Agenda item: FL 102

USF Board of Trustees

March 21, 2013

Issue: Proposed Ph.D. in Cell and Molecular Biology

Proposed action: New Degree Program Approval

Background information: This application reflects a reorganization of the Biology Department that began in 2006 and was completed in early 2009. This created the Department of Cell Biology, Microbiology and Molecular Biology (CMMB) and the Department of Integrative Biology (IB). The resources of the original Biology Department (including faculty, staff, teaching assistantships and base budget) were reallocated to the two departments in January 2009. Currently the two departments share the Ph.D. in Biology, with new students applying directly to either CMMB or IB, who handle their own admissions. Therefore, resources have already been established and are sufficient to support the proposed new degree program. This new degree for CMMB formally completes the reorganization at the graduate level, and replaces the concentration based program that is already in place, and has been functioning since 2006. The separation of programs is primarily driven by sweeping changes that have occurred in the biological sciences in the last 20 years. The two programs are widely divergent from each other in scientific content, with the CMMB program being primarily biomedical in nature, focusing on the cellular and molecular basis of human diseases; and the IB program centered around the biological, ecological and evolutionary competency of organisms, with a primary focus on conservation and global change biology.

Strategic Goal(s) Item Supports: The PhD in Cell and Molecular Biology supports State University System (SUS) Strategic Goals: **i)** "To strengthen Quality and Reputation of Academic Programs and Universities"; **ii)** "To increase Degree Productivity and Program Efficiency"; **iii)** "To increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis"; and **iv)** "To strengthen the Quality and Reputation of Scholarship, Research, and Innovation" .It also supports USF strategic **goal I** to produce "Well-educated and highly skilled global citizens through our continuing commitment to student" and USF strategic **goal II** to develop "High-impact research and innovation to change lives, improve health, and foster sustainable development and positive societal change"

Workgroup Review: ACE, 03/07/013
Supporting Documentation: Attached Proposal
Prepared by: Dr Lindsey N. Shaw (813-974-2087)

Board of Governors, State University System of Florida

Request to Offer a New Degree Program

University of South Florida-Tampa	**Fall 2013**
University Submitting Proposal	**Proposed Implementation Term**
College of Arts and Sciences	**Cell Biology, Microbiology & Molecular Biology**
Name of College(s) or School(s)	**Name of Department(s)/ Division(s)**
Cell and Molecular Biology	**PhD Cell and Molecular Biology**
Academic Specialty or Field	**Complete Name of Degree**
CIP 26.0406	
Proposed CIP Code	

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

Date Approved by the University Board of Trustees		**President**		**Date**
Signature of Chair, Board of Trustees	**Date**	**Vice President for Academic Affairs**		**Date**

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1 in Appendix A. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2 in Appendix A. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

Implementation Timeframe	Projected Enrollment (From Table 1)		Projected Program Costs (From Table 2)				
	HC	FTE	E&G Cost per FTE	E&G Funds	Contract & Grants Funds	Auxiliary Funds	Total Cost
Year 1	34	25.5	$28,137	$717,502	$66,936	0	$784.438
Year 2	39	29.25					
Year 3	43	32.25					
Year 4	46	34.5					
Year 5	50	37.5	$21,453	$804,480	$66,936	0	$871,416

Note: This outline and the questions pertaining to each section must be reproduced within the body of the proposal

to ensure that all sections have been satisfactorily addressed. Tables 1 through 4 are to be included as Appendix A and not reproduced within the body of the proposals because this often causes errors in the automatic calculations.

INTRODUCTION

I. Program Description and Relationship to System-Level Goals

Preface: This application for a new Ph.D is driven by two synergistic forces; a recent reorganization of the (former) Department of Biology and recognition that the field of has grown enormously since the Department of Biology was formed in the 1970's. The reorganization created two new departments with very different missions; the Department of Cell Biology, Microbiology, and Molecular Biology (CMMB) and the Department of Integrative Biology (IB). Each department is housed in a separate building and each has operated independently for the past seven years.

The resources of the original Biology Department (including faculty, staff, teaching assistantships and base budget) were reallocated to the two departments in January 2009. Currently the two departments share the Ph.D. in Biology, with new students applying directly to either CMMB or IB, who handle their own admissions. Therefore, resources have already been established and are sufficient to support the proposed new degree program. This new degree for CMMB simply completes the reorganization at the graduate level.

The separation of programs is primarily driven by divergence of the biological sciences. The two programs distinguish themselves from each as follows:

The central mission of the Department of Cell Biology, Molecular Biology and Microbiology focuses on the investigation of human diseases at the molecular and cellular level. This is broadly organized into three focus areas: Genome Integrity and Mechanisms of Aging; Bacterial Pathogenesis and Resistance; and Structural and Computational Biology. Specifically, faculty members in CMMB are engaged in research using model organisms that focus on neurodegenerative disorders, ageing related diseases, the immunological and genetic basis of diabetes, cancer development and progression, biosensing based detection of infectious agents in food and the environment, the pathogenesis of bacterial infection, antibiotic resistance and drug development and the immunology of host-pathogen interaction. Their research seeks to develop a better understanding of human disease causation and development, with the goal of uncovering new treatment options and drug targets.

The central mission of the Department of Integrative Biology focuses on the integration of morphological and physiological adaptations that facilitate the biological, ecological and evolutionary competency of organisms. All levels of organization are subjected to research, from molecules to ecosystems, and all forms of life are included from microbes to plants to animals. IB's faculty members are engaged in research activities that involve, broadly, conservation biology, global change biology, freshwater biology and pollution, marine biology, biomechanics, disease biology, biogeochemistry, and evolutionary biology. Their research integrates our understanding of living things across all levels of organization.

As such, there is a clear distinction in the foci of each department, and degree, which we contend merits separate doctoral degree programs.

A. Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.

a) **Level:** The proposed degree will be at the graduate level and will be a Ph.D. degree. This degree will be the first Ph.D. degree in Cell and Molecular Biology housed in a public university in the state of Florida. The proposed degree was developed from an existing concentration in Cell and Molecular Biology within the Ph.D. degree in Biology.

b) **Emphasis including concentrations, tracks, or specializations:** The Ph.D. degree will be an integrated, combined program that focuses on the scientific study of cells, cellular systems, and the molecular basis of cell structure and function. It includes instruction in cell biology, cell chemistry, molecular biology, microbiology, biophysics, and structural biology.

c) **Total number of credit hours:** This degree requires 90 semester credit hours, comprised as follows:

Course Work: 19 credits

6 credits Core Requirements
7 credits Other Required Courses
6 credits Electives

Research Requirements (71 credits)

Directed Research (BSC7910): 32 credits
Dissertation Research (BSC 7980): 38 credits
PhD Seminar (BSC7936): 1 credit

d) **Overall purpose including examples of employment or education opportunities that may be available to program graduates:**

Biology has changed and diversified far more than other sciences in recent years. This is why the old Biology PhD is being replaced by two very different doctoral programs (in CMMB and our sister department IB respectively) to reflect changes in the discipline. This new Cell and Molecular Biology degree will formalize these changes, and focus on training students in the vast new areas of knowledge and understanding. The powerful new methodologies impact how research is carried out and new knowledge gained. All these result in new niches that need to be filled in the market place by students trained in the new, more specialized technologies.

This degree is categorized as a STEM (Science, Technology, Engineering and Math) program and will train a new generation of biologists. Graduates will be well prepared to become Biotechnologists, Professors, Teachers, and Entrepreneurs in business, healthcare and industry. Students trained in this program will provide a workforce in biotechnology and biomedical fields that will support continued research and development in the state of Florida, in the Tampa bay area, and at USF itself, leading to the production of world class scholars. In addition to working directly in laboratories, well trained cell and molecular biologists often work in businesses, industry and government; and use their knowledge to advise and apply scientific principles in business plans and policy issues.

Another important area for Cell and Molecular Biology graduates is in science education. A Cell and Molecular Biology Ph.D. degree provides the knowledge base to become an effective teacher, particularly in community colleges and universities, and qualified science teachers are in higher demand than those trained in non-science areas. Other opportunities exist in training, education and public outreach for business, government and private institutions.

B. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which specific goals the program will directly support and which goals the program will indirectly support. (See the SUS Strategic Plan at http://www.flbog.org/about/strategicplan/)

The Ph.D. in Cell and Molecular Biology specifically supports the following State University System (SUS) Strategic Goals to: **i)** "Strengthen Quality and Reputation of Academic Programs and Universities" by "Improving the quality and relevance of all academic programs"; **ii)** "Increase Degree Productivity and Program Efficiency" by "Increasing access and degree completion for students"; **iii)** "Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis" by "Increasing student access and success in degree programs in the STEM fields and other areas of strategic emphasis that respond to existing, evolving, and emerging critical needs and opportunities"; and **iv)** "Strengthen the Quality and Reputation of Scholarship, Research, and Innovation" by "Improving the quality and impact of scholarship, research, and commercialization activities". The new Ph.D. in Cell and Molecular Biology is a new doctoral degree not currently available in the SUS, and graduates will contribute to these goals by working in critical areas related to biotechnology and education.

C. If the program is to be included in an Area of Programmatic Strategic Emphasis as described in the SUS Strategic Plan, please indicate the category and the justification for inclusion.

The Areas of Programmatic Strategic Emphasis:

1. Critical Needs:
   - Education
   - Health Professions
   - Security and Emergency Services
2. Economic Development:
   - Globalization
   - Regional Workforce Demand
3. Science, Technology, Engineering, and Math (STEM)

The Ph.D. in Cell and Molecular Biology specifically supports the Critical Need in Education and Health Professions because many graduates move into university academic positions where they train undergraduate and graduate students in Cell and Molecular Biology. Graduates from this program also become biomedical (e.g. cancer and other diseases) researchers thus contributing to health professions. This degree supports Economic Development – Regional Workforce Demand because some graduates move into the biotechnology industry. This degree clearly falls into the STEM category as it specializes in Bioscience.

D. Identify any established or planned educational sites at which the program is expected to be offered and indicate whether it will be offered only at sites other than the main campus.

This degree will be offered only at the USF Tampa campus in the existing Department of Cell Biology, Microbiology and Molecular Biology.

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY

II. Need and Demand

A. Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.

National Level: The new Ph.D. in Cell and Molecular Biology addresses the need for more targeted training within the biological sciences. As a discipline, biology has changed more than any other scientific field over the past 20 years due to a remarkable expansion of knowledge

and methods in cell and molecular biology. This explains the need to replace the existing biology PhD degree with two, very different, and more focused programs that better serve the needs of students and the workforce. The revolution in cell and molecular biology has dramatically enhanced career options for our students. As a faculty and as a university, we are responsible to focus and develop our curricula in the biological sciences to reflect these changes. The national bioscience industry has a total employment impact of 7.5 million jobs (Battelle Report, 2009, http://www.bio.org/local/battelle2009/main.asp). A report to Congress (CRS Report for Congress: RL34539) expressed concerns that changing work force needs in science and technology are not being met. The American Institute of Biological Sciences suggests the need for more focused training, particularly in new biological science disciplines related to cell and molecular biology.

Many of the students who select the Ph.D. degree in Cell and Molecular Biology will be those pursuing careers in biotechnology, health related areas and science education. They will become faculty members at Universities and Medical Schools, not only teaching, but carrying out research in Biomedicine, Cancer, Aging, Drug Development and Bacterial Pathogenesis. Others will carry out similar research but work in the biotechnology and health industries rather than academic settings.

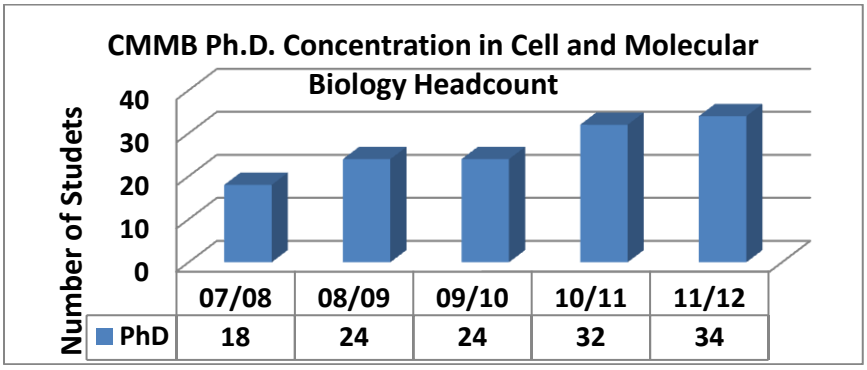
Florida and Local: In 2009, the Governor of Florida highlighted the importance of training Florida's future workforce in life science related industries "*Florida's economy continues to benefit from the state's development as a global leader in biotechnology and life sciences. The advances from this industry will continue to diversify Florida's economy, as well as improve the health and quality of life for everyone."* Biotechnology and health related industries are growing rapidly in Florida and new foci in graduate training within the biological sciences are needed.

Numerous biotechnology enterprises such as Scripps, Burnham, Torrey Pines and SRI have been recruited to Florida in recent years (OPPAGA Report No. 06-71). These institutions have begun to spawn entrepreneurial companies and other spinoffs that need well-trained graduates in Cell and Molecular Biology. The Bureau of Labor Statistics rates Florida as the 4th state in the nation for employment of biological scientists, further supporting the need to train the next generation of scientists.

USF Goals: The new Ph.D. in Cell and Molecular Biology supports USF strategic goal I to produce "Well-educated and highly skilled global citizens through our continuing commitment to student" by "Providing the highest quality, comprehensive, interdisciplinary educational programs and student research opportunities to foster critical thinking and intellectual inquiry through a variety of pedagogical and delivery methods", "Enhancing opportunities for all students by providing transformational learning — including an increased commitment to science, technology, engineering, and mathematics (STEM) and health fields — that is intellectually, scientifically, and technologically sound and produces relevant applied skills and engaged outcomes", and "Educating competitive, highly skilled students prepared to excel in the global job market and to make meaningful and lasting contributions to society". The degree also support USF strategic goal II to develop "High-impact research and innovation to change lives, improve health, and foster sustainable development and positive societal change" by "Engaging in high-impact research, scholarship, and creative activities that generate new knowledge" and "Developing strategic interdisciplinary research initiatives that solve critical problems".

B. Demand: Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.

The Ph.D in Cell and Molecular Biology already exists as a concentration in Cell and Molecular Biology within the existing Ph.D. in Biology that was begun in 2007 and fully implemented in 2009. Enrollment is limited by the number of research faculty available to mentor the students and resources to financially support the students. The CMMB department typically turns down numerous qualified applicants each year because of lack of mentors or financial aid for all the qualified applicants. The figure below shows the historical enrollment in the existing program:



C. If substantially similar programs (generally at the four-digit CIP Code or 60 percent similar in core courses), either private or public exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research). In Appendix B, provide data that support the need for an additional program as well as letters of support, or letters of concern, from the provosts of other state universities with substantially similar programs.

The most similar program in the SUS is a Ph.D. degree in Animal Molecular and Cellular Biology (26.0406) at the University of Florida. However, it is focused on agricultural and veterinary animal science rather than biomedical science and biotechnology. The proposed Ph.D. in Cell and Molecular Biology described in this proposal is substantially different because it focuses on human health and biotechnology.

D. Use Table 1 in Appendix A (A for undergraduate and B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 40 credit hours per year and graduate FTE will be calculated as 32 credit hours per year. Describe the rationale underlying enrollment projections. If, initially, students within the institution are expected to change majors to enroll in the proposed program, describe the shifts from disciplines that will likely occur.

It is expected that all of the current students in the existing Ph.D. in Biology: Concentration in Cell and Molecular Biology will immediately transfer into the new Ph.D. degree in Cell and Molecular Biology and the original Ph.D. in Biology: Concentration in Cell and Molecular Biology will be discontinued. Therefore in the first year there will be no net change in the number of Ph.D. students. CMMB is a young department and is expecting moderate growth in the number of faculty lines over the next few years to accommodate recent growth in undergraduate headcount and SCH. As new faculty members are hired, the graduate student capacity will increase so it is expected that the new Ph.D. in Cell and Molecular Biology will grow moderately as well. Other than students transferring from the Ph.D. in Biology: Concentration in Cell and Molecular Biology to the new Ph.D. in Cell and Molecular Biology, no shifts in disciplines are likely to occur. With regards to the old Biology PhD, it is anticipated that all students in our department currently enrolled in that degree will immediately transfer to the

new PhD in Cell and Molecular Biology. If there exists demand from some students in CMMB to remain in the PhD in Biology, then the program will be continued until such time as they have graduated. There will be no problem with course offerings or teach-out as the PhD in Biology currently offered by CMMB is identical in curriculum to the new PhD in Cell and Molecular Biology. Additionally, this is primarily a research based degree, so there are minimal course and teaching requirements that would have to be considered.

E. Indicate what steps will be taken to achieve a diverse student body in this program. If the proposed program substantially duplicates a program at FAMU or FIU, provide, (in consultation with the affected university), an analysis of how the program might have an impact upon that university's ability to attract students of races different from that which is predominant on their campus in the subject program. <u>The university's Equal Opportunity Officer shall review this section of the proposal and then sign and date in the area below to indicate that the analysis required by this subsection has been reviewed and approved</u>.

The current graduate program in the CMMB Department reflects a commitment for diversity. The following steps will be taken to increase underrepresented groups of STEM graduate students.

Step 1: The CMMB Department will continue to be a featured program on the SCIENCE CAREER Web Site of Science Magazine and GRAD SCHOOL.COM, two prestigious national locations to feature STEM graduate programs.

Step 2: Specifically target Morehouse University, Howard University, Florida A &M University, University of Puerto Rico and University of Virgin Islands for promoting our graduate program. These universities receive substantial federal funding enhancing their STEM undergraduate programs.

Step 3: Actively promote the CMMB Graduate Ph.D. program to USF undergraduate minority students who now have become more competitive.

A Ph.D. in Cell and Molecular Biology is expected to be attractive to minority STEM students who often apply to medical schools. For those with research interests, this degree can be combined with MD programs. We will continue to work with USF Honors College in placing excellent STEM students into undergraduate research programs, hoping to keep them in the USF pipeline for entry into the CMMB Ph.D. program.

Because there is no other Cell and Molecular Ph. D. offered in Florida, we do not anticipate any unfavorable impact.

Ted Williams — Signature of Equal Opportunity Officer

1-25-13 — Date

III. Budget

A. Use Table 2 in Appendix A to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 in Appendix A to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.) If the university intends to operate the program through continuing education on a cost-recovery basis or market

rate, provide a rationale for doing so and a timeline for seeking Board of Governors' approval, if appropriate.

The impetus for the change in the Ph.D. was the reorganization of the Department of Biology into two new departments (Cell Biology Microbiology and Molecular Biology; and Integrative Biology) so they could each better focus on unique areas of expertise. However they still share and deliver an undergraduate degree, and both masters and Ph.D. degrees, all in general biology. When the departments were separated the budget from the original single biology department was reallocated according to the faculty and students newly chosen departments so as to continue support of the degree programs. The total funding in support of the existing Ph.D. program is $1,423,492 (this is only the portion of the departmental budget that supports the PhD program; the support for the Undergraduate programs and the masters degrees are in addition to this amount). The total budget supporting the general biology Ph.D program was divided so that the budget supporting CMMB's portion of the current Ph.D. program was/is $717,502. This amount is now available to support the new program proposed herein.

Table 2 is a summary of costs associated with the proposed Ph.D. in Cell and Molecular Biology which are associated largely with faculty and graduate teaching assistantships (in support of the 2300 biology undergraduate majors) and one staff assistant. Table 3 shows that the new program has a net cost of zero since the resources to support the new programs currently exist (divided between the programs when the two new departments were created in 2009). This is indicated in Table 3 where the base budget in support of CMMB's portion of the current general Ph.D. in biology ($717,502) is reallocated back to the department, but now in support of the new Ph.D. in Cell and Molecular Biology. Thus all of the resources needed to operate the new Ph.D. are already in place. Because the number of Ph.D. students in the department is near capacity for the number of faculty, we project only modest increases over the next five years. Current students will have the opportunity to switch to the new degree or stay with the current degree which will be phased out as existing students graduate.

B. If other programs will be impacted by a reallocation of resources for the proposed program, identify the program and provide a justification for reallocating resources. Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).

The Biology Department reorganized into two new departments between 2006 and 2009, creating the Department of Cell Biology, Microbiology and Molecular Biology and the Department of Integrative Biology. The resources of the original Biology Department (including faculty, staff, teaching assistantships and base budget) were reallocated to the two departments in January 2009. Currently the two departments share the Ph.D. in Biology but with distinct concentrations. New students apply directly to either CMMB or IB, who handle their own admissions. This new degree for CMMB simply completes the reorganization at the graduate level.

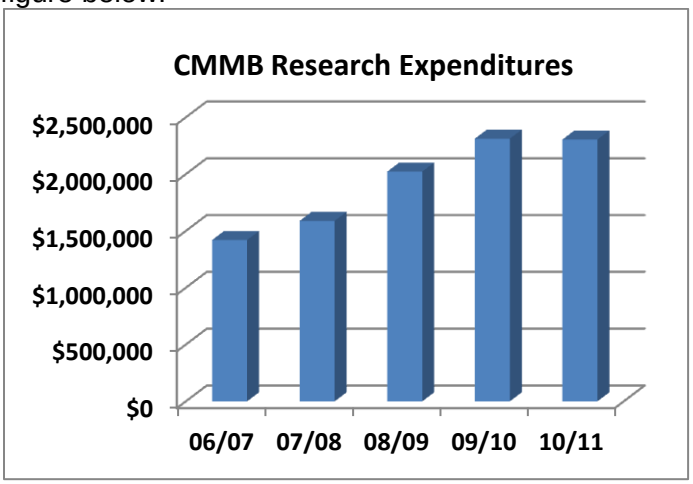
C. Describe other potential impacts on related programs or departments (e.g., increased need

for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).

The new Ph.D. degree in Cell and Molecular Biology will retain the same course format as the present Ph.D. in Biology: Concentration in Cell and Molecular Biology, so there will be little or no impact to other programs or departments.

D. Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.

The most significant source of extramural funds to support CMMB graduate students are federal research grants. Many Ph.D. students are supported by grants that provide research assistantships, tuition waivers or laboratory supplies, equipment and reagents needed for their research. CMMB typically expends $2.2 million in research dollars each year as shown in the figure below:



The CMMB Department has established several USF Foundation accounts and works actively with the College of Arts and Sciences Development office. The Department of CMMB intends to establish graduate scholarships in the future using our general USF Foundation fund and an allocation from the College of Arts and Sciences Wood Foundation. The CMMB Department also receives Tharp Foundation funds that support graduate education. Our general USF Foundation fund also supports our seminar program which brings nationally recognized researchers to USF. These seminars are attended by our graduate students. Many CMMB Department graduate students are involved in interdisciplinary research activities with our colleagues at the Florida Center of Excellence for Drug Discovery and Innovation, the Byrd Center, USF Health and the Moffitt Cancer Center. The USF Herbarium is housed within the CMMB Department and also supports our seminar program.

IV. Projected Benefit of the Program to the University, Local Community, and State

Use information from Tables 1 and 2 in Appendix A, and the supporting narrative for "Need and Demand" to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.

Projected qualitative benefits of the Ph.D. in Cell and Molecular Biology to USF: The University of South Florida benefits from having the State's first doctoral degree in Cell and Molecular Biology in the College of Arts and Sciences. Students attend USF with a specific desire of obtaining this focused specialized graduate degree and it is expected that the quality of students

in the program will rise. The new degree will allow USF to be more competitive with the changing field of biology and the degree brings a new focus that better prepares students for academic and biotechnology related jobs. This new degree will also contribute to the efforts at the College of Medicine, the Byrd Alzheimer's Institute and the Moffitt Cancer Center.

Projected quantitative benefits of the Ph.D. in Cell and Molecular Biology to USF: It is expected that this degree will attract more applicants over the next five years, allowing the program to grow within the resources available to the program (Table 1).

Projected qualitative benefits of the Ph.D. in Cell and Molecular Biology to community: The local Tampa Bay Area benefits from having students equipped with a degree in Cell and Molecular Biology to fill critical needs of research institutes and biotechnology companies for graduates with advanced training in biomedical sciences. The development of the I-4 technology corridor depends on graduates of modern degree programs in science and engineering such as the new degree in Cell and Molecular Biology.

Projected quantitative benefits of the Ph.D. in Cell and Molecular Biology to the community: According to the Florida High Technology Corridor web site, the I-4 Technology corridor is composed of more than 200 companies with over 10,000 employees in the area of Life Sciences and Medical Technologies (http://www.floridahightech.com/hightechindustry/medical.php). Graduates with the new Ph.D. degree in Cell and Molecular Biology will help fulfill the workforce needs of this industry.

Projected qualitative benefits of the Ph.D. in Cell and Molecular Biology to Florida: The Ph.D. in Cell and Molecular Biology provides unique academic training for biomedically oriented students. It also contributes to a pipeline of a highly trained labor force for high tech companies, which the new governor desires to attract to the state (St. Petersburg Times, December 2010). Finally the new degree supports the current State University System (SUS) Strategic Goals to: **i)** "Strengthen Quality and Reputation of Academic Programs and Universities" by "Improving the quality and relevance of all academic programs"; **ii)** "Increase Degree Productivity and Program Efficiency" by "Increasing access and degree completion for students"; **iii)** "Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis" by "Increasing student access and success in degree programs in the STEM fields and other areas of strategic emphasis that respond to existing, evolving, and emerging critical needs and opportunities"; and **iv)** "Strengthen the Quality and Reputation of Scholarship, Research, and Innovation" by "Improving the quality and impact of scholarship, research, and commercialization activities".

V. Access and Articulation – Bachelor's Degrees Only

A. If the total number of credit hours to earn a degree exceeds 120, provide a justification for an exception to the policy of a 120 maximum and submit a separate request to the Board of Governors for an exception along with notification of the program's approval. (See criteria in Board of Governors Regulation 6C-8.014)

Not Applicable.

B. List program prerequisites and provide assurance that they are the same as the approved common prerequisites for other such degree programs within the SUS (see the Common Prerequisite Manual at FACTS.org). The courses in the Common Prerequisite Counseling Manual are intended to be those that are required of both native and transfer students prior to entrance to the major program, not simply lower-level courses that are required prior to graduation. The common prerequisites and substitute courses are mandatory for all institution programs listed, and must be approved by the Articulation Coordinating Committee (ACC). This requirement includes those programs designated as "limited access."

If the proposed prerequisites are not listed in the Manual, provide a rationale for a request for exception to the policy of common prerequisites. NOTE: Typically, all lower-division courses required for admission into the major will be considered prerequisites. The curriculum can require lower-division courses that are not prerequisites for admission into the major, as long as those courses are built into the curriculum for the upper-level 60 credit hours. If there are already common prerequisites for other degree programs with the same proposed CIP, every effort must be made to utilize the previously approved prerequisites instead of recommending an additional "track" of prerequisites for that CIP. Additional tracks may not be approved by the ACC, thereby holding up the full approval of the degree program. Programs will not be entered into the State University System Inventory until any exceptions to the approved common prerequisites are approved by the ACC.

Not Applicable.

C. If the university intends to seek formal Limited Access status for the proposed program, provide a rationale that includes an analysis of diversity issues with respect to such a designation. Explain how the university will ensure that community college transfer students are not disadvantaged by the Limited Access status. NOTE: The policy and criteria for Limited Access are identified in Board of Governors Regulation 6C-8.013. Submit the Limited Access Program Request form along with this document.

Not Applicable.

D. If the proposed program is an AS-to-BS capstone, ensure that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as set forth in Rule 6A-10.024 (see Statewide Articulation Manual at FACTS.org). List the prerequisites, if any, including the specific AS degrees which may transfer into the program.

Not Applicable.

INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan.

The new Ph.D. in Cell and Molecular Biology supports USF strategic goal I to produce "Well-educated and highly skilled global citizens through our continuing commitment to student" by "Providing the highest quality, comprehensive, interdisciplinary educational programs and student research opportunities to foster critical thinking and intellectual inquiry through a variety of pedagogical and delivery methods", "Enhancing opportunities for all students by providing transformational learning — including an increased commitment to science, technology, engineering, and mathematics (STEM) and health fields — that is intellectually, scientifically, and technologically sound and produces relevant applied skills and engaged outcomes", and "Educating competitive, highly skilled students prepared to excel in the global job market and to make meaningful and lasting contributions to society". The degree also support USF strategic goal II to develop "High-impact research and innovation to change lives, improve health, and foster sustainable development and positive societal change" by "Engaging in high-impact research, scholarship, and creative activities that generate new knowledge" and "Developing strategic interdisciplinary research initiatives that solve critical problems". The PhD in Cell and Molecular Biology also supports the following State University System (SUS) Strategic Goals to: **i)** "Strengthen Quality and Reputation of Academic Programs and Universities" by "Improving

the quality and relevance of all academic programs"; **ii)** "Increase Degree Productivity and Program Efficiency" by "Increasing access and degree completion for students"; **iii)** "Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis" by "Increasing student access and success in degree programs in the STEM fields and other areas of strategic emphasis that respond to existing, evolving, and emerging critical needs and opportunities"; and **iv)** "Strengthen the Quality and Reputation of Scholarship, Research, and Innovation" by "Improving the quality and impact of scholarship, research, and commercialization activities".

B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.

The proposed Ph.D. in Cell and Molecular Biology builds on existing strengths in the biological sciences at USF. USF has strong undergraduate programs in biological and biomedical sciences that feed directly into this program. The department has close ties to other science departments in the College of Arts and Sciences as well as the College of Medicine, the Center for Drug Discovery and Innovation, the Moffitt Cancer Center, and the Johnny Byrd Alzheimer's Center. Our graduate students utilize facilities and expertise in these other departments and centers. The CMMB department shares an interest in Structural Biology with the Department of Molecular Medicine in the College of Medicine and has a close relationship with the Moffitt Cancer Biology Ph.D. Program which is academically housed in CMMB. Two of our faculty and many of our graduate students are closely involved with the Center for Drug Discovery and Innovation. A distinct synergy and cooperativity has developed between our department and other biomedically oriented departments and centers at USF.

C. Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology (table) of activities, listing both university personnel directly involved and external individuals who participated in planning. Provide a timetable of events necessary for the implementation of the proposed program.

In 2006, the Dean of Arts and Sciences directed the Biology Department to reorganize into two smaller but more focused departments. This was fully implemented in January 2009 with the creation of the Integrative Biology Department and the Department of Cell Biology, Microbiology and Molecular Biology. At that time, the Dean asked the two departments to develop new Ph.D. programs.

Planning Process

Date	Participants	Planning Activity
3 March 06 - 7 June 06	Dean Skvoretz, Biology Reorganization Committee: Professors James Garey, Dan Lim, Rick Pollenz, Brian Livingston	Biology reorganization begun. CMMB and IB established as Divisions, The communication from Dean Skvoretz allows the two Divisions to develop separate concentrations/tracks in the Biology PhD program.
30 March 2007	Professors Brian Livingston, Jessica Moore, Kristina Schmidt, My Lien Dao (CMMB graduate committee)	CMMB Graduate Committee begins planning new Cell and Molecular Concentration, proposed separate graduate admissions for CMMB and IB.
15 Jan 2007	All CMMB faculty	Planning for new and more structured PhD Biology

		Concentration in Cell and Molecular Biology began at annual CMMB Faculty retreat.
Spring 2007	Brian Livingston (CMMB graduate director), CAS graduate committee and University graduate council	Proposal for separate graduate admissions for CMMB and IB is submitted and approved.
Fall 2007	USF Graduate School Staff	2007/2008 catalog is published specifying separate admissions for CMMB and IB into the Biology PhD program.
Fall 2008	CMMB Division Graduate Committee: Professors Rick Pollenz, Meera Nanjundan, Les Shaw, Jessica Moore, My Lien Dao	First complete draft of the Ph.D. Biology concentration in Cell and Molecular Biology.
30 Jan 2009	Dean Eisenberg	An MOU is issued establishing CMMB as a independent department and requires CMMB to develop a PhD in Cell and Molecular Biology
Spring 2009	CMMB Division Graduate Committee: Professors Meera Nanjundan, Les Shaw, Jessica Moore, My Lien Dao	PhD Biology Concentration in Cell and Molecular Biology is approved by the CMMB graduate committee, CAS graduate committee and Graduate Council
Fall 2009	USF Graduate School Staff	The new CMMB Biology PhD concentration in Cell and Molecular Biology is published in the 2009/2010 USF graduate catalog.
8 May 2009	All CMMB faculty	The new PhD in Cell and Molecular Biology is discussed and outlined in the annual CMMB faculty retreat. It is designed to be similar to the existing concentration in Cell and Molecular Biology.
Spring 2010	CMMB Faculty Retreat	Continued discussion and planning of the Ph.D. in Cell and Molecular Biology Proposal.
4 Dec 2011	CMMB Department Graduate Committee: Professors Shaw, Riordan, Nanjundan, Varma, Wright	First complete draft of the Ph.D. in Cell and Molecular Biology.

Events Leading to Implementation-

Date	Implementation Activity
Dec 2008	USF approved the Ph.D. Biology Concentration in Cell and Molecular Biology
Fall 2011	First version of the Ph.D. in Cell and Molecular Biology approved by the CMMB Graduate Committee approved by the CMMB Chair
Spring 2012	Department approved the Ph.D. in Cell and Molecular Biology
Fall 2012	School and College approved the Ph.D. in Cell and Molecular Biology
February 2013	Proposal reviewed by Academics & Campus Environment Advisory Council
Spring 2013	Proposal reviewed by USF Board of Trustees

Summer 2013	Proposal reviewed by USF Board of Govenors
Fall 2013	Advertise the program and solicit applicants for the 2014 academic year. Engage in recruiting activities to generate a quality and diverse applicant pool
Spring 2014	Review applicants and accept 9 students as the initial cohort
Fall 2014	New cohort begins the program

VII. Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.

The CMMB Department is just four years old and has not yet undergone an external review process, although this has been scheduled for fall 2013. The Department, as a part of the USF Tampa campus, is, however, accredited by SACS. The graduate program is administered and reviewed by the CMMB Graduate Committee and the Chair, as well as the Dean's office in the College of Arts and Sciences. All existing degrees including the current Ph.D. in Biology: Concentration in Cell and Molecular Biology were approved by the Department, the College and USF at the level of the Graduate Council.

VIII. Curriculum

A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor's degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

Assessment of learning outcomes is measured at three distinct points during the program:

1. Oral Qualifying Exam
2. Written Qualifying Exam
3. Dissertation Defense

Assessment of student learning outcomes from formal core and required coursework are measured in the Oral and Written Qualifying exams for the PhD program in Cell and Molecular Biology where the following rubrics are used for assessment:

1. Oral Qualifying Exam Rubric

Explanation: The candidate will be scored in five distinct categories using a 4 (highest) to 0 (lowest) scale. The maximal points that can be earned will be 20. Minimal passing score will be an average of 16 (80%) across all committee members with no scale subscore lower than 2.0.

Scoring criteria

GENERAL AND DISCIPLINE SPECIFIC KNOWLEDGE

4: shows exceptional knowledge of both general and discipline specific concepts
3: has firm grasp of both general and discipline specific concepts, but missing some key ideas.
2: shows adequate mastery of general knowledge, but discipline specific knowledge has significant gaps.
1: shows poor knowledge of both general and discipline specific concepts.
0: has minimal understanding of general and discipline specific concepts.

PROBLEM SOLVING
4: response to the problem is immediate, understanding of questions is clear; analysis is relevant, sophisticated and original. Moves easily to higher levels of detail. Establishes hypotheses. Shows ability to "work the problem".
3: responds well to the problem and analysis goes beyond the obvious, can move to higher levels of detail.
2: adequate response but may contain factual, interpretive or conceptual errors. Requires additional prompts or information to proceed to higher levels of detail
1: confuses concepts including those in the prompt. Cannot process to additional levels even with additional information.
0: unable to proceed through prompt. Does not understand the central dogma.

UNDERSTANDING OF METHODOLOGY
4: exceptional understanding of methodologies, rationale for use and outcomes. Can provide all detail of procedure.
3: general understanding of methodologies, may not be clear on overall outcomes. Can provide some detail of process.
2: recognizes methodology, but overall application and rational is lacking. Cannot provide detail of process.
1: is aware of methodology but does not know process or application
0: does not recognize technique

ORGANIZATION/COMMUNICATION
4: shows clear organization in working the problem. Uses correct terminology. Diagrams and pathways are diagramed in detail and the continuity between concepts is clearly explained. Speaks clearly. Demonstrates clear command of the room.
3: shows organization in working the problem. Properly diagrams pathways and processes. Speaks well.
2: is not well organized in working the problem. Explanation tends to be verbal. Diagrams and pathways lack detail and are
superficial. Shows many instances of mis-use of terminology when discussing the concept.
1: shows minimal organization and explanations are all verbal. Verbal communication is scattered.
0: is unable to link ideas and concepts. Does not use the board even when prompted. Verbal communication is poor.

SUPPORT
4: shows clear understating of literature base and specific individuals who carried out key studies. References supporting material when working though problems
3: show understanding of key papers and recognizes some individuals. Occasionally references supporting material when working though problems
2: has understanding of discipline specific literature, but does not immediately recognize some key reports. Does not consistently reference other material while working through a problem.
1: has poor grasp of the literature and does not recognize key individuals or studies. Does not reference supporting literature when working through the problems
0: has no knowledge of general or discipline specific literature base.

2. The Written Qualifying Exam Rubric:

Rubric For Assessment of Grant Proposal (Written Qualifying Exam)

Grading guidelines:

4: Exemplary; all points addressed with clarity and deep understanding, (top 10%)
3: Competent; all points addressed but lacking in some areas (average to above average)
2: Marginal; main points are addressed, but significant gaps are evident (below average)
1: Poor; general standards have not been met; failure to meet the stated objectives
0: specific component is absent

Abstract (4 pts) score comments
Description of the project is concise, contains a defined hypothesis or research objective, outlines methodology and specific aims to be completed.

Specific Aims (12 pts)
Specific area of research is clearly defined and includes Central Research Objective, Goal or Hypothesis is clearly defined. Significance of research is placed in context of current dogma. Specific aims are active and measurable.

Introduction/Literature Review (16 pts)
Review of literature is organized around thematic areas, is sequential and related to the specific research focus area. Review is critical, integrated and identifies knowledge gap. The literature base is presented in context to the work that is proposed Content of the review is drawn from appropriate original peer-reviewed journal articles that are referenced correctly.

Methodology/Experimental Design (16 pts)
Rationale for proposed studies is clearly stated. Proposed experiments are sufficiently described and utilize appropriate methods. Expected outcomes are explained. Alternative studies are proposed.

References (4 pts)
Appropriate references are provided
*Students must score >75% (39pts out of a possible 52 pts) to pass the written qualifying exercise.

3. Dissertation Defense Rubric

RUBRIC FOR ASSESSMENT OF DISSERTATION

Grading guidelines

4: Exemplary; all points addressed with clarity and deep understanding, (top 10%)
3: Competent; all points addressed but lacking in some areas (average to above average)
2: Marginal; main points are addressed, but significant gaps are evident (below average)
1: Poor; general standards have not been met; failure to meet the stated objectives
0: specific component is absent

Abstract (4 pts)
Description of the project is concise, contains a defined hypothesis or research objective, outlines methodology and specific aims to be completed.

Introduction/Literature Review (20 pts)
Specific area of research is clearly defined and includes Central Research Objective, Goal or

Hypothesis is clearly defined. Review of literature is organized around thematic areas, is sequential and related to the specific research focus area. Review is critical, integrated and identifies knowledge gaps. The literature base is presented in context to the work that is proposed. Content of the review is drawn from appropriate original peer-reviewed journal articles that are referenced correctly.

Methodology/Experimental Design (12 pts)
Rationale for completed studies is clearly stated. Experimental methodology is sufficiently described and appropriate to the experimental question. The process by which the data was gathered or generated is clearly described.

Findings (12 pts)
The findings are presented in a logical, sequential manner and build logically from and directly address the research question. All the original data is presented in appropriate formats. Patterns, relationships and themes that are described by the data are supported by the data.

Discussion/Conclusions/Implications (16 pts)
Conclusions are presented that are consistent with the results. The stated conclusions are framed in the context of the current knowledge base and defined knowledge gaps. The implications of the findings to the field are stated. Future directions are suggested

Organization (16 pts)
Written with correct grammar, punctuation and spelling. Appropriate references are provided
Written in a scholarly language that is clear and precise. Logically organized

Students must score >75% (60pts) in the assessment of the dissertation.

1. The General Learning Outcomes for the Program

The overall Assessment of a student's learning outcomes in the program are assessed through the following:

Outcome 1: Students will pass a written qualifying exam on a specific area of cell and molecular biology.

Methods of Assessment: PhD students must write and pass a written qualifying exam based on general and discipline specific areas of cell and molecular biology. The students' major advisor and two nominated faculty members will judge the written exam for scientific competence by a faculty-developed rubric (FDR). The student must achieve at least a 75% from the rubric to be considered passing.

Outcome 2: Students will demonstrate the ability to orally communicate knowledge in the core areas of cell and molecular biology, as well as specialized areas.

Methods of Assessment: All PhD students must successfully complete an oral qualifying examination to a supervisory committee consisting of their major advisor and three other credentialed faculty members. The committee will use an FDR to assess the student's discipline-specific knowledge and their general knowledge in the field of cell and molecular biology. Students must score at least a 80% from the FDR to successfully satisfy this outcome.

Outcome 3: Students will generate a written dissertation proposal that contains a cohesive set of experiments and addresses a specific hypothesis in the areas of cell and molecular biology.

Methods of Assessment: PhD students must write an original dissertation proposal that describes their dissertation research in the core areas of cell and molecular biology as well as more specialized areas. The students' committee, consisting of their major advisor and three other credentialed faculty members, will approve the topic. The proposal will be assessed for scientific competence by a faculty-developed rubric (FDR). The student must achieve at least a 70% from the rubric.

Outcome 4: Students will present and defend a dissertation in a specialized area of cell and molecular biology.

Methods of Assessment: All PhD students must present and defend a scholarly dissertation based on their research to the faculty in an open seminar The student's committee will then use an FDR to assess the defense and overall quality of the dissertation in the field of cell and molecular biology. Students must score at least a 70% based on the FDR to successfully satisfy this outcome.

B. Describe the admission standards and graduation requirements for the program.

To gain acceptance into the program, students must apply to the USF Graduate School for admission to the PhD program in our department. Students are required to have a B.S. degree in Biology (or equivalent) to apply to the doctoral program. Students must submit copies of transcripts, GRE scores, supporting documents, and a statement of personal research interests directly to the department. International applicants must also submit TOEFL scores and assessed and validated copies of their international transcripts. The minimum admission requirements are a GPA of 3.0 with the following minimum GRE percentile sub-scores: Verbal 57th percentile, Quantitative 35th percentile, AW 73rd percentile.

The graduation requirements for this program are 90 credits of study in total (including a minimum of 38 credits Dissertation Research), the successful completion of a written and oral preliminary doctoral examinations, the submission and approval of a dissertation proposal, the presentation of research at 2 separate national/regional professional meetings, the submission of one research article for publication to a refereed scientific journal, the submission of an acceptable dissertation, and the presentation of doctoral seminar and successful research defense.

C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

Students must take a minimum of 90 credits as outlined below

Core Requirements (6 hours)
PCB 6525 Molecular Genetics (3)
BSC 6094 Scientific Grant Writing (3)*

**this course is in the process of being approved as a structured course (PCB6094). It was formerly offered as BSC6936 as a special topics course of the*

same title and content.

Other Required Courses (7 hours)
PCB6920 Advances in Cellular & Molecular Biology (1)
BSC6930 Lectures in Contemporary Biology (1hour, taken 4 times) (4)
BSC6932 Advances in Scientific Review (2)

Electives* [minimum 6 hours]
PCB 5616 Molecular Phylogenetics (3)
PCB 6107 Advanced Cell Biology (4)
BSC 5425 Genetic Engineering and Recombinant DNA Technology (3)
MCB 5206 Public Health & Pathogenic Microbiology (3)
PCB 6236 Advanced Immunology (4)
PCB 5256 Developmental Mechanisms (3)
BSC 6932 Selected Topics (1-4)

**Courses not on this list may be used with the approval of the CMMB Graduate Program Director.*

Research Requirements (71 hours)
BSC 7910 Directed Research (32 hour minimum)
BSC7980 Doctoral Dissertation (38 hour minimum)
BSC7936 PhD Seminar (1 hour)

Written Qualifying Exam
All students in the Cell and Molecular Biology Ph.D. program must complete a written qualifying examination. The exam shall be in the format of a grant proposal and contain the following sections:

- Abstract {300 words}
- Specific Aims [1 page]
- Background and Significance of topics [4-5 pages]
- Proposed research program (conducted over 3 year period) [9-10 pages]
- Bibliography (no page limit)

The length of the proposal shall be no more than 15 pages (the abstract and bibliography does not count in the page limit). The topic of the exam shall meet the following guidelines:

- The written proposal cannot be based in the same model organism that the student will use to carry out their dissertation research
- The written proposal cannot be based on the analysis of the same gene/protein that the student will investigate during their dissertation research
- The written proposal cannot be based on the analysis of the same pathway that the student will investigate during their dissertation research.

Admission to Candidacy
The doctoral student is eligible for admission to candidacy after completing structured course requirements, passing the qualifying examination and approval by the supervisory committee. Appropriate forms to document promotion to candidacy must be completed and to the Graduate School. Following admission to candidacy, a student must enroll in BSC 7980 when engaged in research, data collection, or writing activities relevant to the doctoral dissertation. Advisors should assign the number of credits in this course in accordance with policy and appropriate to the demands made on faculty, staff, and University facilities, but in no event will the total number of earned dissertation credits be fewer than 38. Students not admitted to

candidacy are not eligible to enroll in BSC 7980.

Dissertation Requirements
The dissertation of all graduate students admitted to a graduate degree program at the University of South Florida must conform to the guidelines of the Handbook for Graduate Thesis and Dissertations available from the USF Graduate School (http://www.grad.usf.edu/thesis.asp).

Doctoral Seminar and Defense
All doctoral students must present a public seminar to the CMMB Department and must be enrolled in BSC 7980, during the semester in which the seminar is given. The seminar should be a concise summary of the research completed to satisfy the requirements for the Ph.D. The seminar is open to the general public and must be announced two weeks prior to the presentation. Upon completion of the seminar, the general public will be invited to ask questions. At the discretion of the student's graduate committee, members of the committee may continue to question the graduate student after the general public has departed the seminar room. Each student is expected to defend his/her research to the unanimous satisfaction of the graduate committee. Following the defense, students will make any editorial modifications to the dissertation as recommended by the supervisory committee and submit the dissertation to the Graduate School.

Other Requirements
1 Scientific Publication
2 presentations at Scientific Meetings

Dissertation Requirements

The dissertation of all graduate students admitted to a graduate degree program at the University of South Florida must conform to the guidelines of the Handbook for Graduate Thesis and Dissertations available from the USF Graduate School (http://www.grad.usf.edu/thesis.asp).

D. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

Fall year 1	BSC7910 Directed Research (2)	Research Req.
	BSC6932 Advances in Scientific Review (2)	Other Required
	PCB6920 Advances in Cellular & Molecular Biology (1)	Other Required
	BSC6930 Lectures in Contemporary Biology (1)	Other Required
	PCB6525 Molecular Genetics (3)	Core

Spring year 1	BSC7910 Directed Research (2)	Research Req.
	BSC6936 Scientific Grant Writing (3)	Core course
	Elective (3)	Elective
	BSC6930 Lectures in Contemporary Biology (1)	Other Required

Summer year 1	BSC7910 Directed Research (6)	Research Req.

Fall year 2	BSC7910 Directed Research (5)	Research Req.
	Elective (3)	Elective
	BSC6930 Lectures in Contemporary Biology (1)	Other Req.

Spring year 2	BSC7910 Directed Research (9)	Research Req.

Summer year 2	BSC7910 Directed Research (6)	Research Req.

Fall year 3*	BSC7910 Directed Research (2)	Research
	BSC7980 Dissertation Research (6)	Research
	BSC6930 Lectures in Contemporary Biology (1)	Other Required

*students should be advanced to candidacy during the Fall of year 3

Spring year 3	BSC7980 Doctoral Dissertation (9)	Research

Summer year 3	BSC7980 Doctoral Dissertation (6)	Research

Fall year 4	BSC7980 Doctoral Dissertation (9)	Research

Spring year 4	BSC7980 Doctoral Dissertation (8)	Research
	BSC7936 PhD Seminar (1)	Research

*Students are expected to finish in their 4th year but some may require additional time

E. Provide a one- or two-sentence description of each required or elective course.-Font changes here

BSC 5425 Genetic Engineering (3)	This lecture-based course will use a problem solving approach, provide fundamental knowledge of scientific concepts and principles that form the basis of experimental methodologies in genetic engineering and recombinant DNA technology. For majors/nonmajors.
MCB 5206 Public Health and Pathogenic Microbiology	A comprehensive survey of pathogenic microbes responsible for disease in man and other animals and the impact of these infectious agents on the public health. These pathogens will be studied with respect to their morphology, cultivation, mechanisms of pathogenicity, laboratory diagnosis, and epidemiology.
PCB 5256 Developmental Mechanisms (3)	Topics in modern developmental biology to be covered in lecture and through readings so as to gain a detailed understanding of cellular and molecular mechanisms of differentiation and pattern formation in various eukaryotic species for majors/non-majors.
PCB 6525 Molecular Genetics (3)	Detailed examination of DNA, RNA and protein synthesis; the effects of mutations on proteins and cellular control.
PCB 5616 Molecular Phylogenetics (3)	Provides a theoretical (lecture) and

	practical (computer lab) framework to allow students to carry out phylogenetic analysis using molecular data. Majors or nonmajors.
BSC6930 Lectures in Contemporary Biology (4)	This Biology lecture series includes a diversity of contemporary topics including: molecular regulatory mechanics, evolutionary genetics, organismal physiology and community ecology.
BSC 6932 Selected Topics (1-4)	Course content will deal with student's and instructor's interest.
BSC6932 Advances in Scientific Review (2)	This course provides new graduate students an exposure to the techniques and skills for scientific analysis and review
BSC6936 Scientific Grant Writing (3)	Course provides instruction on becoming a successful grant writer as well as understanding the grant proposal writing and review process. Responsibilities of the principle investigator for compliance, fiscal matters, and scientific management of the funded grant will also be covered with guest lecturers from the Division of Sponsored Research.
PCB 6107 Advanced Cell Biology (3)	Detailed examination of the structure, function and molecular biology of eukaryotic cells.
PCB 6236 Advanced Immunology (4)	Discussion of the basic immune reaction, nature of antigenicity; basic immunological techniques and their use in biological research and the medical sciences. Lec/Lab.
PCB6920 Advances in Cellular & Molecular Biology (1)	A journal club in which graduate students present and discuss research publications from the preceding twelve months in the fields of molecular and cellular biology.
BSC 7910 Directed Research (1-)	Directed research is for pre-candidacy students when performing their bench research
BSC7936 PhD Seminar (1)	Graduating Ph.D. students will present a formal seminar based upon their dissertation to the Department of Biology and the public. Restricted to majors.
BSC7980 Doctoral Dissertation (38)	Doctoral dissertation is for post-candidacy students when performing their bench research

F. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the curriculum and indicate whether any industry advisory council exists to provide input for curriculum development and student assessment.

The proposed Ph.D. degree in Cell and Molecular Biology is consistent with the needs of

graduate students who plan careers in biomedical research, biotechnology and research related fields. There is no special accreditation or curricular organization by outside professional agencies in cell and molecular biology. However, the proposed Ph.D. in Cell and Molecular Biology is consistent with those of peer departments at other universities.

G. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program. Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.

There is no special accreditation by professional agencies in cell and molecular biology.

H. For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor's or master's programs associated with the proposed program. Are the programs accredited? If not, why?

There is no special accreditation by professional agencies in cell and molecular biology.

I. Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2 in Appendix A. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

The proposed Ph.D. in Cell and Molecular Biology will be traditionally delivered on campus. Because the primary focus is on bench-related research it would be inappropriate to execute the program through distance or distributed learning. With that said, research science is inherently a collaborative process, and therefore significant synergy with CMMB and existing SUS and other Florida universities already exist. In this guise, students from our department travel to laboratories of faculty at other SUS and Florida institutions to perform cooperative and collaborative research, working towards a common goal. Additionally, faculty from other SUS and Florida universities also serve on the dissertation committee of CMMB students, further strengthening external ties and collaborations.

IX. Faculty Participation

A. Use Table 4 in Appendix A to identify existing and anticipated ranked (not visiting or adjunct) faculty who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).

The proposed Ph.D. program is focused on laboratory research, so the main effort by the faculty is mentoring, advising and supervising students in their dissertation research efforts. The CMMB Department has 14 tenure earning/tenured assistant, associate or full professors engaged in mentoring of Ph.D. graduate students and in teaching graduate courses. In addition, two of our permanent instructors teach graduate courses as part of their assignments as summarized in

Table 4.

B. Use Table 2 in Appendix A to display the costs and associated funding resources for existing and anticipated ranked faculty (as identified in Table 2 in Appendix A). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.

The Ph.D. degree in Cell and Molecular Biology will be phased in as a replacement for the original Ph.D. degree in Biology: Concentration in Cell and Molecular Biology. This is being done as part of the reorganization of the original Biology department into two new departments. The number of students in the in the Cell and Molecular Biology Ph.D. program is expected to be similar to the number of students in the original Ph.D. degree program in Biology: Concentration in Cell and Molecular Biology. Because of this, the amount of SCH generated by the CMMB Department is not expected to change and no additional cost or funding sources will be necessary. We anticipate moderate growth in the number of faculty in the department over the next five years, primarily to catch up with growth in our undergraduate and graduate programs over the last few years. These new faculty positions are not linked to the proposed Ph.D. program directly.

C. Provide in the appendices the curriculum vitae (CV) for each existing faculty member (do not include information for visiting or adjunct faculty).

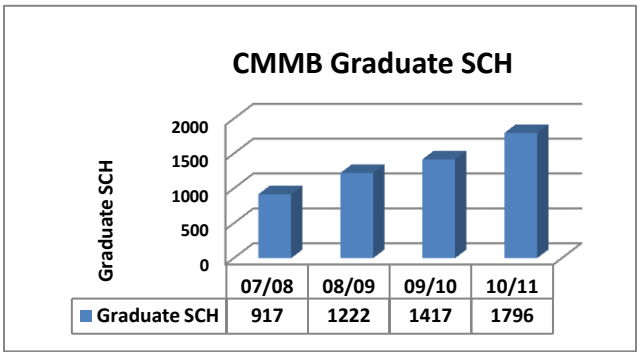
D. Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.

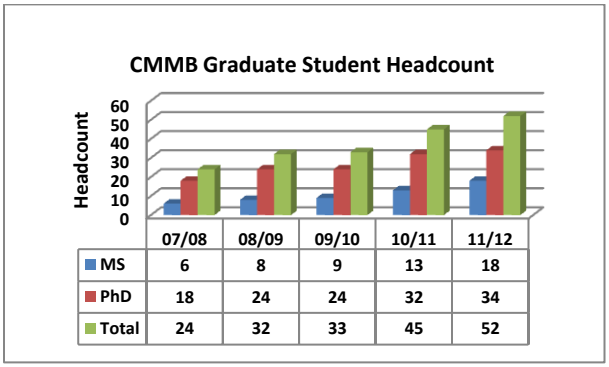
The CMMB Department offers several graduate degrees:

M.S. in Biology, Concentration in Cell and Molecular Biology (15 students)
M.S. in Microbiology (3 students)
Ph.D. in Biology: Concentration in Cell and Molecular Biology (34 students)
Ph.D. in Cancer Biology (in association with the Moffitt Cancer Center, 32 students)

The department faculty members are extraordinarily productive in teaching:

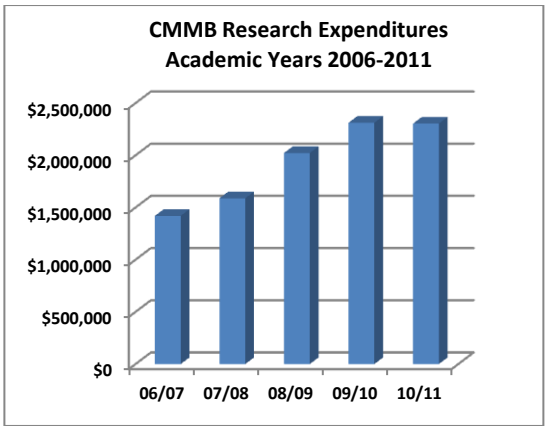
CMMB has approximately 34 Ph.D. students in the Biology: Concentration in Cell and Molecular Biology program, and an additional 32 Ph.D. students in the associated program Cancer Biology Program at the Moffitt Cancer Center. In addition, there are 18 M.S. students within the department. Annual graduate SCH in the department reached 1800 in the 10/11 academic year:





There is a strong research commitment within the department. In the current academic year, CMMB faculty hold a total of $7.5 million in extramural funds and spend approximately

$2.2.million each year on research activities, primarily by graduate students. The 14 research faculty members collectively publish approximately 34 publications each year. Despite being relatively new department, 4 doctoral students graduated during 2012, with twice that number expected in 2013. We expect this increase in graduation numbers to continue during the first 5 years of this program.



CMMB faculty carry out significant service projects each year. Typically this includes departmental, college and university committee work as well as peer review of manuscripts for journals and grant proposals for funding agencies. In addition, our faculty members serve as editors and on editorial boards for journals and scientific organizations, organize conferences, judge science fair projects, and perform a myriad of other duties.

X. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university's students. Include a signed statement from the Library Director that this subsection and subsection B have been reviewed and approved.

The University of South Florida's Library System consists of the USF's main research library located on the Tampa campus and includes the Hicks and Elaine Shimberg Health Sciences Library and the Louis de la Parte Mental Health Institute Library.

All of the USF Libraries provide access to more than 2 million volumes and an extensive collection of electronic resources including approximately 52,500 e-journal subscriptions, 541,000 eBooks and 900 aggregator databases (i.e. AccessScience, BIOSIS Citation Index, MEDLINE, Web of Knowledge, Web of Science) containing another 13,000 unique e-journal titles, 48,000 e-books, and 150,000 digital images.

The USF Libraries subscribe to 767 print and other non-electronic format serials in the major subject fields of biology and an additional 779 in the related areas of the medical and chemical (molecular) sciences. The USF Libraries provides online subscriptions to 1331 periodical and journal titles in the major subject fiends of biology (direct online subscription titles and multi-publisher aggregated titles) and 3963 more in the related areas of medicine and chemistry (molecular). Included in the 1331 total electronic titles are 129 Microbiology titles. See the appendix for more information.

B. Describe additional library resources that are needed to implement and/or sustain the

program through Year 5. Include projected costs of additional library resources in Table 3 in Appendix A.

Recognizing the value and importance of research in biology, the USF Libraries will continue a sustained level of support for doctoral research in Cell Biology, Microbiology and Molecular Biology, along with allied and associated subject areas and disciplines. Within the next five years, the expectation would be for a continued level of support for these disciplines. An increase in the cost of the library's journal subscriptions would be anticipated, with typical annual increases of 3-6%. The acquisition of additional resources would have to be balanced against the research needs of other academic disciplines on campus within the confines of any budgetary restraints that the university could face during the next five years. See the appendix for more information.

Signature of Library Director	**Date**

A complete signed statement from the USF Library Director is included in the Appendix

C. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.

CMMB is located in the BSF and ISA buildings located on the USF Tampa campus. There is 24,000 sf of research laboratory space and 3,500 sf of office space assigned to CMMB in these buildings. There are also seven undergraduate teaching labs in ISA totaling 8,400 sf dedicated to graduate students teaching undergraduate laboratory courses. CMMB utilizes university wide classroom space for lecture courses. These spaces are sufficient to support the new Ph.D. degree in Cell and Molecular Biology.

D. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2 in Appendix A. Do not include costs for new construction because that information should be provided in response to X (J) below.

No additional classroom, laboratory or office space will be necessary.

E. Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.

USF has abundant research infrastructure to support the endeavors of faculty and graduate students. We possess departmental confocal microscopy, cell culture and microarray facilities. The Center for Drug Discovery and Innovation has extensive proteomics and mass-spectrometry facilities, as well as NMR instrumentation. Through various USF Health departments we have access to animal experimentation facilities, flow cytometry, fluorescent imaging, analytical and electron microscopy, laser micro-dissection and histology tools. This is in addition to individual laboratory equipment and instrumentation within CMMB.

F. Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2 in Appendix A.

No additional specialized equipment is needed to sustain the new Ph.D. degree in Cell and

Molecular Biology.

G. Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel, etc.). Include projected costs of special resources in Table 2 in Appendix A.

No additional specialized categories of resources are needed to sustain the new Ph.D. degree in Cell and Molecular Biology.

H. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2 in Appendix A.

The department receives a teaching assistantship and tuition waiver budget from the College of Arts and Sciences to support graduate students enrolled in our department who teach undergraduate laboratory courses. Currently this budget supports approximately 35 students annually. The department receives about $20,000 annually in THARP and $10,000 in WOODS foundation money to support the continuance of graduate education. These funds are used primarily for summer support. Additional students are supported by research grants (from funding agencies such as the National Institutes of Health, the National Science Foundation, and the American Cancer Society) awarded to our faculty via research assistantships, tuition waivers and laboratory supply money. In 2011, four graduate students were supported by research grants in the academic year and 11 in the summer. We also have a number students supported in the department by USF scholarships, including diversity success awards. The expectation is that these mechanisms of support will remain at similar levels, or even increase, over the first 5 years of this program.

I. Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1 through 5.

Internships or Practicum Experiences are not required by the Ph.D. program in Cell and Molecular Biology. Our students are required to perform experimental research, which they conduct in the research laboratories of our faculty.

J. If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Table 2 in Appendix A includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.

No new funding is requested for the Ph.D. in Cell and Molecular Biology.

APPENDIX A

TABLE 1-A (DRAFT)
PROJECTED HEADCOUNT FROM POTENTIAL SOURCES
(Baccalaureate Degree Program)

Source of Students (Non-duplicated headcount in any given year)*	Year 1		Year 2		Year 3		Year 4		Year 5	
	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Upper-level students who are transferring from other majors within the university**	0	0	0	0	0	0	0	0	0	0
Students who initially entered the university as FTIC students and who are progressing from the lower to the upper level***	0	0	0	0	0	0	0	0	0	0
Florida community college transfers to the upper level***	0	0	0	0	0	0	0	0	0	0
Transfers to the upper level from other Florida colleges and universities***	0	0	0	0	0	0	0	0	0	0
Transfers from out of state colleges and universities***	0	0	0	0	0	0	0	0	0	0
Other (Explain)***	0	0	0	0	0	0	0	0	0	0
Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

* List projected annual headcount of students enrolled in the degree program. List projected yearly cumulative ENROLLMENTS instead of admissions.
** If numbers appear in this category, they should go DOWN in later years.
*** Do not include individuals counted in any PRIOR CATEGORY in a given COLUMN.

APPENDIX A

TABLE 1-B (DRAFT)

PROJECTED HEADCOUNT FROM POTENTIAL SOURCES

(Graduate Degree Program)

Source of Students (Non-duplicated headcount in any given *)	Year 1		Year 2		Year 3		Year 4		Year 5	
	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Individuals drawn from agencies/industries in your service area (e.g., older returning students)	0	0	0	0	0	0	0	0	0	0
Students who transfer from other graduate programs within the university**	0	0	0	0	0	0	0	0	0	0
Individuals who have recently graduated from preceding degree programs at this university	20	15	19	14.25	18	13.5	18	13.5	18	13.5
Individuals who graduated from preceding degree programs at other Florida public universities	6	4.5	9	6.75	10	7.5	12	9	13	9.75
Individuals who graduated from preceding degree programs at non-public Florida institutions	0	0	1	0.75	2	1.5	0	0	0	0
Additional in-state residents***	0	0	0	0	0	0	0	0	0	0
Additional out-of-state residents***	4	3	5	3.75	7	5.25	8	6	10	7.5
Additional foreign residents***	4	3	5	3.75	6	4.5	8	6	9	6.75
Other (Explain)***	0	0	0	0	0	0	0	0	0	0
Totals	**34**	**25.5**	**39**	**29.25**	**43**	**32.25**	**46**	**34.5**	**50**	**37.5**

* List projected annual headcount of students enrolled in the degree program. List projected yearly cumulative ENROLLMENTS instead of admissions.

** If numbers appear in this category, they should go DOWN in later years.

*** Do not include individuals counted in any PRIOR category in a given COLUMN.

APPENDIX A

TABLE 2 (DRAFT)
PROJECTED COSTS AND FUNDING SOURCES

Instruction & Research Costs (non-cumulative)	Year 1							Year 5					
	Funding Source							Funding Source					
	Reallocated Base* (E&G)	Enrollment Growth (E&G)	Other New Recurring (E&G)	New Non-Recurring (E&G)	Contracts & Grants (C&G)	Auxiliary Funds	**Subtotal E&G, Auxiliary, and C&G**	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	Auxiliary Funds	**Subtotal E&G, Auxiliary, and C&G**
Faculty Salaries and Benefits	147,014	0	0	0	0	0	**$147,014**	233,992	0	0	0	0	**$233,992**
A & P Salaries and Benefits	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
USPS Salaries and Benefits	35,000	0	0	0	0	0	**$35,000**	35,000	0	0	0	0	**$35,000**
Other Personal Services	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Assistantships & Fellowships	535,488	0	0	0	66,936	0	**$602,424**	535,488	0	0	66,936	0	**$602,424**
Library	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Expenses	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Operating Capital Outlay	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Special Categories	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Total Costs	**$717,502**	**$0**	**$0**	**$0**	**$66,936**	**$0**	**$784,438**	**$804,480**	**$0**	**$0**	**$66,936**	**$0**	**$871,416**

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base," "enrollment growth," and "other new recurring") from Years 1-4 that continue into Year 5.

***Identify if non-recurring.

Faculty and Staff Summary

Total Positions	Year 1	Year 5
Faculty (person-years)	1.15	1.86
A & P (FTE)	0	0
USPS (FTE)	1	1

Calculated Cost per Student FTE

	Year 1	Year 5
Total E&G Funding	$717,502	$804,480
Annual Student FTE	25.5	37.5
E&G Cost per FTE	$28,137	$21,453

APPENDIX A

TABLE 3 (DRAFT)
ANTICIPATED REALLOCATION OF EDUCATION & GENERAL FUNDS*

Program and/or E&G account from which current funds will be reallocated during Year 1	Base before reallocation	Amount to be reallocated	Base after reallocation
Cell Biology,Microbioogy and Molecular Biology	717,502	717,502	717,502
	0	0	
	0	0	
	0	0	
	0	0	
	0	0	
Totals	$717,502	$717,502	**$717,502**

*** If not reallocating funds, please submit a zeroed Table 3**

Note: funds are in the current budget of CMMB to support their portion of the shared Biology PhD program it will now support the new program

APPENDIX A

TABLE 4 (DRAFT)
ANTICIPATED FACULTY PARTICIPATION

Faculty Code	Faculty Name or "New Hire" Highest Degree Held Academic Discipline or Speciality	Rank	Contract Status	Initial Date for Participation in Program	Mos. Contract Year 1	FTE Year 1	% Effort for Prg. Year 1	PY Year 1	Mos. Contract Year 5	FTE Year 5	% Effort for Prg. Year 5	PY Year 5
A	Bradshaw, Patrick Ph.D. Molecular Genetics	Asst. Prof	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.15	0.11
A	Burkhardt, Brant Immunology	Asst. Prof	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.15	0.11
A	Dao, My-Lein, Ph.D. Immunology	Assoc. Prof.	Tenure	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.15	0.11
A	Daughdrill, Gary, Ph.D. Molecular Cell Biology	Assoc. Prof.	Tenure	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.15	0.11
A	El-Rady, Johnny, Ph.D. Microbiology	Instructor	MYA	Fall 2011	9	0.75	0.05	0.04	9	0.75	0.05	0.04
A	Garey, James, Ph.D. Molecular Phylogenetics	Professor	Tenure	Fall 2011	12	1.00	0.10	0.10	12	1.00	0.10	0.10
A	Kee, Younghoon Genetics	Asst. Prof.	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.15	0.11
A	Nanjundan, Meera, Ph.D. Molecular Cell Biology	Asst. Prof.	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.20	0.15
A	Riordan, James, Ph.D. Molecular Microbiology	Asst. Prof.	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.20	0.15
A	Schmidt, Kristina, Ph.D. Molecular Genetics	Asst. Prof.	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.20	0.15
A	Shaw, Lindsey, Ph.D. Molecular Microbiology	Asst. Prof.	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.20	0.15
A	Stevens, Stanley, Ph.D. Proteomics	Asst. Prof.	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.15	0.11
A	TeStrake, Diane, Ph.D. Microbiology	Professor	Tenure	Fall 2011	9	0.75	0.05	0.04	9	0.75	0.05	0.04
A	Vandenbergh, Peter Microbiology	Instructor	MYA	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.15	0.11
A	Varma, Sameer Bioinformatics	Asst. Prof	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.20	0.15
A	Westerheide, Sandra, Ph.D. Molecular Cell Biology	Asst. Prof.	earning	Fall 2011	9	0.75	0.10	0.08	9	0.75	0.20	0.15
	Total Person-Years (PY)							**1.15**				**1.86**

Faculty Code		Source of Funding	PY Workload by Budget Classsification Year 1		Year 5
A	Existing faculty on a regular line	Current Education & General Revenue	1.15		1.86
B	New faculty to be hired on a vacant line	Current Education & General Revenue	0.00		0.00
C	New faculty to be hired on a new line	New Education & General Revenue	0.00		0.00
D	Existing faculty hired on contracts/grants	Contracts/Grants	0.00		0.00
E	New faculty to be hired on contracts/grants	Contracts/Grants	0.00		0.00
		Overall Totals for	**Year 1** 1.15		**Year 5** 1.86

UF UNIVERSITY of FLORIDA
College of Agricultural and Life Sciences

MEMORANDUM

TO: Angel Kwolek-Folland
Associate Provost for Academic Affairs

FROM: R. Elaine Turner, Senior Associate Dean
College of Agricultural and Life Sciences

DATE: March 13, 2013

SUBJECT: Review of proposed PhD programs

Thank you for the opportunity to review the proposals for new PhD programs in Cell and Molecular Biology and Integrative Biology at the University of South Florida. Based on the information provided, these two new doctoral programs will replace the existing PhD in Biology. I have reviewed the proposals and also have received comments from the graduate coordinators of our doctoral programs in Animal Molecular and Cellular Biology and Microbiology and Cell Science. Based on these reviews, the new proposals do not appear to increase the amount of overlap or duplication with our existing programs. Both graduate coordinators expressed openness to future collaboration with USF faculty related to graduate education and research.

Please let me know if you have additional questions.

2002 McCarty Hall D
PO Box 110270
Gainesville, FL 32611-0270

Institute of Food and Agricultural Sciences
http://www.cals.ufl.edu
An Equal Opportunity Institution

352-392-1963
352-392-8988 Fax

Review of the University of South Florida Proposed PhD Degrees in Cell and Molecular Biology, and Integrative Biology

Dr. Brian J. Wilkinson

Professor of Microbiology and

University Distinguished Professor

School of Biological Sciences

Illinois State University

Normal, Illinois 61790-4120

March, 2013

1. **The Two Degree Programs are a Logical and Positive Development for the Organization of Biology and the University of South Florida**

Before I address this specific issue, I would like to recount a little professional history at Illinois State University (ISU). I believe that the development of biology at my institution has been stifled because of our failure to reorganize into separate departments. Furthermore, a very successful degree program (in terms of student interest) in Biochemistry and Molecular Biology offered by the Departments of Chemistry and Biological Sciences has been disbanded because of a lack of an appropriate organizational structure of department status and the autonomous authority that it carries.

The fundamental divergence in biologists is whether they are predominantly philosophically and functionally laboratory or field scientists. These two kinds of biologists see the world differently and keeping these divergent philosophies in the same department is a recipe for failure. For example, for the last decade the Department of Biological Sciences at ISU tried to reorganize the undergraduate curriculum, but failed to do so. The revision failed because of the inability of the diverse faculty to agree on things like whether all undergraduates had to take a course in ecology. The discipline of biology is too large and broad to be accommodated in one **department.** In recognition of this we organized as a **School** of Biological Sciences a few years ago.

This organization has facilitated curriculum revision, but this structure does not give the different interests in the department the latitude to truly thrive. Because biology is such a large discipline and attractive to a large group of students, biology departments end up with too many diverse options for efficient operation. Also, biology departments have a tendency to simply end up with too many faculty in the same academic unit for efficient philosophical, academic, and bureaucratic operation.

The interdisciplinary program in Biochemistry and Molecular Biology at ISU is being reorganized with the biochemistry program going to the Department of Chemistry and molecular biology program going to the School of Biological Sciences. The Biochemistry and Molecular Biology program had to have the approval of both the Department of Chemistry and School of Biological Sciences to make curricular changes, lacked its own degree granting authority, and lacked an adequate budget. Because of the lack of departmental autonomy the academic program was destined for failure.

I believe that appropriate administrative structure is critical for the optimum operation of academic programs.

In 2006 reorganization of the Department of Biology at the University of South Florida was initiated. This process was completed in 2009 with the creation of two new departments, the Department of Cell Biology, Microbiology and Molecular Biology and the Department of Integrative Biology. I congratulate the faculty of the Biology Department, the Dean of the College and the Provost on their vision in effecting this change. It seems that creation of two new independent PhD programs, which in essence have operated as such for some time, is the formal last piece of the puzzle to be put into place.

2. The Two Proposed Programs are Distinct and Reflect the Trajectory of the Field

The proposed PhD program in Cell and Molecular Biology is strongly biomedically oriented and is focused on the cellular and molecular basis of human disease. A large student interest exists at both the undergraduate and graduate levels. Dealing as it does with the nation's health, significant grant funding is available on a competitive basis. The Cell Biology, Microbiology and Molecular Biology department at USF has a large and diverse doctoral program, attracting a diverse and internationally represented student body. Students in the existing program work with Cell Biology, Microbiology and Molecular Biology faculty who are leaders in their respective fields of study. Significant funding exists from sources such as the National Institutes of Health (NIH, the gold standard for biomedical research), American Cancer Society and the National Science Foundation (NSF). The students already engaged in the Cell and Molecular Biology PhD program are producing significant scientific publications in top tier journals. The program is not duplicative of other programs in other State of Florida public universities. It is a STEM program that supports the University and State University System strategic goals.

The proposed PhD program in Integrative Biology is broad-based and themed on the morphological and physiological adaptations that facilitate the biological, ecological and evolutionary competency of organisms. Plants, animals and microbes are studied with approaches ranging from levels of organization from molecular to ecosystem levels. Living organisms are studied as encountered in their natural environments in this program rather than as model, laboratory entities in the Cell and Molecular Biology PhD program. The Integrative Biology graduate program successfully attracts students from all parts of the globe to study with a world class faculty with an outstanding track record in obtaining grant money and publishing in first rate scientific journals. The PhD program in Integrative Biology is also a STEM program and fully compatible with University and State University System strategic goals.

The approaches to biology of these two programs will remain viable for the foreseeable future.

3. The Curricula are Robust and Strengthened by the Creation of the New Departments and Degrees

Prior to World War II, biology, chemistry, physics and mathematics were often housed together in Departments of Natural Sciences. It is of course unthinkable nowadays that the **disciplines** of chemistry and biology could be housed together in a single department. It is unlikely that a single person could claim to truly be a master of both disciplines. Likewise a PhD in biology reflects an administrative convenience rather than true mastery of all of biology. The two curricula are well-designed, focused and rigorous and represent "truth in advertising" for the recipients of the respective degrees.

4. The Proposed Budgets are Appropriate

Given the de facto operation of these programs as separate PhD programs the financial resources are already in place from both intramural and extramural sources. Students are supported on teaching and research assistantships, and consumables are largely purchased through grant dollars awarded to the faculty from federal, state, industrial, and foundation sources.

5. The Faculty are Accomplished and Well Qualified to Mentor Students

As a whole the faculty of the two departments are productive in publishing in significant numbers in prestigious primary literature journals. They successfully compete for extramural funding from federal and other sources. Their accomplishments are validated by invitations to write reviews and book chapters, present seminars at national and international meetings, review manuscripts prior to publication, serve on editorial boards, and serve on grant review panels. The faculty provide an excellent environment within which candidate students earn their PhD degrees.

Summary

The creation of two new departments, Cell Biology, Microbiology and Molecular Biology, and Integrative Biology, from the Department of Biology was a forward-thinking move by the University of South Florida that promoted the further development of the broad discipline of biology at the university. It created two departments within which faculty share a common academic vision for their respective disciplines, and provides an efficient administrative structure. It is entirely appropriate that the two separate PhD programs are formally created at this time to further ensure that these two departments will continue to grow and flourish.

Overview of USF Libraries, Mission, and Program/Discipline Strengths

The University of South Florida is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award degrees at the baccalaureate, master's, specialist, and doctoral levels, including the Doctor of Medicine.

The institution was initially accredited in 1965 and was last reviewed and reaffirmed in 2005. The institution is scheduled to receive its next reaffirmation of accreditation review in 2015.

The University of South Florida's Library System consists of USF's main research library, located on the Tampa Campus; two special libraries, the Hinks and Elaine Shimberg Health Sciences Library and the Louis de la Parte Mental Health Institute Library, which are also located on the Tampa Campus; the Nelson Poynter Memorial Library, USF St. Petersburg; the Jane Bancroft Cook Library, USF Sarasota-Manatee; and the USF Polytechnic Library in Lakeland.

Our vision is to become a globally recognized academic library system advancing knowledge through integrated resources, responsive services, research, and instruction.

Together, the USF Libraries provide access to more than 2 million volumes and an extensive collection of electronic resources including approximately 52,500 e-journal subscriptions, 541,000 eBooks and 900 aggregator databases containing another 13,000 unique e-journal titles, 48,000 e-books, and 150,000 digital images. In addition, students have access to over 70,000 audio/visual materials including videos, CDs, and DVDs. Books in the areas of cell biology, microbiology, and molecular biology are generally shelved in the Q (specifically QH, QK, QL, and QR) *Library of Congress* (LC) call number ranges located on the 5th floor, as well as in the reference areas in the basement and on the 1st floor.

The new and expanded first floor Learning Commons provides on-site access to information professionals, computers and research databases. The nearby tutoring and learning services are now located in the library for assistance with questions related to Science, Technology, and Mathematics (STM).

In addition to extensive electronic and print resources, the USF Libraries offer unique access to primary research materials through the Special and Digitized Collections Departments. Specializations include Florida history and politics,

American literature, medieval manuscripts, juvenile literature, rare books, and sheet music. Most special collections are available at the Tampa Library.

The library endeavors to develop and maintain a collection that will satisfy the needs for resources that support the undergraduate and graduate curriculum in the department of Cell Biology, Microbiology and Molecular Biology (CMMB), as well as serve the more specialized demands for advanced research materials.

The most recent collection development policy for the CMMB department can be found at:

http://guides.lib.usf.edu/content.php?pid=82332&sid=611550

USF Libraries Collections – Focus on Cell Biology, Microbiology, and Molecular Biology Resources

The USF Tampa Library has also created new subject guides to link our students and faculty to the many research tools available in biology and related fields of study. The new guide for biology is available at: http://guides.lib.usf.edu/Biology

Librarians in all subject areas will also create course-specific guides on request. These may be easily and quickly created with input from the faculty member and/or students. An example of a course guide created for CHM 4060 may be viewed online at: http://guides.lib.usf.edu/CHM4060

In addition to linking these courses from the library site, these new subject and course guides may be seamlessly integrated into BlackBoard course offerings. Library professionals are ready and able to assist your classes in physical and virtual environments.

Collection development policies and librarian contact information for all USF programs and departments are available online through our online portal: http://guides.lib.usf.edu/collection-development

Through consortial purchasing with the other State University Library (SUL) participants, we are able to keep our electronic collections steady, with strong growth in specific and targeted collection areas. The information gathered in a 2009 study of research topics in the School of Natural Science and Mathematics helped to link the faculty research and teaching focus points to specific library subject headings and better drive our acquisitions. We do, of course, still purchase books, journals, and other materials on request whenever possible.

The following is a brief summary of the USF Tampa Library's collections, with a heavy focus on our science resources:

Monographs - Totals

Print: The USF Libraries hold **25,381** print titles in the major subject fields of Biology. There are another **20,608** print holdings in the related areas of the medical and chemical sciences.

Electronic: USF has purchased **2,613** individual electronic books in the major subject fields of Biology and **6155** in the related areas of the medical and chemical sciences. Comprehensive publisher e-book packages (i.e. Springer e-Book Collections, Oxford Scholarship Online, and others) also allow for the purchase of large groups of titles at a substantial discount. The USF Libraries obtain other new titles through various request types and vendors. Preference is given to electronic format when selecting many new titles, or ordering those requested by our research community. Notifications of new titles are sent to librarians in each subject area; those for biology are reviewed by Megan Sheffield (kmsheffield@usf.edu).

Serials - Totals

Print: The USF Libraries subscribes to **767** print and other non-electronic format serials in the major subject fields of Biology and an additional **779** in the related areas of the medical and chemical sciences.

Electronic: The USF Libraries provides online subscriptions to **1,331** periodical and journal titles in the major subject fields of Biology (direct online subscription titles and multi-publisher aggregator titles) and **3,963** more in the related areas of medicine and chemistry. We attempt to add numerous new e-journals each year, especially in the new fields and topics in biology and related subject areas. These subscriptions include association collections as well as individual and publisher collections.

Included in the **1,331** total electronic titles are **129** Microbiology titles, **109** Botany titles, and **163** titles on Natural History. In addition to the e-journals in the Biology and the related areas of Medicine and Chemistry, there are **1,148** additional titles in the category of Environmental Science, **927** in the Earth Sciences, and **2,549** in the Life Sciences. The increasing interdisciplinary aspects of science and engineering research contribute to strong and diverse electronic collections, as well as the flexibility to focus on a specific few areas of spending to supplement strong programs and areas of distinctive research.

Titles collected by the USF Tampa Library also represent those that are highest rated in their respective research fields. For example, the USF Tampa Library provides electronic access to 19 of the top 20 highly rated (ISI impact factor) journals in Biology. These ratings do not always represent true journal value, but the Tampa Library seeks to obtain virtually all statistically important titles.

Electronic databases - Totals

There are over **900** electronic databases provided and managed by the USF Libraries and the USF Tampa Library. These resources are most commonly accessed by Title, or by Subject using the MetaLIB system. In the Biology category, there are **56** total online resources available, with further breakdown by type and/or subject content. The **8** databases identified as "Key sources" include:

- AccessScience – Vendor: McGraw-Hill
- Biological & Agricultural Index Plus – Vendor: EBSCO
- BioOne – Vendor: BioOne
- BIOSIS Citation Index – Vendor: Thomson Reuters
- General Science Full Text – Vendor: EBSCO
- MEDLINE – Vendor: ProQuest
- Web of Knowledge – Vendor: Thomson Reuters
- Web of Science – Vendor: Thomson Reuters

We also have subscriptions to almost all other major science databases, including a comprehensive journal and book package from the publisher Springer and the complete ISI Web of Knowledge database (which includes the Journal Citation Reports, BIOSIS Previews, and the Web of Science resources).

Use of all of these resources is extremely high, which helps to justify the spending for research-level resources in areas of biological and medical research. The USF Libraries pays over $6 million annually for resources, including almost $2 million for the list of previous databases. As stated previously, we leverage consortial buying with good negotiation and packaging of resources to ensure maximum product per research dollar.

Here is a sample of summary usage data for a selected list of resources (some databases discussed above are not included as statistics are not available):

Database	Sessions	Searches	Full-text Downloads
AccessScience	1183	1505	1257
Biological & Agricultural Index Plus	2453	6750	NA
BioOne	2515	819	NA
General Science Full Text	3454	9848	NA
MEDLINE	827	11536	NA
Web of Knowledge	81462	NA	NA
Web of Science	6973	35369	15931

Related Databases - School of Natural Sciences & Mathematics (SNSM)
The Doctor of Philosophy in Cell Biology, Microbiology and Molecular Biology would be most closely aligned with the Biomedical Science research cluster. The disciplines included in this research cluster include: Integrative Biology (IB), Chemistry, Physics, Mathematics & Statistics, and Geology.

In addition to the databases in the biological sciences, the USF Libraries support this biomedical research focus by providing access to the premier databases and journals in these related science disciplines: **SciFinder Scholar** (Chemistry) **GeoRef** (Geology,) **MathSciNet** (Mathematics & Statistics), **Medline** (Health), **IOP Journals** (Physics), **ProQuest Dissertations & Theses** (full text).

Services

Instruction and Other Subject Specific Services

Megan Sheffield (kmsheffield@usf.edu) is the current subject librarian covering the CMMB department. Megan, as well as other librarians, provide bibliographic instruction services to faculty and their classes, research consultations, and other services to all members of the USF research community. Please feel free to contact Megan with any additional questions, comments, or suggestions.

There were **10** instructional sessions performed for courses in the School of Natural Sciences and Mathematics from Fall 2010 to the end of Summer 2011 and **25** library workshops from Fall 2010 to the end of Summer 2011 (including undergraduate and graduate classes). We have also pioneered new in-person and virtual (via Elluminate) Advanced Topics in the Life Sciences Library Research workshops and one of each type was offered in the fall semester of 2011. More of these types of voluntary library skills workshops, both physical and virtual, will be available in future semesters.

From the beginning of Fall in 2010 to October of 2011, the librarian for the School of Natural Sciences and Mathematics performed **76 advanced research consultations**. Most of these sessions were meetings with students and faculty from doing research in the life sciences. Megan Sheffield is available for consultations and provides contact information on the library site, subject pages, and other virtual locations.

Collection Development

As the subject librarian representing the departments and research centers for the School of Natural Sciences and Mathematics, Megan Sheffield is the main contact for requesting new materials that faculty need for their teaching and research. Even with recent cuts to the USF Libraries materials budget, the library has managed to figure out ways to obtain and retain materials that are needed to sustain the robust research programs that has been established within the CMMB department. The USF Libraries also have established a link on the library's website to the Suggest-a-Purchase program. This link provides both faculty and graduate students with an online request form that goes directly to the Collection Management team at the USF Tampa Library for review and final purchasing decisions. The main focus of the USF Libraries acquisition program is to purchase eBooks so that the resources are available, with unlimited access to the broadest audience possible, from anywhere – at any time. The USF Libraries Demand-Driven Acquisitions (DDA) provided by the EBL vendor platform, allows patrons full use of the e-content on a short-term loan, and after multiple uses, the ebooks are automatically purchased and added to the library's permanent collection. The flexibility that is provided through this DDA program stretches the library's expendable budget to allow the life sciences faculty and graduate students with extended access to the most recent research materials that are available.

Interlibrary Loan

In addition to subject, collection, and instructional services, the USF Libraries also provides Interlibrary Loan (ILL) and document delivery services. In the last twelve months, the USF Tampa Library has provided over **582** loans, articles, and other items through our ILL system (ILLIAD) to biology faculty and student users.

Another feature of the USF Libraries Interlibrary Loan service is the ILL Purchase-on-Demand program. ILL requests for newer materials that cost less than $200 are often purchased for the library's collection, which means that the book is often available much sooner than it would be if the patron had to wait for a standard ILL transaction. Quite often, the book is available electronically, so it becomes available almost immediately.

STEM Tutoring

Through partnerships with Tutoring & Learning and the Writing Center, we now have advanced STEM (Science, Technology, Engineering, & Mathematics) tutoring services available at the USF Tampa Library.

Expenditures

In any given year, the USF Libraries materials budget is pushed to its limit. The rising cost of continuing journal subscriptions, the need for new research materials, and requests for access to online data sets are part of the daily landscape. A large portion of the USF Libraries' 6.2 million budget supports the continuation of the electronic resources. The biological sciences are well represented throughout the USF Libraries electronic collections. The USF Libraries recognize the need to continue their support for research and teaching within the STEM disciplines and have included several STEM initiatives in their strategic goals.

Summary Statement

Recognizing the value and importance of research in biology, the USF Libraries will continue a sustained level of support for doctoral research Cell Biology, Microbiology, and Molecular Biology, along with allied and associated subject areas and disciplines.

Within the next five years, the expectation would be for a continued level of support for these disciplines. An increase in the cost of the library's journal subscriptions would be anticipated, with typical annual increases of 3-6 %. The acquisition of additional resources would have to be balanced against the research needs of other academic disciplines on campus within the confines of any budgetary restraints that the university could face during the next five years.

Prepared by:

Megan Sheffield, Subject Librarian for CMMB, USF Tampa Library

Date: 2/23/2012 Email: kmsheffield@usf.edu

Reviewed by:

Cheryl McCoy, Coordinator of Collections, USF Libraries

Date: 2/23/2012 Email: cmccoy@usf.edu

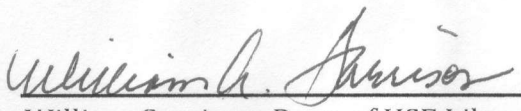
Approved by:

Todd Chavez, Director of Academic Resources, USF Libraries

Date: 2/23/2012 Email: tchavez@usf.edu

As of February 2012, the collections of the USF Tampa Library and affiliates are sufficient to support the Doctor of Philosophy in Cell Biology, Microbiology, and Molecular Biology. Sustained annual investments to maintain the recurring elements of this collection and to purchase newly published materials are required to preserve sufficiency. With escalating costs, typical annual increases of 3-6% are likely. Strategic investments are required as new faculty are hired and areas of emphasis evolve.

Certified by:



William Garrison, Dean of USF Libraries

Date: 2/23/2012 Email: wgarrison@usf.edu

2/18/13

CURRICULUM VITAE

JAMES ROY GAREY

Department of Cell Biology, Microbiology
& Molecular Biology
University of South Florida
4202 East Fowler Avenue SCA110
Tampa, FL 33620-5150

(813)-974-7103 (voice)
(813)-974-1614 (fax)
garey@usf.edu

EDUCATION

B.A. (Marine Biology) San Francisco State University, 1977
M.A. (Physiology) San Francisco State University, 1979
Ph.D. (Zoology: Molecular Biology) University of Texas, 1985

ACADEMIC APPOINTMENTS

-Chair, Department of Cell Biology, Microbiology and Molecular Biology, University of South Florida, 2009 - present.
-Courtesy Professor of Geology, University of South Florida, 2012 – present.
-Director, Division of Cell Biology, Microbiology and Cell Biology, University of South Florida, 2006- 2009.
-Co-Chair, Department of Biology, University of South Florida, August 2006 to January 2009.
-Assistant Dean/Director of Facilities, Safety and Security, College of Arts and Sciences, University of South Florida, 2003-2006.
-Professor of Biology, Department of Biology, University of South Florida, August 2006-present.
-Associate Professor of Biology, Tenured, Department of Biology, University of South Florida. 2001.
-Assistant Professor of Biology, Department of Biology, University of South Florida. 1997 - 2001.
-Assistant and Tenured Associate Professor of Biology, Department of Biological Sciences, Duquesne University, 1991-1997.
-Research Assistant Professor of Medicine, Division of Hematology, University of Utah School of Medicine Center, 1988-1991.
-Hematology Fellow, Department of Hematology, Univ. of Utah Medical Center, 1986-1988.
-Post-doctoral Research Associate, Department of Biology, University of Utah, 1985-1986.

GRANT SUPPORT

Current and Pending Grant Support

None at present

Previous Grant Support

- Ecogenomics of sulfur cycling in and anaerobic marine sinkhole (PI). $5000. USF Internal Grant Award. 6/01/2010-5/31/2012.

-Global Patterns of Soil Biodiversity: Implications for Ecosystem Function (PI). $624,007. Ecosystems, National Science Foundation, Mar 04- Feb 10.

-Ecosystem response to elevated Arsenic concentrations. (Co-PI). Biocomplexity Program, National Science Foundation. Total Budget is $1,490,000, my share was ~446,000 total, ~$316,000 in direct costs. 10/01/02 - 9/30/08.

- A Pilot Study for an Annelid Genome Project. (Consortium project with J.A. Lake at UCLA) National Institutes of Health. $253,357 Mar 00-Feb 05 (direct and indirect USF share: $113,550).

-Conference support grant for the 9th International Tardigrade Symposium (PI). USF Internal Award, $8,000, 01/01/03-12/31/03.

-Extreme Environments: the Animal and Bacterial Inhabitants of a Sulfide-rich Sinkhole in the Gulf of Mexico (Principal Investigator). $12,600, Nasa Astrobiology Institute June 01-May 03.

-Molecular Phylogeny of Gulf Invertebrates. (PI). Ship time grant for March 26-30, 2003. Florida Institute of Oceanography ($11,000).

-The lesser known Protostome taxa: Evolution, Development and Ecology (Principal Investigator) National Science Foundation, Systematic Biology. $12,092 to support a symposium during the 2001 SICB meetings in Chicago.

-International Travel Grant, University of South Florida, travel to Finland, $1,500, May 2000.

-Molecular Phylogeny of Gulf Invertebrates. Ship time grant for March 10-14, 2000. Florida Institute of Oceanography ($6500).

- Benthic Meiofauna Diversity as an Environmental Marker (Principal Investigator) Research and Creative Scholarship Grant, University of South Florida, $7,499, Mar 99 - Apr 00**.**

- International Travel Grant, University of South Florida, Travel to Greece, $1,500, Aug 2000.

-Nematode origins and evolutionary relationships (Principal Investigator) United States Department of Agriculture Grant, $111,552, Oct 95-Feb 00.

--Nematode Evolutionary Relationships. (Principal Investigator) Winters Foundation, $8000 June 1995-1997.

-Nematode origins and evolutionary relationships. (Principal Investigator) United States Department of Agriculture Seed Grant Program, $49,998 Sept 1993 - Sept 1995.

-High School Teacher Fellowship. American Society for Biochemistry and Molecular Biology. $6000, Summer 1994.

-Pseudocoelomate Evolutionary Relationships. Noble Dick Award. Funded $4400 February 1992-1993

-Faculty Development Award ($5000), Vertebrate Uroporphyrinogen Decarboxylase. University of Utah in 1989 and 1990.

-Biomedical Research Support Grant ($8000), Heme Biosynthesis in Yeast, University of Utah, 1989-1990

Previous Educational and Equipment Grant Support

-Undergraduate research in Biological Sciences at Duquesne University (Principal Investigator) National Science Foundation. $110,400 May 1994- May 1997.

-Acquisition of a cooperatively run automated DNA Sequencer (Principal Investigator). United States Department of Agriculture Equipment Grant, $42,500 + $42,500 matching funds

from Duquesne University, August 1995-1996.

-Acquisition of updated equipment for an integrated cell and molecular biology laboratory (Co-Principal Investigator). National Science Foundation ILI grant $33,627 + $33,627 matching funds from Duquesne University, July 1996- 1998.

-Acquisition of a scintillation counter and high speed centrifuge (Co-Principal Investigator). National Science Foundation (BIR9420104). $41,305 + $17,702 matching funds. Mar1995- Feb1996.

-Introducing modern investigative laboratories in cellular, genetic, and developmental biology to undergraduates at Duquesne University (Co-principal investigator). National Science Foundation BIR-9322152, $20,812 + $20,812 matching funds, July 1992 -Dec 1994.

AWARDS AND HONORS

-AAAS Fellow, elected in 2012.
-President's Award for Faculty Excellence. 2003. University of South Florida
-Outstanding Faculty Research Achievement Award. 2003. University of South Florida
-Phi Kappa Phi Honor Society. Inducted in 1983.
-Outstanding Graduate Student Award. 1979. San Francisco State College

EDITORIAL DUTIES

-Hydrobiologia, Guest Editor 2003
-Invertebrate Biology editorial board, 1997-2004
-Molecular Phylogeny and Evolution editorial board, 2001-present.

SYMPOSIA AND MEETINGS ORGANIZED

-Lesser-known protostome taxa: ecology, development and evolution. Symposium organized for the 2001 SICB meeting in Atlanta.
-Ninth International Tardigrade Symposium held in Tampa Florida in July 2003.

PUBLICATIONS

Menning DM and Garey JR. (2013) The influence of a coastal spring on a nearshore marine ecosystem. In Preparation.

Rubelmann H, Karlen DJ, and Garey JR (2013) Biocomplexity near a shallow arsenic rich hydrothermal vent. In Preparation.

Nielsen UN, Ayres E, Wall DH, Li G, Bardgett RD, Wu T and Garey JR (2013). Global-scale patterns of soil nematode community structure in relation to climate and ecosystem properties. *Submitted to Global Ecology and Biogeography*.

Franck AR, Cochrane, BJ and Garey, JR. (2013) Relationships and dispersal of the Caribbean species of Harrisia (sect. Harrisia) using AFLP and seven DNA regions. *Accepted for publication in Taxon*.

Garey JR, Halanych KM, Servin JA, Lake JA (2013) *Deuterostomia*. Chapter in Companion volume to the *PhyloCode*, UC Press, in review.

Lake JA, Halanych KM, Servin JA, Garey JR (2013). *Ecdysozoa*. Chapter in Companion volume to the *PhyloCode*, UC Press, in review.

Garey JR, Halanych KM, Servin JA, Lake JA (2013). *Protostomia*. Chapter in Companion volume to the *PhyloCode*, UC Press, in review.

Halanych KM, Garey JR, Servin JA , Lake JA. (2013). *Lophotrochozoa.* Chapter in Companion volume to the *PhyloCode*, UC Press, in review.

Lake JA, Garey JR, Servin JA, Halanych KM (2013) *Bilateria*. Chapter in Companion volume to the *PhyloCode*, UC Press, in review.

Vaughn R, Garnhart N, Thomas, WK. Garey JR, and Livingston BT. (2012). Sequencing and analysis of the gastrula transcriptome of the brittle star *Ophiocoma wendtii*. *EvoDevo. 3:19 (16 pp).*

Franck AR, Cochrane, BJ and Garey, JR. (2013) Phylogeny, biogeography, and subgeneric classification of Harrisia (Cactaceae). Systematic Botany, *in press.*

Garey JR and Menning DM. (2012) The dynamics of community structure within a submarine coastal spring with an anchialine source. Natura Croatica 21, 43-46.

Franck AR, Cochrane, BJ and Garey, JR. (2012). Low-copy nuclear primers and ycf1 primers in Cactaceae. *AJB Primer, Notes and Protocols in the Plant Sciences,* e405-e407*.*

Bengtsson J, Hartmann M, Untersehere M, Vaishampayanf P, Abarenkovg, K, Dursoh L, Biki E, Garey JR, Erikssonb KM and Nilsson RH. (2012). Megraft: A software package to graft ribosomal small subunit (16S/18S) fragments onto full-length sequences for accurate species richness and sequencing depth analysis in pyrosequencing-length metagenome. Research in Microbiology 163: 407-412.

Wu T, Ayres E, Bardgett RD, Wall DH and Garey JR. (2011) A molecular study of the worldwide distribution and diversity of small soil animals*.* Proc. Nat. Acad. Sci. U.S.A. 108: 17720–17725.

Garman KM, Rubelmann H, Karlen DJ, Wu T and Garey JR. (2011). A comparison of the ecological conditions associated with two submarine karst features in the Gulf of Mexico. Hydrobiologia 677: 65-87.

Garey JR (2010) What is a Protostome? Grizmek's Web, Gale / Cengage Learning*. Published on line*.

Karlen, D. and Garey J.R. (2010). Benthic community structure along a natural environmental gradient in the vicinity of a shallow-water hydrothermal vent, Ambitle Island, Papua New Guinea. Pacific Science 64: 391-404*.*

Wu T, Ayres E, Li G, Bardgett RD, Wall D and Garey JR. (2009). Molecular profiling of soil animal diversity in natural ecosystems: incongruence of molecular and morphological results*. Soil Biology and Biochemistry*.41:849-857

Holland N.D., Campbell T.G., Garey J.R., Holland L.Z. and N.G. Wilson. (2009). The Florida amphioxus (Cephalochordata) hosts larvae of the tapeworm *Acanthobothrium brevissime*: natural history, anatomy, and taxonomic identification of the parasite. Acta Zoologica. 90: 75-86.

Garey, JR and McInnes, SJ (2008) Global diversity of tardigrades (Tardigrada) in freshwater. Hydrobiologia 595:101-106.

Stanton G., Meverden K., Thomsen T. and Garey, J.R. (2007). Close circuit rebreathers in the forensic study of the Rouse Simmons Shipwreck. In: Pollock NW, Godfrey JM eds, Proceedings of the American Academy of Underwater Sciences.26th Symposium, Dauphin Island, Ala.

Massey, S.E. and Garey, J.R., (2007). A comparative genomics analysis of codon reassignment reveal a link with mitochondrial proteome size and a mechanism of genetic code change via suppressor tRNAs. J. Mol. Evol. 64, 399-410.

Pichler, T., Amend, J.P., Garey, J., Hallock, P., Hsia, N.P., Karlen, D.J., Meyer-Dombard, D.R., McCloskey, B.J. and R.E. Price. (2006) A natural laboratory to study Arsenic Geobiocomplexity. EOS 87:221-225

Garey, J.R., Nelson, D.R. and Nichols, P.B. (eds) Biology of the Tardigrades. Hydrobiologia special volume 558 (2006).

Garey, J.R. (2006). Biology of the Tardigrades: An Introduction to the 9th International Symposium on Tardigrada. Hydrobiologia, 558:1-3.

Nichols, P. B., Nelson, D.R. and Garey, J.R. (2006). A family level analysis of tardigrade phylogeny. Hydrobiologia, 558:53-60.

Garman, K.M. and Garey, J.R. (2005). The transition of a freshwater karst aquifer to an anoxic marine system. Estuaries, 28:686-693.

Slomba, J., Essig, F. and Garey, J.R. (2004). The infrageneric taxonomy of Clematis using an actin intron. Sida Cont. Bot. 21: 55-61.

Weslawski, J.M., Snelgrove, P.V.R., Levin, L.A., Austen, M.C.V., Kneib, R.T., Iliffe, T.M., Garey, J.R., Hawkins, S.J. and Whitlatch, R.B. (2004) Marine Sedimentary Biota as Providers of Ecosystem Goods and Services. *In:* Wall, D.H. (ed.). Sustaining Biodiversity and Ecosystem Services in Soils and Sediments. Island Press, Washington, D.C. pp 73 – 98.

Lavelle, P., Bignell, D., Austen, M.A., Brown, V.K., Behan-Peltier, V., Garey, J.R., Giller, P., Hawkins, S.J., Brown, G.G., St John, M., Hunt, W.H., Paul, E.A. (2004). Connecting Soil and Sediment Biodiversity: The Role of Scale and Implications for Management. *In:* Wall, D.H. (ed.). Sustaining Biodiversity and Ecosystem Services in Soils and Sediments. Island Press, Washington, D.C.

Snelgrove, P.V.R., Austen, M.C., Hawkins, S.J., Iliffe, T.I., Kneib, R.T., Levin, L.A., Weslawski, J.M., Whitlatch, R.B., and Garey, J.R. (2004). Vulnerability of Marine Sedimentary Ecosystem services to Human Activities. *In:* Wall, D.H. (ed.). Sustaining Biodiversity and Ecosystem Services in Soils and Sediments. Island Press, Washington, D.C. pp 161-190.

Harwood, V.J., Delahoya, N.C., Ulrich, R.M., Kramer, M.F., Whitlock, J.E., Garey, J.R. and Lim, D.M. (2004). Molecular Confirmation of *Enterococcus faecalis* and *E. faecium* from Clinical, Fecal and Environmental Sources. Letters in Applied Microbiology. 38: 476-482.

Mallat, J., Garey, J.R. and Schultz, J.W. (2004). Ecdysozoan Phylogeny: first use of nearly complete 28S and 18S rRNA gene sequences to classify the arthropods and their kin. Molec. Phyl. Evol. 31: 178-191.

Massey, S.E., Moura, G., Beltrao, P., Almeida, R., Garey, J.R., Tuite, M.F. and Santos, M.A.S. (2003). Comparative evolutionary genomics unveils the molecular mechanism of reassignment of the CTG codon in *Candida spp*. Genome Research 13:544-557.

Garey, J.R. (2003) Ecdysozoa: the evidence for a close relationship between arthropods and nematodes. in: The Panorama of Animal Evolution, pp 503-509. PenSoft Press.

Garey, J.R. (2002). The lesser-known Protostomes. Integ. and Comp. Biol. 42:611-618.

Bleidorn, C., Schmidt-Rhaesa, A. and Garey, J.R. (2002). Systematic relationships of Nematomorpha based on molecular and morphological data. Invertebrate

Biology,121:357-364.
Garey, J.R. (2001). Ecdysozoa: the relationship between Cycloneuralia and Panarthropoda , Zool. Anz. 240: 321-330.
Gray, K.M. and Garey, J.R. (2001). The evolution of bacterial LuxI and LuxR quorum sensing regulators. Microbiology, **147**: 2379-2387
Cameron, C.B., Garey, J.R. and Swalla, B.J. (2000). Evolution of the Chordate Body Plan: New Insights from phylogenetic analyses of deuterostome phyla. Proc. Natl. Acad. Sci. U.S.A. **95**:4469-4474.
Garey, J.R. (2000) Invertebrate Evolution. In:McGraw-Hill Yearbook of Science and Technology, McGraw-Hill, New York, pp 216-218.
Swalla, B.J.,Cameron, C.B., Corley, L.S., Garey, J.R. (2000). Urochordates are Monophyletic within the Deuterostomes, Syst. Biol. **49**:122-134.
Garey, J.R. (1999) In search of the elusive echinoderm. American Association of Underwater Science Slate 14:6
Garey, J.R., Nelson, D.R., Mackey, L.Y., and Li, J. (1999). Tardigrade Phylogeny: Congruency of Morphological and Molecular Evidence. Zool. Anz. **238:**205-210.
Garey, J.R. and Schmidt-Rhaesa, A. (1998). The essential role of "minor" phyla in molecular studies of animal evolution. Amer. Zool. **38**: 907-917.
Garey, J.R., Schmidt-Rhaesa, A., Near, T.J. & Nadler, S.A. (1998) The evolutionary relationships of rotifers and acanthocephalans. Hydrobiologia **387/388**:83-91.
Near, T.J., Garey, J.R., Nadler, S.A. (1998) Phylogenetic relationships of the Acanthocephala inferred from 18S ribosomal DNA sequences. Molec. Phyl. Evol. **10**: 287-298.
Schmidt-Rhaesa, A., Ehlers, U. Bartolomaeus, T, Lemburg, C. and Garey, J.R. (1998) The phylogenetic position of the Arthropoda. J. Morphol. **238**:263-285.
Mushegian, A.R., Garey, J.R., Martin, J. and Liu, L. (1998). Large-scale taxonomic profiling of eukaryotic model organisms: a comparison of orthologous proteins encoded by the human, fly, nematode, and yeast genomes. Genome Research **8**: 590-598.
Blaxter ML, De Ley P, Garey JR, Liu LX, Scheldeman P, Vierstraete A, Vanfleteren JR, Mackey LY, Dorris M, Frisse LM, Vida JT, Thomas WK. (1998) A molecular evolutionary framework for the phylum Nematoda. Nature **392**: 71-74.
Aguinaldo A.M.A., Turbeville J.M., Linford L.S., Rivera M.C., Garey J.R., Raff R.A.and Lake J.A. (1997) Evidence for a clade of nematodes, arthropods and other moulting animals. Nature **387:** 489-493.
Garey J.R., Near T.J., Nonnemacher M.R., and Nadler S.A. 1996. Molecular evidence for Acanthocephala as a sub-taxon of Rotifera. J. Mol. Evol. **43:** 287-292.
Mackey, L.Y., Winnepennickx, B., Backeljau, I., De Wachter, R., Emschermann, P., and Garey, J.R. (1996) 18S rRNA suggests that Entoprocta are Protostomes, unrelated to Ectoprocta. J. Mol. Evol. **42**: 552-559.
Garey, J.R., Krotec, M., Nelson, D.R., and Brooks, J. (1996). Molecular analysis supports a Tardigrade-Arthropod association. Invertebrate Biology **115**:79-88.
Winnepenninckx, B., Backeljau, T., Mackey, L.Y., Brooks, J.M., De Wachter, R., Kumar, S. and Garey, J.R. (1995) 18S rRNA data indicate that the aschelminthes are polyphyletic and consist of at least three distinct clades. Molec. Biol. Evol. **12**: 1132-1137.
Garey, J.R., Franklin, K.F., Brown, D., Harrison, M.L., Metcalf M., and Kushner, J.P. (1993)

Analysis of uroporphyrinogen decarboxylase complementary DNAs in sporadic porphyria cutanea tarda. Gastroenterology **105**:165-169.

Chelstowka, A., Zoladek, T., Garey, J.R., Kushner, J.P., Rytka, J., and Labbe-Bois, R. (1992) Identification of amino acid changes affecting yeast uroporphyrinogen decarboxylase activity by sequence analysis of *hem12* mutant alleles. Biochem. J. **288**:753-757.

Garey, J.R., Labbe-Bois, R., Cheltowska, A., Rytka, J., Harrison, L.M. Kushner, J.P., and Labbe, P. (1992) Heme biosynthesis in *Saccharomyces cerevisiae*: *HEM12* gene sequence and evidence for two conserved glycines essential for enzymatic activity. Eur. J. Biochem. **205**:1011-1016.

Garey, J.R., Harrison, L.M., Franklin, K.F. and Kushner, J.P. (1990) Uroporphyrinogen decarboxylase: A splice site point mutation causes the deletion of exon 6 in multiple families with familial porphyria cutanea tarda. J. Clin. Invest. **86**:1416-1422.

Mehra, R.K., Garey, J.R. and Winge, D.R. (1990) Selective and tandem amplification of the metallothionein gene family in *Candida glabrata*. J. Biol. Chem. **265**:6369-6375.

Wolstenholme, D.R., Okimoto, R., Macfarlane, J.L., Pont, G.A., Chamberlin, H.M., Garey, J.R., and Okada, N.A. (1990) Unusual features of lower metazoan mitochondrial genomes. *In*: Structure, function, and biogenesis of energy transfer systems. ed. E. Quagliariello, S. Papa, F. Palmieri, and C. Saccone. Elsevier Science Publishers B.V. Amsterdam.

Mehra, R.K., Garey, J.R., Butt, T.R., Gray, W.R. and Winge, D.R. (1989) *Candida glabrata* metallothioneins: Cloning and sequence of genes and characterization of protein. J. Biol. Chem. **264**:19747-19753.

Garey, J.R. and Wolstenholme, D.R. (1989) Platyhelminth mitochondrial DNA: Evidence for early evolutionary origin of a tRNA$^{Ser}_{AGN}$ that contains a dihydrouridine-arm replacement loop, and of serine-specifying AGA and AGG codons. J. Mol. Evol., **28**:374-387.

Garey, J.R., Hansen, J.L., Harrison, L.M., Kennedy, J.B., and Kushner, J.P. (1989) A Point Mutation in the Coding Region of Uroporphyrinogen Decarboxylase Associated with Familial Porphyria Cutanea Tarda, Blood **73**:892-895.

Jhiang, S., Garey, J.R. and Riggs, A.F. (1988) Exon-intron Organization in Genes of Earthworm and Vertebrate Globins. Science **240**:334-336.

Garey, J.R. and Riggs, A.F. (1986) The hemoglobin of *Urechis caupo*: The cDNA derived amino acid sequence. J. Biol. Chem. **261**:16446-16450.

Garey, J.R. and Riggs, A.F. (1986) Identification of a cDNA transcript containing the coding region for F-I globin from *Urechis caupo*. *in* "Invertebrate oxygen carriers". (Linzen, B., ed.) Springer-Verlag, N.Y.

Jhiang, S.M., Garey, J.R., and Riggs, A.F. (1986) Cloning of cDNA for globin from the earthworm *Lumbricus terrestrius*. *in* "Invertebrate oxygen carriers". (Linzen, B., ed.) Springer-Verlag, N.Y.

Garey, J.R. and Riggs, A.F. (1984). Structure and function of hemoglobin from *Urechis caupo*. Arch. Biochem. Biophys. **228**:320-331.

Garey, J.R., Brodeur, R.D., and Riggs, A.F. (1983). Isolation of RNA from red cells of *Urechis caupo.* Life Chem. Reports, Suppl. **1**, 387-391.

Invited Presentations:

Department of Biology Seminar Series, Duquesne University, Nov. 2012. The influences of

coastal springs on near shore marine ecosystems.

Wormnet Symposium at the Society for Integrative and Comparative Biology, Jan. 2005. Simulating DNA evolution: application to genomic analysis.

University of California, Riverside, Department of Biology, Oct. 2004. The usefulness of simulating DNA evolution in understanding problems in phylogeny.

University of Florida, Department of Zoology, Sept. 2004. The usefulness of simulating DNA evolution in understanding problems in phylogeny.

University of Hawaii, Honolulu, HI, Dec 2003. The Karst Sulfide Pump.

Complex Systems Seminar, University of South Florida, The usefulness of simulating DNA evolution in understanding problems in phylogeny, April 2003.

Center for Coastal Environmental Health and Biomolecular Research at Charleston SC. Molecular Profiling: A New Method Of Inferring Meiofaunal Community Structure. March 2003.

University of South Florida, College of Marine Sciences. Phylogeny Matters. Invited seminar January 2002.

Washington State University, Pullman. Phylogeny Matters. Invited seminar, October 2001.

Fifth International Acanthocephalan Workshop, Helsinki Finland. The relationship between rotifers and acanthocephalans. Invited Speaker, May 2001.

University of South Florida, Department of Biochemistry. Phylogeny Matters. Invited seminar, March 2001.

University of South Florida, Department of Biology. What your mother did not tell you about animal evolution. Invited Seminar, October 2000.

University of Florida, Department of Entomology/Nematology. Ecdysozoa: the relationship between nematodes and arthropods. Invited seminar, September 2000.

XVIIIth International Congress of Zoology, Athens, Greece. The evidence for Ecdysozoa. Invited speaker, Aug 2000.

8th International Symposium on Tardigrada, Copenhagen Denmark. Molecular Approaches to Tardigrade Phylogeny. Invited Speaker, July 2000.

Society of Nematology 1999 meeting, Nematode Evolution Symposium, Monterey CA. The Phylogenetic Relationship of Nematodes to Other Metazoan Phyla.

University of South Florida, Geology Department. Molecular Approaches to Unraveling Evolutionary Histories. Invited Seminar, Sept. 1999.

University of California, Los Angeles. Molecular Biology Department, Metazoan Evolution. Invited seminar, Oct. 1999.

Gordon Conference on Molecular Evolution, Invited Speaker, Ventura CA, Jan 1998, Invertebrate Evolution: A Molecular View.

Society for Integrative and Comparative Biology: Metazoan Phylogeny Symposium, Invited Speaker, Boston MA, Jan 1998. The pivotal role of minor phyla in understanding animal evolution

VIII International Rotifer Symposium, Invited Speaker, St. John's University MN, June 1997.The evolutionary relationships of rotifers and acanthocephalans.

2nd Keystone Symposium on Molecular Helminthology. The phylogenetic position of the nematodes. Invited workshop presentation, Feb 29, 1996.

Pennsylvania State University, Presented a seminar on molecular studies of animal evolution to

the Molecular Evolution Group in Oct 1995.

Gordon Research Conference, Chemistry and Biology of Pyrroles 1990. Invited Speaker, The spectrum of mutations in the uroporphyrinogen decarboxylase gene responsible for hepatoerythropoietic porphyria and porphyria cutanea tarda.

American Society of Hematology 1989. Plenary Session Speaker. The Molecular basis of familial porphyria cutanea tarda.

Gordon Research Conference, Chemistry and Biology of Pyrroles, Invited Speaker, Wolfboro MA1988.

Papers and Posters Presented at Meetings (uninvited)

Garey JR and Menning DM (2012). The dynamics of community structure within a submarine coastal spring with an anchialine source. Presented at the 2nd International Symposium on Anchialine Ecosystems in Cavtat, Croatia.

Garey JR, Menning DM and Rubelmann H (2012). Coastal Springs in Florida (USA): Sentinels for sea level change. Geologia, special issue pp 17. Presented at the NSF Workshop in Mallorca on Sea level changes into MIS5: from observations to predictions.

Garey JR, Wu T, Ayres E, Bardgett RD, Wall DH (2012). The Global Distribution and Diversity of Soil Invertebrates. Presented at the annual SICB conference in Charleston NC.

Menning, D. and Garey JR (2011). Biogeochemistry of a subterranean estuary in West Central Florida. Coastal and Estuarine Research Federation annual meeting; Societies, Estuaries & Coasts: Adapting to Change. Daytona Beach, FL.

Wu T, Ayres E, Bardgett RD, Wall DH and Garey JR (2010). Global patterns of soil biodiversity using molecular profiling. Presented at the annual Ecology Society of America annual meeting.

Wu T, Ayres E, Bardgett R, Wall DH, Garey JR (2009). Soil faunal distribution under different ecosystems using large scale molecular cloning and sequencing. Ecological Society of America Annual Conference in Albuquerque NM.

Brown CM, Rubelmann H, Franck A, Garey JR (2009). An Analysis of the Diversity of Sulfur Oxidizing Organisms Utilizing the Sox Pathway. USF Undergraduate Research Symposium.

Trinidad ML, Rubelmann H, Franck A, Garey JR (2009). Diversity of Sulfur Reducing Microorganisms Using the Dissimilatory Sulfite Reductase (DSR) Pathway in the Environment. USF Undergraduate Symposium. First Prize, Poster Presentation, Natural Sciences.

David J. Karlen, Tiehang Wu, Terry G. Campbell and James R. Garey (2008). Marine Eukaryotic Diversity in Sediments Along a Shallow Water Hydrothermal Gradient Inferred from 18S rDNA. Presented at the January 2008 SICB Meeting in San Antonio, TX.

Wu, T and J. R. Garey (2008). The Importance of DNA quality and primers in comparative soil faunal community structure analyses. Abstract for a presentation to a joint meeting of the Geological Society of America (GSA), Soil Science Society of America (SSSA), American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and the Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM (GCAGS), hosted by the Houston Geological Society (HGS). October 5 – 9, 2008, Houston, Texas.

Wu T, Garey JR, Depovic S, Ayres E, Bardgett RD, Wall DH (2007). Comparing soil fauna communities using large-scale DNA sequencing. Presentation at the Ecological Society of America Annual Meeting in San Jose CA in August 2007.

Karlen, DJ, Campbell, TG and Garey, JR (2007) A Molecular Analysis of Marine Meiofaunal Diversity Along a Natural Environmental Gradient in the Vicinity of a Shallow-Water Hydrothermal Vent. Presented at the January 2007 SICB Meeting in Phoenix AZ.

Karlen, DJ and Garey, JR (2007). Trends in the polychaete community near a shallow-water hydrothermal vent in Papua New Guinea. Presented at the August 07 International Polychaete Conference in Portland, ME.

Harmon, MC, Garey JR and Livingston BT (2005). Position of the ophiuroids within the Echinodermata revisited. Talk presented at the 2005 SICB meeting in San Diego.

Karlen, D. and Garey J.R. (2005). Marine benthic community structure along a natural environmental gradient in the vicinity of a shallow-water hydrothermal vent, Ambitle Island, Papua New Guinea. Talk presented at the 2005 SICB meeting in San Diego.

Campbell, T.G. and Garey, J.R. (2005). Analysis of Glycerol 3-Phosphate Dehydrogenase for potential use in deep metazoan phylogeny. Talk presented at the 2005 SICB meeting in San Diego.

Wetherington, H., Garey, J. and Madrigal, L. (2004). Mitochondrial DNA analysis for the study of variation and determination of geographic identity of indigenous human skeletal remains. Poster presented at the American Association of Physical Anthropology Meeting in Tampa.

Nichols, P. B., Nelson, D.R. and Garey, J.R. (2004). A family level analysis of tardigrade phylogeny. Talk presented at the 2004 SICB meeting in New Orleans.

Campbell, T.G. and Garey, J.R. Phylogenetic analysis of the Micrognathozoan, Limnognathia maerski, based on the 18S rRNA gene. Talk presented at the 2004 SICB meeting in New Orleans.

Nichols, P. B., Nelson, D.R. and Garey, J.R. (2003). A family level analysis of tardigrade phylogeny. Talk presented at Ninth International Tardigrade Symposium, St. Pete Beach, FL.

Garey, J.R. (2001). Deep Bilaterian Phylogeny: The Evolution of Adaptation to Extreme Environments. NASA Astrobiology Institute Meeting, Washington DC.

Garey, J.R. (2001). The lesser-known protostome taxa. Amer. Zool. 40: 1025 (abstract).

Essig B., Garey, J.R. and Slomba, J.M. (2000) The infrageneric classification of Clematis (Ranunculaceae). Am. J. Bot. 87:125 (abstract).

Robeson, M.S. II and J.R. Garey (2000). The mitochondrial genome of the rotifer Brachionus plicatilis. Am. Zool. 40: 1191 (abstract).

Hamilton, H. and Garey, J.R. (2000). Molecular approaches to meiofaunal ecology. Amer. Zool. 40:1042 (abstract).

Garey J.R., and Campbell, T.(2000). Acanthocephalan and Rotifer relationships revisited. Amer. Zool. 40:1025 (abstract).

Nichols, P.B. (2000). Tardigrade evolutionary relationships. Amer. Zool. 40: 1137-1148 (abstract).

Garey, J.R. and Robeson, M. (1999). The mitochondrial genome of Brachionus plicatilis. Am.Zool. 39: 15A. Presented at the SICB meeting in Atlanta.

Hamilton, H. and Garey, J.R. (1999). Applying Molecular Techniques to Environmental Studies of Meiobenthic Fauna. Presentation to the Florida Association of Benthologists, Dec. 9-10, 1999.

Garey JR. (1999). The Phylogenetic Relationship of Nematodes to Other Metazoan Phyla. Program Guide And Abstracts for The Joint Meeting of the American Society of Parasitologists & the Society of Nematologists, pp 94

Garey JR and Robeson MS (1999). The mitochondrial Genome of the rotifer Brachionus plicatilis. Amer. Zool. 39: 82 (abstract).

Garey JR, Schmidt-Rhaesa A. (1998). The pivotal role of "minor" phyla in understanding animal evolution. Amer. Zool. **37**:101A.

Garey JR, Schmidt-Rhaesa A, Near TJ, and Nadler S. (1997) The evolutionary relationships of Rotifers and Acanthocephalans. Paper presented to the Sixth Rotifer Symposium at Saint John's University June 23-29

Nelson DR and Garey JR (1998). Molecular Analysis of Eutardigrades and Heterotardigrades. Paper presented to the Seventh Tardigrade Symposium in Dusseldorf Germany Sept. 4-7 1997.

Blaxter, M., DeLey, P., Garey, J.R. and Liu, L. (1996). Origins of zooparasitic nematodes inferred from ribosomal RNA molecular phylogeny. Abstract for the Wood's Hole Molecular Parasitology meeting Sept. 14-18, 1996.

Garey, J.R., Mackey, L.Y., Tyler, S, and Smith, J.P.S., III (1996). 18S rRNA study of the phylogenetic position of the catenulid flatworms. Abstract submitted for the 1996 Society for Molecular Biology and Evolution Meeting.

Garey, J.R. (1996). Problems in aschelminth phylogeny: A molecular approach. Poster presented at the first Molecular Evolution Gordon Conference, Jan 29, 1996.

Garey, J.R., Near, T.J., Nonnemacher, M.R., and Nadler, S.A. (1996). Analysis of 18S rRNA genes suggests that acanthocephalans evolved from bdelloid rotifers. Proceedings of the Keystone Symposia (*abstract*).

Garey, J.R. and Nelson, K.R. (1995) The evolutionary relationships of tardigrades based on 18S rRNA gene sequence analysis. Am. Zool. **35**: 57A (*abstract*).

Garey, J.R., Mackey, L.Y., Brooks, J.M., Winnepenninckx, B, and Backeljau, T. (1995). Animal Phylogeny: Ribosomal RNA studies of the Aschelminthes. Presented at the Keystone Symposia: Molecular approaches to marine ecology and evolution. March 5-11, 1995. J. Cell. Biochem. Suppl. **19B**:345 (*abstract*).

Mackey L.Y., Bodnar K., and Garey J.R. (1994) Molecular evidence supports a close evolutionary relationship of rotifers to acanthocephalans and supports polyphyletic origins of aschelminthes. Poster presented at the Annual Meeting of the Society for Molecular Biology and Evolution (abstract).

Nonnemacher, M.R. and Garey, J.R. (1994) The 18S Ribosomal gene of the Rotifer *Philodina*. American Chemical Society Regional Meeting Program pp 55 (abstract).

Ye, Q., Mackey, L.Y., Douglas, K.E., and Garey, J.R. (1993) The phylogenetic relationships of rotifers and acanthocephalans as determined with molecular data. Program of the First Annual Meeting of the Society for Molecular Biology and Evolution, pp 44 (abstract).

Garey, J.R. and Ye, Q. (1992) The use of the uroporphyrinogen decarboxylase gene as a tool to

study phylogenetic relationships of distantly related organisms. Program of the International Conference on Molecular Evolution, pp 60.
Garey, J.R., Elder, G., and Kushner, J.P. (1989) Splice site mutations in the uroporphyrinogen decarboxylase gene are a common basis of porphyria cutanea tarda. Blood **74**:44a.
Wolstenholme, D.R., Okimoto, R. Macfarlane, J.L., Pont, G.A., Chamberlin, H.M., Garey, J.R. and Okada, N.A. (1989) Unusual features of lower metazoan mitochondrial genomes. Proceedings of the International Symposium on Structure, function and biogenesis of energy transfer systems. Rosa Marina, Italy, pB 5.
Garey, J.R., Hansen, J.L. and Kushner, J.P. (1988) The molecular basis of familial porphyria cutanea tarda. Clin. Res. **36**:612A.
Garey, J.R. and Wolstenholme, D.R. (1987) Fluke mitochondrial DNA: genes for cytochrome C oxidase I, NADH dehydrogenase subunits 1 and 3, and eight tRNAs. Fed. Proc. **46**:1949.
Garey, J.R. and Riggs, A. (1983) Preparation of cDNA from the mRNA of *Urechis* red cells. Fed. Proc. **42**:1971.
Garey, J.R. and Riggs, A. (1982) Structure and function of hemoglobin from *Urechis caupo*. Fed. Proc. **41**:650.
Garey, J.R. (1978) Structure and properties of hemoglobin from the echiuroid worm *Urechis caupo*. Western Society of Naturalists. 59th Annual meeting. Abstracts of symposia and contributed papers, p. 38.

AD-HOC REVIEWER

EvoDevo
Evolution and Development
Invertebrate Biology
Journal of Crustacean Biology
Molecular Biology and Evolution
Molecular Ecology Resources
Molecular Phylogenetics and Evolution
Nature
Perspectives in Biology and Medicine
Science
National Science Foundation
Seagrant (Florida and National)
United States Department of Agriculture

NATIONAL SCIENCE FOUNDATION PANELS

Systematics, Spring 1998
Biotic Surveys and Inventories, Spring 1999
EPSCoR Panel, Spring 2000

SOCIETY MEMBERSHIPS (past and present)

-American Association for the Advancement of Science
-American Association of Underwater Sciences

-American Microscopical Society
-American Society for Biochemistry and Molecular Biology
-International Association of Meiobenthologists
-Society for Molecular Evolution
-Society of Nematologists
-Society of Systematic Biologists
-Society of Integrative and Comparative Biology

UNIVERSITY AND COLLEGE COMMITTEES (Current)

University Diving Safety Committee, Chair
University Laboratory and Field Safety Committee, Chair
CAS Tenure and Promotion Committee, Chair
ISA Artwork Committee
SNSM Tenure and Promotion Committee
Phi Kappa Phi Executive Council
Faculty Senate, 2008 – Present, Senator

UNIVERSITY AND COLLEGE COMMITTEES (past)

Provost's Rewards Working Group, member
Provost's Budget Planning Task Force, Member
CAS Chairs Steering Committee
CAS Performance Bonus Committee
Interdisciplinary Science Building Committee, Chair

SPECIAL PROJECTS

CAS Capital Improvement Plan: In 2007 I worked with the Dean to submit a series of CIP forms that outline the long term building plan for CAS that included six new or renovated buildings.
USF Educational Plant Survey: in 2007 and 2008 I represented the Provost's office in working with the SUS Educational Plant Survey team. This involved several weeks of full time work in the Fall 0f 07 and Spring of 2008.
Hillsborough Community College Biotechnology Advisory Board: I work with HCC in developing their Biotechnology AS degree.
Provost's Rewards Working Group: Worked with the Provost to determine better ways of rewarding faculty members.
USF System Advisory Council: worked to develop guidelines for the USF system.

SCUBA QUALIFICATIONS

Open water – PADI
Advanced Open Water – PADI
Rescue Diver - PADI
Divemaster - PADI
Full Cave, Technical Cave - NSS, IANTD
CCR Rebreather, - IANTD

Nitrox - IANTD
Technical Nitrox - NAUI
Decompression and Extended Range Diving - NAUI
Trimix - IANTD
Gas Blending – NAUI – IANTD
Oxygen Provider – DAN
CPR/First Aid - NAUI
Scientific Diver to 250 fsw – AAUS

UNIVERSITY TEACHING

University of South Florida:

Undergraduate:

General Genetics
General Genetics lab coordinator
General Biology I
Honors Biological Methods
Invertebrate Zoology with lab

Graduate:

Molecular Systematics
Molecular Evolution
Advances in Molecular Evolution
Systematic Biology
Astrobiology
The Lesser-Known Invertebrates
Biogeochemistry
Molecular Phylogenetics
Advances in Scientific Review

Duquesne University:

Undergraduate:

General Biology I
Cell Chemistry
Genetics
Human Sexuality

Graduate:

Evolution
Molecular Biology

GRADUATE STUDENTS AND POST-DOCS (year completed)

University of South Florida

MS students

Robeson, Mike (2001)
Hamilton, Heather (2003)
Slomba, Jonathon (2003)
Joel Turner (2004)
Wetherington, Hattie (2005)
Kimberly Fern (2005)

University of South Florida Ph.D. students

Samler, Dale (2001)
Nichols, Brent (2005)
Campbell, Terry (2008)
Turner, Joel (2008)
Karlen, David (2010)
Morgan, Emma (2010)
Garman, Michael (2010)
Franck, Alan (2012)
Vaughn, Roy (2012)
Rubelmann, Haydn (current)
Menning, Damian (current)
Rachel Schweers (current)

Duquesne University

MS students (year completed)

Ye, Qing (1993)
Mackey, Laura (1994)
Brooks, Jacqueline (1996)
Li, Jia (1997)
Piazza, Mark (1997)

Post-Doctoral Fellows

Schmidt-Rhaesa, Andreas (1997-98)
Wu, Tiehang (2006-2011)
Vaughn, Roy (2012 – present)

UNDERGRADUATE RESEARCHERS
University of South Florida

Davis, Carisa (IBS Fellow, 1999)
Dittmar, Kristen (1999)
Fernandez, Alison (2001)
Wetherington, Hattie (Honors Thesis, 2001)
Adorno, Melissa (Honors Thesis, 2003)
Amrooei, Danoosh (2003)
Carapellucci, Sarah (2003)
Rasheid, Soolaf (2003)
Danielson, Amy (Honors Thesis, 2003)
Cameron, Melissa (2003)
Matt Burgess (2004)
Lynette Sanchez (2004)
Tom Bebee (2005)
Haydn Rubelmann (2005)
Carrie Easley (2004)
Melanie Laws (2006)
Jennifer Hardee (2005)
Jessica Kennedy (2007)
Sarah Mike (2006)
Meghan Small (Honors Thesis, 2007)
Christine Brown (Honors Thesis, 2008-2009)
Mathew Trinidad (2008-09)
Gabrielle Gauthier (Honors Thesis, 2009-10)
Ornela Hazizaj (Honors Thesis) 2009-10
Amanda Zimmerman (2009-2010)
William Spencer (2009-2010)
Urvish Patel (2009-2010)
Johana Andrea Henao (2009)
Luisa Alvarado (2009-2010)
Abusad Mahmud (Honors Thesis, 2010-11)
Milad Avazdavani (2010-11)
Sean Jarvis (2010-11)
Monica Lazaro (2010-11)
Mathew Manzi (2010-11)
Will Carraher-Stross (honors Thesis, 2012)
Devon Thomas (2012-2013)
Elaina Graham (2012-2013)
Jamie Ibanez (2012)
Anthony Peters (2012)
Vijay Patel (2012)

Duquesne University
Bodnar, Kendra (1993)
Delkanic, Karen (1994)
Landefeld, Ryan (1996)
Nonnemacher, Mike (1997)

CURRICULUM VITAE (February 2013)

NAME: Daniel V. Lim, Ph.D.
Distinguished University Professor

MAILING ADDRESS:
Department of Cell Biology, Microbiology and Molecular Biology
University of South Florida
4202 E. Fowler Avenue, ISA2015
Tampa, FL 33620-7115
Telephone: (813) 974-1618 FAX: (813) 905-9940
E-mail: Lim@usf.edu Website: http://www.usf.edu/abl

BIRTHDATE: April 15, 1948
Houston, Texas

EDUCATION: B.A. in Biology, Rice University (1970)
Ph.D. in Microbiology, Texas A&M University (1973)
Postdoctoral Fellow, Department of Microbiology and Immunology, Baylor College of Medicine (1973-1976)

HONORS AND AWARDS:
Jesse H. Jones Academic Scholarship (1966-1970)
Houston Endowment, Inc. Academic Scholar (1966-1970)
Rice University Tuition Grant (1966-1970)
Robert A. Welch Foundation Predoctoral Fellow (1971-1973)
Robert A. Welch Foundation Postdoctoral Fellow (1973-1976)
Phi Sigma Biological Honor Society, Graduate Research Award for the Outstanding Dissertation in the United States (1974)
Searle/Donald Richardson Memorial Award, American College of Obstetrics and Gynecology (co-recipient with Walter J. Morales) (1987)
Margaret Green Outstanding Teacher Award, Southeastern Branch American Society for Microbiology (1989)
Governor's Award for Outstanding Contribution in Science and Technology as the Leading Scientist in Biotechnology in Florida (1990)
Outstanding Undergraduate Teaching Award, University of South Florida (1991, 2000)
Teaching Incentive Program Award for Outstanding Undergraduate Teaching, University of South Florida (1994, 1997)
Professorial Excellence Program Award, University of South Florida (1998)
P.R. Edwards Award for Excellence in Microbiology, Southeastern Branch American Society for Microbiology (2001)
President's Award for Faculty Excellence, University of South Florida (2003)
Christopher Columbus Fellowship Foundation 2004 Homeland Security Award in Biological, Radiological, Nuclear Field (2004)

HONORS AND AWARDS (Continued):

Ivan Roth Award for Outstanding Service and Contributions in Microbiology, Southeastern Branch American Society for Microbiology (2004)
Tampa City Council Commendation for Homeland Security Award (2004)
Outstanding Faculty Research Achievement Award, University of South Florida (2005)

PROFESSIONAL AND HONORARY SOCIETIES:

Fellow, American Academy of Microbiology (Elected 1986)
American Society for Microbiology (ASM Council, 2000-2006; Career Development Committee, 1999-2008; Branch Organization Committee and Region IV Planning Coordinator, 2008-2011)
Southeastern Branch, American Society for Microbiology (President, 1990-1991; Branch Councilor, 2000-2006)
Inter-American Society for Chemotherapy (Vice President, 1983-1989)
Sigma Xi
Phi Sigma Biological Honor Society
International Association for Food Protection
American Association for the Advancement of Science

ACADEMIC APPOINTMENTS:

Robert A. Welch Foundation Postdoctoral Fellow, Department of Microbiology and Immunology, Baylor College of Medicine (1973-1976)
Assistant Professor, Department of Biology, University of South Florida (1976-1981)
Associate Professor, Department of Biology (Tenured), University of South Florida (1981-1987)
Associate Faculty, Tampa General Hospital School of Medical Technology (1982-1988)
Interim Chairman, Department of Biology, University of South Florida (1985-1987)
Founding Director, Institute for Biomolecular Science, University of South Florida (1988-1993)
H. Lee Moffitt Cancer Center & Research Center, Member (2004-)
Professor, Department of Biology, University of South Florida (1987-2006)
Professor, Department of Global Health, College of Public Health, University of South Florida (2000-)
Distinguished University Professor, University of South Florida (2006-)
Founding Co-Director, Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics (2006-2011)

CURRENT AND PAST COMMITTEE APPOINTMENTS:

Microbiology Degree Committee (1976-1987; Chairman, 1978-80)
Ph.D. Examination Committee (1976-1979; Chairman, 1979)
USF President's *Ad Hoc* Committee on University Internal Affairs (1977)
Medical Technology Committee (1979-1988)
Seminar Committee (1980)
Graduate Admissions Committee (1980, 1985-1988)
Search Committees for Immunologist, Molecular Geneticist, Animal Virologist (1976-1982)
Faculty Advisory Committee, Department of Biology (1980-1982)
Curriculum Committee, Department of Biology (1980-1983)
Search Committee for Molecular Microbiologist (Chairman, 1983)
Search Committee for Dean, College of Natural Sciences (1983)
NIH Biomedical Research Support Grant Committee (1980-1984)
Tenure Committee, College of Natural Sciences (1985-1986)
Board of Regents Review Committee, Department of Biology (1986)
Search Committee for Immunologist (1989)
Patricia and Richard Wood Endowed Chair Search Committee (Chairman, 1990-1993)
Honors and Awards Committee, College of Arts and Sciences (1992-1994)
Faculty Advisory Committee, Department of Biology (Chairman, 1993-1995; 1999)
Planning Committee, Department of Biology (1993-1996)
Seminar Committee, Department of Biology (1996-1998)
Search Committees for Microbiologist (Chairman, 1993, 1998)
Curriculum Committee, Department of Environ. & Occup. Health (1998-2000)
Honors Committee, Department of Biology (1999-2001)
Search Committee for Developmental Biologist (2001)
Graduate Committee, College of Arts and Sciences (2001-2003)
Awards and Credentialing Committee, Department of Biology (Chairman, 2001-2003)
Search Committee for Biology Instructor (2003)
Search Committee for Developmental Biologist (2004)
Search Committee for Molecular Microbiologist (Chairman, 2006)
Faculty Advisory Committee, Department of Cell Biology, Microbiology and Molecular Biology (2006-2011)
Distinguished University Professor Review Committee, College of Arts and Sciences (2009)

CURRENT/RECENT STUDY SECTIONS AND REVIEW PANELS:

NASA Bioengineering Review Panel (2000)
NIH Bioengineering Research Partnership Study Section (2000-2001)
NIH/NIAID SBIR/STTR Infectious Diseases & Microbiology Study Section (2000-2005)

CURRENT/RECENT STUDY SECTIONS AND REVIEW PANELS (Continued):

NIH/NIAID Partnerships for Novel Therapeutics, Diagnostic and Vector Control Strategies in Infectious Diseases Study Section (2002-2003)
Department of Defense/DTRA Senior Technical Review Committee (2001-2003)
NIH/NIAID Regional Centers of Excellence for Biodefense and Emerging Infectious Diseases Research Reviewer (2003)
Department of Defense/DARPA Senior Technical Review Committee (2001-2003)
USDA National Research Initiative Competitive Grants Program *Ad Hoc* Reviewer (2003)
USDA Agricultural Research Service National Program ad hoc Reviewer (2003)
USDA SBIR Program ad hoc Reviewer (2003)
Naval Research Laboratory/American Society for Engineering Education Postdoctoral Fellowship Field Reviewer (2003)
National Academies/National Research Council, Indicators of Waterborne Pathogens, Invited Reviewer (2003)
United States-Israel Binational Agricultural Research & Development (BARD) Fund Proposal Reviewer (2004)
Louisiana Board of Regents Support Fund R&D Program Reviewer (2004)
Singapore Science & Engineering Research Council, Invited Reviewer (2005)
National Academies/National Research Council, Committee on Water System Security Research (2004-2007)
National Academies/National Research Council, Ohio Third Frontier Program Review Committee (2008)

CURRENT AND PAST CORPORATE CONSULTATIONS:

Pharmacia Diagnostics/Pharmacia AB (USA/Sweden) (1979-1988)
The Conservancy (1980-1984)
GIBCO Laboratories/BRL, Life Technologies, Inc. (1982-1988)
Tetravalent, Inc. (1986-1990)
Lone Star Steel Company (1995-1997)
Environmental Biotech, Inc. (1996-1997)
Micro-Ambient (1996-1997)
Becton Dickinson Microbiology Systems (1997-1999)
Constellation Technology Corporation (2001-2003)
General Dynamics (2003)
MSE Technology Applications, Inc. (2003-2004)
Nanobac (2006)
Elion Systems (2007-2008)
Origin Tech LLC (2011-)

RECENT RESEARCH GRANTS (Past Twelve Years):

A System for the Real Time/Near Real Time Identification of Food-Borne Pathogens, National Science Foundation STTR (NSF 9810459), $39,930 (USF/Lim Portion) (9/98-8/99) (co-PI)

Tests to Identify Specimens, Becton Dickinson, $3,885 (10/98-10/99) (PI)

Real Time ID of Food-Borne Pathogens by an Innovative Biosensor Assay, Florida High Technology Corridor Program, $44,800 (12/98-12/99) (PI)

Real Time ID of Waterborne Pathogens by an Innovative Fiber Optic Biosensor, Water Environment Research Foundation, $124,947 (6/00-12/01) (co-PI)

Near Real Time Detection of Microbial Contamination in Recreational Waters Using an Innovative Fiber Optic Biosensor, U. S. Environmental Protection Agency, $50,000 (8/00-5/04) (PI)

A Fully Autonomous and Self-Sufficient Gastrobot for Long-Term Environmental Applications, Intel Corporation, $90,000 (5/01-4/02) (co-PI)

Rapid Detection of Bacteria in Blood and Platelets, NIH SBIR (1R43AI051797-01), $29,887 (USF/Lim Portion) (4/02-9/02) (co-PI)

Methods to Improve Capture and Detection of Target Organisms for Biosensor Assays, Research International, $7,250 (10/02-1/03) (PI)

On Line Real Time/Near Real Time Biosensor Monitoring for Water, Pinellas County Utilities, Phases I and II, $205,200 (8/02-9/03) (PI)

Development & Testing of Rapid Methods for the Detection & Enumeration of Bacterial Indicators, Southern California Coastal Water Research Project, $59,769 (USF/Lim Portion) (12/02-8/03) (co-PI)

Botulinum Toxin and Ricin Assay Development for Taste Chip, Constellation Technology Corporation, $195,530 (5/03-9/03) (PI)

Detection of Human Pathogens with a Real-Time Fiber Optic Biosensor, The Cooperative Institute for Coastal and Estuarine Environmental Technology, $198,433 (12/01-8/04) (co-PI)

Vaccinia Virus Assay Development for Array Biosensor, Constellation Technology Corporation/Defense Threat Reduction Agency, $60,000 (3/04-7/04) (PI)

On Line Real Time/Near Real Time Biosensor Monitoring for Water, Pinellas County Utilities, Phase III, $150,043 (6/04-5/05) (PI)

Rapid Detection of Major Food-borne Pathogens, NIH SBIR (1R43AI052684-01A1), $36,800 (USF/Lim Portion) (7/04-8/05) (co-PI)

Integrated Immunoassay/PCR Test for Bioterrorism Agents, NIH SBIR (5R43EB001731-02), $60,050 (USF/Lim Portion) (7/04-7/05) (co-PI)

Antibacterially-Active Nanoparticles, National Science Foundation STTR (NSF 0419903), $7,178 (USF/Lim Portion) (7/04-6/05) (co-Investigator)

A Mechanistically Novel Antibiotic for Anthrax, NIH STTR (1R41AI061901-01, $9,135 (USF/Lim Portion) (9/04-3/05) (co-Investigator)

RECENT RESEARCH GRANTS (Past Twelve Years) (Continued):

Aptamer Beacon Experimental Validation, Northrop Grumman, $13,137 (12/04-4/05) (PI)

Evaluation of the Photon Detection System for Detection of E. coli O157:H7 and Salmonella, Healthspex, $14,500 (10/05-3/06) (PI)

N-Thiolated ß-Lactams, NIH (5R01AI051351-03), $50,000 (Lim Portion) (3/02-2/07) (co-Investigator)

Real Time/Near Real Time Detection of Microbial Pathogens/Toxins Associated with Food, Water, and Surfaces (DAAD13-00-C-0037), U.S. Army Research, Development and Engineering Command (RDECOM), $7,617,564 (8/00-8/06) (PI)

Assessment of Patient Isolation Unit Containment Properties and Filtration Efficiency, SAIC, $8,790 (10/07-1/08)

Antibacterially-Active Nanoparticles, National Science Foundation SBIR Phase II, $29,000 (USF/Lim Portion) (8/06–7/08) (co-Investigator)

Manufacturing Platform for Immunoassays, National Science Foundation SBIR, $15,382 (USF/Lim Portion) (7/07-6/08) (co-PI)

Rapid Concentration and Quantification of Bacteria and Viruses from Marine Waters, The Cooperative Institute for Coastal and Estuarine Environmental Technology, $145,893 (5/07-8/08) (co-PI)

Real Time/Near Real Time Detection of Microbial Pathogens/Toxins Associated with Food, Water, Air, and Human Specimens (W911SR-05-C-0020), U.S. Army Research, Development and Engineering Command (RDECOM), $3,776,657 (9/05-11/09) (PI)

Rapid Sample Processing and Biosensor Detection of Biothreat Agents (W911SR-07-C-0084), U.S. Army Research, Development and Engineering Command (RDECOM), $3,448,437 (9/07-3/11) (PI)

Biothreat Agent Sample Concentration and Processing (W911SR-09-C-0005), U.S. Army Research, Development and Engineering Command (RDECOM), $1,376,823 (12/08-6/12) (PI)

Extraction and Identification of Pathogens from Complex Matrix Samples using Immunomagnetic Bead Separation (IMS) and Lateral Flow Immunoassays (W911SR-09-C-0005 Supplemental), U.S. Army Research, Development and Engineering Command (RDECOM), $64,414 (8/10-6/12) (PI)

Electrospray Deposition of Biosensor Substrates (NSF 0854354), National Science Foundation, $117,865 (Lim Portion) (6/09-5/12) (co-PI)

An Integrated System for In-Field Detection of Microbial Contaminants in Coastal Waters, NOAA SBIR, $25,909 (USF/Lim Portion) (7/10-1/11)(Co-Investigator)

Rapid Sample Processing and Agent Detection (W911SR-10-C-0020), U.S. Army Research, Development and Engineering Command (RDECOM), $804,215 (9/10-5/13) (PI)

RECENT RESEARCH GRANTS (Past Twelve Years) (Continued):

Biothreat Agent Sample Processing and Detection (W911SR-11-C-0017), U.S. Army Research, Development and Engineering Command, $764,701 (1/11-7/13) (PI)

Reagentless Laser-Induced Breakdown Spectroscopy (LIBS) for Detection and Identification of Bacteria (W911SR-11-C-0017 Supplemental), U.S. Army Research, Development and Engineering Command (RDECOM), $75,033 (1/11-7/13) (PI)

Evaluation of Cooling Towers for Collection, Concentration, and Detection of Chemical and Radiological Agents, Department of Energy/Savannah River National Laboratory, $53,000 (3/12-9/12) (PI)

Field Blood Donor Pathogen Kit, U.S. Special Operations Command/Draper Laboratory, $70,000 (9/12-5/14) (PI)

Daniel V. Lim
Curriculum Vitae

RESEARCH PUBLICATIONS:

(Graduate students in **boldface;** undergraduate students in ***boldface italics***)

Williams, R.P., R.H. Scott, D.V. Lim, and S.M.H. Qadri. 1976. Macromolecular syntheses during biosynthesis of prodigiosin by *Serratia marcescens.* Appl. Environ. Microbiol. 31:70-77.

Lim, D.V., S.M.H. Qadri, and R.P. Williams. 1976. Incorporation of proline into prodigiosin by a put mutant of *Serratia marcescens.* Appl. Environ. Microbiol. 31:738-742.

Lim, D.V., S.M.H. Qadri, C. Nichols, and R.P. Williams. 1977. Biosynthesis of prodigiosin by nonproliferating wild-type *Serratia marcescens* deficient in catabolism of alanine, histidine, and proline. J. Bacteriol. 129:124-130.

Lim, D.V., A.N. James, and R.P. Williams. 1977. Radiolabeling of and macromolecular syntheses in *Neisseria gonorrhoeae* types 1 and 4. Appl. Environ. Microbiol. 33:328-333.

Lim, D.V. 1978. Differences in susceptibilities of virulent strains and avirulent strains of *Neisseria gonorrhoeae* to antimicrobial agents. Antimicrob. Agents Chemother. 14:45-50.

Lim, D.V., ***R.D. Smith,*** and ***S. Day.*** 1979. Evaluation of an improved rapid co-agglutination method for the serological grouping of beta-hemolytic streptococci. Can. J. Microbiol. 25:40-43.

Lim, D.V. and **T. Wall.** 1980. Confirmatory identification of *Neisseria gonorrhoeae* by slide co-agglutination. Can. J. Microbiol. 26:218-222.

Lim, D.V. and ***M. Marnell.*** 1980. Confirmatory identification of group D streptococci by slide co-agglutination. Curr. Microbiol. 4:151-154.

Caldwell, J.B. and D.V. Lim. 1981. The effects of oxygen concentration on neuraminidase production by type III group B streptococci. Curr. Microbiol. 5:175-178.

Lim, D.V., **W.L. Rigling,** ***M.H. Marnell,*** J.J. Jezeski, and K.L. Smith. 1982. Isolation and identification of bacteria resembling *Streptococcus agalactiae* from commercially pasteurized milk. The Public Hlth. Lab. 40:53-58.

Lim, D.V., K.S. Kanarek, and **M.E. Peterson.** 1982. Magnitude of colonization and group B streptococcal sepsis in newborn infants. Curr. Microbiol. 7:101-104.

Jones, D.E., K.S. Kanarek, J.L. Angel, and D.V. Lim. 1983. Elimination of multiple reactions of the Phadebact *Streptococcus* co-agglutination test. J. Clin. Microbiol. 18:526-528.

Jones, D.E., ***E.M. Friedl,*** K.S. Kanarek, J.K. Williams, and D.V. Lim. 1983. Rapid identification of pregnant women heavily colonized with group B streptococci. J. Clin. Microbiol. 18:558-560.

RESEARCH PUBLICATIONS (Continued):

Peterson, M.E., B.J. Yokel, and D.V. Lim. 1984. Recovery of selected pathogens from Naples Bay, Florida, and associated waterways. Estuaries 7:131-136.

Jones, D.E., K.S. Kanarek, and D.V. Lim. 1984. Group B streptococcal colonization patterns in mothers and their infants. J. Clin. Microbiol. 20:438-440.

Lim, D.V., W.J. Morales, S. Washington, and A.F. Walsh. 1985. Reduction of morbidity and mortality rates of neonatal group B streptococcal disease through early, rapid diagnosis and prophylactic chemotherapy. Recent Adv. in Chemother., p. 2145-2146.

Lim, D.V., W.J. Morales, A.F. Walsh, and D. Kazanis. 1986. Reduction of morbidity and mortality rates of neonatal group B streptococcal disease through early diagnosis and chemoprophylaxis. J. Clin. Microbiol. 23: 489-492.

Morales, W.J., D.V. Lim, and A.F. Walsh. 1986. Prevention of neonatal group B streptococcal sepsis by the use of a rapid screening test and selective intrapartum chemoprophylaxis. Am. J. Obstet. Gynecol. 155:979-983.

Lim, D.V., W.J. Morales, and A. Walsh. 1987. Lim Group B Strep Broth and coagglutination for rapid identification of group B streptococci in preterm pregnant women. J. Clin. Microbiol.. 25:452-453.

Morales, W.J. and D.V. Lim. 1987. Reduction of group B streptococcal maternal and neonatal infections in preterm pregnancies with preterm rupture of membranes through a rapid identification test. Am. J. Obstet. Gynecol. 157:13-16.

Alberts, V.A., S.S. Khan, D.V. Lim, and D. Te Strake. 1989. Extracellular enzyme activity of some Saprolegniales from a Florida estuary. Mycologia. 81:460-463.

McGarey, D.J., T. Kraxberger-Beatty, V.A. Alberts, D. Te Strake, and D.V. Lim. 1990. Investigations of potential microbial pathogens associated with ulcerative disease syndrome (UDS) of Florida fish. *In* F.O. Perkins and T.C. Cheng (ed.) Pathology in Marine Science, p. 65-75. Academic Press, New York.

Kraxberger-Beatty, T., D.J. McGarey, H. Grier, and D.V. Lim. 1990. *Vibrio harveyi*, an opportunistic pathogen of snook, *Centropomus undecimalis,* held in captivity. J. Fish Dis. 13:557-560.

McGarey, D.J., L. Milanesi, *D.P. Foley, B. Reyes, L.C. Frye,* and D.V. Lim. 1991. The role of motile aeromonads in the fish disease, ulcerative disease syndrome (UDS). Experientia 47:441-444.

Jackson, R.J., *K. Gates,* R.J. Sheridan, and D.V. Lim. 1993. Degradation of collagen fibrils by group B streptococci. Curr. Microbiol. 26:141-145.

RESEARCH PUBLICATIONS (Continued):

Lim, D.V., **R.J. Jackson,** and **C. Pull-VonGruenigen.** 1993. Purification and assay of bacterial collagenases. J. Microbiol. Methods 18:241-253.

Jackson, R.J., M. Dao, and D.V. Lim. 1994. Cell-associated collagenolytic activity by group B streptococci. Infect. Immun. 62:5647-5651.

Jackson, R.J., M. Dao, and D.V. Lim. 1995. Modified FALGPA assay for cell-associated collagenolytic activity. J. Microbiol. Methods 21:209-215.

Leverone, M.R., T.C. Owen, F.S. Tieder, G.J. Stewart, and D.V. Lim. 1996. Resting cell dehydrogenase assay measuring a novel water soluble formazen detects catabolic differences among cells. J. Microbiol. Methods 25:49-55.

Morales, A., J. Garland, and D.V. Lim. 1996. Survival of potentially pathogenic human-associated bacteria in the rhizosphere of hydroponically-grown wheat. FEMS Microb. Ecol. 20:155-162.

Jackson, R.J., D.V. Lim, and M. Dao. 1997. Identification and analysis of a collagenolytic activity in *Streptococcus mutans.* Curr. Microbiol. 34:49-54.

Kalter, C.S., S.S. Dickey, D.V. Lim, and W.F. O'Brien. 1997. Effect of pH on migration of group B *Streptococcus* through human cervical mucus. Prenat Neonat Med 2:223-227.

Rayon, J., J. Carver, L. Wyble, D. Wiener, S. Dickey, V. Benford, L. Chen, and D. Lim. 1997. The fatty acid composition of maternal diet affects lung prostaglandin E_2 levels and survival from group B streptococcal sepsis in neonatal rat pups. J. Nutr. 127:1989-1992.

Ren, X., M.I. Konaklieva, H. Shi, S. Dickey, D.V. Lim, F.J. Gonzalez, and E. Turos. 1998. Studies on non-conventionally fused bicyclic beta-lactams. J. Org. Chem. 63:8898-8917.

DeMarco, D.R., E.W. Saaski, D.A. McCrae, and D.V. Lim. 1999. Rapid detection of *Escherichia coli* O157:H7 in ground beef using a fiber optic biosensor. J. Food Protection 62:711-716.

Morales, W.J., S.S. Dickey, P. Bornick, and D.V. Lim. 1999. Change in antibiotic resistance of group B *Streptococcus:* impact on intrapartum management. Am. J. Obstet. Gynecol. 181:310-314.

Turos, E., M.I. Konaklieve, R. Ren, H. Shi, J. Gonzalez, S. Dickey, and D.V. Lim. 2000. N-thiolated bicyclic and monocyclic beta-lactams. Tetrahedron. 56:5571-5578.

Lim, D.V. 2000. Rapid pathogen detection in the new millennium. NFPA Journal. 2:13-17.

Lim, D.V. 2001. Rapid biosensor detection of foodborne microbial pathogens. Microbiological Methods Forum Newsletter 18:13-17.

RESEARCH PUBLICATIONS (Continued):

Tims, T.B., S.S. Dickey, **D.R. DeMarco,** and D.V. Lim. 2001. Detection of low levels of *Listeria monocytogenes* within 20 hours using an evanescent wave biosensor. Am. Clin. Labor. 20:28-29.

DeMarco, D.R. and D.V. Lim. 2001. Direct detection of *Escherichia coli* O157:H7 in unpasteurized apple juice with an evanescent wave biosensor. J. Rapid Methods and Automation in Microbiology 9:241-257.

DeMarco, D.R. and D.V. Lim. 2002. Detection of *Escherichia coli* O157:H7 in 10- and 25-gram ground beef samples using an evanescent wave biosensor with silica and polystyrene waveguides. J. Food Protection 65:596-602.

Kramer, M.F., **T.B. Tims,** D.R. DeMarco, and D.V. Lim. 2002. Recovery of *Escherichia coli* O157:H7 from optical waveguides used for rapid biosensor detection. J. Rapid Methods and Automation in Microbiology 10:93-106.

Turos, E., T.E. Long, M.I. Konaklieva, C. Coates, J-Y. Shim, S. Dickey, D.V. Lim, and A. Cannons. 2002. *N*-Thiolated ß-Lactams: Novel antimicrobial agents for methicillin-resistant *Staphylococcus aureus.* Bioorg Med Chem Letts 12:2229-2231.

Coates, C., T.E. Long, E. Turos, S. Dickey, and D.V. Lim. 2003. *N*-Thiolated ß-lactam antibacterials: Defining the role of unsaturation in the C4 side chain. Bioorg Med Chem 11:193-196.

Lim, Daniel V. 2003. Real time/near real time detection of bioterrorism agents. Biodetection Technologies: Identification Innovations and Strategies, pp. 117-136. Knowledge Press, Brookline, MA.

Long, T.E., E. Turos, M.I. Konaklieva, A. L. Blum, A. Amry, E.A. Baker, L.S. Suwandi, M.D. McCain, M.F. Rahman, S. Dickey, and D.V. Lim. 2003. Effect of aryl ring fluorination on the antibacterial properties of C_4 aryl-substituted *N*-methylthio ß-Lactams. Bioorg Med Chem 11:1859-1863.

Lim, D.V. 2003. Detection of microorganisms and toxins with evanescent wave, fiber optic biosensors. Proc. IEEE 91: 902-907.

Tims, T.B. and D.V. Lim. 2003. Confirmation of viable *E. coli* O157:H7 by enrichment and PCR after rapid biosensor detection. J. Microbiol. Methods 55:141-147.

Harwood, V.J., N.C. Delahoya, R.M. Ulrich, M.F. Kramer, J.E. Whitlock, J.R. Garey, and D.V. Lim. 2004. Molecular confirmation of *Enterococcus faecalis* and *E. faecium* from clinical, fecal and environmental sources. Letts. Appl. Microbiol. 38:476-482.

RESEARCH PUBLICATIONS (Continued):

Kramer, M.F. and D.V. Lim. 2004. A rapid and automated fiber optic-based biosensor assay for the detection of *Salmonella* in spent irrigation water used in the sprouting of sprout seeds. J. Food Protection 67:46-52.

Donaldson, K.A., M.F. Kramer, and D.V. Lim. 2004. A rapid detection method for Vaccinia virus, the surrogate for smallpox virus. Biosensors and Bioelectronics 20:322-327.

Tims, T.B. and D.V. Lim. 2004. Rapid detection of *Bacillus anthracis* spores directly from powders with an evanescent wave fiber-optic biosensor. J. Microbiol. Methods 59:127-130.

Nyquist-Battie, C., L.E. Frank, D. Lund, and D.V. Lim. 2004. Optimization of a fluorescence sandwich enzyme-linked immunosorbent assay for detection of *Escherichia coli* O157:H7 in apple juice. J. Food Protection 67:2756-2759.

Lian, W., S.A. Litherland, H. Badrane, W. Tang, D. Wu, H.V. Baker, P.A. Gulig, D.V. Lim, and S. Jin. 2004. Ultra-sensitive detection of biomolecules with fluorescent dye-doped nanoparticles. Anal. Biochem. 334:135-144.

Simpson, J.M. and D.V. Lim. 2005. Rapid PCR confirmation of *E. coli* O157:H7 after evanescent wave fiber optic biosensor detection. Biosensors and Bioelectronics 21:881-887

Nyquist-Battie, C., L. Mathias, L.E. Frank, D. Lund, and D.V. Lim. 2005. Antibody-based detection of acid-shocked, acid-adapted, and apple juice-incubated *Escherichia coli* O157:H7. J. Immunoassay and Immunochemistry 26:259-271.

Turos, E., C. Coates, J-Y Shim, Y. Wang, J.M. Leslie, T.E. Long, G.S.K. Reddy, A. Ortiz, M. Culbreath, S. Dickey, D.V. Lim, E. Alonso, and J. Gonzalez. 2005. *N*-Methylthio ß-lactam antibacterials: effects of the C_3/C_4 ring substituents on anti-MRSA activity. Bioorg. Med. Chem. 13:6289-6308.

Lim, D.V., J.M. Simpson, E.A. Kearns, and M.F. Kramer. 2005. Monitoring for agents of bioterrorism/biowarfare. Clin. Microbiol. Rev. 18:583-607.

Heldreth, B., T.E. Long, S. Jang, G.S.K. Reddy, E. Turos, S. Dickey, and D. V. Lim. 2006. *N*-Thiolated ß-lactam antibacterials: effects of the *N*-organothio substituent on anti-MRSA activity. Bioorg. Med. Chem. 14:3775-3784.

Turos, E., R.K. Mishra, K.D. Revell, C.M. Coates, S. Dickey, and D.V. Lim. 2006. *N*-Thiolated 2-oxazolidinones: a new family of antibacterial agents for methicillin-resistant *Staphylococcus aureus* (MRSA) and *Bacillus anthracis.* Bioorg. Med. Chem. Lett. 16:2081-2083.

RESEARCH PUBLICATIONS (Continued):

Turos, E., T.E. Long, B. Heldreth, J.M. Leslie, S.K.R. Guntireddygari, Y. Wang, C. Coates, M. Konaklieva, S. Dickey, D.V Lim, E. Alonso, and J. Gonzalez. 2006. *N*-Thiolated ß-lactams: a new family of anti-*Bacillus* agents. Bioorg. Med. Chem. Lett. 16:2084-2090.

Turos, E., J-Y. Shim, Y. Wang, K. Greenhalgh, G.S.K. Reddy, S. Dickey, and D.V. Lim. 2007. Antibiotic-conjugated polyacrylate nanoparticles: new opportunities for development of anti-MRSA agents. Bioorg. Med. Chem. Lett. 17:53-56.

Turos, E., S.K. Reddy, K. Greenhalgh, S.A. Abeylath, S. Dickey, and D.V. Lim. 2007. Penicillin-bound polyacrylate nanoparticles: restoring the activity of beta-lactam antibiotics against MRSA. Biorg. Med. Chem. Lett. 17:3468-3472.

Nyquist-Battie, C., L. Freeman, J.P.S. Soberano, D. Lund, E. Kearns, and D.V. Lim. 2007. Effects of chlorine injury, starvation and Colitag enrichment on sandwich enzyme-linked immunosorbent assay (sELISA) detection of *Escherichia coli* O157:H7. J. Immunoassay Immunochem. 28:371-383.

Kramer, M.F., G. Vesey, N.L Look, B.R. Herbert, J.M. Simpson and D.V. Lim. 2007. Development of a *Cryptosporidium* oocyst assay using an automated fiber optic-based biosensor. J. Biol. Eng. 1:3.

Simpson-Stroot, J.M., E.A. Kearns, P.G. Stroot, S. Magaña, and D.V. Lim. 2008. Monitoring biosensor capture efficiencies: development of a model using GFP-expressing *Escherichia coli* O157:H7. J. Microbiol. Meth. 72:29-37.

Abeylath, S.C., E. Turos, S. Dickey, and D.V. Lim. 2008. Glyconanobiotics: Novel carbohydrated nanoparticle antibiotics for MRSA and *Bacillus anthracis.* Bioorg. Med. Chem. 16:2412-2418.

Turos, E., K.D. Revell, P. Ramaraju, D.A. Gergeres, K. Greenhalgh, A. Young, N. Sathyanarayan, S. Dickey, D.V. Lim, M.M. Alhamadsheh, K. Reynolds. 2008. Unsymmetric aryl-alkyl disulfide growth inhibitors of methicillin-resistant *Staphylococcus aureus* and *Bacillus anthracis.* Bioorg. Med. Chem. 16:6501-6508.

Kearns, E.A., S. Magana, and D.V. Lim. 2008. Automated concentration and recovery of microorganisms from drinking water using dead-end ultrafiltration. J. Appl. Microbiol. 105:432-442.

Brown, D.R., L.D. Wendland, G.J. Ortiz, M.F. Kramer, D.V. Lim, M.B. Brown, and P.A. Klein. 2008. Evanescent-wave biosensor for field serodiagnosis of tortoise mycoplasmosis. Vet. Immunol. Immunopathol. 124:322-331.

RESEARCH PUBLICATIONS (Continued):

Leskinen, S.D. and D.V. Lim. 2008. Rapid ultrafiltration concentration and biosensor detection of enterococci from large volumes of Florida recreational water. Appl. Environ. Microbiol. 74:4792-4798.

O'Driscoll, M., K. Greenhalgh, A. Young, E. Turos, S. Dickey, and D.V. Lim. 2008. Studies on the antifungal properties of N-thiolated beta-lactams. Bioorg Med. Chem. 16:7832-7837.

Nyquist-Battie, C., L. Freeman, K. Leckband, S. Martinez, A. Ansley, D. Lund, and D.V. Lim. 2008. Antibody-based detection of *Escherichia coli* O157:H7 and *Salmonella enterica* serovar Typhimurium grown in low-shear modeled microgravity. Micrograv. Sci. Technol. 20:23-28.

Denton, K.A., M.F. Kramer, and D.V. Lim. 2009. Rapid detection of *Mycobacterium tuberculosis* in lung tissue using a fiber optic biosensor. J. Rapid Methods and Automation in Microbiology 17:17-31.

Leskinen, S.D**.**, S.M. Schlemmer, E.A. Kearns and D.V. Lim. 2009. Detection of *E. coli* O157:H7 in Complex Matrices under Varying Flow Parameters with a Robotic, Fluorometric Assay System. Proc. SPIE 7167:71670J-1 – 71670J-10.

Lim, D.V., E.A. Kearns, S.D. Leskinen, S. Magaña, J. M. Stroot, D.M. Hunter and S. Schlemmer. Sample Preparation and Assay Refinements for Pathogen Detection Platforms. 2009. Proc. SPIE. 7167:71670O-1 – 71670O-10.

Leskinen, S.D. and D.V. Lim. 2009. Rapid dead-end ultrafiltration concentration and biosensor detection of enterococci from beach waters of Southern California. J. Water and Hlth. 7:674-684.

Garay-Jimenez, J.C., D. Gergeres, A. Young, S. Dickey, D.V. Lim, and E. Turos. 2009. Physical properties and biological activity of poly (butyl acrylate–styrene) nanoparticle emulsions prepared with conventional and polymerizable surfactants. Nanomedicine: Nanotechnology, Biology and Medicine. 5:443-451.

Lian, W., D. Wu, D.V. Lim, and S. Jin. 2010. Sensitive detection of multiplex toxins using antibody microarray. Anal. Biochem. 401:271-279.

Hunter, D.M. and D.V. Lim. 2010. Rapid detection and identification of bacterial pathogens using an ATP bioluminescence immunoassay. J. Food Protect. 73:739-746.

Leskinen, S.D., M. Brownell, D.V. Lim, and V.J. Harwood. 2010. Hollow fiber ultrafiltration used to concentrate microorganisms associated with human feces from various surface water types in Florida. Appl. Environ. Microbiol. 76:4116-4117.

RESEARCH PUBLICATIONS (Continued):

Buttice, A.L., J.M. Stroot, D.V. Lim, P.G. Stroot, and N.A. Alcantar. 2010. Removal of sediment and bacteria from water using green chemistry. Environ. Sci. Technol. 44:3514-3519.

Leach, K.M., J.M. Stroot, and D.V. Lim. 2010. Same-day detection of *E. coli* O157:H7 recovered from spinach using electrochemiluminescent and cytometric bead array biosensors. Appl. Environ. Microbiol. 76:8044-8052.

Hunter, D.M., S.D. Leskinen, S. Magana, S.S. Schlemmer, and D.V. Lim. 2011. Rapid ultrafiltration concentration and IMS/ATP-bioluminescence detection of *Escherichia coli* O157:H7 in recreational water and produce wash. J. Microbiol. Meth. 87:338-342.

Stroot, J.M., K.M. Leach, P.G. Stroot, and D.V. Lim. 2012. Capture antibody targeted fluorescence in situ hybridization (CAT-FISH): Dual labeling allows for increased specificity in complex samples. J. Microbiol. Meth. 88:275-284.

Hunter, D.M. and D.V. Lim. 2012. An IMS/ATP assay for the detection of *Mycobacterium tuberculosis* in urine. Tuberculosis Research and Treatment. doi:10.1155/2012/292605.

Ramaraju, P., D.Gergeres, E.Turos, S.Dickey, D.V. Lim, J. Thomas, and B. Anderson. 2012. Synthesis and antimicrobial activities of structurally novel S,S′-bis(heterosubstituted) disulfides. Bioorg. Med. Chem. Lett. 22:3623-3631.

Figueroa, J., S. Magaña, D.V. Lim, and R. Schlaf. 2012. Antibody immobilization using pneumatic spray: comparison with the avidin-biotin bridge immobilization method. Journal of Immunological Methods 386:1-9.

Leskinen, S.D., E.A. Kearns, W.L. Jones, R.S. Miller, C.R. Bevitas, M.T. Kingsley, R.L. Brigmon, and D.V. Lim. 2012. Automated dead-end ultrafiltration of large volume water samples to enable detection of low-level targets and reduce sample variability. Journal of Applied Microbiology. 113:351-370.

Daniel V. Lim
Curriculum Vitae

PUBLISHED ABSTRACTS:

Lim, D.V. and B.F. Watson. 1972. Ribonucleic acid synthesis in substrate-permeable *Escherichia coli.* Abstr. Ann. Meeting ASM, p. 177.

Lim, D.V. and B.F. Watson. 1974. Isolation and characterization of temperature-sensitive mutants of *Escherichia coli* specifically altered in DNA-dependent RNA polymerase. Abstr. Ann. Meeting ASM, p. 175.

Watson, B.F. and D.V. Lim. 1974. Heat-sensitive DNA-dependent RNA polymerase mutants of *Escherichia coli.* Fed. Proc. 33:1602.

Lim, D.V. and S.M.H. Qadri. 1975. Characterization of an enzyme reaction involved in biosynthesis of the secondary metabolite prodigiosin in *Serratia marcescens.* Abstr. Ann. Meeting ASM, p. 182.

Lim, D.V. and A.N. James. 1976. Ribonucleic acid and protein syntheses in *Neisseria gonorrhoeae* during growth and colony type change in a liquid, defined minimal medium. Abstr. Ann. Meeting ASM, p. 55.

Williams, R.P., D.V. Lim, and S.M.H. Qadri. 1976. Incorporation of amino acids into a secondary metabolite, prodigiosin, by aut, hut, and put mutants of *Serratia marcescens.* Abstr. Ann. Meeting ASM, p. 124.

Lim, D.V. 1977. Differences in susceptibility of virulent cells and virulent cells of *Neisseria gonorrhoeae* to antibiotics. Abstr. Ann. Meeting ASM, p. 76.

Ruiz, P. and D.V. Lim. 1977. Growth rate and colony stability of *Neisseria gonorrhoeae* on solid media and liquid media. Abstr. Ann. Meeting ASM, p. 365.

Lim, D.V., ***S. Day,*** and ***R. Smith.*** 1978. An improved method for rapid detection of streptococcal groups by a co-agglutination technique. Abstr. Ann. Meeting ASM, p. 299.

Recckio, R.A. and D.V. Lim. 1978. Conversion of *Neisseria gonorrhoeae* from virulent to avirulent colony types in a glucose-limited chemostat. Abstr. Ann. Meeting ASM, p. 84.

Lim, D.V. 1979. Identification of *Neisseria gonorrhoeae* by slide coagglutination. Texas. J. Sci. 31:199.

Lim, D.V. 1979. Grouping of beta-hemolytic streptococci by slide coagglutination. Texas J. Sci. 31:200.

Lim, D.V. and **T. Wall.** 1979. Rapid growth of streptococci in a modified liquid medium. Abstr. Ann. Meeting ASM, p. 338.

Lim, D.V. and **T. Wall.** 1979. Identification of *Neisseria gonorrhoeae* by a simple slide co-agglutination technique. Abstr. Ann. Meeting ASM, p. 347.

Pombier, E.C. and D.V. Lim. 1979. Penicillin susceptibility of rogenital isolates of *Neisseria gonnorrhoeae* in relation to auxotrophic requirements and serum resistance. Abstr. Ann. Meeting ASM, p. 9.

PUBLISHED ABSTRACTS (Continued):

Dutka, J. and **M.E. Salley.** 1979. Conversion of *Neisseria gonorrhoeae* from virulent colony types to avirulent colony types. Abstr. Ann. Meeting ASM, p. 45 (from the laboratory of D.V. Lim).

Pombier, E.C. and **R.A. Recckio.** 1979. Relationship between serum resistance and auxotrophy in *Neisseria gonorrhoeae.* Abstr. Ann. Meeting ASM, p. 42 (from the laboratory of D.V. Lim).

Lim, D.V., ***M.H. Marnell,*** and ***S.F. Friel.*** 1980. Rapid confirmatory identification of group B streptococci. Abstr. Ann. Meeting ASM, p. 302.

Marnell, M.H., S.F.Friel, and D.V. Lim. 1980. Confirmatory identification of group D streptococci by slide co-agglutination. Abstr. Ann. Meeting ASM, p. 297.

Mathews, H.S. and D.V. Lim. 1980. Effect of penicillin G on neuraminidase activity by group B streptococci. Abstr. Ann. Meeting ASM, p. 9.

Marnell, M.H. and D.V. Lim. 1981. Confirmatory identification of *Streptococcus pneumoniae* by slide co-agglutination. Abstr. Ann. Meeting ASM, p. 277.

Kanarek, K.S., D.V. Lim, P.R. Williams, J.S. Curran, and C. Brown. 1981. The relationship of group B streptococcal (GBS) colonization magnitude and GBS sepsis in newborn infants. Clin. Res. 29:898A.

Lim, D.V., K.S. Kanarek, and **M.E. Peterson.** 1982. Magnitude of colonization and group B sepsis in newborn infants. Abstr. Ann. Meeting ASM, p. 296.

Friedl, E.M. and D.V. Lim. 1982. Growth of auxotrophic *Neisseria gonorrhoeae* in enriched media. Abstr. Ann. Meeting ASM, p. 274.

Rigling, W.L. and D.V. Lim. 1982. Phagocytosis of group B streptococci by murine macrophages. Abstr. Ann. Meeting ASM, p. 58.

Peterson, M.E. and B.J. Yokel. 1982. Bacteriological analysis of Naples Bay and comparison of two enrichment methods for *Salmonella.* Abstr. Ann. Meeting ASM, p. 217.

Lim, D.V, **M.E. Peterson,** and K.S. Kanarek. 1982. Magnitude of colonization and group B streptococcal sepsis in newborn infants. APHA Abstracts.

Lim, D.V., ***E.M. Friedl,*** **M.E. Peterson,** and J.W. Frankel. 1982. Rapid identification of *Neisseria gonorrhoeae* by co-agglutination and growth of auxotrophic strains on enriched media. APHA Abstracts.

Peterson, M.E., D.V. Lim, and B.J. Yokel. 1983. Effect of pH, salinity, and temperature on the growth and toxin production of non-01 *Vibrio cholerae* in a defined medium. Abstr. Ann. Meeting ASM, p. 283.

Jimenez, E.M., ***C.E. Johnson, D.M. Normandin,*** and D.V. Lim. 1983. Identification of auxotrophic and prototrophic gonococci by coagglutination and immunofluorescence. Abstr. Ann. Meeting ASM, p. 314.

PUBLISHED ABSTRACTS (Continued):

Jones, D.E., ***E.M. Friedl,*** K.S. Kanarek, J.L. Angel, and D.V. Lim. 1983. Magnitude of colonization and transmission of group B streptococci from mothers to infants. Abstr. Ann. Meeting ASM, p. 371.

Jones, D.E., K.S. Kanarek, and J.L. Angel. 1983. Elimination of multiple reactions of the Phadebact *Streptococcus* coagglutination test. Abstr. Ann. Meeting ASM, p. 376 (from the laboratory of D.V. Lim)

Lim, D.V., **D.E. Jones,** K.S. Kanarek, and J.K Williams. 1983. Rapid, predictive diagnosis of group B streptococcal sepsis in newborn infants. Proceedings of the 13th International Congress of Chemotherapy.

Lim, D.V., **D.E. Jones,** and ***E.F. Jones.*** 1984. Rapid diagnosis of mothers delivering infants at risk for early-onset group B streptococcal disease. Abstr. Ann. Meeting ASM, p. 258.

Jimenez, E.M. and D.V. Lim. 1984. Growth of auxotrophic and prototrophic *Neisseria gonorrhoeae* on New York City, Martin-Lewis, and Thayer-Martin media. Abstr. Ann. Meeting ASM, p. 280.

Jones, D.E., ***E.F. Jones,*** and D.V. Lim. 1984. Patterns of maternal-infant colonization with group B streptococci. Abstr. Ann. Meeting ASM, p. 309.

Jimenez, E.M. and ***J.E. Hester.*** 1984. Effects of vancomycin levels on growth of auxotrophic and prototrophic *Neisseria gonorrhoeae.* Abstr. Ann. Meeting ASM, p. 17 (from the laboratory of D.V. Lim).

Colquhoun, B.F., K.C. Burke, and K.S. Kanarek. 1985. Maternal and neonatal serum antibody response to group B streptococcal infection. Abstr. Ann. Meeting ASM, p. 75 (from the laboratory of D.V. Lim).

Lim, D.V., W.J. Morales, S. Washington, and A.F. Walsh. 1985. Reduction of morbidity and mortality rates of neonatal group B streptococcal disease through early, rapid diagnosis and prophylactic chemotherapy. Proceedings of the 14th International Congress of Chemotherapy (Kyoto, Japan).

Sivils, R.T., **L. Chakkaphak,** and D.V. Lim. 1986. Nutritional requirements for group B streptococci. Abstr. Ann. Meeting ASM, p. 70.

Newman, K.A., W. Westra, **L. Mozdab,** and D.V. Lim. 1985. A fluorogenic assay for the rapid detection of fecal coliforms in water. Abstr. Ann. Meeting ASM, p. 295.

Lim, D.V., W.J. Morales, A.F. Walsh, and D. Kazanis. 1986. Reduction of morbidity and mortality rates of neonatal group B streptococcal disease in a preterm population. Abstr. Ann. Meeting ASM, p. 346.

Mozdab, L. 1986. Influence of different atmospheric conditions on growth of group B streptococci. Abstr. Ann. Meeting ASM, p. 70 (from the laboratory of D.V. Lim).

PUBLISHED ABSTRACTS (Continued):

Morales, W.J. and D.V. Lim. 1986. Prevention of neonatal group B streptococcal disease by rapid diagnosis. Proc. International Congress of Pediatrics.

Kraxberger, T.G., D. TeStrake, and D.V. Lim. 1987. Potential fish pathogens isolated from healthy and diseased fish in Florida. Abstr. Ann. Meeting ASM, p. 251.

Jackson, M.K., W.J. Morales, and D.V. Lim. 1987. Growth of group B streptococci in amniotic fluid of different gestation ages. Abstr. Ann. Meeting ASM, p. 50.

Beatty, T.G., D. Te Strake, and D.V. Lim. 1988. Isolation of *Aeromonas* and *Vibrio* from diseased fish in Florida. Abstr. Ann. Meeting ASM, p. 302.

Chipollini, J.A., W.J. Morales, and D.V. Lim. 1988. Rates of degradation of amniotic membranes by group B streptococci. Abstr. Ann. Meeting ASM, p. 56.

Howard, M.D. and D.V. Lim. 1989. Rapid, selective growth of *Listeria monocytogenes* in liquid media. Abstr. Ann. Meeting ASM, p. 429.

McGarey, D.J., T.G. Beatty, D. Te Strake, and D.V. Lim. 1989. The role of bacteria in the fish disease, ulcerative disease syndrome. Abstr. Ann. Meeting ASM, p. 286.

McGarey, D.J., *R.M. Wrona,* and D.V. Lim. 1989. Rapid identification of motile aeromonads by the Minitek and API nonfermenter system. Abstr. Ann. Meeting ASM, p. 349.

Anthony, M.L., *M.D. Howard,* and D.V. Lim. 1990. Comparison of culture techniques for recovery of microorganisms from environmental surfaces. Abstr. Ann. Meeting ASM, p. 290.

McGarey, D.J., *D. Foley,* and D.V. Lim. 1990. Serological detection of S-layer proteins in *Aeromonas* species. Abstr. Ann. Meeting ASM, p. 360.

McGarey, D.J., *D. Foley,* and D.V. Lim. 1990. Rapid identification of motile aeromonads by bacteriological and serological methods. Abstr. Ann. Meeting ASM, p. 351.

Werner, B.S. and D.V. Lim. 1990. Growth of *Listeria monocytogenes* in different media. Abstr. Ann. Meeting ASM, p. 285.

Kincaid, E. M., C.M. Strom, M.D. Malzahn, and D.V. Lim. 1991. Production of collagenase by group B streptococci under different incubation conditions. Abstr. Ann. Meeting ASM, p. 30.

Milanesi, L.E., D.J. McGarey, *D.P. Foley,* and D.V. Lim. 1991. Comparison of virulence associated factors of *Aeromonas* recovered from fish and humans. Abstr. Ann. Meeting ASM, p. 324.

Anthony, M.L., M.D. Malzahn, and D.V. Lim. 1991. Rapid growth and identification of *Salmonella* and *Shigella.* Abstr. Ann. Meeting ASM, p. 387.

PUBLISHED ABSTRACTS (Continued):

Jackson, R.J., *K.L. Gates,* R.J. Sheridan, and D.V. Lim. 1992. Degradation of amniotic collagen fibrils by group B streptococci. Microscopy Research and Technique, 22:403.

Strom, C.M. and D.V. Lim. 1992. Purification of collagenase from group B streptococci. Abstr. Ann. Meeting ASM, p. 69.

Jackson, R.J., ***K.L. Gates,*** R.J. Sheridan, and D.V. Lim. 1992. Degradation of amniotic collagen fibrils by group B streptococci. Abstr. Ann. Meeting ASM, p. 69.

Jackson, R.J., *K.L. Gates,* C.M. Pull, and D.V. Lim. 1993. Collagenase-producing environmental isolate of *Bacillus* spp. and Bacillus endophthalmitis. Abstr. Ann. Meeting ASM, p. 51.

Jackson, R.J. and D.V. Lim. 1994. Collagenase production by *Bacillus cereus* and Bacillus endophthalmitis. Abstr. Ann. Meeting ASM, p. 49.

Jackson, R.J., D.V. Lim, and M.L. Dao. 1994. Regulation of collagenolytic activity in *Streptococcus mutans.* Abstr. Ann. Meeting ASM, p. 73.

Jackson, R.J., M.L. Dao, and D.V. Lim. 1994. Collagenolytic activity by group B *Streptococcus.* Abstr. Ann. Meeting ASM, p. 73.

Leverone, M.R., D.V. Lim, and G.J. Stewart. 1994. Fatty acid degradation in *Pseudomonas.* Abstr. Ann. Meeting ASM, p. 279.

Jackson, R.J., M.L. Dao, and D.V. Lim. 1995. Characterization of the collagenolytic enzyme(s) of group B *Streptococcus.* Abstr. Ann. Meeting ASM, p. 175.

Morales, A., D.V. Lim, and J.L. Garland. 1995. Survival of potential human-associated pathogens in the rhizosphere of hydroponically grown wheat. Abstr. Ann. Meeting ASM, p. 334.

Leverone, M.R., T.C. Owen, and G.J. Stewart. 1995. Testing cell dehydrogenase assay measuring a water soluble formazen detects catabolic differences among cells grown in different carbon sources. Abstr. Ann. Meeting ASM, p. 539 (from the laboratory of D.V. Lim).

Rushing, G.D. and D.V. Lim. 1997. Purification of a collagenolytic enzyme from group B *Streptococcus.* Abstr. Ann. Meeting ASM, p. 37.

Dickey, S.S. and D.V. Lim. 1997. Rapid screening of group B streptococci by selective broth enrichment and an optical immunoassay. Abstr. Ann. Meeting ASM, p. 135.

Lim, D.V. 1998. Academic Positions: What Your Mother Never Told You! Abstr. Ann. Meeting ASM.

Coakley, M.B. and D.V. Lim. 1998. Purification of a collagenase from group B *Streptococcus.* Abstr. Ann. Meeting ASM.

Morrow, M.R., R. Widen, and D.V. Lim. 1998. A novel flow cytometry method for detecting group B *Streptococcus.* Abstr. Ann. Meeting ASM.

PUBLISHED ABSTRACTS (Continued):

DeMarco, D.R. and D.V. Lim. 1999. A portable evanescent wave fiber optic biosensor for the rapid detection of *Escherichia coli* O157:H7 in ground beef. Abstr. Ann. Meeting ASM, p. 513.

Ray, C.D. and D.V. Lim. 1999. Antibiotic resistance in group B *Streptococcus.* Abstr. Ann. Meeting ASM, p. 160.

Morrow, M.R., R. Widen, and D.V. Lim. 1999. Detection of group B *Streptococcus* using flow cytometry after capturing with paramagnetic beads. Abstr. Ann. Meeting ASM, p. 196.

Coakley, M.B. and D.V. Lim. 1999. Purification of a collagenase from group B *Streptococcus.* Abstr. Ann. Meeting ASM, p. 241.

LeHoullier, L.. and D.V. Lim. 1999. Induction of a collagenase in group B *Streptococcus.* Abstr. Ann. Meeting ASM, p. 241.

DeMarco, D.R. and D.V. Lim. 2000. Direct detection *E. coli* O157:H7 in apple juice and apple cider using a portable, evanescent wave fiber optic biosensor. Abstr. Ann. Meeting ASM, p. 512.

Tims, T.B., D.V. Lim, and **D.R. DeMarco**. 2000. Rapid detection of *Listeria monocytogenes* with an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p. 518.

Ray, C.D. and D.V. Lim. 2000. Erythromycin determinants *ErmB* and *MefA/E* in group B *Streptococcus.* Abstr. Ann. Meeting ASM, p. 15.

Kryder, C.D. and D.V. Lim. 2001. Detection of Cy5-labeled oligonucleotide with an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p. 156.

DeMarco, D.R. and D.V. Lim. 2001. Rapid detection of *Escherichia coli* O157:H7 in 10 and 25 gram ground beef samples using an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p. 573.

Tims, R., S.S. Dickey, and D.V. Lim. 2001. Detection of low levels of *Listeria monocytogenes* within 12-16 hours by an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p. 575.

Lim, D.V. 2002. Real time/near real time biosensor detection of bioterrorism agents. Proceedings of the Biodetection Technologies Conference, Alexandria, Maryland.

Bedenbaugh, C.M., M.F. Kramer, and D.V. Lim. 2002. A ganglioside-based assay for the identification of cholera toxin utilizing an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p. 37.

Tims, T. and D.V. Lim. 2002. Recovery of *Bacillus globigii* spores from fiber optic waveguides after rapid identification with an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p. 105.

Kramer, M.F., **T.B. Tims, D.R. DeMarco**, and D.V. Lim. 2002. Recovery of *Escherichia coli* O157:H7 from fiber optic waveguides used for rapid detection. Abstr. Ann. Meeting ASM, p. 369.

PUBLISHED ABSTRACTS (Continued):

DeMarco, D.R., T.B. Tims, and D.V. Lim. 2002. Biosensor detection and recovery of *Escherichia coli* O157:H7 from human fecal samples. Abstr. Ann. Meeting ASM, p.134.

de Groh, E.D., M.A. Psiaki, V.J. Harwood, and D.V. Lim. 2002. Sensitivity and specificity of *Escherichia coli* O157:H7 detection in untreated wastewater using an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p.432.

Varkey, S., A.C. Cannons, and D.V. Lim. 2002. Enhanced detection of DNA fragments with an evanescent wave biosensor using a signal amplification system. Abstr. Ann. Meeting ASM, p.145.

Trindade, T., M.F. Kramer, and D.V. Lim. 2002. Antibody-based detection of fecal enterococci utilizing an evanescent wave fiber optic biosensor. Abstr. Ann. Meeting ASM, p. 437.

Dickey, S.S.,M.F. Kramer, and D.V. Lim. 2002. Recovery of *Staphylococcus aureus* on surfaces using a swab-rinse technique vs. immersion technique. Abstr. Ann. Meeting ASM, p. 259.

Delahoya, N.C., M.F. Kramer, J.E. Whitlock, V.J. Harwood, and D.V. Lim. 2002. Survey of *Enterococcus* species from various sources using API 20 Strep and PCR methods for species identification. Abstr. Ann. Meeting ASM, p. 389.

Donaldson, K.A., M.F. Kramer, and D.V. Lim. 2003. Detection of vaccinia virus, a surrogate of the smallpox virus, from seeded throat culture swabs using a fiber optic biosensor assay. Abstr. Ann. Meeting ASM, p. 182.

Nyquist-Battie, C., D. Lund, K.A. Kearns, and D.V. Lim. 2003. F(ab')2 antibody fragments used as secondary antibodies improve detection of *Escherichia coli* O157:H7 in sandwich and non-sandwich enzyme-linked immunoassays (ELISAs) using commercially-available primary antibodies. Abstr. Ann. Meeting ASM, p. 498.

Kramer, M.F., P.A.Gulig, and D.V. Lim. 2003. A rapid and automated fiber optic-based biosensor assay for the detection of *Salmonella* in spent irrigation water used in the sprouting of sprout seeds. Abstr. Ann. Meeting ASM, p. 500.

Trindade, T., M.F. Kramer, and D.V. Lim. 2003. Antibody-based detection of microbial pathogens and indicator organisms in marine water utilizing an evanescent wave fiber optic biosensor. Abstr. Ann. Meeting ASM, p. 550.

Kearns, E.A., T.B. Tims, and D.V. Lim. 2003. The effect of chlorine, chloramines and chlorine neutralization on detection of *Escherichia coli* O157:H7 with an antibody-based fiber optic biosensor assay. Abstr. Ann. Meeting ASM, p. 604.

PUBLISHED ABSTRACTS (Continued):

Bedenbaugh, C.M., M.F. Kramer, and D.V. Lim. 2003. A ganglioside-based assay for the detection of cholera toxin utilizing an evanescent wave biosensor. Abstr. Ann. Meeting ASM, p. 650.

Look, N.I., M.F. Kramer, and D.V. Lim. 2003. Extraction and detection of *Bacillus anthracis* proteins for antigenic recognition of the spores. Abstr. Ann. Meeting ASM, p. 651.

Bedenbaugh, C.M, M.F. Kramer, and D.V. Lim. 2004. A ganglioside-based assay for the detection of cholera toxin in oyster homogenate utilizing an evanescent wave fiber optic biosensor. Abstr. Ann. Meeting ASM, p. 501.

Donaldson, K.A., N.L. Look, T.B. Tims, and D.V. Lim. 2004. The electronic TasteChip, a flow-through, microchip multi-analyte detection system. A ganglioside-based assay for the detection of cholera toxin in oyster homogenate utilizing an evanescent wave fiber optic biosensor. Abstr. Ann. Meeting ASM, p. 661.

Kearns, E.A., A. Bissing, T.B. Tims, S. Dickey, and D.V. Lim. 2004. Concentration of *B. subtilis* var. *niger* spores from water followed by detection using a fiber optic biosensor. Abstr. Ann. Meeting ASM, p. 592.

Kramer, M.F., N.L. Look, and D.V. Lim. 2004. Anti-*Cryptosporidium* oocyst polyclonal antibody utilized in immunoassays detects soluble antigen of *Cryptosporidium parvum* oocysts. Abstr. Ann. Meeting ASM, p. 551.

Look, N.L., M.F. Kramer, V.A. Luna, and D.V. Lim. 2004. Use of *Bacillus thuringiensis* spore coat proteins for antibody production and rapid biosensor immunoassay development. Abstr. Ann. Meeting ASM, p. 660.

Nyquist-Battie, C., L. Freeman, D. Lund, and D.V. Lim. 2004. Improvement of sandwich enzyme-linked immunoabsorbent assay detection of *Escherichia coli* O157:H7 in apple juice by the addition of polyvinylpyrrolidone. Abstr. Ann. Meeting ASM, p. 482.

Trindade, M.T., M.F. Kramer, and D.V. Lim. 2004. An evanescent wave fiber optic biosensor for the detection of fecal enterococci in beach water. Abstr. Ann. Meeting ASM, p. 548.

Bedenbaugh, C., M.F. Kramer, and D.V. Lim. 2005. A ganglioside-based assay for the detection of cholera toxin in oyster homogenate utilizing an evanescent wave fiber-optic biosensor. Abstr. Ann. Meeting ASM.

Kearns, E.A., S. Magaña, B. Dodge, A. Levine, R. Sorrells, and D.V. Lim. 2005. Development of a semi-dead end filtration system for concentration of bacterial spores from drinking water. Abstr. Ann. Meeting ASM.

Kramer, M.F. and D.V. Lim. 2005. Use of LPS-binding peptides for capture of gram negative bacteria in rapid detection of gram-negative bacteria using a fiber-optic biosensor. Abstr. Ann. Meeting ASM.

PUBLISHED ABSTRACTS (Continued):

Magaña, S., E.A. Kearns, D.V. Lim, A.K. Bailey, M.V. Tesone, and T.A. Postlethwaite. 2005. Development of rapid biosensor assays to detect *B. globigii* and *E. coli* O157:H7 using an automated array biosensor. Abstr. Ann. Meeting ASM.

Simpson, J.M. and D.V. Lim. 2005. Rapid PCR confirmation of *E. coli* O157:H7 after evanescent wave fiber optic biosensor detection. Abstr. Ann. Meeting ASM.

Trindade, M.T., M.F. Kramer, and D.V. Lim. 2005. An evanescent wave fiber optic biosensor for the detection of fecal enterococci in beach water. Abstr. Ann. Meeting ASM.

Lian, W., D.V. Lim, and S. Jin. 2005. Sensitive detection of pathogens and toxins using fluorescent nanoparticles in a microarray format. Abstr. Ann. Meeting ASM.

Lund, D., C. Nyquist-Battie, M.F. Kramer, and D.V. Lim. 2005. Isolation of anti-cholera toxin single chain Fv (scFv) antibody fragments from Tomlinson libraries using phage display followed by expression in *Escherichia coli* HB2151 cells. Abstr. Ann. Meeting ASM.

Freeman, L., C. Nyquist-Battie, D. Lund, and D.V. Lim. 2005. Effect of chlorine disinfectant on antibody-based detection of *Escherichia coli* O157:H7. Abstr. Ann. Meeting ASM.

Denton, K.A. and D.V. Lim. 2006. Rapid detection of *Mycobacterium tuberculosis* using a fiber optic biosensor. Abstr. Ann. Meeting ASM.

Kearns, E.A., S. Magaña, T. Postlethwaite, R. Sorrells, and D.V. Lim. 2006. Development of an automated on-line water monitor: field test results. Abstr. Ann. Meeting ASM.

Kramer,.M.F., U. Bläsi, and D.V. Lim. 2006. Use of phage P68 virion associated Protein 17 for detection of whole cells of *Staphylococcus aureus* using enzyme-linked assays. Abstr. Ann. Meeting ASM.

Mercado, Q.J., M.F. Kramer, and D.V. Lim. 2006. Use of polymyxin B for capture of gram negative bacteria in rapid detection of gram-negative bacteria using a fiber-optic biosensor. Abstr. Ann. Meeting ASM.

Shehane, S.D., **M.T. Trindade**, D. Wingfield**,** and D.V. Lim. 2006. Time required for detection of *Enterococcus* spp. in recreational coastal waters - Analyte 2000 biosensor assay versus EPA Method 1600. Abstr. Ann. Meeting ASM.

Nyquist-Battie, C., D. Lund, and D.V. Lim. 2006. Expression of single-chain variable-fragment (scFv) recombinant antibodies against cholera toxin in an insect cell line. Abstr. Ann. Meeting ASM.

PUBLISHED ABSTRACTS (Continued):

Nyquist-Battie, C., J-P. S. Soberano, L. Freeman, D. Lund, and D. V. Lim. 2006. Suitability of polyclonal antibodies to the rough mutant *Escherichia coli* J5 for immunoassay-based detection of the fecal indicator, *Eshcerichia coli.* Abstr. Ann. Meeting ASM.

Nyquist-Battie, C, J-P.S. Soberano, L. Freeman, K. Leckband, D. Lund, and D.V. Lim. 2006. Screening commercial polyclonal antibodies against the *Escherichia coli* reference collection (ECOR) for use in portable, evanescent wave, fiber-optic biosensors. ASM Biodefense Meeting.

Kearns, E.A., S. Magaña, and D.V. Lim. 2007. Concentration of *Escherichia coli* 0157:H7 from drinking water using an automated concentration system. Abstr. Ann. Meeting ASM.

Kramer, M.F.**,** U. Bläsi, and D.V. Lim. 2007. Use of phage P68 virion associated protein 17 for detection of whole cells of *Staphylococcus aureus* using biosensor assays. Abstr. Ann. Meeting ASM.

Leskinen, S.D., V.J. Harwood, and D.V. Lim. 2007. Near real-time detection of enterococci in recreational coastal waters by the Rec DEC-RAPTOR method. Abstr. Ann. Meeting ASM.

Magaña, S., M.F. Kramer, and D.V. Lim. 2007. Cross-reactivity of *Escherichia coli* O157:H7 antibody with wastewater background flora. Abstr. Ann. Meeting ASM.

Nyquist-Battie, C., E. Miller, D. Lund, and D. V. Lim. 2007. Production of polyclonal antibodies for the detection of *Salmonella enterica* serovars Typhimurium and Enteritidis using bacterial strains lacking the O antigen of the lipopolysaccharide. Abstr. Ann. Meeting ASM.

Schlemmer, S.M., M.F. Kramer, C. Nyquist-Battie, and D.V. Lim. 2007. Capture efficiency of gram negative bacteria by polymyxin B sulfate is increased by detergent in biosensor assays. Abstr. Ann. Meeting ASM.

Thompson, R. and D.V. Lim. 2008. Bacteriophage P68 Protein 17 as a capture and detection molecule for *Staphylococcus aureus* in biosensor assays. Abstr. Ann. Meeting ASM.

Schlemmer, S.M., S.D. Leskinen, and D.V. Lim. 2008. Indirect detection of gram negative bacteria by polymyxin B sulfate with a fiber optic biosensor. Abstr. Ann. Meeting ASM.

Leskinen, S.D. and D.V. Lim. 2008. Rapid assessment of enterococci in southern California recreational water by ultrafiltration concentration coupled to biosensor detection. Abstr. Ann. Meeting ASM.

Nyquist-Battie, C., D. Lund, J.E. Chu, E. Miller, and D.V. Lim. 2008. Detection of *Vibrio cholerae* using antisera produced by immunization with a synthetic peptide containing the sequence of a surface-exposed region of toxin-coregulated pilus protein A (TcpA). Abstr. Ann. Meeting ASM.

PUBLISHED ABSTRACTS (Continued):

Hunter, D.M. and D.V. Lim. 2008. Rapid detection and identification of bacterial pathogens using an ATP bioluminescence immunoassay. Abstr. Ann. Meeting ASM.

Leskinen, S. D., E. A. Kearns and D. V. Lim. 2009. Dead-end hollow fiber ultrafiltration with the automated concentration system for simultaneous recovery of *Bacillus atrophaeus* spores and MS2 bacteriophage directly from chloraminated tap water. Abstr. Ann. Meeting ASM.

Hunter, D. M., S. D. Leskinen and D. V. Lim. 2009. Detection of waterborne pathogens in concentrated recreational water using an ATP bioluminescence immunoassay coupled to PCR. Abstr. Ann. Meeting ASM.

Kearns, E. A., S. Leskinen and D. V. Lim. 2009. Characterization of an improved filter for recovery of microorganisms from water using an automated concentration system. Abstr. Ann. Meeting ASM.

Schlemmer, S. M., S. Magaña, and D. V. Lim. 2009. Method to concentrate and detect: Automated concentration system and lateral flow immunoassays. Abstr. Ann. Meeting ASM.

Battie, C., C. Ancheta, D. Lund, and D. V. Lim. 2009. Detection of *Vibrio cholerae* O1 using antisera produced by Genomic Antibody Technology using a plasmid containing the sequence of a surface-exposed protein of the toxin-coregulated pilus protein A (TcpA). Abstr. Ann. Meeting ASM.

Hunter, D.M., S. D. Leskinen and D. V. Lim. 2010. ATP bioluminescence immunoassay detection and PCR confirmation of *E. coli* O157:H7 in concentrated recreational water. Abstr. Ann. Meeting ASM.

Kearns, E. A., S.D. Leskinen and D. V. Lim. 2010. Automated dead-end hollow fiber ultrafiltration for simultaneous recovery of multiple organisms from tap water. Abstr. Ann. Meeting ASM.

Leach, K.M., J. M. Stroot, and D. V. Lim. 2010. Comparison of electrochemiluminescence, cytometric bead array, and immunomagnetic separation for detection of *E. coli* O157:H7 on fresh produce. Abstr. Ann. Meeting ASM.

Leskinen, S. D., E. A. Kearns and D. V. Lim. 2010. Initial field trials of the Automated Concentration System for recovery of fecal indicator bacteria from surface and ground waters of the Tampa Bay Area. Abstr. Ann. Meeting ASM.

Magaña, S., S.M. Schlemmer, and D.V. Lim. 2010. Method to concentrate and detect pathogens in produce wash: Automated Concentration System, lateral flow immunoassays, and MSD PR2 1500. Abstr. Ann. Meeting ASM.

Schlemmer, S.M., K. Leach, S. Magaña, and D.V. Lim. 2010. Optimizing *E. coli* O157:H7 detection on lateral flow immunoassays using concentration and immunomagnetic separation. Abstr. Ann. Meeting ASM.

PUBLISHED ABSTRACTS (Continued):

Schlemmer, S.M., S. Magaña, and D.V. Lim. 2011. Dispersal of *Bacillus* spore clumps to improve accuracy of spore counts for use in detection systems. Abstr. Ann. Meeting ASM.

Hunter, D.M. and D.V. Lim. 2011. Evaluation of an IMS/ATP assay for detection of *Staphylococcus aureus* in blood. Abstr. Ann. Meeting ASM.

Leskinen, S.D., E.A. Kearns, W.L. Jones, C.R. Bevitas, R.L. Brigmon, and D.V. Lim. 2011. Automated dead-end ultrafiltration for enhanced surveillance of *Legionella pneumophila* in cooling tower waters. Abstr. Ann. Meeting ASM.

Magaña, S., J. Figueroa, R. Schlaf, and D.V. Lim. 2011. A new improved fabrication technique of immunoassay waveguides for the detection of *E. coli* O157:H7. Abstr. Ann. Meeting ASM.

Hunter, D.M. and D.V. Lim. 2012. IMS/ATP isolation and detection of Gram-positive organisms in blood with PCR confirmation of *Staphylococcus aureus*/MRSA. Abstr. Ann. Meeting ASM.

Leskinen, S.D., E.A. Kearns, S. Deshpande, D.A. Cremers, R.A. Multari, and D.V. Lim. 2012. Evaluation of two methods for non-targeted detection of bacteria. Abstr. Ann. Meeting ASM.

Magaña, S., S.M. Schlemmer, and D.V. Lim. 2012. Method to concentrate and detect *E. coli* O157:H7 in high organic load lettuce wash. Abstr. Ann. Meeting ASM.

GRADUATE STUDENTS AND THESES (Current/most recent positions):

Edward C. Pombier (M.S., 1979) - Relationship between serum resistance and auxotrophy in *Neisseria gonorrhoeae* (Radiation Safety Officer, University of Miami)

Richard A. Recckio (M.S., 1979) - Growth of *Neisseria gonorrhoeae* in a chemostat (Microbiologist, Anheuser Busch/Houston)

Trevor Wall (M.S., 1980) - Mouse virulence of group B streptococci (Regulatory Affairs Officer, Bio-Rad)

Bruce Caldwell (M.S., 1980) - The effects of oxygen concentration on neuraminidase production by type III group B streptococci (Osteopath)

Harriet Mathews (M.S., 1981) - Effect of penicillin G on neuraminidase activity by group B streptococci (Faculty, Pasco-Hernando Community College)

Walter L. Rigling (M.S., 1982) - Phagocytosis of group B streptococci by murine macrophages (teacher)

Mary E. Peterson (M.S., 1983) - Effect of pH, salinity, and temperature on the growth and toxin production of non-01 *Vibrio cholerae* in a defined medium (Microbiologist, Dynamac/Kennedy Space Center)

Douglas E. Jones (M.S., 1983) - Magnitudes of colonization of group B streptococci in mothers and infants (Microbiologist, Chastain Skillman, Inc.)

Elaine M. Jimenez (M.S., 1985) - Effects of vancomycin and human serum on growth and survival of penicillinase-producing and non-penicillinase-producing *Neisseria gonorrhoeae* (Microbiologist, DynCorp)

Kelly C. Burke (M.S., 1985) - Antibody titers in colostra of maternity patients colonized with group B streptococci

Lynnette Chakkaphak (M.S., 1985) - The auxotrophic and growth requirements of group B streptococci (Director of Medical Technology, St. Vincent's Medical Center, Jacksonville)

Brian F. Colquhoun (M.S., 1986) - Antibody titers in sera of mothers and infants colonized with group B streptococci

Laila Mozdab (M.S. 1986) - Effect of carbon dioxide on the growth and metabolism of group B streptococci (Physician)

Melissa Jackson Bacic (M.S., 1987) - Amniotic fluid and growth of group B streptococci (Postdoctoral Fellow, East Carolina University School of Medicine)

Teresa (Kraxberger-Beatty) Fischer (M.S., 1988) - The isolation, identification, and characterization of bacteria from ulcerative fish from the St. Johns River system (Associate Professor, Indian River State College)

Jose Chipollini (M.S., 1988) - Collagenase production by group B strepto-cocci (Technical Director, Biosecurity and Food Safety, MOARC, LLC)

GRADUATE STUDENTS AND THESES (Continued):

Mia L. Anthony (M.S., 1990) - An accelerated procedure for the detection of *Salmonella* and *Shigella* (Microbiologist/Pharmacologist, Sanofi Winthrop)

Bobbi S. Werner (M.S., 1990) - The development of a rapid isolation, enrichment, and identification scheme for *Listeria* (Manager, Regulatory Affairs, Galderma Laboratories)

Donald J. McGarey (Ph.D., 1991) - The role of aeromonads in ulcerative disease syndrome and the development of serological methods for the rapid detection of S-layer proteins on *Aeromonas* (Professor, Kennesaw State University, Atlanta, GA)

Lori Milanesi (M.S., 1991) - Virulence factors of *Aeromonas* (Chief Microbiologist, Walt Disney World)

Erica Kincaid (M.S., 1992) - Factors influencing collagenase production in group B streptococci (Microbiologist, Procter & Gamble)

Christine Strom (M.S., 1992) - The partial purification of collagenolytic enzyme from group B *Streptococcus* (Microbiologist, Tropicana)

Christine Pull (M.S., 1994) - Detection and analysis of cell-associated caseinase from group B streptococci (Dentist)

Lorraine Cho-Chung-Hing (M.S., 1995) - Investigation of a potential collagenase gene in group B *Streptococcus* (Physician)

Anabelle Morales (M.S., 1995) - Survival of potentially pathogenic human-associated bacteria in the rhizosphere of hydroponically-grown wheat (Assistant Professor, Deleware Valley College)

Rosalind Jackson (Ph.D., 1996) - Collagenolytic activity by group B streptococci and its association with degradation of amniotic collagen fibrils (Research Associate, H. Lee Moffitt Cancer Center and Research Institute; deceased)

Marianne (Leverone) Kramer (Ph.D., 1996) - Fatty acid oxidation in *Pseudomonas* and partial DNA sequence of acyl-CoA synthetase in *Pseudomonas aeruginosa* PAK (Assistant Professor, East Tennessee State University)

Gregory Rushing (M.S., 1997) - Purification and characterization of collagenase from group B *Streptococcus* (Physician)

Bridgette Berryhill (M.S., 1997) - Construction of a group B *Streptococcus* genomic library and probing for a potential collagenase gene (Research Associate, Shriners Hospital for Crippled Children)

Lisa LeHoullier (M.S. 1998) - Induction of a potential collagenase in group B *Streptococcus* (Instructor, University of Tampa)

Matthew Morrow (M.S. 1998) - An evaluation of the use of flow cytometry to rapidly detect group B *Streptococcus* (Director of Flow Cytometry, USF Children's Research Institute)

Matthew Coakley (M.S. 1998) - Purification of a collagenase from group B *Streptococcus* (District Sales Manager, Medtronic)

GRADUATE STUDENTS AND THESES (Continued):

Raymond Kurz (Ph.D. 1998) - Removal of microbial indicators from stormwater using sand filtration, wet detention, and alum treatment best management practices (Environmental scientist, Ayres Associates, Inc.)

Crystal Ray (M.S. 2000) - Antibiotic resistance genes of group B *Streptococcus* (Research Assistant, University of South Florida)

Robert Allison (MPH 2000) (Research Assistant, University of South Florida)

William Rodriguez (M.S. 2001) - Iron requirements of *Streptococcus agalactiae* (Scientist, Sofamor Danek/Gen Surgical Corp)

Bryan Tims (M.S. 2001) – Rapid detection of *Listeria monocytogenes* with an evanescent wave biosensor (Research Assistant, Virginia State Laboratories)

Daniel DeMarco (Ph.D. 2001) – An evanescent wave fiber optic biosensor for the rapid detection of pathogenic bacteria using *E. coli* O157:H7 as a model organism for assay development (Senior Research Scientist, DuPont Corp.)

Diane Welson (M.P.H. 2001) (Research Assistant, Orange County Water Utilities)

Theresa Trindade (Ph.D. 2006) – Detection of pathogenic bacteria and fecal enterococci in recreational water with an evanescent wave fiber optic biosensor (Research Associate, University of South Florida)

Crystal Bedenbaugh (Ph.D. 2006) – Development of ganglioside-based assays for the identification of botulinum and cholera toxins utilizing an evanescent wave biosensor (Instructor, Southeastern University)

Kimberly Denton (M.S. 2006) – Rapid detection of *Mycobacterium tuberculosis* in lung tissue using a fiber optic biosensor (Technician, LifeLink)

Christie McCabe (M.S., 2009) – Binding efficiency of biosensor assays – A novel antibody-based capture matrix utilizing human serum albumin and streptococcal protein G to increase capture efficiency of bacteria

MEDICAL FELLOWS TRAINED IN RESEARCH:

Craig S. Kalter, M.D., Department of Obstetrics and Gynecology (1994-1995) - Migration of group B *Streptococcus* through cervical mucus

Jorge Rayon, M.D., Department of Pediatrics (1995-1996) - Nutrition and group B *Streptococcus* infection in neonatal rat pups

POSTDOCTORAL FELLOWS (Past Ten Years):

Daniel DeMarco, Ph.D. (2001-2002) (currently, Senior Research Microbiologist, DuPont Corporation)

Allyson Bissing-Gibson, Ph.D. (2002-2003) (currently, Senior Scientist, Tetracore)

Kim Donaldson, Ph.D. (2002-2004) (currently, U.S. Customer Service Manager, BioMerieux)

Eric Callahan, Ph.D. (2004-2005)

POSTDOCTORAL FELLOWS (continued):

Marianne F. Kramer, Ph.D. (2000-2007) (currently, Assistant Professor, East Tennessee State University)
Joyce Stroot, Ph.D. (2004-2011)(currently, Senior Microbiologist, Ciris Energy)
Kelly Leach, Ph.D. (2009-2011) (currently, Instructor, USF)
Elizabeth Kearns, Ph.D. (2001-)
Stephaney Leskinen, Ph.D. (2005-)

UNDERGRADUATE RESEARCH STUDENTS AND PROJECTS:

Rosella D. Smith (1977-1978), Project: Growth and metabolism of *Neisseria gonorrhoeae*
Phillip Ruiz (1977), Project: Growth of *Neisseria gonorrhoeae* in a liquid medium
Jill DeVeise (1977), Project: Virulence properties of *Neisseria gonorrhoeae*
Rick Calermo (1978), Project: Growth of *Neisseria gonorrhoeae*
Debra Rodriguiz (1978), Project: Inhibition of hemolytic streptococci
Susan D. Day (1978), Project: Growth of streptococci in different media
Michael Kambourelis (1978), Project: Growth of *Neisseria gonorrhoeae*
Russell Graham (1978), Project: Penicillinase activity in *Neisseria gonorrhoeae*
Mary H. Marnell (1979-1980), Project: Identification of streptococci by co-agglutination
Victor Ciccarelli (1979), Project: Growth of streptococci
Richard Silverberg (1979), Project: Growth of bacteria
Lloyd West (1979-1980), Project: Effect of incubation conditions on growth of *Neisseria gonorrhoeae*
Pat Krause (1979), Project: Growth of *Neisseria gonorrhoeae* in a liquid medium
Richard Thomas (1980), Project: Virulence factors of *Streptococcus pyogenes*
Shari Goodwin (1980), Project: Growth of bacteria
Deborah Jones (1980), Project: Growth of *Neisseria gonorrhoeae* in defined media
Norma Musson (1980), Project: Virulence properties of bacteria
Teresa Kraxberger Beatty (1981), Project: Penicillin resistance of *Streptococcus agalactiae*
Martin Wells (1981), Project: Virulence properties of bacteria
Joyce Lambert (1981), Project: Rapid growth of bacteria
Lori Ignaszewski (1981), Project: Virulence of *Streptococcus agalactiae* in mice
Elizabeth Friedl Jones (1981), Project: Identification of streptococci by co-agglutination
Mark Fowler (1982), Project: Growth and survival of *Neisseria gonorrhoeae*
Caryn Lobel (1982), Project: Rapid identification of *Streptococcus agalactiae*
Charles Gibson (1982), Project: Biochemical characteristics of pathogenic bacteria
Helen Bullock (1982), Project: Virulence factors of *Vibrio*
Cheryl Johnson (1982-1983), Project: Auxotrophic growth requirements of *Neisseria gonorrhoeae*
Diane Normandin (1982), Project: Transport of *Neisseria gonorrhoeae*
Tomas Gacio (1982), Project: Analysis of water for pathogenic bacteria
Carla Reeley (1983), Project: Identification of pathogenic bacteria

UNDERGRADUATE RESEARCH STUDENTS AND PROJECTS (Continued):

Joy Moritz (1984), Project: Isolation of *Chromobacterium violaceum* from lakes
Sue Hoffman (1984), Project: Isolation of *Chromobacterium violaceum* from lakes
Yolanda Sanchez (1985), Project: Virulence properties of bacteria
Rita T. Sivils (1985-1986), Project: Metabolic pathways of group B streptococci
Sharon Mohammed (1985-1986), Project: Antibiotic resistance of group B streptococci
Karen Newman (1985-1986), Project: Fluorogenic assays for fecal coliforms
William Westra (1985-1986), Project: Fluorogenic assays for fecal coliforms
Susan Lefave (1986), Project: Rapid identification of *Streptococcus agalactiae*
Earl Echon (1986), Project: Fluorogenic assay for bacteria
Kristina Nelson (1986), Project: Microbial pathogens of fish
Orlando Abadia (1986), Project: Microbial pathogens of fish
Lisa Young (1986), Project: Clinical isolates of *Streptococcus agalactiae*
Melany D. Howard (1986), Project: *Neisseria gonorrhoeae* and penicillinase production
Mike Wolfington (1987), Project: Fluorogenic assay for bacteria
Laura Currey (1987), Project: Direct test for identification of *Streptococcus agalactiae*
Lisa Young (1987), Project: Direct test for identification of *Streptococcus agalactiae*
Jennifer Hester (1987), Project: Isolation of pathogenic bacteria from fish
Deborah Greene (1988), Project: Tetrazolium-based assay for identification of bacteria
Mia Anthony (1988), Project: Microbicidal activity of disinfectants
Dayna Glockner (1989), Project: Growth of bacteria in liquid media
Daniel Foley (1989-1990), Project: Identification of *Aeromonas* from fish
Broc Pratt (1992), Project: Rapid identification of *Salmonella* and *Shigella*
Ricardo Gonzalez (1992), Project: Rapid identification of *Salmonella* and *Shigella*
Thomas H. Jennings (1992), Project: Development of collagenase screening assays
Kim Gates (1991-1993), Project: Purification of collagenolytic enzymes from *Streptococcus agalactiae*
Parimal Maniar (1993), Project: Purification of bacterial collagenases
Franceen Tieder (1993-1994), Project: Tetrazolium assay for fatty acid metabolism in *Pseudomonas*
Michelle Plantin (1994, American Cancer Society Summer Fellow), Project: Screening of group B streptococci for collagenase activity
Mary Flaten (1994, Biology Honors Student), Project: Collagen gel assay for group B *Streptococcus*
William Rodriguez (1997), Project: Siderophores produced by group B *Streptococcus*
Son-Hi Scruggs (1998, McNair Scholar), Project: Antibiotic resistance of group B *Streptococcus*

RECENT INVITED TALKS:

Rapid detection of pathogens using a fiber optic biosensor, Florida Public Health Association Annual Meeting, Tampa, FL (July 2000)

Real time/near real time biosensor detection of microbial pathogens, North Central Association of Food and Drug Officials, Grand Rapids, Michigan (October 2000)

Bacterial contamination and detection, Nationwide Satellite Transmission, NASA Network and Sunshine Network (December 2000)

Real time/near real time detection of foodborne pathogens using a fiber optic biosensor, USDA Agricultural Research Service Center, Wyndmoor, Pennsylvania (June 2001)

Biosensor detection of microbial pathogens, Florida Foodborne Pathogen Analysis Conference, St. Petersburg Beach, Florida (July 2001)

Rapid biosensor detection of pathogens in food and water, U.S. Army Solider and Biological Chemical Command Food Safety Workshop, Hunt Valley, Maryland (March 2002)

Real time/near real time biosensor detection of pathogenic microorganisms and toxins in food, water, and the environment, Florida Water Resources Conference, Orlando, Florida (March 2002)

Real time/near real time biosensor detection of bioterrorism agents, Biodetection Technologies Conference, Alexandria, Maryland (May 2002)

Behind Closed Doors: So You Want to Become a University Professor, American Society for Microbiology 103rd General Meeting, Washington, DC (May 2003)

Real time/near real time biosensor detection of pathogenic microorganisms and toxins in water, and the environment, 2002 Pool & Spa Expo, Dallas, Texas (October 2002)

Real time/near real time biosensor detection of pathogenic microorganisms and toxins in water, American Water Works Water Quality Technology Conference, Seattle, Washington (November 2002)

Battling bioterrorism with biosensors, Lunch with a Scholar, Tampa, Florida (January 2003)

Rapid biosensor detection of microbial pathogens/toxins, Consortium of Biological Defense Researchers Meeting, Lubbock, Texas (April 2003)

Real time/near real time biosensor detection of bioterrorism agents, American Industrial Hygiene Conference and Expo, Dallas, Texas (May 2003)

Rapid biosensor detection of microbial pathogens, Rapid Microbiological Measurement Methods Conference, Monterey, California (May 2003)

Battling bioterrorism with biosensors, BioSciences in Florida: Catalysts for Change Conference, Orlando, Florida (October 2003)

Battling bioterrorism with biosensors, Auburn University, Auburn, Alabama (January 2004)

Battling bioterrorism with biosensors, Scientists and Engineers Expanding Knowledge Luncheon, Sarasota, Florida (February 2004)

Battling bioterrorism with biosensors, Division of Infectious Diseases, Tufts University, North Grafton, Massachusetts (February 2004)

Battling bioterrorism with biosensors, Tampa Bay Chapter of Sigma Xi, Tampa, Florida (March 2004)

RECENT INVITED TALKS (Continued):

Insider Secrets to Academic Jobs, American Society for Microbiology 104th General Meeting, New Orleans, Louisiana (May 2004)

Biosensors Battling Bacteria and Bioterrorism, Discovery Day Keynote Speaker, Hillsborough Community College, Brandon, Florida (April 2005)

Rapid Biosensor Detection of Waterborne Pathogens, BioFlorida/Florida Marine Biotech Summit V, Gainesville, Florida (November 2006)

Rapid Biosensor Detection of Pathogens, 2006 Florida SBIR/STTR Conference, Tampa, Florida (March 2006)

Rapid Concentration/Biosensor Detection of Pathogens, Florida Research Consortium Annual Tech Transfer Conference, Miami, Florida (May 2007)

Rapid Concentration/Biosensor Detection of Pathogens, Florida Innovation Workshop, Orlando, Florida (March 2008)

Biosensors, Bugs, and Biodefense, University of Central Florida, Orlando, Florida (April 2008)

Sample Preparation and Assay Refinements for Pathogen Detection Platforms, Photonics West, San Jose, California (January 2009)

Sensor Technologies for Pathogens and Toxins, IAFP Annual Meeting, Anaheim, California (August 2010)

Integrated Rapid Sample Processing/Detection of Waterborne and Foodborne Pathogens, LabAutomation2011, Palm Springs, CA (February 2011)

Improving WMD surveillance and detection through concentration. U.S. Defense Threat Reduction Agency, Fort Belvoir, VA (August 2012)

SCIENTIFIC JOURNAL REVIEWER (Past Five Years):

Analytical Chemistry
Biosecurity and Bioterrorism
Biosensors and Bioelectronics
Journal of Bionanoscience
AWWA Journal
Journal of Virological Methods
Journal of Food Protection
Journal of Rapid Microbiological Methods
Journal of Microbiological Methods
Optics & Lasers in Engineering
Journal of Agricultural and Food Chemistry

BIOGRAPHICAL SKETCHES:

American Men and Women of Science
The International Who's Who of Contemporary Achievement
Who's Who in Frontier Science and Biotechnology
Who's Who in Medicine and Healthcare
Who's Who in Science and Engineering
Who's Who in American Education
Who's Who among Asian Americans
Who's Who in the South and Southeast
Who's Who in Technology
Who's Who in America
Who's Who in the World
Dictionary of International Biography
Men of Achievement

OTHER:

Inventor, Lim Broth (REMEL, Becton Dickinson Microbiology Systems, PML Microbiologicals, Hardy Diagnostics, Gibson Laboratories) (FDA Gold Standard for Identification of Group B Streptococci and Recommended by the Centers for Disease Control and Prevention)
U.S. Patent #6,476,015 (2002), "*N*-thiolated β-lactam antibiotics" (Co-Inventor)
U.S. Patent # 6,946,458 (2005), "*N*-thiolated β-lactam: Novel antibacterial agents for methicillin-resistant *Staphylococcus aureus*" (Co-Inventor)
U.S. Patent #7,759,639 (2010), "Directly coating biological molecules on glass surfaces using electrospray" (Co-Inventor)
U.S. Patent Pending, "ATP bioluminescence immunoassay" (Co-Inventor)
U.S. Patent Pending, "Automated concentration system" (Co-Inventor) (Licensed to Intellisense)
U.S. Patent Pending, "Capture antibody targeted fluorescent in-situ hybridization (CAT-FISH)" (Co-Inventor)
U.S. Patent Pending, "Automated particulate concentration system" (Co-Inventor)
Author, *Microbiology*, West Publishing Company (1989)
Author, *Microbiology,* Second Edition, Wm. C. Brown/McGraw-Hill (1998)
Author, *Microbiology,* Third Edition, Kendall/Hunt (2003)
Co-Author, *Introduction to Microbiology Laboratory Manual,* Contemporary Publishing Co (1995)
Author, "Microbiology" in *Encyclopedia of Life Sciences,* Macmillan (2000)

OTHER (Continued):
CDC Task Force on Preparedness and Response to Foodborne Bioterrorism (2001)
USF Chapter, National Academy of Inventors, Charter Member
President, Micro Concepts Research Corporation

RESEARCH INTERESTS:
Pathogenic microbiology, molecular biology, diagnostic microbiology, environmental microbiology, food and water microbiology; virulence mechanisms in pathogenic bacteria; probing and cloning of virulence genes; development of procedures for sample processing and rapid identification of bacteria; biosensors.

Richard S. Pollenz, Ph.D.
Associate Dean: Undergraduate Studies
Director: Office for Undergraduate Research
Professor: Department of Cell Biology, Microbiology and Molecular Biology
pollenz@usf.edu

EDUCATION

PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE, Philadelphia. PA
Bachelor of Science in **Toxicology**, Cum Laude; 5/11/83.
Honors: Dean's List, Griffith Scholarship, President's Award

NORTHWESTERN UNIVERSITY, Chicago IL
Ph.D. in **Cell, Molecular and Structural Biology**; September 1986 – March 1991.
Honors: Markey Fellowship for duration of doctoral studies.
Rex L. Chisholm, Ph.D., Dissertation Advisor.

POST-DOCTORAL EXPERIENCE

NORTHWESTERN UNIVERSITY, Chicago, IL
Post-doctoral Research; March 1991 – August 1991.
R. L. Chisholm Ph.D., Advisor

McARDLE LABORATORY FOR CANCER RESEARCH, Madison, WI
Post-doctoral Fellowship; October 1991 – October 1993.
Alan Poland M.D., Advisor
Research program was funded in part by NIH Postdoctoral Fellowship Grant awarded to RSP.

UNIVERSITY OF WISCONSIN, Madison, WI
Post-doctoral Fellowship; November 1993 – June 1994.
Richard E. Peterson Ph.D, Advisor

SUMMARY OF ACADEMIC/RESEARCH PROFESSIONAL EXPERIENCES

Research Technician: University of North Carolina; Department of Pharmacology June 1983- December 1985
Research Scientist: Burroughs Wellcome, Department of Molecular Biology Dec. 1985- July 1986
Assistant Professor: Medical University of South Carolina, Department of Biochemistry and Molecular Biology; July 1994 - June 1999
Associate Professor: Medical University of South Carolina, Department of Biochemistry and Molecular Biology; July 1999 - August 2000
Associate Professor: University of South Florida; Dept. Biology August 2000 – August 2007
Director of Undergraduate Studies, USF, CMMB Division; August 2006-October 2008
Professor: University of South Florida; CMMB Dept. July 2007 – present
Director of Graduate Studies, USF, CMMB Dept. July 2008 – December 2008
Associate Dean, USF Graduate School, September 2008 – July 2011
Associate Dean, USF Undergraduate Studies Aug 2011 - present
Director, .USF Office for Undergraduate Research, August 2011 - present

ACADEMIC ADMINISTRATION

Associate Dean: USF Graduate School *(September 2008 – August 2011; full time assignment)*
6,200 masters students in 97 programs and 2,300 doctoral students in 42 programs
10 colleges on USF-Tampa Campus
Staff supervised: 26
Direct Reports: 9

Key Responsibilities
Academics and Policy (Catalog and Graduate Council)
Graduate Petitions/Appeals/Grievances
Admissions
Thesis and Dissertation (Oversight of the ETD process)
Student Success and Diversity (Fellowships, Student Success Workshops)
Assessment and Accreditation (Graduate School SACS liaison)
Postdoctoral Affairs

Key Accomplishments as Graduate Associate Dean

• Revised entire ETD process and developed comprehensive tutorials, boot camps, Blackboard organization for thesis and dissertation students and comprehensive website (http://www.grad.usf.edu/thesis.asp). A presentation on this model will be presented at the Southern Conference of Graduate Schools Annual Meeting in Huntsville AL in February 2011.

• Developed paperless fellowship submission system and comprehensive website to assist students in the fellowship process (http://www.grad.usf.edu/grants.asp).

• Developed comprehensive website for grants and fellowships to assist students in obtaining extramural funding (http://www.grad.usf.edu/opportunities-for-gradstudent.asp). This initiative was accompanied with workshops to assist in grant writing and the submission process.

• Developed and delivered a Professional Development and Student Success Workshop series that offered 8-10 different sessions per semester (i.e. Demystifying Publication, Finding a Research Topic and Choosing a Mentor; Attending a Research Conference, Writing for Success, Developing Effective Oral Communication Skills). See the current list: http://www.grad.usf.edu/workshops.asp).

• Established comprehensive strategic goals for all units of the Graduate School.

• Generated several major reports on enrollment, retention, time to degree, job placement and other metrics that can be provided upon request.

Significant Committee Assignments as Graduate Associate Dean
Students of Concern Assistance Team
Enrollment Management Action Team
Associate Deans for Research Council
Associate Deans Council
Graduate Enrollment Management (Chair)
Academic and Administrative Assessment Committee
SACS Leadership Team
Graduate Council Policy and Curriculum Sub-Committees (Graduate School lead)
Graduate Associate Deans (Co-Chair)

Associate Dean: USF Undergraduate Studies and Director Office for Undergraduate Research
(August 2011 – present; full time assignment)
34,000 undergraduate students
10 colleges on USF-Tampa Campus
Staff supervised: 5
Direct Reports: 5

Key Responsibilities
Increase participation in undergraduate research
Track impact of UR on student retention and time to degree
Obtain extramural funding for UR efforts
Increase diversity for UR participants
Develop training and professional content
Assessment and Accreditation (QEP development)

FELLOWSHIPS, SCHOLARSHIPS, HONORS

Griffith Scholarship; 1982-1983
Presidents Award; 1983
Markey Fellowship; September 1986 to March 1991
NRSA Postdoctoral Fellowship; June 1993-July 1994
Health Sciences Foundation Developing Teacher Award; 1997-1998
Health Sciences Foundation Developing Scholar Award; 1998-1999
PharmD. Class of 2002 Professor of the Year; 1998-1999
Presidents Award for Academic Excellence; 2003

SERVICE ON GRANT REVIEW PANELS/STUDY SECTIONS

Agency: NIH
Panel: Center Grant for University of Cincinnati
Date: 5/2001

Agency: EPA
Panel: Futures Research Panel
Date: 6/2002

Agency: Alberta Heritage Foundation for Medical Research
Panel: Scholarship Applications
Date: 10/2002

Agency: NIH
Panel: NCI Futures Grants
Date: 5/2003

Agency: Center for Environmental and Rural Health (Texas A&M)
Panel: Pilot Project Program
Date: 6/2003

Agency: NIH
Panel: Xenobiotic and Nutrition Disposition and Action (XNDA)
Date: 8/2004

Agency: Minnesota Sea Grant College Program

Panel: Grant Program 2005-2007
Date: 8/2004

Agency: NIH
Panel: ADME Special Emphasis Panel
Date: 6/2005

Agency: NIH
Panel: Systems Special Emphasis Panel
Date: 5/2009

Agency: NIH
Panel: XNDA Study Section
Date: 2/20010

EDITORIAL REVIEWS

Journal Environmental Toxicology and Chemistry (Review Board, 96-99)
Molecular Pharmacology (ad hoc reviewer)
Biochemical Pharmacology (ad hoc reviewer)
Comparative Immunology (ad hoc reviewer)
Toxicological Sciences (ad hoc reviewer)
J. Biological Chemistry (ad hoc reviewer)
Molecular and Cellular Biology (ad hoc reviewer)
Archives of Biochem and Biophys (ad hoc reviewer)
Nucleic Acids Research (ad hoc reviewer)
J. Biochemistry (ad hoc reviewer)
Human Toxicology (ad hoc reviewer)
Zebrafish (ad hoc reviewer)

INVITED LECTURES/SEMINARS

Medical College of Chicago, 1991
University of Illinois at Chicago, 1991
Johns Hopkins University, 1992
Meharry Medical College, 1993
Southern Research Institute, 1993
Medical University of South Carolina, 1994
Fort Johnson (NOAA), 1995
The Institute of Wildlife and Environmental Toxicology, Clemson Univ. 1996
Michigan State University, Pharmacology and Toxicology, 1997
University of Texas Medical Branch, Pharmacology and Toxicology, 1999
Pollution Responses in Marine Organisms Conference (PRIMO), College of William and Mary, 1999
Clemson University, Dept. Biological Sciences, 1999
ASPET Meeting, Boston MA, 2000
Society of Toxicology Meeting, Nashville TN, 2002
Texas A & M University; Department of Veterinary Science, 2003
University of Georgia; Department of Pharmacology and Physiology, 2003
Texas A & M University; Department of Pharmacology and Toxicology, 2003
University of Texas Medical Branch, Department of Pathology, 2003
Society of Toxicology Annual Meeting, Baltimore, MD 2004
Society of Toxicology Annual Meeting, New Orleans, LA 2005

Georgetown University, Dept. Biological Sciences, 2005
University of Florida, Department of Pharmacology, 2005
Gordon Conference, Mechanisms of Toxicity, 2006
Louisville, Dept of Biochemistry, 2006
University of Memphis, Dept of Biology, 2007
University of South Florida, ERIC series, 2008
Duke University, 2008
Michigan State University, 2008
Furman University, 2008
Karolinska Institute (Stockholm, Sweden) 2010

CHAIRED SYMPOSIA SESSIONS AT NATIONAL MEETINGS

Society of Toxicology Annual Meeting, Nashville TN, 2002
Society of Toxicology Annual Meeting, Baltimore, MD 2004
Society of Toxicology Annual Meeting, New Orleans, LA 2005
Society of Toxicology Annual Meeting, New Orleans, LA 2006
Gordon Conference, Mechanisms of Toxicity, 2006
Society of Toxicology Annual Meeting, Charlotte, NC, 2007
Society of Toxicology Annual Meeting, Seattle, WA, 2008
Society of Toxicology Annual Meeting, Baltimore, MD 2009

PROFESSIONAL AFFILIATIONS

Society of Toxicology
- Student Poster Awards Committee (2002-2003; 2003-2004, 2004-2005, chair)
- Molecular Biology Specialty Section, Jr. Councilor (2003-2004)
- Molecular Biology Specialty Section, Sr. Councilor (2004-2005)
- Molecular Biology Specialty Section, VP-elect (2005-2006)
- Molecular Biology Specialty Section, VP (2006-2007)
- Molecular Biology Specialty Section, President (2007-2008)
- SOT Scientific Program Committee, (2008-2012)

Society of Pharmacology and Experimental Therapeutics (ASPET)
AAAS

FUNDING HISTORY

Total Direct Costs Generated as PI (1995-2010) $2,100,000
Total Indirect Costs Generated as PI (1995-2008) $697,000

COMPLETED

1994 (as post-doc)
IN VITRO BIOASSAY FOR THE DETERMINATION OF FISH-SPECIFIC TCDD EQUIVALENTS BY ASSESSMENT OF TCDD-REGULATED GENES
Agency: Wisconsin Sea Grant College Program (NOAA)
Principal Investigator: RE Peterson; **RS Pollenz; Associate Investigator**
Dates: 8/94-7/97
Amounts: $450,000dc over 3 years

1995-1996
DEVELOPMENT OF MODELS FOR THE STUDY OF ENVIRONMENTALLY-MEDIATED SIGNAL TRANSDUCTION AND DEVELOPMENT IN MARINE SPECIES
Agency: South Carolina Sea Grant Consortium (NOAA)
Principal Investigator: **RS Pollenz**
Dates: 12/95-11/98
Amount: $61,667 dc/year; $185,000 dc over 3 years

1997-2002
R29 ANALYSIS OF ARNT ISOFORMS IN *ONCORHYNCHUS MYKISS*
Agency: National Institute of Environmental Health Sciences (NIEHS)
Principal Investigator: **RS Pollenz**
Dates: 12/97-11/02
Amount: $70,000 dc/yr; $350,000 dc/$515,000 tc over 5 years

1999-2002
DEVELOPMENT OF AQUATIC BIOASSAY MODELS FOR EVALUATING PHYSIOLOGICAL BASED BIOMARKERS OF EXPOSURE
Agency: South Carolina Sea Grant Consortium (NOAA)
Principal Investigators: **RS Pollenz** and PJ Morris
Dates: 12/99-11/02
Amount: $57,333 dc/yr; $172,000 dc over 3 years

2000-2005 (extended to 2006)
RO1 ANALYSIS OF AH RECEPTOR DEGRADATION IN VIVO AND IN VITRO
Agency: National Institute of Environmental Health Sciences
Principal Investigator: **RS Pollenz**
Dates: 12/00-11/05
Amount: $160,000 dc/year; $800,000 dc/$1,200,00 tc over 5 years

2002
A NEW TEM MICROSCOPE FOR BIOLOGY
Agency: National Science Foundation
Principal Investigator: SK Pierce,
Co-Principal Investigator: **RS Pollenz** (co-PI)
Dates: 5/15/02
Amount: $144,017

2007-2010
R21 SCREENS TO IDENTIFY GAIN OF FUNCTION AH RECEPTOR MUTANTS INVOLVED IN DEGRADATION
Agency: National Institute of Environmental Health Sciences
Principal Investigator: **RS Pollenz**
Co-*Principal Investigator:* KS Schmidt
Dates: 5/07-4/08
Amount: $125,000 dc/year; $225,000 dc/ $330,750 over 2 years

ACTIVE

R21 A KNOCKOUT/KNOCKIN STRATEGY FOR ANALYSIS OF ARNT AND ARTN2 IN VIVO

Agency: National Institutes of Health
Principal Investigators: **RS Pollenz**, MJ Kern (Medical University of South Carolina)
Dates: 4/01/10-3/31/12
Amount: $250,000 dc/$405,000 tc.

PLANNED

IMPACT OF AH RECEPTOR DEGRADATION IN VIVO AND IN VITRO
Agency: National Institute of Health
Principal Investigator: **RS Pollenz**

PUBLICATIONS

Refereed Journal Articles

Bold = RSP corresponding author
Underlined = graduate student trained by RSP
Underlined/italic = undergraduate student trained by RSP

1) McCarthy, K.D., T. Harmon, J. Prime, and R.S. Pollenz. 1985. Receptor mediated phosphorylation of astroglial intermediate filament protein in cultured astroglia. *J. Neurochem*. 44: 723-733.

2) Pollenz, R.S., and K.D. McCarthy. 1986. Regulation of intermediate filament protein phosphorylation and cell morphology in cultured astroglia. *J. Neurochem*. 47: 9-21.

3) Besterman, J.M., R.S. Pollenz, E.L. Booker and P. Cuatrecasas. 1986. Diacylglycerol-induced translocation of diacylglycerol kinase: Use of affinity-purified enzyme in a reconstitution system. *Proc. Natl. Acad. Sci. USA* 83: 9378-9382.

4) Chisholm, R.L., A.M. Rushforth, R.S. Pollenz, E.R. Kuczmarski, and S.R. Tafuri. 1988. *Dictyostelium discoidium* myosin: Isolation and characterization of cDNAs encoding the essential light chain. *Mol. Cell Biol.* 8:794-804.

5) Hopkinson, S.B., R.S. Pollenz, I. Drummond, and R.L. Chisholm. 1989. Expression and organization of BP74 a cyclic AMP-regulated gene expressed during *Dictyostelium* development. *Mol. Cell Biol.* 9:4170-4184.

6) Pollenz, R.S., and R.L. Chisholm. 1991. *Dictyostelium discoidium* myosin essential light chain: Genomic structure and characterization. *Cell Motility and Cytoskel.* 20:83-94

7) Pollenz, R.S., T.L Chen, L. Trivinos-Lagos and R.L. Chisholm. 1992. The *Dictyostelium* essential light chain is required for myosin function. *Cell* 69:951-962.

8) Pollenz, R.S., C.A. Sattler and A.P Poland. 1994. The aryl hydrocarbon receptor and aryl hydrocarbon receptor nuclear translocator protein show distinct subcellular localizations in Hepa 1c1c7 cells by immunofluorescence microscopy. *Molecular Pharmacology* 45:428-438.

9) **Pollenz, R.S.** 1996. The Ah-receptor but not the Arnt protein is rapidly depleted in hepatic and non-hepatic culture cells exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin. *Molecular Pharmacology*. 49:391.

10) Jones, G.B., M.W. Kilgore, R.S. Pollenz, A. Li, J.E. Mathews, J.M. Wright, R.S. Huber, P.L. Tate, T.L. Price, and R.P. Sticca. 1996. Target directed enediyne prodrugs. hER and AHR degradation by a synthetic oxo-enediyne. *Bioorganic & Medicinal Chemistry Letters*. 6:1791-1797.

11) Zabel, E., R.S. Pollenz and RE Peterson. 1996. Relative potencies of individual polychlorinated dibenzo-p-dioxin, dibenzofuran and biphenyl congeners and congener mixtures based on induction of cytochrome P4501A. *Envir Tox and Chem*. 15: 2310-2318.

12) **Pollenz, R.S**., Sullivan, H.R., Holmes, J., Necela, B., and Peterson, R.E. 1996. Isolation and expression of cDNAs from rainbow trout that encode two novel bHLH/PAS protein with distinct functions in the presence of the aryl hydrocarbon receptor. *J. Biol. Chem*. 271: 30886-30896.

13) Walker, M.K., R.S. Pollenz and S.M. Smith. 1997. Expression of the aryl hydrocarbon receptor (AhR) and AhR nuclear translocator during chick cardiogenesis is consistent with 2,3,7,8-Tetrachlorodibenzo-p-dioxin-induced heart defects. *Tox. Appl. Pharm*. 143:407-419.

14) Holmes, J., and **R.S. Pollenz**. 1997. Determination of ARNT protein concentration and subcellular localization in hepatic and non-hepatic cell culture line. *Molecular Pharmacology*. 52:202-211.

15) **Pollenz, R.S**. and B. Necela. 1998. Characterization of two continuous cell lines from *Oncorhynchus mykiss* for models of AHR-mediated signal-transduction *Aquatic Toxicology* 41:31-49.

16) **Pollenz, R.S**., M.J. Santostefano, *E. Klett*, V. Richardson, B. Necela, and L.S. Birnbaum. 1998. A single oral dose of TCDD results in sustained depletion of AHR protein in female Sprague-Dawley rats. *Toxicological Sciences*. 42:117-128.

17) Roman, B.L. R.S. Pollenz, and R.E. Peterson. 1998. AHR and ARNT expression and CYP1A1 induction in the adult male rat reproductive tract. *Toxicol. Appl. Pharmacol*. 150228-239.

18) Wang, F. Hovick, D., Pollenz R.S., and Safe, S. 1998. Functional and physical interactions between the estrogen receptor Sp1 and nuclear aryl hydrocarbon receptor complexes. *Nuc. Acids Res*. 26:3044-3052.

19) Sommer, R.J., Sojka, K., Pollenz, R.S., Cooke, P., and Peterson, R.E. 1999. AHR and ARNT protein and mRNA concentrations in rat prostate: Effects of stage of development and TCDD. *Toxicol. Appl. Pharmacol*. **155**:177-189.

20) Henry, E.C., Kende, A.S., Rucci, G., Totleben, M.J., Willey, J.J., Derringer, S.D., Pollenz, R.S., Jones, J.P., Gasiewicz, T.A. 1999. Flavone antagonists stabilize the Ah receptor with hsp90 and inhibit nuclear uptake. *Molecular Pharm*. **55**:716-725.

21) Necela, B., and **Pollenz, R.S**. 1999. Functional analysis of activation and represssion domains with the rainbow trout ARNT protein *Biochemical Pharmacology* **57**:1177-1190.

22) Davarions, N.A. and **Pollenz, R.S**. 1999. Aryl hydrocarbon receptor imported into the nucleus following ligand binding is rapidly degraded via the cytoplasmic proteasome following nuclear export. *J. Biol. Chem*. **274**:28708-28715.

23) **Pollenz R.S**., N.A. Davarinos, and T.P. Shearer. 1999 Analysis of AHR-mediated signaling under physiological hypoxia reveals lack of competition for the ARNT transcription factor. *Molecular Pharm*. **56**:1127-1137.

24) Heid, S.E., Pollenz R.S, and Swanson H.I. 2000. Role of heat shock protein 90 in mediating agonist-induced activation of the aryl hydrocarbon receptor. *Molecular Pharm.* **57**:82-92

25) **Pollenz, R.S**., and Barbour, E.R. 2000 Analysis of the complex relationship between nuclear export and Ah receptor-mediated gene regulation. *Mol. Cell. Biol.* 20-6094-6105.

26) Mona A. Abdallah, Richard S. Pollenz, Frans N. Droog, Richard A. Nunamaker, Walter J. Tabachnick and Murphy, K.E. 2000. Isolation and characterization of a cDNA clone coding for a glutathione S-transferase Class Delta Enzyme from the biting midge Culicoides variipennis sonorensis. *Biochemical Genetics*, **38**:377-390.

27) Abdallah, M.A., R.S. Pollenz, R.A. Nunamaker, and K.E. Murphy (2000). Identification and characterization of a cDNA clone encoding the heat shock protein (Hsp60) from the biting midge, Culicoides variipennis sonorensis Wirth and Jones. *Biochemical Genetics* **38**: 154-162

28) Sojka, K., Kern, C. and **Pollenz R.S**. 2000 Subcellular localization expression of ARNT protein in developing mouse and chicken *The Anatomical Record* 260:327-334

29) Necela, B.N., and **Pollenz, R.S**. 2001. Role of C-terminal domain of rtARNTa in negative function *Biochem Pharm* 62:307-318

30) Dudley, AC, Peden-Adams, M., EuDaly, J, Pollenz, R.S., and Keil, D.E. 2001. An aryl hydrocarbon receptor independent mechanism of JP-8 jet fuel immunotoxicity in ah responsive and non-responsive mice. *Toxicological Sciences* 59:251-259

31) Sojka, K., and **Pollenz R.S**. 2001 Expression and subcellular localization of aryl hydrocarbon receptor nuclear translocator (ARNT) isoforms in developing rainbow trout. *Marine Biotechnology* 3:416-427.

32) **Pollenz, R.S**., Necela, B.N. and Sojka, K. 2002. Analysis of rainbow trout Ah-receptor isoforms in cell culture reveals conservation of function *Biochem Pharm* 64:49-60.

33) Cioffi, C.C., Pollenz, R.S., Middleton, D.L., Wilson, M.R., Miller, N.W., Clem., W., Warr, G.W., Ross, D.A. 2002. Oct2 transcription factor of a teleost fish: Activation domains and function from an enhancer. *Arch. Biochem. Biophys.* 404: 55-61

34) Song, Z., **Pollenz R.S**. 2002. Ligand dependent and independent modulation of AH receptor localization, degradation, and gene regulation. *Mol. Pharmacol* 62:806-816

35) Jones, GB; Wright, JM; Hynd, G; Wyatt, JK; Warner, PM; Huber, RS; Li, AW; Kilgore, MW; Sticca, RP; **Pollenz, RS**. 2002 Oxa-enediynes: Probing the electronic and stereoelectronic contributions to the Bergman cycloaromatization. *J. Organic. Chem*. 67:5727-5732.

36) Song, Z., **Pollenz R.S**. 2003 Functional Analysis of murine aryl hydrocarbon (AH) receptors defective in nuclear import: Impact of receptor degradation and gene activation. *Mol. Pharmacol*. 63:597-606

37) Wentworth, J, *Buzzeo R,* and **Pollenz R.S**. 2004. Functional characterization of aryl hydrocarbon receptor localization and degradation zebrafish *Biochem. Pharmacol*. 67:1363-72.

38) Campaigne Larsen, M, Brake, PB, Pollenz RS, and Jefcoate CR. 2004. Linked expression of AHR, CYP1A1 and CYP1B1 in rat mammary epithelia, in vitro, is each substantially elevated by specific extracellular matrix interactions that precede branching morphogenesis. *Toxicological Sciences*. 82:46-61

39) **Pollenz RS** and Dougherty EJ. 2005. Redefining the role of XAP2 and CHIP in the degradation of endogenous AHR in cell culture models. *J. Biol. Chem* 280:33346-33356.

40) **Pollenz RS**, *Popet J*, and Dougherty EJ. 2005. Role of the carboxy-terminal transactivation domain and active transcription in the ligand-induced degradation of the mouse Ah^{b-1} receptor. *Biochemical Pharmacology*. 70:162301633

41) Zeruth, G and **Pollenz R.S**. 2005 Isolation and characterization of the CYP1A1 gene and promoter from zebrafish *Zebrafish* 2:197-210

42) **Pollenz RS,** Wilson SE and Dougherty EJ. 2006 Role of the endogenous XAP2 protein on the localization and nucleocytoplasmic shuttling of the endogenous mouse Ah b-1 receptor in the presence and absence of ligand. *Molecular Pharmacol.* 70:1369-1376.

43) **Pollenz R.S** and Buggy C. 2006. Ligand dependant and independent degradation of the human aryl hydrocarbon receptor (hAHR) in cell culture models *Chem. Biol. Inter.* 164:49-59

44) **Pollenz RS.** 2007. Specific blockage of ligand-induced degradation of the AH receptor by proteasome but not calpain inhibitors in cell culture lines from different species. *Biochemical Pharm* 74:131-143

45) ZeRuth G and **Pollenz RS.** 2007. Functional analysis of cis-regulatory regions within the dioxin-inducible CYP1A promoter/enhancer region from zebrafish (Danio rerio). *Chem Biol Interact*. 170:100-113

46) Evans BR, Karchner SI, Allan LL, Pollenz RS, Tanguay RL, Jenny MJ, Sherr DH, Hahn ME. 2008. Repression of aryl hydrocarbon receptor (AHR) signaling by AHR repressor (AHRR): Role of DNA binding and competition for ARNT. *Mol Pharmacol.* 73(2):387-98

47) Dougherty EJ, **Pollenz RS**. 2008. Analysis of AH Receptor-ARNT and AH Receptor-ARNT2 Complexes In Vitro and in Cell Culture. *Toxicol Sci.* 103(1):191-206.

48) Kawajiri K, Kobayashi Y, Ohtake F, Ikuta T, Matsushima Y, Mimura J, Pettersson S, Pollenz RS, Sakaki T, Hirokawa T, Akiyama T, Kurosumi M, Poellinger L, Kato S, Fujii-Kuriyama Y. 2009. Aryl hydrocarbon receptor suppresses intestinal carcinogenesis in ApcMin/+ mice with natural ligands. *Proc Natl Acad Sci U S A.* 106:13481-13486.

Reports in Preparation or Submitted

Dougherty E and **Pollenz RS**. Role of ARNT and DNA binding in ligand-dependent degradation of the AH receptor

Invited Reviews and Technical Reports

1) McCarthy, K.D**.,** R.S. Pollenz, S. Burgess, P. Trimmer, L. Leuria and C. Ingraham. 1986. Astroglia: Receptors and their influence on intracellular processes. *Advances in Bioscience*. 61: 392-420.

2) Wilson, A.K., R.S. Pollenz, R.L. Chisholm and P. de Lanerolle. 1992. The role of myosin I and myosin II in cell motility. *Cancer and Metastasis Reviews* 11:79-91.

3) **Pollenz, R.S**. 1996. Linearity of Western blotting with ECL. *ECL Highlights #9*. Amersham Inc. Arlington Hts. IL.

4) **Pollenz, R.S.** 2002. Mechanism of Ah receptor down regulation (degradation) and its impact on AHR-mediated gene regulation. *Chemico Biological Inter.* 141:41-61

Books and Book Chapters

1) **Pollenz, RS**, M. Kimble and AC Cannons. 2004 *Experiments in Cell Biology* Kendall/Hunt Publishing, Dubuque, IA ISBN # 0-7575-1102-3

2) **Pollenz, RS**, M. Kimble and AC Cannons. 2005 *Experiments in Cell Biology* Kendall/Hunt Publishing, Dubuque, IA 2nd Edition

3) **Pollenz, RS**, M. Kimble and AC Cannons. 2008 *Experiments in Cell Biology* Kendall/Hunt Publishing, Dubuque, IA 3rd Edition

4) **Pollenz RS.** 2010 In *Comprehensive Toxicology 2nd Edition*. Chapter 2.08. PAS Proteins/Comparative Biology and Proteasomal Degradation. Elsevier Major Works

5) Dougherty E and **Pollenz RS**. 2010. In *Comprehensive Toxicology 2nd Edition*. Chapter 2.13. ARNT: A Key bHLH/PAS Regulatory Protein Across Multiple Pathways. Elsevier Major Works

Commentary

1) **Pollenz, RS** 2007. Letter Re "Calpain mediates the dioxin-induced activation and down regulation of the aryl hydrocarbon receptor". *Molecular Pharmacology* 71:384-385

Abstracts and Presentations at National Meetings (only presentations list since 2005)

Students are bolded

Zeruth, G, Wentworth J and Pollenz 2005. RS ISOLATION AND CHARACTERIZATION OF THE CYP1A1 PROMOTER REGION FROM ZEBRAFISH. Society of Toxicology Annual Meeting, New Orleans, LA

Pollenz RS and **Popat J.** 2005. The role of the COOH-terminal transactivation domain of the AHR in degradation and gene activation. Society of Toxicology Annual Meeting, New Orleans, LA

Dougherty, E, McQuown J and Pollenz RS. 2005 IMPACT OF NH-TERMINAL TAGS ON AH RECEPTOR LOCALIZATION, AND DEGRADATION IN CELL CULTURE. Society of Toxicology Annual Meeting, New Orleans, LA

RS Pollenz 2005. The Ubiquitin-Proteasome System in Regulation of Nuclear Transcription Factors and Signal Transduction Pathways. Society of Toxicology Annual Meeting, New Orleans, LA. Symposia Session

Zeruth, G and Pollenz RS. 2006. Functional analysis of the promoter/enhancer region of the CYP1A1 gene from zebrafish. Society of Toxicology Annual Meeting, San Diego, CA. (selected for platform presentation)

Wison SE and Pollenz RS. 2006. The role of endogenous XAP2 on the subcellular location and nucleocytoplamsic shuttling behavior of the endogenous Ahb-1 receptor. Society of Toxicology Annual Meeting, San Diego, CA. (selected for platform presentation)

Dougherty EJ and Pollenz RS. 2006. Functional analysis of mouse ARNT2 Ah receptor-mediated signal transduction. Society of Toxicology Annual Meeting, San Diego, CA. (selected for platform presentation)

Dahlin S, Boverhof DR, Zacharewski T, and Pollenz RS. 2006. Analysis of AH receptor protein concentration in liver and lung of C57BL1/6 mice exposed to a single oral dose of TCDD. Society of Toxicology Annual Meeting, San Diego, CA.

Pollenz RS. 2007 Reductions in the level of AHR has a dramatic impact on induction of CYP1A1 in cell culture lines. Society of Toxicology Annual Meeting, Charlotte, NC (selected for platform presentation)

Pollenz RS. 2007. Lack of a role of calpain proteases in the ligand induced degradation of the AHR in culture lines from different species. Society of Toxicology Annual Meeting, Charlotte, NC (selected for platform presentation).

Dougherty E and RS Pollenz. 2007. Analysis of ARNT2 function in AH receptor mediated signal transduction. Society of Toxicology Annual Meeting, Charlotte, NC (selected for platform presentation)

ZeRuth G and Pollenz RS. 2007. Functional analysis of the CYP1A1 promoter/enhancer region from Danio rerio (zebrafish). (selected for platform presentation)

ZeRuth G and Pollenz RS. 2008. Analysis of a putative FOXA1 binding site in the Danio Rerio CYP1A1 promoter/enhancer. Society of Toxicology Annual Meeting, Seattle, WA

Dougherty E and RS Pollenz. 2008. Ligand dependent differences of DNA binding by AHR-ARNT vs. AHR-ARNT2 complexes in vitro. Society of Toxicology Annual Meeting, Seattle, WA

Wilson SE, Schmidt, KH and Pollenz RS 2008. Characterization of AH Receptor and ARNT protein expression in yeast. Society of Toxicology Annual Meeting, Seattle, WA

Pollenz RS. 2008. Role of the cullin 4B, E6AP and MdM2 ubiquitin E3 ligaes enzymes in ligand-dependent and independent degradation of the AH Receptor. Society of Toxicology Annual Meeting, Seattle, WA

R Buzzeo, Dougherty EJ and Pollenz RS 2008. Role of DNA binding and dimerization with ARNT in the ligand induced degradation of the AH receptor. Society of Toxicology Annual Meeting, Seattle, WA

Wilson SE, Schmidt, KH and Pollenz RS 2009. Characterization of AH Receptor and ARNT protein expression in yeast. Society of Toxicology Annual Meeting, Baltimore MD

Pollenz RS. 2009. Society of Toxicology Annual Meeting, Baltimore MD

Wilson SE, Schmidt, KH and Pollenz RS 2010. Characterization of AH Receptor and ARNT protein expression in yeast. Society of Toxicology Annual Meeting, Salt Lake City, UT

GRADUATE STUDENT TRAINING

STUDENTS GRADUATED AS MAJOR PROFESSOR (papers published)

Hillary Root-Sullivan **(1),**	MS Biochemistry, MUSC 1996; Pioneer Chemical
Jennifer Holmes **(2),**	MS Biochemistry ,MUSC 1997; Practicing Law
Nikos Davarions **(2)**	MS Biochemistry, MUSC 1999; Earned MD degree
Brian Necela **(5)**	PhD Biochem. MUSC 1999; Res. Asso. Univ. of FL
Rick Barbour **(1)**	MS Biochemistry, MUSC 2000
Kate Marks-Sojka **(3)**	PhD Biochem. MUSC 2000; Scientist, DAKO Corp
Jeannette Wentworth **(1)**	MS CMMB, USF 2003; Federal Government Quantico, VA
Ed Dougherty, **(6)**	PhD CMMB, USF 2008; Postdoctoral Scholar, NIH
Gary ZeRuth **(2)**	PhD CMMB, USF 2008; Postdoctoral Scholar, NIEHS
Sarah Cuccinello (2)	PhD CMMB, USF 2011; Postdoctoral Scholar, USF
Kristine Griffith	PhD CMMB, USF 2011; Postdoctoral Scholar, Scripps Inst

GRADUATE COMMITTEES

The number or committees are to numerous to list.

POST-DOCS

Zhijuan (JoAnne) Song, PhD (2001-2002)

Mario de la Pena, MD. PhD (2002-2003)

Sarah Cuccinello, PhD (2011 – present)

UNDERGRADUATE STUDENTS MENTORED

Fall 2000
Nina Marshall, Melissa Otto, Maria Katsouli
Spring 2001
Maria Katsouli, Richelle Nalder
Summer 2001
Barbara Osborne
Fall 2001
Benjamin Lambright, Patroula Smpokou
Spring 2002
Annette Hendrix, Uday Metha, Jared Ehrhart, Karel Calero,
Fall 2002
Jared Ehrhart, Brandon Faza, Tareq Alsaghir, Taher Alsaghir, Eden Kleiman
Spring 2003
Jeffery Taylor

Summer 2003
Jesal Popat ***(Publication),*** Amanda Bingham,
Fall 2003
Amber Cockburn (USF Honors)
Spring 2004
Amber Cockburn (USF Honors College) 1st place in student poster competition
Maitri Kalia, Dana Levine,
Summer 2004
Younghee Kim, Greg Breaux,
Fall 2004
Priscilla Sato
Spring 2005
Priscilla Sato, Matthew Burgess, Sarah Dahlin ***(submitted Publication),***
Spring 2006
Jennifer Martin ***(submitted Publication)***, Kevin Nehaul, Mrunal Shah, Sarah Monte, Tara, Amato
Summer 2006
Joshua Eberhard (USF Honors College)
Fall 2006
Joshua Eberhard (USF Honors College)
Spring 2007
Andrew Vivas (Biology/USF Honors College)
Joshua Eberhard (USF Honors College)
Fall 2007
Andrew Vivas (Biology/USF Honors College)
Carlos Faza
Summer 2008
Joyce Jones
Amanda Tarkowski (USF Honors College)
Fall 2008
Joyce Jones
Amanda Tarkowski (USF Honors College)
Spring 2009
Joyce Jones
Amanda Tarkowski (USF Honors College)

DEPARTMENT OF BIOLOGY SERVICE (2000-present)

2000-2001
Faculty Advisory Committee
Developmental Biology Search Committee (Chair)
2001-2002
Faculty Advisory Committee (Chair)
Curriculum Committee
Developmental Biology Search Committee
Peer Review of Teaching
2002-2003
Faculty Advisory Committee (Chair)
Curriculum Committee
Cell Biology Search Committee (Chair)
Peer Review of Teaching

Honors Biology class lecture

2003-2004

Faculty Advisory Committee (Chair)
Curriculum Committee
Cell Biology Search Committee
Peer Review of Teaching
Honors Biology class lecture

2004-2005

Faculty Advisory Committee
Curriculum Committee
Cell Biology Search Committee (Chair)
Honors Biology class lecture

2005-2006

Faculty Advisory Committee
Curriculum Committee

2006-2007

Faculty Advisory Committee
Chair: CMMB UG curriculum committee
Associate Director: CMMB UG Studies

2007-2008

Faculty Advisory Committee
Chair: CMMB UG curriculum committee
Associate Director: CMMB Division UG Studies
Associate Director: CMMB Division Graduate Studies

2008-2009

Faculty Advisory Committee
Chair: CMMB UG curriculum committee
Associate Director: CMMB Department UG Studies (through Dec 2008)
Associate Director: CMMB Department Graduate Studies (through Feb 2009)

2010-2011

Faculty Advisory Committee

UNIVERSITY OF SOUTH FLORIDA SERVICE (2000-present)

2001-2002

College of Arts and Sciences Dean Search Committee

2002-2003

USF Radiation Safety Council

2003-2004

USF Radiation Safety Council
Graduate Marshal (Spring, Summer, Fall)

2004-2005

USF Radiation Safety Council (Chair)
Graduation Marshal (Spring, Fall)

2005-2006

CAS Faculty Advisory Committee, College of Arts and Sciences
USF Radiation Safety Council (Chair)
Graduation Marshal (Spring, Fall)

2006-2007

CAS Faculty Advisory Committee, College of Arts and Sciences

USF Radiation Safety Council (Chair)
Graduation Marshal (Spring, Fall)

2007-2008

CAS Faculty Advisory Committee, College of Arts and Sciences (Chair)
USF Radiation Safety Council (Chair)
Graduation and Convocation Committee member (through USF Faculty Senate)
Emerging Health Sciences Degree committee member (through Provost's office)
Graduation Marshal (Spring, Summer, Fall)

2008-2009

USF Radiation Safety Council
Graduation and Convocation Committee member (through USF Faculty Senate)
Graduation Marshal (Spring, Summer, Fall)
Associate Dean USF Graduate School

2009-2010

USF Radiation Safety Council
Graduation Marshal (Spring, Summer, Fall)
Associate Dean USF Graduate School (See committee list in cover letter)

2010-2011

Graduation Marshal (Spring, Summer, Fall)
Associate Dean USF Graduate School (see Academic Administration)

2011-2012

Graduation Marshal (Spring, Summer, Fall)
Associate Dean USF Undergraduate Studies (see Academic Administration)

COMMUNITY SERVICE IN TAMPA (2000-present)

Sports Related

2000: Head Soccer Coach U5 (Spring and Fall); Club Tampa Palms
2001: Head Soccer Coach U5 and U10 teams; Club Tampa Palms
2002-2003: Head Soccer Coach U12; North Tampa Soccer Association
2007: Freedom HS swim team meet timer
2007: FHSAA District swim meet timer
2008: Woman's Final Four Volunteer
2008: Freedom HS swim team meet director
2009: Freedom HS swim team head timer/scorer
2010: Freedom HS swim team scorekeeper
2011: Freedom HS swim team scorekeeper

Education Related

2001: Great American Teach In; Plant City High School
2001: Special Science Lecture; Tampa Palms Elementary School
2002: Sound technician for school play; Tampa Palms Elementary School
2003: Career Panel; Riverview High School, Newport Ritchie
2005: Special lecture for advanced science classes; Liberty Middle School
2005: Head Judge; Odyssey of the Mind Regional Competition
2005: Bathroom reconstruction, Tampa Palms Elementary School
2005: Fall Fundraiser Volunteer, Tampa Palms Elementary School
2005: Chaperone Volunteer, Liberty Middle School
2005: Faculty Lecture Program; Palm Harbor High School AP science class
2005: Faculty Lecture Program; "Great American Teach In ". Gulf High School four AP science classes

2005: Faculty Lecture Program; Lake Region High School AP science class
2006: Fall Fundraiser Volunteer, Tampa Palms Elementary School
2006: Chaperone Volunteer, Tampa Palms Elementary School
2006: Head Judge; Odyssey of the Mind Regional Competition
2006: Faculty Lecture Program, Brewster Technical Center
2007: Head Judge; Odyssey of the Mind Regional Competition
2008: Science Lectures to Liberty Middle School
2009: Science Lectures to Liberty Middle School
2010: Freedom High Score Keynote Speaker for Science and Math Scholars
2011: Great American Teach In, Franklin Middle Magnet School

Other

2002: Technical support; Masque Theater
2003: Set construction and stage manager assistant; Masque Theater
2003-2004: Vice President of Public Relations; Masque Theater, Temple Terrace
2004: Cast in Li'l Abner; Salerno Theater, Tampa, FL
2004: Stage Manager and Set construction; The Mouse Trap; Masque Theater, Temple Terrace

TEACHING AND COURSE DEVELOPMENT: MEDICAL UNIVERSITY OF SOUTH CAROLINA (1996-2000)

Intro. Biochemistry **MUSC College of Pharmacy.** **Co-Course Dir.**

Fall 1996, Fall 1997, Fall 1998, Fall 1999
Junior level; 60-80 students/class

In this course I was responsible for 19 lectures on cell structure and basic metabolism. This comprised 50% of the course and I worked with Dr. E. Spicer to set the lecture schedule, administer exams and compile the final grades. Dr. Spicer and I essentially redefined the course in 1996 by changing the text that had been previously used and restructuring the lectures. All lectures were administered in PowerPoint and accompanied by a 150-page syllabus containing lecture outlines, study guides, study songs and figures. *Voted professor of the year for 1998-1999 by the Pharmacy class of 2002.*

Advanced Biochemistry **MUSC College of Dentistry.** **Lecturer**

Spring 1997, Spring 1998, Spring 1999, Spring 2000
Junior level; 60-80 students/class

In this course I was responsible for delivery of 6 lecture hours dealing with cell structure, cell motility, muscle contraction and prostaglandin synthesis and biology. All lectures were administered in PowerPoint.

Cell and Molecular Biology **MUSC Graduate School** **Lecturer**

Fall 1996, Fall 1997, Fall 1998, Fall 1999
15-20 students/class

I was responsible for 6 hours of teaching. The topics were cells, organelles, cell culture and immunological methods. I provided the students with a take home examination in which some data analysis was required. A all lectures were administered in PowerPoint.

Advanced. Cell Biology **MUSC Graduate School** **Facilitator**

Spring 1998, Spring 1999
6 students

This course was a problem based learning format with 2 facilitators for each group of 6 students. Students were required to define a set of "learning issues" and work through a set of problems and selected journal articles. The facilitator was responsible for keeping the students on track and focusing the discussion toward the learning issues. 28-2hrs sessions comprise this course.

Involvement in Interdisciplinary Courses.

The following are graduate level courses that I have participated in as an invited lecture due to my expertise in environmental issues related to dioxin and other pollutants.

Special Topics in Environment	**MUSC Graduate School**
Drug Metabolism and Disposition	**MUSC Graduate School**
Molecular Microbiology	**MUSC Graduate School**

Involvement in Other Teaching Activities at MUSC

Medical School Summer Fellowship

Medical student Eric Klett and I were awarded a summer fellowship for lab work during the summer of 1996. The research carried out at that time was presented at the Society of Toxicology annual meeting (March 1996, Cincinnati OH) and was later published:

> **Pollenz, R.S.**, M.J. Santostefano, E. Klett, V. Richardson, B. Necela, and L.S. Birnbaum. 1998. A single oral dose of TCDD results in sustained depletion of AHR protein in female Sprague-Dawley rats. *Toxicological Sciences*. 42:117-128.

Mentoring Program
I participated in the Mentoring Program of the Charleston County School District. A high school student spends 40 hours in the lab over the course of 5-8 weeks learning about research and MUSC. I sponsored Audrey Thredkeild during 1996.

Shadowing Program
This is another program endorsed by Charleston Country Schools in which a high school student spends a day in the laboratory learning about research and the job of a Ph.D. I sponsored two students while at MUSC.

Parallel Curriculum of the MUSC College of Medicine.
In this program, students take a problem solving approach to learning medicine. Students are evaluated 4 times a semester in the clinical setting and then have to present the case and argue the biology behind it. During the intense exam, you can really challenge the student to understand the key issues. Each examination is approximately 2 hours and I have participated in at least 12 exams from 1998-2000.

TEACHING AND COURSE DEVELOPMENT: THE UNIVERSITY OF SOUTH FLORIDA (2001-PRESENT)

* All courses listed below were designed and delivered exclusively by RSP.

Cell Biology **USF Dept. Biology** **Course Director**

Spring 2001, Fall 2001, Fall 2002, Fall 2003, Fall 2005, Spring 2007, Spring 2008
Junior Level; 160-400 students/class

This junior level course is taught to 200-400 students and consists of twenty eight 75 minute lectures. The course is delivered in PowerPoint and is supported by a WEB site that contains PDF files of lecture outlines, practice problems, study guides, figures and digital animations of important concepts. The students also purchase a syllabus that contains homework problem sets and extra credit as well as study songs and supporting reference material. I have developed a series of karaoke songs that help in understanding of important concepts (G protein signaling, ΔG, amino acids, gene regulation, electron transport etc) that are delivered "karaoke" style each week. Tests are concept oriented and based on the format of the MCATs with the student required to get through several tiers.

Cell Biology Laboratory **USF Dept. Biology** **Course Director**

Spring 2001, Fall 2002, Spring 2003, Fall 2003, Fall 2005, Spring 2006; Spring 2007, Summer 2007, Spring 2008
Junior Level; 132 total students/22 in 6 different laboratory sections

I have completely redesigned this course since arriving at USF. The course manual was rewritten and was published by Kendall/Hunt in 2004. I completed revisions for the 3rd Edition in 2007 for Spring 2008 publication. I have prepared and instituted seven lab lectures that are given to the students outside of the lab section that bring uniformity to the course. As with the cell bio course, the lab is supported by a WEB site that contains lecture outlines, additional figures and other resources. *The manual for this course has been published by Kendall-Hunt; RS Pollenz primary author.*

Receptor Pharmacology **USF Dept Biology** **Course Director**

Spring 2002
Advanced Graduate Level; 6 students

This advanced graduate course was designed to expose the students to receptor kinetics and signal transduction systems. 6 lectures were given in support of problems sets and journal reviews. All exams were take home with data analysis.

Genetic Engineering **USF Dept Biology** **Course Director**

Spring 2003, Spring 2004, Fall 2004, Spring 2006, Fall 2006, Fall 2007
Graduate and advance Undergraduate; 20-30 students

This course was designed from scratch in 2003 with the goal of taking the students through modern genetic engineering principles. Topics covered include phage biology, cloning, PCR, antibodies, in vitro protein expression, transgenics, use of siRNA and gene chips. All exams are take home, open book with several in class exercises designed to test central concepts.

Receptor-Mediated Signal Transduction USF Dept Biology Course Director

Spring 2005
Advanced Graduate; 5 students

This advanced graduate course was designed to expose the students to the history of the aryl hydrocarbon receptor signal transduction pathway. The course is a combination of lecture and literature reviews that looks at the AHR pathway from 1968-2005. All exams were take home with data analysis.

Building a Leader Series: Building Research Skills USF Graduate School Course co-Dir.

Summer 2009
Advanced Graduate; 30 students

This graduate course was organized in collaboration with the USF Graduate School Dean (Karen Liller) to expose the students to various aspects of leadership and research skills. Content was based on many of the Graduate Student Success Workshops and included, *RCR, Oral Presentation Skills, Writing Skills, and Conference Presentation Skills.* Students were required to prepare an abstract/specific aims as well as short PPT for presentation to the class.

Learning 21th Century Science Using 18th Century Methods: USF Honors College Course Dir.

Fall 2010, Fall 2011
Non Majors Natural Science; Honors Undergraduates; 18-24students

This course is part of the general education curriculum. The course was designed around the concept of genetic engineering. Students were required to complete weekly readings and submit a summary paper. The course was not didactic but was a facilitated discussion on the ethics, science and impact of the readings. Students also were placed into 4 groups and had to complete team-building exercises and develop an 8-10 -minute "skit/performance" at the conclusion of the course that answered one of three genetic engineering challenge questions. The final performances had to be based on science but where required to meet certain "creative" elements in how the answer was presented (i.e. dialogue had to be in the form of limericks; lyrics to original songs needed to be written and performed karaoke style, etc).

Involvement in Other Teaching Activities at USF

Director of Undergraduate Studies in the CMMB Division of the Dept. Biology

Chair of Undergraduate Curriculum Committee CMMB Division of the Dept. Biology

Department of Biology Curriculum Committee; 2001-2006

USF Honors Program; Ms. Amber Cockburn: Honors Thesis Director 2003-2004
Mr. Joshua Eberhard: Honors Thesis Director 2006-2007
Ms. Amanda Tarkowski: Thesis Director 2007-2008

Lectures to the freshman Biology Honors class 2003-2005

Bridges Program (Fall 2007): Mentorship of minority students in lab rotations. Students were enrolled at Hillsborough Community College for enrollment in the Pharmacy Program at Florida A & M University.

Current: Graduate Student Success Seminar Series (http://www.grad.usf.edu/workshops.asp)

CONTINUING EDUCATION COURSES TAUGHT AT INTERNATIONAL MEETINGS

I have developed and delivered several continuing education "mini-courses" over the past several years at the SETAC and Society of Toxicology annual meetings

Society of Toxicology Annual Meeting, 2000, Philadelphia, PA. **Course Chair**; *ANTIBODIES AS REAGENTS TO EVALUATE TOXICANT-INDUCED SIGNAL TRANSDUCTION PATHWAYS*

Society of Toxicology and Environmental Chemistry, 2000; Nashville, TN; **Course co-Chair**. *RECEPTORS AND SIGNAL TRANSDUCTION IN ENVIRONMENTAL TOXICOLOGY*

Society of Toxicology Annual Meeting, 2001, San Francisco, CA, **Course co-Chair** *RECEPTORS AND SIGNAL TRANSDUCTION IN ENVIRONMENTAL TOXICOLOGY*

Society of Toxicology Annual Meeting, 2006, San Diego, CA, **Course Chair,** *ANALYSIS OF GENE AND PROTEIN EXPRESSION: From Experimental Design to Data Analysis*

Society of Toxicology Annual Meeting, 2008, Seattle, WA **Course Chair,** *PROCESS BASED APPROACHES TO MODULATING GENE AND PROTEIN EXPRESSION IN VIVO AND IN VITRO*

2012

CURRICULUM VITAE
TE STRAKE, DIANE (WAGNER MERNER)
Professor, Department of Cell Biology, Molecular Biology, and Microbiology

EDUCATION:

B.S. 1957, University of Florida
M.A. 1959, Duke University
Ph.D. 1963, Duke University

PROFESSIONAL EXPERIENCE:

Assistant Professor, 1960-62,Greensboro College, N.C.
Assistant Professor, 1966-67, California State College
Assistant Professor, 1967-70, University of South Florida
Assistant Chairperson, 1975-1979, University of South Florida
Associate Professor, 1970-90, University of South Florida
Professor, 1990- , University of South Florida
Interim Associate Dean, Research and Operations, College of Arts and Sciences, 1995-96, University of South Florida
Associate Dean, Research and Operations, College of Arts and Sciences 1996-2001
Associate Director Undergraduate Studies, Department of Cell Biology, Molecular Biology and Microbiology 2008-
Director, USF Herbarium 1/2010-

PROFESSIONAL MEMBERSHIP:

Mycological Society of America
Southeastern Association Botanical Society
North American Mycological Society
Voting Member of National Association of State Universities and Land-Grant Colleges (Section on Fish and Wildlife Resources)
American Association for the Advancement of Sciences (AAAS)
Mycology Society of American representative to AAAS 1999-2004

HONORS. AWARDS:

USF Research Council Award, 1972 Sigma Xi
Phi Sigma
Sabbatical Leave, Fall, 1982
Foreign Assistance Travel Stipend 1983, 1985, 1986, 1988, 1990
Gordon Conferences 1984, 1986, 1988, 1990, 1992, 1998,
Charter faculty member of USF Honors Committee (lead to Honors College)

GRANTS AND CONTRACTS RECEIVED:

Private Company: 1984-85. $1000. Condominium mold study.
Department of Environmental Regulation
$30,000. 1986-87 (with D. Lim): Microbiological Studies of Ulcerative Fish from Florida Estuaries.
$86,745. 1987-88 (3/1/-12/10). Study of Fish Pathogens Causing
Ulcerative Disease Syndrome (UDS) in Fish in the St. Johns River Estuary.

NASA/NOVA: 1999-2000 $70,000 Science Education Course Reform. (With Dr .Romeo and Dr. Zeidler)

GENERAL RESEARCH AREA: Marine and medically important fungi

SPECIFIC RESEARCH AREA:

The widely distributed saprobic fungus, *Basidiobolus*, is sometimes a pathogen of humans and other vertebrates, primarily in tropical areas. One long-range goal of my research is to obtain, information about the physiology, pathogenicity, and distribution of this fungus that is also reported to be an insect pathogen. With colleagues, I hope to determine how much variability exists among these taxa from temperate and tropical environments, and how it might relate to the pathogenicity of this fungus.

Other interests involve plant/fungal and plant/fungal/insect relationships. Several of these are focused in the marine and coastal environments.

CONTRIBUTIONS TO THE EDUCATION OF NON-SCIENCE AND SCIENCE STUDENTS AT THE UNIVERSITY OF SOUTH FLORIDA

Charter science faculty person in USF's first non-science Learning Community for first time in college students

Past member of College of Education and College of Arts and Sciences Science Education Liaison Committee.

Implemented Science Laboratory Up-grades Proposal for the College of Arts and Sciences in the role of Associate Dean

Coordinated the Science Center Renovation Project (50,000 sq. ft.) for College of Arts and Sciences

Participated in the interview and tenure process of all science candidates for the College of Arts and Sciences 1995-2001

Supported the Dean of CAS in promoting the implementation of the Florida State Sunshine Standards in Science and Literacy; involves coordination of events with the College of Education and the Coalition of Science Literacy and The Sun-Coast Area Center for Educational Enhancement

PAPERS PUBLISHED: (R=refereed)

Frye, B.E. and D. Te Strake. 1956. A preliminary survey of the habitat types of two species of *Cypripedium, C. calceolus var. pubescens and C. acaule.* Virginia Jour. Sci. 7: 176-188. (R)

Te Strake, D. 1959. Estuarine distribution and saline tolerance of some Saprolegniaceae. Phyton (Intenat'l. Jour. Exp. Bot.)12: 147-152. (R)

Wagner, D. Te Strake. 1965. Developmental morphology of *Leptosphaeria discors* (Saccardo and Ellis) Saccardo and Ellis. Nova Hedwigia 9: 45-61. (R)

Johnson, T.W. and D. Te Strake Wagner. 1967. Aquatic fungi of the Lake Itasca region. Duke University (mimeo) 111 pages.

Wagner, D. Te Strake. 1969. A monocentric, holocarpic fungus in *Lemna minor* L. Nova Hedwigia 18: 203-208. (R)

Wagner, D. Te Strake. 1969. Ecological studies on *Leptosphaeria discors*, a graminicolus fungus of salt marshes. Nova Hedwigia 18: 383-396. (R)

Wagner, D. Te Strake. 1970. Audience participation in demonstrating the Hardy- Weinberg Law in mass lecture. Bull. Assoc. S.E. Biologists 17: 75- 76. (R)

Wagner-Merner, D. Te Strake and C.J. Dawes. 1970. Taxonomic revision of *Saprochaetae saccharophila.* Mycologia 62: 791- 796. (R)

Wagner-Merner, D. Te Strake, G. Griepenburg, and K. Tyson. 1970. Mosses of the Tampa Bay Area. University of South Florida. 56 pp.

Wagner-Merner, D. Te Strake. 1972. Arenicolous fungi from the south and central Gulf Coast of Florida. Nova Hedwigia 23: 915-922. (R)

Bergen, L. and D. Te Strake Wagner-Merner. 1977. Comparative survey of fungi and potential pathogenic fungi from selected beaches in the Tampa Bay area. Mycologia 69: 299-671. (R)

Wagner-Merner, D. Te Strake. 1979. Observations on a trichomycete from *Uca pugilator* Mycologia 71: 669-671. (R)

Wagner-Merner, D. Te Strake. 1979. Dispersed fungal spores associated with a central Florida peat bog. Nova Hedwigia 31: 667-675. (R)

Wagner-Merner, D. Te Strake and J.M. Lawrence. 1980. Occurrence of fungi (Thraustochytriaceae) in the gut of *Lytechinus variegatus* (Lamarck) (Echinodermata: Echinoidea). Florida Scientist 43: 62-63. (R)

Wagner-Merner, D. Te Strake, W.R. Duncan and J.M. Lawrence. 1980. Preliminary comparison of Thraustochytriaceae in the guts of a regular and irregular echinoid. Botanica Marina 23: 93-97. (R)

Wagner-Merner, D. Te Strake. 1980. Estuarine distribution of Saprolegniaceae in the Tampa Bay area: I. Botanica Marina 23: 707-709. (R)

Eilers, F.I., D. Te Strake Wagner-Merner and J.*A.* Kimbrough. 1980. Rare occurrences of large mushrooms {*Tricholoma*)sp. Florida Scientist 43: 50-54. (R)

Wagner-Merner, D. Te Strake. 1980. Bryophytes of Hillsborough River State Park, Florida. I. Mosses. Castanea 45: 97-100. (R) ,

Yangco, B.G., J. Okafor and D. Te Strake. 1984. In Vito susceptibilities of human and wild- type isolates of *Basidiobolus* and *Conidiobolus* species. Antimicrobial Agents and Chemotherapy 25: 413-416. (R)

Okafor, J., D. Te Strake, H. Mushinsky and B.G. Yangco. 1984. A *Basidiobolus* sp. and its association with reptiles and amphibians in Southern Florida. Sabouraudia: *J.* of Vetern. Mycology 22: 47-51. (R)

Yangco, B.G., D. Te Strake and J. Okafor. 1984. *Phialophora richardsiae* isolated from infected human bones: morphological physiological susceptibility studies. Mycopathologia 86: 103-111 (R)

Halvorson, M., D. Te Strake and D.F. Martin. 1984. The effect of aponin, substances from a green alga *Nannochloris* sp., on spore germination of two fungi. Microbios 41: 105-113. (R)

Te Strake, D. and H. Aldrich. 1984. Ultrastructure of two associations involving marine fungi and green algae. Botanica Marina 26: 515-519. (R)

Te Strake, D., R.B. Lassiter, *I.A.* Lassiter and D.A. Breil. 1985. Bryophytes from mangroves and adjacent shoreline plant communities of Tampa Bay, Florida. Florida Scientist 49: 31-39. (R)

Te Strake, D. 1985. Fungi, their occurrence and potential roles in the Tampa Bay Ecosystem. p. 305-327. Tampa Bay Area Scientific Information Symposium. Simon, J. and E. Esteves (eds.). (R)

Yangco, B.G., A. Nettlow, J. Okafor, J. Park and D. Te Strake. 1986. Comparative antigenic studies of species of *Basidiobolus* and other medically important fungi. J. Clinical Microbiology 23(4):679-682. (R)

Te Strake, D. 1986. Ulcerative Mycosis: Research in Florida, Fourth Annual Neuse River Foundation Symposium. New Bern, N.C. p. 27-28.

Te Strake, D. and D. V. Lim. 1988. Bacterial and fungal studies of ulcerative fish in the St. Johns River. Department of Environmental Regulation, State of Florida. Report: contract WM138.

Okafor, J., H.C. Gugnani, D. Te Strake and B. Yangco. 1987. Extracellular enzyme activities by *Basidiobolus* and *Condidiobolus* isolates on solid media. Mykosen 30(9): 404-407. (R)

Te Strake, D., W.C. Jaap, E. Truby and R. Reese. 1988. Fungal filaments in *Millepora complanata* Lamarck, 1816 (Cnidaria: Hydrozoa) after mass expulsion of zooxanthellae. Florida Scientist 51: 184-188. (R)

Dykstra, M.J., J.F. Levine, E.J. Noga, J.W. Hawkins, P. Gerdes, W.J. Hargis, H.J. Hargis and D. Te Strake. 1989. Ulcerative Mycosis: A serious menhaden disease of the southeastern coastal fisheries of the United States. Journal of Fish Diseases 12: 175-178. (R)

Te Strake, D., J. Park and B. Yangco. 1989. Exoantigen comparisons of selected isolates of *Basidiobolus* species. Mycologia 81: 284-288. (R)

Alberts, V., S. Khan, D. Lim and Diane Te Strake. 1989. Extracellular enzyme activity of some Saprolegniaceae from a Florida estuary. Mycologia 81: 460-463. (R)

Cochrane, B., J. Brown, R. Wain, B. Yangco, and Diane Te Strake. 1989. Genetic studies in the genus *Basidiobolus* I. Isozyme variations among isolates of human and natural populations. Mycologia 81: 504-513. (R)

McGarey, D.J., T. Kraxberger Beatty, V.A. Alberts, D. Te Strake and D.V. Lim. 1990. Investigations of potential microbial pathogens associated with ulcerative disease syndrome (UDS) of, Florida fish. In F.O. Perkins and T.C. Cheng (ed) Pathology of Marine Science, pp. 65-75, Academic Press, New York. (R)

Nelson, R., D., Te Strake, B. Yangco, and B. Cochrane. 1990. Genetic studies in the genus *Basidiobolus*, phylogenetic relationships inferred from ribosomal DNA analysis. J. Exptl. Mycology 14: 197-206. (R)

Nelson, R., D., B. Cochrane, and D. Te Strake. 1998. The distribution of *Basidiobolus* and *Conidiobolus* in soil and litter at sites near Tampa, Florida. Mycologia 90: 121-134. (R)

Essig, F.B., Y. R. Taylor and D. Te Strake. 1999. Florida's Wax Palm: The Silver Form of *Serenoa repens* (Arecacaceae) Florida Scientist 63: 13-16. (R)

Nelson, R., B. Cochrane, P. Delis, and D. Te Strake. 2002. Basidioboliasis in Anurans in Florida. Journal of Wildlife Diseases. 38: 463-467.

TeStrake, D. 2003. AAAS Report to MSA. Inoculum: 54:17

TeStrake, D. 2006. Fungi Associated with Borrichia frutescens (Asteraceae): insect galls and endophytes. Sida. 22(1):755-763.

TeStrake, D. 2007. Ruminations. Pinesong August p.4

TeStrake, D. and R.P. Wunderlin. 2010. University of South Florida Herbarium 19p.

PAPERS PRESENTED (usually with abstracts):

Te Strake, D. and T .W .Johnson. 1958. A marine Labyrinthula parasitic in Rhizoclonium riparium. Association of Southeastern Biologists.

_____1965. Incidence of a graminicolous salt marsh fungus. American Institute of Biological Sciences.

_____1967. Observations of Reesia in Lemna minor. Florida Academy of Sciences.

_____ and A.A. Latina. 1968. Audience participation in demonstrating the Hardy Weinberg Law in mass lecture. Florida Academy of Sciences.

_____and L. Bergen. 1973. Late Pleistocene fungus spores from a Florida peat bog. Florida Academy of Sciences.

_____ 1973. Distribution of mycopropagules in sea foam from mid-Florida gulf beaches. Florida Academy of Sciences.

_____and G. Griepenburg. 1973. Field studies of two species of Leucobryum in West Central Florida. Florida Academy of Sciences.

_____.and L. Bergen. 1974. Noteworthy fungi from beach sands in the Tampa Bay area. Florida Academy of Sciences.

_____ and S. Lecroy. 1976. Fungi from the hindgut of Uca pugilator Bosc. Florida Academy of Sciences.

_____ and R. Jones. 1976. Preliminary observations of fungi occurring in coastal habitats in Hernando County, Florida. Florida Academy of Sciences.

_____ and F.I. Eilers. 1979. Unusual occurrences of large mushrooms. Florida Field Biologists Meeting.

Duncan, W., J .M. Lawrence and D. Te Strake. 1979. Comparison of Thraustochytriaceae in the guts of a regular and irregular echinoid. Third International Marine Mycology Symposium, Morehead City, N.C.

_____ and J. Spears. 1979. Estuarine distribution of Saprolegniaceae in the Tampa Bay area. Third International Marine Mycology Symposium. Morehead City, N.C.

Duncan, W. and D. Te Strake. 1980. Thraustochytriaceae (Myxomycota) in the guts of Echinoids. (Florida Academy of Science.) Florida Scientist 43 (Suppl.): 19.

Te Strake, D. and J. Spears. 1979. Estuarine distribution of Saprolegniaceae in the Tampa Bay, area. Third International Marine Mycology Symposium. Morehead City, N.C.

Duncan, W. and D. Te Strake. 1980. Thraustochytriaceae (Myxomycota) in the guts of Echinoids. (Florida Academy of Science.) Florida Scientist 43 (Suppl.): 19.

Yanco, B.G. and D. Te Strake. 1981. A bone infection caused by Phialophora richardsiae (Nannf.) (Florida Academy of Science.) Florida Scientist 44 (Suppl.): 46.

Halvorson, M., D.F. Martin and D. Te Strake. 1981. Mycostasis of fungal spores in sea foam and marine sediments. (Florida Academy of Sciences.) Florida Scientist 44 (Suppl.): 14.

Te Strake, D. and E.D. McCoy. 1981. Observations of Laboulbeniales on Florida earwigs. Florida Field Biologists Meeting.

_____ and E.D. McCoy. 1981. Laboulbeniales on Florida earwigs. (Mycological Society of America.) MSA Newsletter 32:50.

_____ M. Halvorson and D.F. Martin. 1981. Some effects of aponin on fungal spore germination. (Florida Academy of Sciences.) Florida Scientist 45 (Suppl.): 20.

_____ R. and J. Lassiter. 1982. Preliminary studies of distribution of mangrove bryophytes from Florida and Abaco, Bahamas. (Florida Academy of Sciences.) Florida Scientist 45 (Suppl.): 22.

_____ J .1. Okafor and H.R. Mushinsky .1982. Ecological studies on Basidiobolus sp.., a fungus occurring in the digestive tract of amphibians and reptiles. (Florida Academy of Sciences.) Florida Scientist 45 (Suppl.): 17.

Yangco, B. and D. Te Strake. 1982. Studies on Phialophora richardsiae isolated from infected human bone. American Society of Microbiologists, Atlanta. Published Abstracts.

J.Okafor, J., B.G. Yangco and D. Te Strake. 1982. Physiological studies on Basidiobolus sp. isolates from Florida and Africa. (American Institute of Biological Sciences.) Mycology Society America Newsletter 33:40.

Yangco, B.J., J.I. Okafor and D. TeStrake. 1983. Antifungal susceptibility studies of human and wild isolates of Basidiobo1us and Conidiobolus sp. and Conidiobolus sp. (American Society of Microbiologists, New Orleans.) ASM Abstracts.

Okafor, J.I., B.G. Yangco and D. Te Strake. 1983. Physiological comparisons of isolates of Basidiolobus. (American Society of Microbiology, New Orleans.) ASM Abstracts.

Baker, V., B.G. Yangco and D. Te Strake. 1983. Development of morphological forms of Basidiobolus and Conidiobolus through nutritional enhancers. (Florida Academy of Sciences.) Florida Scientist 46:43.

Te Strake, D. and H. Aldrich. 1983. Ultrastructure of fungi within the cell walls of two tropical marine green algae. (Mycological Society of America and American Phytopathological Society.) Phytopathology 73:852.

___ D., H. Mushinsky and J.I. Okafor. 1983. Distribution of Basidiobolus sp.. in the digestive tract of some amphibians and reptiles from Florida. (Association of Southeastern Biologists.) A.S.B.Abstracts 30:86.

Mattson, R. and D. Te Strake. 1983. Trichomycetes in Brachyurans (true crabs) from Tampa Bay, Florida. The Third International Mycological Congress, Tokyo, Japan.

Baker, V., B.G. Yangco, J. Okafor and D. Te Strake. 1983. The effect of nutrition on morphology and black pigment production of Basidiobolus spp. The Third International Mycological Congress, Tokyo, Japan.

Baker, V., B.G. Yangco and D. Te Strake. 1984. The effects of asparagine and dextrose on growth, pigment and protein production in 4 species of Basidiobolus. (American Society of Microbiology Society, St. Louis.) ASM Abstracts.

Wain, R., J. Brown, B.J. Yangco and D. Te Strake. 1984. Electrophoretic studies of selected enzymes of isolates of Basidiobolus. (Mycological Society of America.) MSA Newsletter 35:45.

Brown, J.K., R.P. Wain, B.G. Yangco and D. Te Strake. 1984. Studies of selected enzymes of isolates of Basidiobolus using electrophoresis. Southeastern Branch, American Society of Microbiology, Clearwater.

Park, J.,A.Nettlow, B.G.Yangco and D. Te Strake. 1984. Preliminary exoantigenic studies of several species of Basidiobolus. Southeastern Branch, American Society of Microbiology, Clearwater.

Yangco, B.G., J. Okafor and D. Te Strake. 1984. susceptibilities of etiological agents of entomophthoromycosis to some imidazole derivatives. Charter Conference of Inter-American Society of Chemotherapy, St. Petersburg.

Brown, J.K., R. Wain, B.G. Yangco and D. Te Strake. 1985. Immunologic and electrophoretic studies of species of Basidiobolus. (American Society Microbiology, Las Vegas.) ASM Abstracts p. 373.

Nettlow, A., J. Park, B.G. Yangco, J. Okafor and D. Te Strake. 1985. Exoantigenic Studies of Several Species of Basidiobolus. (American Society Microbiology, Las Vegas.) ASM Abstracts.

Te Strake, D., J. Park, J. Brown and B.G. Yangco. 1985. Ultrastructural studies of an isolate of Basidiobolus. (Florida Society of Electron Microscopy, Tampa.) Abstracts p. 19.

_____ and B.G. Yangco. 1985. Scanning Electron Microscopy of a fungus isolated from infected human bone. (Florida Society of Electron Microscopy, Tampa.) Abstracts p. 19.

_____ and H. Aldrich. 1985. Ultrastructure of cell walls of two marine green algae containing fungi. (Florida Society of Electron Microscopy, Tampa.) Abstracts p. 19.

_____ A. Nettlow, J. Brown, J. Park, R. Wain, B.G. Yangco and J. Okafor. 1985. Immunologic and electrophoretic studies of species of Basidiobolus. (International Society of Human and Animal Mycoses, Atlanta.) Published Abstracts.

Ledford, D.K., R.F. Lockey, D. Serbousek, J. Park and D. Te Strake. 1985. Studies on airborne fungal spores and pollens during grass mowing. (International Society of Human and Animal Mycoses, Atlanta.) Published Abstracts.

Mattson, R., J. Simon and D. Te Strake. 1985. Occurrence and abundance of Eccrinales in Brachyuran crabs from Tampa Bay. (The Fourth International Marine Mycology Symposium, Portsmouth, United Kingdom.) Published Abstracts.

Nettlow, A., J. Park, B.G. Yangco, J. Okafor and D. Te Strake. 1985. Antigenic relationships among species of Basidiobolus and Conidiobolus as determined by an immunodiffusion test. (American Society of Microbiology.) ASM Abstracts p. 377.

Park, J., J. Brown, B.G. Yangco and D. Te Strake. 1985. Ultra-structural studies of an isolate of Basidiobolus. (Florida Society of Electron Microscopy, Tampa.) Abstracts p. 19.

Te Strake, D. and B.G. Yangco. 1985. Scanning electron microscopy of a fungus isolated from infected human bone. (Florida Society of Electron Microscopy, Tampa.) Abstracts p. 19.

_____ and H. Aldrich. 1985. Ultrastructure of cell walls of two marine green algae containing fungi. (Florida Society of Electron Microscopy, Tampa.) Abstracts p. 19.

Nettlow, A.L., J.L. Brown, J. Park, R. Wain, B.G. Yangco, J. Okafor and D. Te Strake. 1985. Immunological and electrophoretic studies of species of Basidiobolus. (International Society of Human and Animal Mycoses, Atlanta.) Published Abstracts.

Ledford, D.K., R.F. Lockey, D. Serbousek, J. Park and D. Te Strake. 1985. Studies on airborne fungal spores and pollens during grass mowing. (International Society of Human and Animal Mycoses, Atlanta.) Published Abstracts.

Mattson, R., J. Simon and D. Te Strake. 1985. Occurrence and abundance of Eccrinales in Brachyuran crabs from Tampa Bay. (The Fourth International Marine Mycology Symposium, I Portsmouth, United Kingdom.) Published Abstracts.

Park, J., A. Nettlow, B.G. Yangco and D. Te Strake. 1985. Electrophoretic characterization of exoantigens of four isolates of Basidiobolus. (American Society of Microbiology, Southeastern and South Carolina Branches, Savannah, Georgia.) Abstracts.

Te Strake, D. and B.G. Yangco. 1985. An overview of entomophthoromycosis: a tropical disease. (Inter-American Society of Chemotherapy, Tampa.)

Brown, J., R. Wain, B.G. Yangco and D. Te Strake. 1986. Variability of isozymes among isolates of Basidiobolus spp. (Mycology Society of America. A.I.B.S., Amherst, MA.) MSA Newsletter 37:21.

Yangco, B.G., A. Nettlow and D. Te Strake. 1986. Aspects of antigenic relationships among, species of Basidiobolus as determined by crossed immunoelectrophoresis. Eds. Samson, R., J.M. Vlak and D. Peters. Fundamental and Applied Aspects of Invertebrate Pathology. Foundation of the Fourth International Colloquium on Invertebrate Pathology, Wageningen, the Netherlands. p.221.

Bazin, B.P., D. V. Lim and D. Te Strake. 1986. Occurrence of fungi associated with ulcerative disease syndrome (UDS) in the lower St. John's River in Florida. Combined Regional Microbiology meetings including the southeastern branch of American Society for Microbiology , Orlando, FL.

Rester, J., T. Beatty, D. Te Strake and D.V. Lim. 1986. Bacteria associated with healthy and lesioned fish in Florida. Combined Regional Microbiology Meetings including the Southeastern Branch of American Society for Microbiology, Orlando, FL.

Te Strake, D., D. Lim and H. Grier. 1986. Occurrence of an ulcerative fish disease in the St. John River, Florida. Preliminary Studies. (Fourth International Symposium on Microbial Ecology.) Ljubljana, Yogoslavia. Published abstracts.

Espinoza, C., A. Conway, D. Te Strake and A. Vickery. 1986. Preliminary observations in an animal model for entromophthoromycosis basidiobolae. Abstracts to the Annual Meeting, American Society of Microbiology, p. 406.

Park, J., J. Okafor, D. Te Strake and E. Lackman. l986. Antigenic relationships among species of Basidiobolus as determined by crossed immunoelectrophoresis. Abstracts of the Annual Meeting, American Society Microbiology, p. 398.

Nelson, R., D. Te Strake, B.J. Cochrane and B.G. Yangco. 1987. Restrictions enzyme analysis of the ribosomal genes of isolates of Basidiobolus. (Fourteenth Fungal Biology Conference, Asilomar , CA.) Fungal Genetics Newsletter p. 43. 8

Dykstra, M., F. Levine, E.Noga and D. Te Strake. 1987. Other cultural and epidemiological observations on the Aphanomyces and Saprolegia sp. associated with ulcerative mycosis (UM) of Atlantic menhaden. (Mycology Society of America. Ottawa, Canada.) MSA p. 21.

McGarey, D., D. Te Strake, T. Beatty and D. Lim. 1988. Recovery of potential pathogenic bacteria from fish exhibiting ulcerative disease syndrome (UDS) in the lower St. Johns River system, Florida. Southeast Branch of American Society of Microbiology, Jekyll Island.

Alberts, V., D. McGarey, T. Beatty, D. Lim and D. Te Strake. 1988. Physiological studies of microbes from lesioned fish occurring in the St. Johns River, Florida. Florida Academy of Sciences" Tampa.

Nelson, R, B. Cochrane, B. Yangco and D. Te Strake. 1988. Restriction analysis of ribosomal DNA of some isolates of Basidiobolus. Gordon Research Conference, Fungal Metabolism.

Te Strake, D., D. Lim and M. Dykstra. 1988. Florida lesioned fish -tale of the zoospore? Mycological Society of America. University California, Davis, California.

Khan, S., V. Alberts, D. Lim and D. Te Strake. 1988. Physiological studies of fungi isolated from lesioned fish and rivers in Florida. Southeastern Branch Meeting, American Society Microbiobiology.

McGary, D., V. Alberts, D. Lim, D. Te Strake and M. Dykstra. 1988. Investigations of some microbial pathogens associated with ulcerative disease syndrome (UDS) of some Florida fish. , Pathology of Marine and aquaculture Organisms -P AMAQ. Glouster Point, Virginia.

Beatty, T., D. Lim and D. Te Strake 1988. Isolation of Aeromonas from diseased fish in Florida. American Society of Microbiology, Miami, Florida.

Nelson, R., B. Yangco, D. Te Strake and B. Cochrane. 1989. Taxonomic relationships among isolates of the fungal genus Basidiobolus revealed by restriction analysis of ribosomal DNA. UCLA Symposium: Molecular Evolution.

McGarey, D., T. Beatty, D. Te Strake and D. Lim. 1989. Role of bacteria in the fish ulcerative , disease syndrome. American Society of Microbiology, New Orleans. ASM abstracts

Khan, S. and D. Te Strake. 1989. Protease and lipase activities of some Oomycetes from estuarine, equine and picine habitats. (5th International Marine Mycology Symposium. Vancouver). Abstracts p. 14.

Nelson, R., B. Yangco, D. Te Strake and B. Cochrane. 1989. Taxonomic relationships revealed by restriction analysis of r-DNA. (Mycology Society of America, Toronto.) MSA Newsletter 40:41.

Khan, S. and D. Te Strake. 1989. Extracellular proteolytic activity of some Saprolegniales. (American Society of Microbiology.) ASM Abstracts.

Yangco, B., R. Nelson, B. Cochrane and D. Te Strake. 1989. Restriction enzyme analysis of the ribosomal genes of isolates from the genus, Basidiobolus. (American Society of Microbiology.) ASM Abstracts.

(1990-2000 Presentations not included)

Donerly, B., S. Gift, M.Chapman and D. Te Strake. 2000. Riding the Waves of Change. Abstract. (Society for College and University Planning, St. Thomas, VI)

Romeo, J. and D. Te Strake. 2000. Paradigms Shifts in Non-science Major Biology Courses: Counterpoint. NARST, New Orleans

Romeo, J. and D. Te Strake 2001. Space Age Biology. SAETS. Embassy Suites, Tampa.

Special Meetings: Gordon Conference: Fungal Metabolism, 1984, 1986, 1988, 1990, 1998.

Invited Symposia , Seminars, and Talks:

1985. Presentation: "Recent Advances in Medical Mycology and Uses of Antifungal Agents." Symposium at Inter-American Society of Chemotherapy.
1986. "The Kiss of a Spore." Sigma Xi Lecture. Eckerd College.
1988. "Fungi in the Marine Environment." University South Carolina: Coastal College
2004 “Environmental Racism: Does It Exist?” UU in the Pines, Brooksville, FL

GRADUATE COURSE INSTRUCTION

Medical Mycology (5000 level)
Field Mycology (5000/6000 level)
Biology of Bryophytes (5000 level)
Marine Mycology (5000 level)
Biology of Medically Important Fungi (5000 level)
Graduate Microbiology Seminar

STEM Pedagogy (6000)

Biology of the Fungi (5000/6000 level)
Topics in Aquatic Fungi (6000 level)
Ethnomycology (5000 level)
Survey of the Fungi (5000 level)
Pathobiology I: 50% assignment (5000 level)
Graduate Physiology and Development Seminar

UNDERGRADUATE COURSE INSTRUCTION

Learning Community I
"Brain"
Sex, Reproduction, Population
Topics in Human Biology
Biology of Aging
Food and Drugs
Environment
Race to Save the Planet
Fundamental Concepts of Biology (Basic College)
Introductory Botany
Field Botany (3000)
Mushrooms and Man
Mycology (4000)
Survey of the Plant Kingdom
Microbiology Seminar (4000)
Applied and Environmental Microbiology (50% teaching assignment) (4000)
Space-Age-Biology (2000)
Environmental Issues (4000)
Scientific Processes (4000)
Fungi and Health (4000)
Mushroom Biology (4000)
Issues in Food and Nutrition (4000)

BACHELOR OF INDEPENDENT STUDIES

Natural Science advisor; past seminar and area coordinator (numerous students as advisor!)

UNIVERSITY.COLLEGE. AND DEPARTMENT COMMITTEES

UNIVERSITY COMMITTEES (present to past, typically 3-year terms)

Chairperson, Equal Opportunity Affairs Committee
Bachelor of Independent Studies Committee
Academic Personnel Council
University Honors Program Committee
Academic Programs Council
Committee of Associates on Human Experimentation
University Center Self-Study Committee
Continuing Education Committee
Ad Hoc Committee on Career Education
Status of Women Subcommittee
Oceanography Committee
Basic College Council
Basic College Committee; Planning for the Decade of 70's
2000- Facilities Planning Executive Workgroup

COLLEGE COMMITTEES

College of Arts and Sciences Advisory Committee
Tenure Committee (2 years)
Natural Science Schedule Committee (5 years)
2002-2004: CAS Undergraduate Committee (Chair, 2002-2004)
School of Natural and Mathematical Sciences-Undergraduate Committee 2008-

SNSM (CAS) Undergraduate Education Committee (Chair 2011-2012)
CAS Undergraduate Education Committee (Chair 2011-2012)

DEPARTMENT COMMITTEES (1967-1995; 2006-)

Botany Degree Committee
Ad Hoc Botanical Garden Committee
Non-Majors committee
Biology Lecture Series Ad Hoc Goals Committee
Microbiology Degree Non-majors
Herbarium Committee,
Graduate Admissions
Numerous Search Committees
Physiology and Development Section
Ad Hoc Botany Garden and Herbarium Curriculum Committee
Faculty Advisory Committee, 1988-1993;2006-S2012
(Chair)
Chairs Advisory Committee

Chairperson, Division of Plant, Cell and Microbial Science 1989

2001-2004: Biology Department Honors Committee
2001-2004: Biology Department Planning Committee
2003-2006 Library Committee, Chair
2002, 2003, 2004, 2005, 2006- Instructor Search Committees
2003-2009 Library Committee, chair
2006-S2012 Faculty Advisory Committee (CMMB) chair.

MASTER'S THESES COMMITTEES

Completed:

S. Todd-Cooper	J. Poppleton
J. Santa-Cruz	J. Merriam
H. Andorfor	K. Pierson-LaDuca
H. Sellenthin	J. Carlton
Lee Yeh-Fuh	L. Mosura
T. Arcuri	P. Hilsenbeck
W. Fagerberg	J. Jewitt-Smith
R. Mattson	K. Holt Ashley
T. Okafor	T. Carrillo Burke
S. Brenner	L. Mozdab
R. Sumner	M. Freddo
L. Chakkaphak	C. Lackman
T. Kraxberger	J. Chipoline
M. Jackson	R. Nelson
C. Siniggllliano	F. Zuklic
C. Urbanski	K. Chernov
K. Kuhlman	T. Siejo
J. Whidden	K. Denton 2006 M. Culbreath (Chemistry)2006

DOCTORAL DISSERTATION COMMITTEES

Completed:

P. Dehn
D. Zuberer
C. Lohr
A. Rehm
E. Truby
B. Hanson
D. Richardson P. Hall
D. McGarey
IR. Salazar (COPH)
N. Esmann
L. Stark
D. Cheny
K. Steiniger
E. Estevez
E. Proffit
E. Spazianizi
R. Nelson D.Krause (COPH)

2006 Completed.

Cherry Steffen, Ph. D. College of Education-committee member
Cyndy Leard, Ph.D. College of Education;-committee member
2009 Completed.
Bina Nyak, Ph.D. Microbiology-committee member

2012 Allan Frank, Ph. D. CMMB- committee Member
2011 Lois Ball, Ph.D. College of Education (Secondary Science)

MASTER DEGREE COMMITTES DIRECTED

Completed:

G. Griepenburg. 1970. Mosses of the Tampa Bay Area.

J .A. Quick, Jr. 1971. Oyster Parasitism by *Labyrinthomyxa marinum* in Florida.

L. Bergen. 1977. Comparative Survey of the Fungi and Potentially Pathogenic Fungi from Selected Beaches in the Tampa Bay Area.

M. Halvorson. 1983 .*Nannochloris* sp., a Marine Green Alga: Its Effect on the Spore Germination, of Two Fungi.

V. Baker. 1984. Regulation of Morphology, Protein, and Pigment Production in *Basidiobolus* spp. with Asparagine and Dextrose.

J. Brown. 1985. Electrophoretic Studies of Isozymes of *Basidiobolus*.

J. Park. 1987. Antigenic Relationships of *Basidiobolus* spp.

B. Mehta. 1987. Non-thesis.

S. Khan. 1989. Extracellular Enzyme Production of Some Saprolegniales.

J. Daly. 1990. Preliminary investigation of the effects of nitrates and nitrites on the Sailfin Molly, *Peocilia latipina* (Lesueur)

V. Alberts. 1991. Murine Mouse Model of Entomophthoromycosis Basidiobolae.

P. Fiske. 1993. Non-Thesis

C. Alaire. 1993. Non-Thesis

P. George. 1994. Non- Thesis

A. Baker, 1995. Plasmodiophthorales in Tampa Bay

Y.R. Taylor. 1995. Studies on the Wax Surface of Two Types of *Serrona repens*

A. Haddock. 1996. Endophytic Fungi in *Borrchia* sp.

A. Whidden. 1997. Non- Thesis MS

G. Molina. 2000. Non-Thesis MS

Farnaz Abidi 2009 Non-Thesis MS

Michael McCartney 2010 Non-thesis MS

Christine Lester 2010 Non-thesis MS

Carl Franconi 2011 Non-thesis MS

Rebecca Hershock 2011 Non-thesis MS

James Kortbus 2011 Non – thesis MS

Lauren Nimelstein 2011 Non-thesis MS

Joy Nugen 2012 Non-thesis MS

Hong Ju Wu 2012 Non-thesis MS

Stephen Duren 2012 Non-thesis MS

Christina Sandovar 2012 Non-thesis MS

Paul Rabaut 2012 Non-thesis MS

John Duncan 2012 Non-thesis MS

Bradley Creamer 2012 Non-thesis MS

Caroline Benjamine 2012 Non-thesis MS

Deesha Treya (in progress, NTMS)

Fatima Albajun (in progress, NTMS)

Tamara Squalls (in progress, NTMS)

Shana Smeltzer (in progress, NTMS)

Anthony Spilker (in progress, Non-thesis MS

SERVICE

CMMB Department:

CMMB Undergraduate Program Committee (chair)

CMMB SACS Committee (chair) -Assessed the Outcomes for ALCs for the Biology and Microbiology degrees 2011-2012.

CMMB Faculty Advisor Committee (chair) S2012

Set up Peer Reviews for fall and spring

Assess Annual Reports S2012

College of Arts and Sciences:

SNSM Undergraduate Committee-Chair

CAS Undergraduate Committee-Chair (The following were approved by the CAS Undergraduate Committee

New BS Degree in Health Sciences
ENL minor
ENT minor
ENW minor
New Minor in New Media Studies
New Minor in Physics
New Minor in Microbiology
Food Studies Certificate- new and 15 credits
Film Studies Certificate
Removal of Social Work Cognate in ISS
New concentrations in Sociology:
Inequality Social Justice
Identity Community
Changes to BA and BS in Economics
Changes to WST and Minor
Change to ENG Honors
ISS new 12 credit Public Health Cognate
ANT Revisions in Major
PSY – added D/F rule like CHE, CMM, and IB
Changes to Major in American Studies
Religion and Ecology :New course
SPC 4701: New course in Intercultural Communication
Plant Ecology: New Course
Conservation Biology: New Course
CHI 1170: New course
WST 4001 new course (Women's Studies Research Methods)
EUH Orthodox Religion: New course
Networking in China and America: New CHI course
American Environmental History: New Course
Urban Economics and Industrial Organization: New Courses

AMH 3192
AMS 4610 Passed before School approval!

BSC 2010 Life Science for teachers
Changes to Physics major
CHI 3471
CHT 3501 Contemporary Chinese Language and Society
CHT 3991 Chinese Film
CMMB concentration to CMMB Major (1)
ENL 4112 18th Century British Lit
EVR 2010 Weather
EVR 4010 Climate
GET 4332 German Directors
IB concentrations to IB Majors (4)
LAH 3630 Modern Brazil
LIT 4183
LIT 4183 Post Colonial Lit
MAP 4202
MAP 4402
Minor in Astronomy
PHY 2048
PHY 2049
PHY 3220
PHY 3220 Classic Mechan
PHY 4605
PHY 4605 Quant Mech
REL 4108 Food and Religion
REL 4604 Early Jewish Lit
SYO4430 Disability and SocietyZOO 4454 Fish Bio Lab)

CMMB UNDERGRADUATE ADMINISTRATIVE ACTIVITIES

A. Plan Fall and Spring schedules

B. Supported Dr. Cooperman moving the new Health Sciences Degree forward; this was implemented F2012.

C. Worked with Chair and Graduate Director on a new Ph. D. Proposal.

D. Succeeded in getting Accelerated non-thesis BS/MS program in Microbiology through the undergraduate program committees.

E. Proposed and moved the new minor in Microbiology through the CAS and USF undergraduate program committees.

D . With Chair, integrated all changes into the 2012/2013 USF Catalogue

E. Evaluated numerous courses for potential transfer credit

F. Addressed grievances from all CMMB courses

G. With Chair, work with CAS dealing with student recruitment, etc.: Stampede and WOW

H. Convened faculty teaching Molecular Biology of the Cell and Molecular Biology of the Gene to assess syllabi contents. (see notes).

I. Meet with all instructors and adjuncts two times each term (see notes)

I. With Chair, meet regularly with Bioadvise and Health Science advising teams

ADMINISTRATION Director USF Herbarium

The University of South Florida Herbarium is the second largest collection of its kind in Florida and the seventh largest in the southeastern United States. It is nationally and internationally known for its collections. The USF Herbarium houses more than 265,000 specimens, including about 450 type specimens. The collection is richest in plants from Florida (40%), with strong holdings from North America north of Mexico (37%), and Latin America (13%). It has the largest collection in the world of materials from central and southern Florida. Specific groups especially well represented include Orchidaceae, Araceae, Apocynaceae, Begoniaceae, Bromeliaceae, Fabaceae, and pteridophytes.

The USF Herbarium library contains over 10,000 books, reprints, and journals, an extensive map collection, and a microfiche collection.

The USF Herbarium provides general plant identification services to various companies or agencies and individuals not part of USF and not involved in research. In return, the companies make a financial donation which is used in support of Herbarium operations.

Summary of activities from January 1, 2012 to December 31, 2012

Accessions

5081 specimens mounted, accessioned, and filed into the USF Herbarium.

Acquisitions

2320 new specimens acquired. Of these, 1898 were gifts, 236 were staff collections, and 186 were received in exchange.

Loan activity

4 loans were sent to 4 institutions, totaling 689 specimens.

4 loans from 2 different institutions were received, totaling 21 specimens.

Online activity

Of the 244 plant families occurring in Florida, 192 families (79%) now have their Florida specimens databased and photographed. These are available online on the *Atlas of Florida Vascular Plants* website. Overall, approximately 15,000 specimens were added during 2012, averaging approximately 3,800 per quarter, to a current total of more than 83,000. These efforts were supported by grants from Florida Fish and Wildlife Conservation Commission and the Florida Wildflower Foundation.

Outside Users

The USF Herbarium was utilized (visited) by about 20 individuals from outside the university. A more realistic reflection of herbarium impact is shown by our online usage, where we get about 20,000 visits per month to the Atlas website.

Plant Identification Services

The USF Herbarium provided services to 16 companies. A total of 447 plant specimens were identified.

Library

The library used external resources to purchase 25 journals and about 10 books for the USF Herbarium library.

Research

The Herbarium provided collection and library resources for the following USF faculty & students:

Kathleen Burt-Utley (faculty) – systematics of Begoniaceae

Clinton J. Dawes (faculty) - ecology and systematics of marine algae and

seagrasses
Frederick B. Essig (faculty) - systematics of Arecaceae and *Clematis* (Ranunculaceae)
Alan Franck (staff) - systematics of Cactaceae and *Agave*
Bruce F. Hansen (staff) - systematics of Apocynaceae; flora of Florida
Anne C. Schmidt (former student) – floristics of USF Eco Area
John Utley (faculty) – systematics of Bromeliaceae
Richard P. Wunderlin (staff) - systematics of *Bauhinia* (Fabaceae), Cucurbitaceae, and Flora of Florida

Publications

Burt-Utley, K. 2012. Contributions toward a revision of Hechtia (Bromeliaceae, Pitcairnioideae) II. New and noteworthy Hechtia species from Oaxaca, México. Phytoneuron 2012-69: 1–14. Published 2 Aug 2012. ISSN 2153 733X
CONTRIBUTIONS TOWARD A REVISION OF *HECHTIA*
(BROMELIACEAE, PITCAIRNIOIDEAE)
II. NEW AND NOTEWORTHY *HECHTIA* SPECIES FROM OAXACA, MÉXICO
KATHLEEN BURT-UTLEY

Burt-Utley and Utley. 2012. New species and notes on Begonia (Begoniaceae) from Mexico and Central America. Phytoneuron 2012-74: 1–25. Published 13 Aug 2012. ISSN 2153 733X
NEW SPECIES AND NOTES ON *BEGONIA* (BEGONIACEAE)
FROM MÉXICO AND CENTRAL AMERICA
KATHLEEN BURT-UTLEY and **JOHN F. UTLEY**

Burt-Utley and Utley. 2013..The Genus Begonia in Mexico. The Begonian: 80:9-12.
Franck, A.R., B.J. Cochrane, & J.R. Garey. Phylogeny, biogeography, and infrageneric classification of *Harrisia* (Cactaceae). Systematic Botany 38: in press.

Franck, A.R. *Harrisia fragrans* (syn. *H. simpsonii*) in eastern & southern Florida. CactusWorld: in press.

Franck, A.R. Synopsis of *Harrisia* including a newly described species, several typifications, new synonyms, and a key to species. Haseltonia 18: in press.

Franck, A.R. Guide to *Agave, Cinnamomum, Corymbia, Eucalyptus, Pandanus,* and *Sansevieria* in the flora of Florida. Phytoneuron 2012-102: 1–23.

Franck, A.R., B.J. Cochrane, & J.R. Garey. Low-copy nuclear primers and *ycf1* primers in Cactaceae. American Journal of Botany 99: e405–e407.

Essig, F. His blog site is: botanyprofessor.blogspot.com (There have been over 20,000 hits in just over a year.)

CURRICULUM VITAE
MY LIEN DAO

ADDRESS

Work:
Department of Cell Biology, Microbiology and Molecular Biology
University of South Florida
4202 East Fowler Avenue
Tampa, FL 33620-5150

PERSONAL INFORMATION

Female, Asian
One Child

EDUCATION AND TRAINING

Secondary

1955-1962: Lycee Marie Curie, Saigon, Vietnam
Degree: Baccalaureate II Degree obtained from the Ministry of Education of France (1962)

Undergraduate

1962-1967: Faculty of Pharmacy, University of Saigon, Vietnam
Degree: National Degree of Pharmacy, 1967 (Bachelor of Science in Pharmacy) (1967).
This program was evaluated by the University of Berkley (CA) as equivalent to a M.S. degree in the U.S.

Graduate

1968-1970: National Institute of Hygiene and Epidemiology, Brussels Belgium.
Specialization in Medical Biochemistry and Public Health Laboratories
Degree: M.S. equivalent

1975-1978: The University of Oklahoma Health Sciences Center, Department of Biochemistry and Molecular Biology
Degree: Ph.D in Biochemistry and Molecular Biology (1978)
PhD Dissertation: Purification of a High-Activity Form of Glucose-6-Phosphate Dehydrogenase and Study on its Immunochemical Reactivity.
Main Advisor: Dr. Connor B. Johnson
This work resulted in a publication in JBC, and a Graduate Dean Research Prize from OUHSC.

SPECIAL TRAINING

1. **1972-1973**: FAO Training Center, Mysore, India, 1972-1973
   Field of Study: Analysis, Standardization and Food Quality Control in the Industry. Certificate of Achievement (1973)
2. **1986**: Harvard Medical School, Department of Continuing Education
   Course on "Microbial and Molecular Genetics Biotechnical Advances". May 19-23, 1986. Certificate of Achievement (1986)
3. **1991:** University of South Florida, Center for Teaching Enhancement.
   Two-Week Workshop on "Involving Students: using Active Learning Strategies in University Classes". Certificate of Achievement (1991)
4. **1997**: University of South Florida. EXCEL Leadership Training Program (Spring 1997)
5. University of South Florida, Center for Teaching Enhancement.
   Five-Day Intensive Workshop on WebCT "Improving Teaching and Learning through Web-Enhanced or Web-Delivered Courses (May 1998)
6. **May 2007**: ASM Meeting in Toronto, Canada. Workshop on "DNA Microarrays: Experimental Design, Data Analysis and Gene Regulation"
   October 2007: The J. Craig Venter Institute (formerly TIGR). Workshop on "Introduction to Microarray Technology"

PROFESSIONAL EXPERIENCE

1967-1975 National Pharmacist, Owner and Director of "Pharmacy DAO", Saigon, Vietnam
1967-1968 Head Clinical Laboratory, Binh-Dan Hospital, Saigon, Vietnam
1968-1970 WHO Fellow, National Institute of Hygiene and Epidemiology, University of Liege, University of Gand, and Scientific Institute Simon Stevin of Bruge, Belgium
1970-1971 Scientific Advisor in Biochemistry, "Bibliotheque Royale Albert I" Bruxelles, Belgium
1971-1975 Head Nutrition Laboratory, National Institute of Public Health Saigon, Vietnam
1979-1980 Research Associate, Vitamins and Nutrition Research Laboratory,The Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma
1980-1981 Associate Research Scientist, Department of Biology, The Johns Hopkins University, Baltimore, Maryland
1982-1984 Research Associate, Department of Microbiology and Immunology. The Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma
1985-1986 Research Assistant Professor, Department of Microbiology and Immunology, The Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma
1986-1990 Assistant Professor, Department of Pediatrics/St.Petersburg
University of South Florida, St. Petersburg, Florida
1995- Joint-Associate Professor, Department of Internal Medicine, Division of Asthma and Allergies, University of South Florida, Tampa, FL 33620
1996-1998 Graduate Program Director, Department of Biology, University of South Florida
1990-present Associate Professor, and **Undergraduate Research program Director** (since 2010) Department of Cell Biology, Microbiology and Molecular Biology, University of South Florida, Tampa, FL 33620
2002-present Ad-hoc consultant for NIH, Grant review panel National Institute of General Medical Sciences, Center for Scientific Review, and National Institute of Dental and Craniofacial Research

TEACHING EXPERIENCE

1970-1972 Lecturer in Biochemistry, Department of Chemical Engineering Polytechnical College, Saigon, Vietnam
1973-1975 Lecturer in Biochemistry and Nutrition, National Institute of Public Health, Saigon, Vietnam
1975-1978 Teaching Assistant, Department of Biochemistry and Molecular Biology, The University of Oklahoma Health Sciences Center,Oklahoma City, Oklahoma
1984-1985 Research Assistant Professor, Medical Microbiology Laboratory for Dental Students. The University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma
1986-1990 Assistant Professor, Molecular Biotechnology for Postdoctoral Fellows, Department of Pediatrics/St. Petersburg, University of South Florida, St. Petersburg
1990-present Associate Professor, Department of Biology, University of South Florida, Tampa,

Undergraduate courses
General Microbiology (3,000 level)
Undergraduate Microbiology Seminar (4,000 level)
Principle of Immunology (4,000 level)
Cellular Microbiology (4,000/5000 level)
Scientific Processes in Biology (4,000 level)
Microbiology for Health Sciences (4,000 level)
Selected Topics in Immunology (4,000 level)

Graduate Courses
Principles of Immunology (5,000 level)
Molecular Biology Techniques (6,000 level)
Graduate Microbiology Seminar (6,000 level)
Advanced Immunology (6,000 level)
Principles of Modern Biotechnology (6,000 level)
Principles of Genomics and Proteomics (5,000 level)
Cellular Microbiology (5,000 level)

Mentoring of graduate and Undergraduate Students
Previous graduate students
5 Ph.D.
Carlos Chavez (Main Advisor)
Marianne Leveronne (Co-Main Advisor with Dr. Lim, BiologyUSF)
Leonardo Puerta, Ph.D (Co-Main Advisor with Dr Lockey, Internal Medicine, USF)
Todd Meyer (Co-Main Advisor with Dr. Melissa Rogers)
Thomas K.Han (main Advisor)
21 M.S. with thesis and 4 M.S. non-thesis

Undergraduate students, recipients of Undergraduate Research Award
Ariel Escolo (Honors' student): First Prize in Biomedical Sciences (2005)
Katie Prosen (Honor's student): Third Prize in Biomedical Sciences (2007)
Misbahuddin Syed (Honor's student): First Prize in Biochemistry (2008)
Arjun Rammohandras (Honor's student): First Prize in Biomedical Sciences (2009)

Armanda Rutter (Honor's student): First prize in Biomedical Sciences (2010)
Mahmoud Dweik (Undergraduate student): Travel grant for presentation of a poster at the National Council of Undergraduate Research Symposium (2011)
Jacob Cohen (Honors's student): Travel grant for an oral presentation at the National Council of Undergraduate Research Symposium (2012)

ACADEMIC HONORS

Fellowships

1968-1970 World Health Organization Fellowship for studies in Belgium Biochemistry
1972-1973 Fellowship of the Food and Agriculture Organization of the United Nations for studies in India. Food Quality Control in the Industry

Awards

1978 Graduate Dean Research Prize. The University of Oklahoma Health Sciences Center
1979 Nomination for a Prize in Nutrition by The American Institute of Nutrition
1991, 1994, and 2002 USF President's Council Faculty Research Awards
1994 Teaching Award: Teaching Incentive Program Award for Outstanding Teaching
2000-2001 Mentor of Outstanding MS thesis by Sean Yoder
2007 Role Model Mentor of the Year. McNair Scholars program Graduate School, USF
2010 Induction to the National Academy of Inventors

PATENT

Patent awarded: January 2, 2007
US Patent 7157242 - Method for Staining Fungi and Protozoa

Patent awarded: June 29, 2010
U.S. Patent 7,745,168 B2- Method for Selectively Staining Chitin Containing organisms

Patent pending: Chitin-binding beads and Chitin-binding fibers; Application to the rapid isolation and detection of Microsporidia

COMMITTEES

Curriculum Committee (5 terms)
Advisory Committee (5 terms)*
Graduate Admission Committee (3 terms)
Search Committee member (20 faculty positions, one Department Chair position, and one Instructor position)
Search Committee Chair person for a Molecular Microbiology Faculty position
University Graduate Advisory Committee, Member since 2008-present*
University Tenure and Promotion Committee, Member 2009-present*
Undergraduate Research Committee, Member, then Chair of the committee 2010-present
Undergraduate Research Program Director (2011-present)

MEMBERSHIPS

1982- Society of Sigma XI American Society for Biochemistry and Molecular Biology
1988- Society of Experimental Biology and Medicine
1990- American Society for Microbiology
2006- Golden Key International (Honorary Member)
2007- Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics

INVITED SEMINAR PRESENTATION

1979 FASEB Meeting in Dallas by the American Institute of Nutrition as a Nominee for a Research Prize in Nutrition

1994 International Congress of Odontologists in Carthagena, Columbia (Presentation of two Lectures). Certificate of Appreciation

2007 Invited honorary Guest Speaker at the Oklahoma University health Sciences Center, Oklahoma City, Oklahoma (August 2007). Topic: *Streptococcus mutans* Candidate Caries Vaccine Antigens and Prospects of Genetic Immunization

2009 invited Guest Speaker at IRX Therapeutics, New York City, NY
Topic: Microsporidia, Opportunistic Pathogens in Residence

2010 invited Guest Speaker at the USF Nano-Bio Collaborative Conference (March 11-12) hosted by USF Nanomedicine Research Center, Office of Research and Innovation, Office of Research, Nanomaterials and Nanomanufacturing Research Center, College of Engineering, Draper Bioengineering Center, USF Connect, and Transgenex NanoBioTech Inc.
Topic: Update on Microsporidia, an Emerging Opportunistic Pathogenic Fungus"
Received Distinguished Lecturer Award Plaque

2010 invited Guest Speaker at the **Global Health Seminar Series (November 30, 2010)**
Topic: Microsporidia, Opportunistic Pathogens in Residence

2011 invited Guest Speaker at "**The Joseph J. Ferretti Symposium: Confronting 21st Century Challenges in Infectious Disease**", The University of Oklahoma Health Sciences Center, OKC, OK, March 25-26

RESEARCH GRANTS

Organization	Number	Function	Title	Amount	Period
Previous Grants					
NIH/NIDR	ROl DE0 7836	PI	Surface Protein Antigens of Cariogenic Streptococci	231,492	9/1/84-8/31/88
NIH	Biomed l Res.Support Grant Program	PI	Nutritional Regulation of G6PD	8,000	4/1/87-3/31/8
NIH/NIDR	RO1 DEO 7836		Cariogenic Streptococci, Molecular Biology of Adherence	239,529	9/1/88-8/31/4
Showa/ACH		PI	Nutritional Regulation of Lymphoproliferative Disease	10,000	1/1/89-/31/89
USF	President's Council Faculty Award Program	PI	Influence of Energy Intake on e Expression of Oncogenes and Tumor Suppressor Genes in Mice of the MRL/lpr,lpr Strain	5,000	1991-1992
NIH/USF BRSG	Small Instrumentation Grant Program	PI		5,000	1991
NIH/USF BRSG	Small Instrumentation Program			9,000	1992
USF	Faculty Research Development Award Program	PI	Regulation of *Streptococcus mutans* Surface Antigens by Proteases	5,000	1994-1995
USF	Faculty Research Development Award program	Co-PI with Dr. Lawrence	Use of Starfish as a Model to Study Growth Factors		1994-1995
USF	Faculty Research Development Award program		Analysis of *Streptococcus mu tans* Collagenolytic Enzymes	7,500	1996-1997
EPA		Co-PI wit Joan B. Rose & Debra Friedman	Feasibility of a Cultural Method for the Detection of *Cryptosporidium parvum* in Environmental Samples	50,000	1995-1996
USF	Res. and Creative Scholarship Grant	PI	Development of a Method of Identification of Microsporidia	7,500	1999-2000

	Program				

Organization	Number	Function	Title	Amount	Period
FFWCC Florida Fish and wild Life Conservation Commission/ Florida Marine Research Institute			Vitro studies of the Effects of Brevetoxins on Manatee Cell	30,000	2000-2001
USF	Research and Creative Scholarship Grant Program		Development of a DNA Vaccine Against a M Bioterrorism Agents	7,500	2002-2003
DOD/USF Cente for Biological Defense. SBCCOM		Co-PI with John Mc Devitt	Electronic Taste Chip, A Novel Method of Detection of Bioterrorism Agents	125,000	12/29/2002-07/30/2004
CDB/USF Centerfor Biological Defense RDCOM		Co-PI with John Mc Devitt	Electronic Taste Chip, A Novel Method of Detection of Bi Bioterrorism Agents	100,000	/ 10/1/2003-9/30/2004
NIH/NIDCR	R21DE014926	PI	Efficacy of DNA versus Protein Vaccine	290,000	7/15/03-5/14/07
NIH/NIDCR	R21DE015127	PI	Cloning and Analysis of *Streptococcus mutans* Putative Collagenase	290,000	/ 8/1/03-5/31/07
USF search Foundation			Immunology and Microbiology of Psoriasis Arthritis	14,000	2008-2009
USF, CMMB			Detection of microsporidia in biological samples and water samples	10,000	2008-2009

CURRENT GRANTS					
Origin Tech, LLC		PI	Detection of Bacterial Contamination in Hospital Ice Machines	20,000	7/1/11-12/30/12
HEP-CO Healthy Environmental Products Corporation		PI	Testing and Certification of HEP-CO's Footwear sanitizing Device	20,000	1/15/12-12/15/12 Extended until 12/31/2013

PUBLICATIONS

Dao, M.L., Watson, J.J., Delaney, R., and Johnson, B.C. 1979. Purification of a Ne High-Activity Form of Glucose-6-Phosphate Dehydrogenase from Rat Liver and the Effect of Enzyme . Inactivation on its Immunochemical Reactivity. J. Biol. Chem. 19, 9441.

Dao, M.L., Johnson, B.C., and Hartman, P.E. 1982. Preparation of a Monoclonal Antibody to Glucose-6-Phosphate Dehydrogenase from Rat Liver and Study on its Immunoreactivity with Native and Inactivated Enzyme. Proc. Natl. Acad. Sci. USA. 70, 2860

Dao, M.L., Johnson, B.C., and DeLuca, C. 1984. Cross-reacting Material to Monoclonal Anti-G6PD in the Absence of Catalytic Activity. Biochemical and Biophysical Research Communication, 118, 854,1984

Dao, M.L., and Ferretti, J.J. Cloning of Streptococcal Genes with St*reptococcus-Escherichia coli* Shuttle vector pSA3. In Recent Advances in Streptococci and Streptococcal Diseases, IXth Lancefield International Symposium

Dao, M.L., and Ferretti, J.J. 1985. *Streptococcus-Escherichia Coli* Shuttle Vector PSA3 and its Use in the Cloning of Streptococcal Genes. Applied and Environmental Microbiology 49, 115.

Dao, M.L. 1985. An Improved Method of Antigen Detection on Nitrocellulose: In Situ Staining of Alkaline Phosphatase Conjugated Antibody. Journal of Immunological Methods 82, 225.

Dao, M.L., Chavez, C., Hirachi, Y., and Ferretti, J.J. 1989. Molecular Cloning of the *Streptococcus mutans* Gene Specifying Antigen A. Infection and Immunity 57: 3372-3376.

Ferretti, J.J., Russell, R.B., and **Dao, M.L**. 1989. Sequence Analysis of the Wall-Associated Protein Precursor of *Streptococcus mutans* Antigen A. Molecular Microbiology 3: 469-478.

Kubo, C., Johnson, B.C., Misra, H.P., **Dao, M.L.**, and Good, R.A. 1987. Nutrition, Longevity, and Hepatic Enzyme Activities in Mice. Nutrition Reports International, 35, 1185-1194.

Dao, M.L., Shao, R., Risley, J., and Good, R.A. 1989. Influence of Chronic Energy Intake Restriction on Intestinal Alkaline Phosphatase in C3H/Bi Mice and Autoimmune-Prone MRL/lpr,lpr Mice. Journal of Nutrition 119, 2017-2022.

Shao, R., **Dao, M.L**., Day, N.K., and Good, R.A. 1990. Influence of Chronic Energy Intake Restriction on Mammary Tumor Development in Adult C3H/Bi Mice. Proc. Soc. Exptl. Biol. Med.

Ogura, M., Ogura, H., Ikehara, S., **Dao, M.L**. and Good, R.A. 1989. Decrease by Chronic Energy Intake Restriction of Cellular Proliferation in the Intestinal Epithelium and Lymphoid Organs in Autoimmunity-Prone Mice. Proc. Natl. Acad. Sci. USA, 86:5918-5922.

Engelman R.W., Day N.K., Chen R.F., Tomita Y., Bauer-Sardina I., **Dao M.L**., and Good R.A.1990. Calorie Consumption Level Influences Development of C3H/Ou Breast Adenocarcinoma With Indifference To calorie Source. Proc. Soc. Exptl. Biol. Med. 193: 23-3.

Qian H., and **M.L. Dao**. 1993. Inactivation of the *Streptococcus mutans* Wall-Associated Protein A Gene (*wap*A) results in a Decrease in Sucrose-Dependent Adherence and Aggregation. Infection and Immunity 61: 5021-5028

Cooper R.D., Watson, J.E, and **M.L.Dao**. (1993). Decreased Expression of Protein Kinase C alpha, beta, and epsilon on Soleus Muscle of Zucker Obese (fa/fa) Rats Endocrinology 133:2241-2247

Jackson J.R., **M.L. Dao**, and D.V. Lim (1994). Cell-Asspociated Collagenolytic Activity by Group B *Streptococcus*. Infection and Immunity 62:5647-5651

Jackson, J.R., **M.L.Dao**, and D.V. Lim (1995). Modified FALGPA Assay for Cell-Associated Collagnolytic Activity. J. Microbiological Method 21:209-215

Puerta L., L. Carabello, E. Fernandez-Caldas, A. Avjioglu, D.G. Marsh, R.F. Lockey, and **M.L. Dao**. (1996). Nucleotide Sequence Analysis of a Complementary DNA Coding for a *Blomia tropicalis* Allergen. J. Allergy and Clinical Immunology 98:932-937

Jackson R.J., D.V. Lim, and **M.L. Dao** (1997). Identification and Analysis of a Collagenolytic Activity in *Streptococcus mutans*. Current Microbiology 34:49-54

Yoder S., C. Cao, K.E. Ugen, and **M.L. Dao** (2000). High Level Expression of a Truncated Wall-Associated Protein A From the Dental Cariogenic *Streptococcus mutans*. Cell and DNA

Science

Han T.K, S. Yoder, C. Cao, K.E Ugen, and **M.L. Dao** (2001). Expression of Streptococcus *mutans* Wall-Associated Protein A Gene in Chinese Hamster Ovary Cells: Prospect for a Dental Caries DNA Vaccine. DNA and Cell Biology, 20:595-601

Han T.K., M. Derby, D.F. Martin, S.D. Wright, and **M.L. Dao** (2003). Effects of Brevetoxins on Murine Myeloma SP2/O Cells: Aberrant Cellular Division. International Journal of Toxicology, 22(2):73-80.

Han T.K., Zhu Z., **M.L. Dao** (2004). Identification, Molecular Cloning, and Sequence Analysis of a Deoxyribose aldolase in *Streptococcus mutans* GS-5. Current Microbiology, 48(3):230-236

Han T.K., **M.L. Dao** (2005). Differential immunogenicity of a DNA vaccine containing the *Streptococcus mutans* cell-associated protein A gene versus that containing a truncated derivative antigen A lacking in the hydrophobic carboxyterminal region. DNA Cell Biol. 24(9):574-82

Han T.K., Zhang C., **M.L. Dao** (2006). Identification and characterization of collagen-binding activity in *Streptococcus mutans* wall-associated protein: A possible implication in dental root caries and endocarditis. Biochem. Biophys. Res Commun 243:787-792

Han T.K., **M.L. Dao** (2007) Enhancement of salivary IgA response to a DNA vaccine against *Streptococcus mutans* wall-associated protein A in mice by plasmid based adjuvants. J. Medical Microbiol, May;56(Pt 5):675-80.

Katherine R. Prosen a, Ronan K. Carroll a, Whittney N. Burda a, Christina N. Krute a, Biplob Bhattacharya b, **My Lien Dao** a, Edward Turos b, Lindsey N. Shaw (2011). The impact of fatty acids on the antibacterial properties of N-thiolated β-lactams. Bioorganic & Medicinal Chemistry Letters 21 (2011) 5293–5295

Manuscripts submitted/in revision

Dao M.L. "Development of a novel chitin staining method and its application to the detection of microsporidia". This paper has been revised with additional data and a change in the title , in which "microsporidia" was replaced by "fungal spores". The reviewers also recommended that we submit our paper to a journal that is more specialized in eukaryotic microbes, and to use color prints. The cost for publication in color is high, hence our paper submission is delayed until adequate funds are available.

Han T.K., and **M.L. Dao** "Cloning and Analysis of a *Streptococcus mutans and Actinomyces*-binding Adhesin" . The reviewers required us to essentially develop a method to demonstrate *S. mutans* and *Actinomyces* co-aggregation. This was a challenging task because previous studies by others mechanically induced co-aggregation. We have established the conditions to obtain a spontaneous co-aggregation of these bacteria. Manuscript is in revision with additional data.

T.K. Han, M. Ioannides, E. Seijo, and **M.L. Dao** "Cloning and analysis of a *Streptococcus mutans* collagenase**.** The reviewers required us to demonstrate true collagenase activity in *S. mutans* (We developed a substrate consisting of prestained fibrillar collagen for the quantitative analysis of true collagenase activity. Thus is a breakthrough in the field of bacterial collagenase as well as mammalian metalloproteases, hence we are preparing a patent application. Our manuscript is currently in revision with the new data.

K.R. Prosen, R.K. Carroll, W.N. Burda, C.N. Krute, B. Bhattacharya, M.L. Dao, E. Turos, L.N. Shaw. The impact of fatty acids on the antibacterial properties of N-thiolated β–lactams. Bioorganic & Medicinal Chemistry Letters (2011) 5293-5295

Manuscripts in preparation

J. Cohen, T. Kitten, and **M.L. Dao** "Detection of putative collagen-binding protein and collagenase Activity in Oral Streptococci

E. Mala, R. Le, and **M.L. Dao** "Detection of viable fungi in peripheral blood by using a novel method of fugal spore isolation"

M.L. Dao. Novel method of detection and quantification of collagenase activity.

E. Mala, L.W. Weiss, G. Leparc, J. Green, K. Benson, and **M.L. Dao** "Prevalence of microsporidia *Encephalitozoon* in blood donor samples

REFERENCES

Dr. James Garey
Professor and Director
Cell Biology, Microbiology and Molecular Biology
Department of Biology
The University of South Florida
Tampa, FL 33620-5150
813-974-1618
lim@cas.usf.edu

Dr. Daniel V. Lim
Distinguished Professor
Cell Biology, Microbiology and Molecular Biology
Department of Biology
The University of South Florida
Tampa, FL 33620-5150
813-974-1618
lim@cas.usf.edu

Dr. Daniel Smith
Professor
The Forsyth Institute &
Harvard School of Dental Medicine
Boston, MA 02115
617-892-8309
dsmith@forsyth.org

Dr. Joseph J. Ferretti
Senior Vice-President and Provost
The University of Oklahoma, Health Sciences Center
Oklahoma City, OK 73104
405-271-2332
JoeFerretti@uokhsc.edu

CURRICULUM VITA: GARY W. DAUGHDRILL, Ph.D.

TITLE: Associate Professor (tenured)
ADDRESS: Department of Cell Biology, Microbiology, and Molecular Biology
Center for Drug Discovery and Innovation
University of South Florida
3720 Spectrum Blvd, Suite 321
Tampa, FL 33612
PHONE: (813) 974-2503
CELL: (208) 596-2313
EMAIL: gdaughdrill@usf.edu

Education:

B.S., Chemistry, 1992, University of Alabama, Tuscaloosa, Alabama

Ph.D., Biochemistry, 1997, University of Oregon, Eugene, Oregon
Adviser: Dr. Frederick W. Dahlquist

Honors and Awards:

Undergraduate Research Award from the University of Alabama
B.S. in Chemistry with American Chemical Society certification
Graduated Phi Beta Kappa
Graduated Magna Cum Laude
Awarded tenure from the University of South Florida in June 2011

Teaching and Research Appointments:

09/1997-05/1998, Affiliate Faculty, Department of Science, Salt Lake City Community College, Salt Lake City, Utah

09/1998-05/2000, Postdoctoral Fellow, Pacific Northwest National Labs, Richland, Washington

07/2000-07/2008, Assistant Professor, Department of Microbiology, Molecular Biology, and Biochemistry, University of Idaho, Moscow, Idaho

12/2002-07/2008, Affiliate Faculty, Department of Biochemistry, School of Medicine, University of Washington, Seattle, Washington

09/2003-12/2008, Adjunct Faculty, Bioinformatics and Computational Biology Program, University of Idaho, Moscow, Idaho

07/2008-12/2008, Associate Research Professor, Department of Biological Sciences, University of Idaho, Moscow, Idaho

12/2008-Present, Associate Professor, Department of Cell Biology, Microbiology, and Molecular Biology, University of South Florida, Tampa, Florida

12/2008-Present, Associate Member, Center for Drug Discovery and Innovation, University of South Florida, Tampa, Florida

Academic Administrative Appointments:

Director, UI Structural Biology Core Facility, 05/2003-12/2008

Acting Director, USF-CDDI NMR Core Facility, 09/2009-Present

Member of University of South Florida Faculty Senate, 09/2010-05/2011

Member of College of Arts and Sciences Faculty Development Committee

Areas of Specialization:

Biophysics, Structural Biology and Evolutionary Biology

Professional Overview

Research

Research in my group is focused on identifying general relationships between the structure, function, and evolution of intrinsically disordered proteins. Over the last 20 years the number of protein structures solved by x-ray crystallography and nuclear magnetic resonance (NMR) spectroscopy has increased dramatically, enhancing our understanding of protein function and the diseases associated with protein dysfunction. Another important outcome of the protein structure initiative is the discovery of numerous protein families that do not form compact rigid structures. These intrinsically disordered proteins (IDPs) are common in nature and disrupting their function can also result in the onset of certain diseases. In contrast to more than 70,000 atomic models for structured proteins, only a handful of realistic structural ensembles have been determined for IDPs. This makes it difficult to test at least two hypotheses: **(1) The structural ensembles of intrinsically disordered proteins are specified by local interactions. (2) Homologous proteins that are intrinsically disordered will be structurally similar above a certain sequence identity.** To test these hypotheses, we are determining structural ensembles for a set of orthologous proteins that are intrinsically disordered. The work is being placed in an evolutionary context to permit an assessment of important structural features by virtue of their conservation and constitutes the first attempt to quantify the relationship between sequence identity and structural similarity for intrinsically disordered proteins.

Teaching

In addition to a 70% research appointment, I also have departmental undergraduate and graduate teaching responsibilities. For the last three years I have taught a sophomore level Cell Biology course. Enrollment for this course is 300-400 students, and it is mandatory for both Biology and Biomedical Science majors. While teaching this course I have incorporated numerous examples of current research that impacts our understanding of basic cell biology. The research areas that I discuss are mostly in structural biology, and I introduced the students to advanced tools for visualization and analysis of protein structures. I will also develop an advanced graduate course in protein structure to be combined with a proteomics course that is currently offered.

Training, Outreach, and Diversity

These activities are primarily associated with the NSF funded project in my lab. During my time at the University of South Florida I have trained one senior postdoctoral scientist, Dr. Hongwei Wu. Dr. Wu is a co-author on a published book chapter and a peer reviewed research article. Two undergraduate students have worked on the NSF project. One of these students, A. Stancik, is a co-author on a published manuscript. The other student, K. Mishal, received an REU supplement to work on the NSF project in Summer 2010 and is a co-author on a manuscript that is in preparation. She recently left the my lab, where she was working as a research technician, to join the graduate program at the Moffitt Cancer Center. Both of the undergraduate students are women and their work on the project supports NSF's goal to increase the participation of members from underrepresented groups in science. During my time at USF I have also trained multiple graduate students. Two of these students, Wade Borcherds and Jessica Kennedy, are in the PhD program. They have successfully completed their advancement to candidacy and are making good progress on their thesis projects. Wade has been very productive and is a co-author on a published book chapter, a published manuscript, and two manuscripts that are in preparation. Jessica currently has a firs-author manuscript in preparation.

I also have considerable experience with outreach activities. I developed a program to interact with K-12 students in the Tampa area. This program was developed in collaboration with a mentor at a group home in Brandon, Florida. The goal of this program was to expose the students to modern problems in structural biology with the hope of exciting and encouraging them to pursue careers in basic science. Most of the children in this home are from underrepresented groups. At a meeting held on January 15, 2011 the students were introduced to structural biology, counseled on pursuing careers in science and given a tour of the wet lab and NMR facility. During the most recent iteration of this program, called "Modeling Molecules and Marvelous Magnets", I have reached out to local Boy and Girl Scout groups as well as high school science teachers. This program is designed to introduce students to important concepts in structural biology and to increase their enthusiasm about science. The program was well received by a group of 8-10 year old boys from scout troop 190 on July 15, 2011.

Publications (the name of the corresponding author(s) is underlined)**:**

1. **Daughdrill, G.W.**, Chadsey, M.S., Karlinsey, J.E., Hughes, K.T., and Dahlquist, F. W. (1997) The C-terminal Half of the Anti-Sigma Factor, FlgM, Becomes Structured When Bound to its Target, σ^{28} *Nat. Struct. Biol.*, 4(4) 285-9
2. **Daughdrill, G.W.**, Hanely, L.J., and Dahlquist F.W. (1998) The C-terminal Half of the Anti-Sigma Factor FlgM Contains a Dynamic Equilibrium Solution Structure. *Biochemistry*, 37(4) 1076-83
3. Rupert P.B., **Daughdrill, G.W.**, Bowerman, B., and Matthews, B.W. (1998) Structure of the *C. Elegans* Skn-1 DNA Binding Domain in Complex With DNA. *Nat. Struct. Biol.,* 5(6) 484-91
4. Jacobs, D.M., Lipton, A.S., Isern, N.G., **Daughdrill, G.W.**, Gomes, X., Wold, M.S., and Lowry, D.F. (1999) Human Replication Protein A: Global Fold of the N-Terminal RPA-70 Domain Reveals a Basic Cleft and Flexible C-terminal Linker. *J. Biomol. NMR*, 14 321-331
5. **Daughdrill G.W.** (1999) Unfolding and Disassociation of the FlgM/σ^{28} Complex are Thermodynamically Coupled. *Prot. & Pep. Let.,* (6)2 79-86
6. Buchko, G.W., **Daughdrill, G.W.,** de Lorimier, R., Rao, S., Isern, N.G., Lingbeck, J.M., Taylor, J.S., Wold, M.S., Gochin, M., Spicer, L.D., Lowry, D.F., and Kennedy, M.A. (1999) Interactions of Human Nucleotide Excisions Repair Protein XPA with DNA and RPA70ΔC327: Chemical Shift Mapping and ^{15}N NMR Relaxation Studies. *Biochemistry*, 38(46) 15116-15128
7. **Daughdrill, G.W.,** Ackerman, J., Isern, N.G., Botuyan, M.V., Arrowsmith, C., Wold, M.S. and Lowry D.F. (2001) The Weak Interdomain Coupling Observed in the 70 kDa Subunit of Human Replication Protein A is Unaffected by ssDNA Binding. *Nucleic Acids Research*, 29(15) 3270-3276
8. Iwahara, J., Iwahara, M., **Daughdrill, G.W.**, Ford, J. and Clubb, R.T. (2002) The Structure of the Dead Ringer-DNA Complex Reveals How AT-rich Interaction Domains (ARIDs) Recognize DNA. *EMBO J.*, 21(5) 1197-1209
9. **Daughdrill G.W.**, Buchko G.W., Botuyan M.V., Arrowsmith C., Wold M.S., Kennedy M.A., and Lowry D.F. (2003) Chemical Shift Changes Provide Evidence for Overlapping Single-Stranded DNA- and XPA-binding Sites on the 70 kDa Subunit of Human Replication Protein A. *Nucleic Acids Research* 31(14):4176-83
10. Pamela D. Vise, Kishore Kodali, Nancy Hoe, Andrzej Paszczynski, James M. Musser and **Gary W. Daughdrill** (2003) Stable Isotope Labeling of a Group A *Streptococcus* Virulence Factor Using a Chemically Defined Growth Medium. *Prot. Expr. and Purif.* 32:232-238
11. **Gary W. Daughdrill**, Pamela D. Vise, Hongjun Zhou, Xiaomin Yang, and Wen-Feng Yu, Maria Luisa Tasayco and David F. Lowry (2004) Reduced Spectral Density Mapping of a Partially Folded Fragment of *E. Coli* Thioredoxin. *J. Biomol. Struct. and Dyn.* 21(5)663-670
12. **Daughdrill, G. W.**, Pielak, G. J., Uversky, V. N., Cortese, M. S. & Dunker, A. K. (2005). Natively Disordered Proteins. In *Handbook of Protein Folding* (Buchner, J. & Kiefhaber, T., eds.). Wiley-VCH, Weinheim, Vol 3, pp. 275-357
13. Vise, P.D., Baral, B., Latos, A.J. and **Daughdrill, G.W.** (2005) NMR Chemical Shift and Relaxation Measurements Provide Evidence for the Coupled Folding and Binding of the p53 Transactivation Domain. *Nucleic Acids Research* 33 (7) 2061-2077
14. Katie E. Olson, Pranesh Narayanaswami, Pamela D. Vise, David F. Lowry, Marc S. Wold, and **Gary W. Daughdrill** (2005) Secondary Structure and Dynamics of an Intrinsically Unstructured Linker Domain. *J. Biomol. Struct. and Dyn.* 23(2) 113-124
15. Pamela Vise, Bharat Baral, Amber Stancik, David F. Lowry and **Gary W. Daughdrill** (2007) Identifying Long-range Structure in the Intrinsically Unstructured Transactivation Domain of p53. *Proteins* 67 526-530

16. **Gary W. Daughdrill**, Pranesh Narayanaswami, Sara Gilmore, Agniezka Belczyk, and Celeste J. Brown (2007) Dynamic Behavior of an Intrinsically Unstructured Linker Domain is Conserved in the Face of Negligible Amino Acid Sequence Conservation *J. Mol. Evol.* 65 (3) 277-288
17. David F. Lowry, Amber Stancik, Ranjay Mann Shrestha, and **Gary W. Daughdrill** (2007) Modeling the Accessible Conformations of the Intrinsically Unstructured Transactivation Domain of p53, *Proteins* 71 (2) 587-598
18. David F. Lowry, Andrew Hausrath, and **Gary W. Daughdrill** (2008) A Robust Approach for Analyzing a Heterogeneous Structural Ensemble, Proteins, 73 (4) 918-928
19. Brown CJ, Johnson AK, **Daughdrill GW** (2010) Comparing Models of Evolution for Ordered and Disordered Proteins, 27 (3) 609-621
20. Gely S, Lowry DF, Bernard C, Jensen MR, Blackledge M, Costanzo S, Bourhis JM, Darbon H, **Daughdrill G**, Longhi S. Solution Structure of the C-terminal X Domain of the Measles Virus Phosphoprotein and Interaction with the Intrinsically Disordered C-terminal Domain of the Nucleoprotein. J Mol Recognit. 2010 Jan 8, Epub ahead of print.
21. **Gary W. Daughdrill**, Determining Structural Ensembles for Intrinsically Disordered Proteins in Instrumental Analysis of Intrinsically Disordered Proteins: Assessing Structure and Conformation, Edited by Vladimir Uversky and Sonia Longhi Copyright © 2010 John Wiley & Sons, Inc.
22. Masahiro Sota, Hirokazu Yano, Julie Hughes, **Gary W. Daughdrill**, Zaid Abdo, Larry J. Forney, Eva M. Top (2010) Shifts in Host Range of a Promiscuous Plasmid Through Parallel Evolution of its Replication Initiation Protein, ISME Journal, in press.
23. **Daughdrill, G. W.** 2011. Protein dynamics: bridging the gap. Nat Chem Biol 7:193-194.
24. Brown, C. J., A. K. Johnson, A. K. Dunker, and **G. W. Daughdrill** 2011. Evolution and disorder. Curr Opin Struct Biol. 21, 441-446
25. **Gary W. Daughdrill**, Wade M. Borcherds, and Hongwei Wu, 2011 Disorder Predictors also Predict Backbone Dynamics for a Family of Disordered Proteins, PLoS-One 6(12): e29207, Epub 2011 Dec 15
26. **Daughdrill GW**, Kashtanov S, Stancik A, Hill SE, Helms G, Muschol M, Receveur-Brechot V, and Ytreberg FM, 2012 Understanding the Structural Ensembles of a Highly Extended Disordered Protein, Mol Biosyst, 8(1): 308-19. Epub 2011 Oct 6
27. Doi K, Li R, Sung SS, Wu H, Liu Y, Manieri W, Krishnegowda G, Awwad A, Dewey A, Liu X, Amin S, Cheng C, Qin Y, Schonbrunn E, **Daughdrill G**, Loughran TP, Sebti S, Wang HG, Discovery of Marinopyrrole A (Maritoclax) as a Selective Mcl-1 Antagonist that Overcomes ABT-737 Resistance by Binding to and Targeting Mcl-1 for Proteasomal Degradation, J Biol Chem. 2012 Mar 23; 287(13): 10224-35
28. Kashtanov S, Borcherds W, Wu H, **Daughdrill GW**, Ytreberg FM, Using Chemical Shifts to Assess Transient Secondary Structure and Generate Ensemble Structures of IDPs, Methods Mol Biol 2012; 895: 139-52
29. Narayanaswami, P, **Daughdrill GW**, Secondary Structure and Dynamics of a Family of Disordered Proteins in Peptide Folding, Misfolding, and Nonfolding, Edited by Reinhard Schweitzer-Stenner, John Wiley & Sons, Inc. 2012: pg 221-238

Professional Meetings and Presentations:

1. Keynote speaker at the Biophysical Society Workshop on The Importance of Disordered Proteins at the annual meeting of the Biophysical Society in Baltimore, MD, 02/1999
2. Presented seminar titled: The Evolution of Protein Flexibility to the Biology Department at the University of Idaho, 03/2002
3. Presented a seminar on The Role of Replication Protein A in Eukaryotic DNA Repair to the Chemistry Department at the University of Idaho, 04/2002

4. Presented a seminar on The Role of Replication Protein A in Eukaryotic DNA Repair at the Northwest Regional Meeting of the American Chemical Society, 06/2002
5. Presented seminar on The Evolution of Protein Flexibility to the Chemistry Department at Gonzaga University, 11/2002
6. Presented a seminar on Methods for the Determination of High Resolution Protein Structures to the Bioinformatics Class at Boise State University, 11/2002
7. Presented a seminar on The Role of Replication Protein A in Eukaryotic DNA Repair to the Inland Northwest Cancer Conference in Spokane, WA, 12/2002
8. Presented a poster on the “Evolution of Protein Flexibility” at the Gordon Conference on Technological Advances in NMR, 01/2004
9. Keynote speaker at the NSF sponsored workshop on Nuclear Magnetic Resonance Spectroscopy at Washington State University, 05/2004
10. Presented a poster on the “Coupling of Folding and Binding for the Intrinsically Unstructured Transactivation Domain of p53” at the Keystone Symposia on Frontiers of NMR in Molecular Biology, 01/2005
11. Presented a poster on “Identifying Long Range Structure in the Intrinsically Unstructured Transactivation Domain of p53” at the Keystone Symposia on Frontiers of NMR in Molecular Biology, 01/2007
12. Presented a seminar on Modeling the Accessible Conformations of the Intrinsically Unstructured Transactivation Domain of p53 at the first EMBO-SPINE2 Workshop on Intrinsically Unfolded Proteins: Biophysical Characterization and Biological Significance in Budapest, HU, 05/2007
13. Presented a seminar on Determining Structural Ensembles for Intrinsically Unstructured Proteins to the Chemistry Department at New Mexico State University, 12/2007
14. Presented a seminar on Determining Structural Ensembles for Intrinsically Unstructured Proteins to the Chemistry Department at Boise State University, 12/2007
15. Presented a poster on “Modeling the Accessible Conformations of the Intrinsically Unstructured Transactivation Domain of p53” at the Keystone Symposia on Frontiers of Structural Biology, 01/2008
16. Presented a seminar on Determining Structural Ensembles for Intrinsically Unstructured Proteins to the Chemistry Department at Arizona State University, 01/2008
17. Presented a seminar on the The Structure and Dynamics of the Tumor Suppressor, p53 to the Department of Biomedical Sciences at Mercer Medical College, 04/2008
18. Presented a seminar on Determining Structural Ensembles for Intrinsically Unstructured Proteins to the Department of Physics at Portland State University, 05/2008
19. Presented a poster on “A Realistic Structural Ensemble for the Intrinsically Unstructured Transactivation Domain of the Human Tumor Suppressor, p53” at the Keystone Symposia on Emerging Tumor Suppressors, 01/2009
20. Presented a poster on “A Robust Approach for Analyzing a Heterogeneous Structural Ensemble” at the annual meeting of the Biophysical Society, 03/2009
21. Presented a seminar on Investigating Protein Structure, Function, and Dynamics using Nuclear Magnetic Resonance Spectroscopy" to the Byrd Alzheimer's Center, 08/2009
22. Presented a seminar on Structure, Function, and Evolution of Intrinsically Disordered Proteins to Department of Molecular Medicine at the University of South Florida, 09/2009
23. Presented a seminar on the Structure, Function, and Evolution of Intrinsically Disordered Proteins to the Department of Physics at the University of South Florida, 09/2009

24. Presented a seminar on a Realistic Structural Ensemble for the Intrinsically Unstructured Transactivation Domain of the Human Tumor Suppressor, p53 at the Harry and Elsa Jiler American Cancer Society Professors Meeting, 11/2009
25. Presented a poster on the “Structure and Evolution of Intrinsically Disordered Proteins" at the Keystone Symposium on Structural Biology, 01/2010
26. Presented a seminar on the Structure and Evolution of Intrinsically Disordered Proteins at the annual meeting of the Biophysical Society, 02/2010
27. Presented a seminar on the Structure, Function, and Evolution of Intrinsically Disordered Proteins at the Moffitt Cancer Center, 03/2010
28. Presented a seminar on the Structure, Function, and Evolution of Intrinsically Disordered Proteins at the first Gordon Conference on Intrinsically Disordered Protein, 07/2010
29. Presented a seminar on the Structure, Function, and Evolution of Intrinsically Disordered Proteins at the Albany Conversation, 06/2011
30. Presented a seminar entitled: Structure, Function, and Evolution of Intrinsically Disordered Proteins at the Center for Integrated Protein Science, Munich, 09/2012
31. Presented a seminar entitled: Structural Basis for Ternary Complex Formation between Hsp90, Tau, and FKBP51 at the 6th Conference on the Hsp90 Chaperone Machine, Les Diablerets, 09/2012
32. Presented a seminar entitled: Structure, Function, and Evolution of Intrinsically Disordered Proteins at the MRC Laboratory of Molecular Biology, Cambridge UK, 09/2012

Grants and Contracts:

Completed:

UI SEED GRANT (PI: Daughdrill) 07/01/01-6/30/03
UI Research Office $9,000 (total)
The Evolution of Protein Flexibility
The main goal of this project was to investigate the evolutionary constraints and patterns that govern the natural selection of partially collapsed, flexible proteins and protein domains.

IRG7700323 (PI: Daughdrill) 11/30/01-06/30/03
American Cancer Society $20,000 (total)
The Role of Replication Protein A in Eukaryotic DNA Repair
The main goal of this project was to understand the mechanism of complex formation and disassociation between replication protein A and the tumor suppressor protein, p53.

SP20 RR16454-01 (PI: Daughdrill) 07/22/02-06/30/04
National Institute of Health $17,500 (total)
Structural and Dynamic Studies of a Hypervariable Virulence Factor from *Streptococcus*
The main goal of this project was to understand the structural basis for the *Streptococcal* inhibitor of complement’s tolerance to amino acid replacements and the structural details of the binding to Ezrin.

P20 RR16448-01 (PI: Forney; PD: Daughdrill) 02/23/02-06/30/07
National Institute of Health $997,071 (direct)
The Evolution of Protein Flexibility
The main goal of this project was to investigate the evolutionary constraints and patterns that govern the natural selection of partially collapsed, flexible proteins and protein domains.

P20 RR16448-01 (PI: Forney; PD: Daughdrill) 02/23/02-06/30/07
National Institute of Health $614,000 (total)
Structural Biology Core Facility
The main goal of this project was to establish a structural biology core facility at the University of Idaho.

1 R21 GM083827-01A1 (Co-I: Daughdrill;Ytreberg) 09/14/09-02/29/12

National Institutes of Health $106,567 (sub-award total)
Determining the Conformational Stability of NMR Ensemble Structures
The main goals of this project are to use coarse grain and more rigorous molecular dynamics simulations to determine how accurately experimentally restrained ensembles of unstructured proteins represent the equilibrium ensemble.

Active:

RSG-07-289-01-GMC (PI: Daughdrill) 07/01/07-06/30/13
American Cancer Society $703,000 (total)
Structural and Dynamic Studies of p53 Binding to RPA70
The main goals of this project are to determine a structural ensemble for the intrinsically unstructured transactivation domain of p53 and to investigate how this ensemble changes on binding to RPA70.

MCB-0939014 (PI: Daughdrill) 04/15/08-04/15/14
National Science Foundation $578,860 (total)
Determining Structural Ensembles for Intrinsically Unstructured Proteins
The main goals of this project are to determine structural ensembles for homologous proteins that are intrinsically unstructured and to use these ensembles to identify relationships between sequence identity and structural similarity.

Pending:

Teaching and Training

Courses Taught:

1. Inorganic Chemistry
2. Organic Chemistry
3. Biophysical Chemistry
4. Protein Structure and Function
5. Graduate Biochemistry
6. Graduate Student Research Seminar
7. Advanced Topics in Microbiology, Molecular Biology, and Biochemistry
8. MSP Teachers Workshop
9. Cell Biology
10. Structural Biology

Graduate Student Mentoring

1. Kishore Kodali, graduated with Masters from University of Idaho, 2003
2. Pranesh Narayanaswami, graduated with Masters from University of Idaho, 2008
3. Anni Pine, graduated with Masters University of South Florida in Summer 2009
4. Wade Borcherds, Ph.D. student, joined lab at University of South Florida in Fall 2009
5. Jessica Kennedy, Ph.D. student, joined lab at University of South Florida in Spring 2009
6. Alex Barrett, M.S. student, joined lab at University of South Florida in Spring 2011

Undergraduate Student Mentoring

1. William Garrett Reynolds, awarded fellowship to perform research in 2003
2. Katie Olson, first author on peer reviewed publication in 2005, went on to successful career in industry
3. Andrew Latos, co-author on peer reviewed publication in 2005
4. Bharat Baral, co-author on two peer-reviewed publications in 2005 and 2007, accepted to graduate school at the University of Idaho
5. Sara Gilmore, co-author on peer-reviewed publication in 2007, accepted to graduate school at John Hopkins
6. Agniezka Belczyk, co-author on peer-reviewed publication in 2007, Polish transfer student
7. Ranjay Mann Shrestha, co-author on peer-reviewed publication in 2007
8. Katie Mishal, co-author on manuscript in preparation.

Professional and Scholarly Organizations:

1. Member of the Biophysical Society since 1999
2. Member of the American Chemical Society since 2000

Professional Service:

1. Member of the DNA Mechanisms in Cancer study section for the American Cancer Society 06/2008-06/2012
2. Ad Hoc proposal reviewer for the National Science Foundation since 2005
3. Ad Hoc proposal reviewer for the U.S. Civilian Research and Development Foundation since 2003
4. Secretary/Treasurer for Intrinsically Disordered Proteins Subgroup at the Biophysical Society, 2010
5. Vice/Co-Chair of the Gordon Research Conference on Intrinsically Disordered Proteins, 2012-2014
6. Invited reviewer for PNAS, JACS, Biochemistry, Journal of Molecular Biology, Biophysical Journal, Protein Science, Proteins, Molecular Biosystems, Journal of Proteome Research, PloS One, BBA-Proteins and Proteomics, Genes to Cells, Nature of Chemical Biology, Nature Protocols
7. On the editorial board of the Scientific World Journal and PeerJ

Kristina Hildegard Schmidt, Ph.D.

Department of Cell Biology, Microbiology and Molecular Biology
University of South Florida
4202 E. Fowler Avenue, ISA 2015
Tampa, FL 33620

Office Phone: (813) 974-1592
Lab Phone:: (813) 974-7873
Fax: (813) 974-1614
Email: kschmidt@usf.edu

EDUCATION

2000	Ph.D. Molecular Biology, University of Edinburgh, UK (Major Professor: Professor David R. Leach)
1995	Diploma in Biology (German equivalent of M.S.), University of Leipzig, Germany

ACADEMIC AND RESEARCH EXPERIENCE

08/2012 – present	Associate Professor, Department of Cell Biology, Microbiology and Molecular Biology, University of South Florida
10/2006 – present	Member, H. Lee Moffitt Cancer Center and Research Institute
3/2007 – 2010	Member, Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics (FCoE-BITT)
1/2006 – 07/2012	Assistant Professor, Department of Cell Biology, Microbiology and Molecular Biology, University of South Florida
10/1999 – 12/2005	Postdoctoral Researcher, Ludwig Institute for Cancer Research, University of California - San Diego (Laboratory of Dr. Richard D. Kolodner)
7/1999 – 10/1999	Research Assistant, Ludwig Institute for Cancer Research, University of California - San Diego (Laboratory of Dr. Richard D. Kolodner)
10/1995 – 7/1999	Graduate Research Assistant, Institute of Cell and Molecular Biology, University of Edinburgh, UK (Laboratory of Dr. David R. Leach) Ph.D. Dissertation: CTG microsatellite instability in *Escherichia coli*.
10/1994 – 10/1995	Undergraduate Research Assistant, University of Leipzig - School of Medicine, Germany (Laboratory of Dr. Claudia Wolf) Diploma Thesis: Mutation Detection in the human *PAH* gene by SSCP and direct sequencing in a German family with suspected intragenic crossover.

AWARDS

2012	Outstanding Educator Award, CMMB, University of South Florida
2009	Outstanding Research Achievement Award, University of South Florida
1998	The New York Academy of Sciences Young Investigator Travel Award
1998	EMBO Travel Award
1997	James Rennie Bequest Travel Award, University of Edinburgh, UK
1995-1998	The Darwin Trust of Edinburgh Pre-doctoral Research Scholarship

PROFESSIONAL ORGANIZATIONS

2006-present	American Society for Microbiology, Member
2006-present	Genetics Society of America, Member

AD-HOC REVIEWER

Mutation Research, Human Mutation, Nucleic Acids Research, Tumor Biology, Genome Integrity, Genetics, Genes and Nutrition, PLos Genetics

GRANT REVIEWER

2007	Cancer Research UK
2006	Biomedical and Life Sciences Research Grant Review Panel, University of South Florida

EDITORIAL BOARDS

ISRN Molecular Biology

RESEARCH FUNDING

NIH/NIGMS

R01 GM081425 NIH Diversity Supplement $105,703
(Pre-doctoral Fellowship for Lillian Doerfler)
Role: PI
Dates: 09/2010 – 09/2012

NIH/NIGMS $1,320,000

5R01 GM081425
Title: Suppression of Translocations by RecQ-like DNA Helicases
Role: PI
Dates: 08/2008 – 5/31/2013

NIH/NIEHS $330,750 (Total)

R21 ES015481
Title: Screens to Identify Gain of Function Ah Receptor Mutants Involved in Degradation
Role: Co-PI (PI: Dr. R. Pollenz, USF)
Dates: 05/2007 - 04/2009

USF College of Arts and Sciences Office of Research and Innovation

Internal Awards Program: New Researcher Grant $10,000
Title: Control of Recombination between Related Genes in Yeast DNA Helicase Mutants
Role: PI
Dates: 05/2006 - 04/2007

USF College of Arts and Sciences Office of Research and Innovation

Internal Awards Program: Faculty Development and Research Award $1000
Role: PI
Date: 07/2006

PEER-REVIEWED PUBLICATIONS

*Corresponding author

Mirzaei H, and **Schmidt KH*** (2012) Non-Bloom syndrome-associated partial and total loss-of-function variants of BLM helicase. *Proceedings of the National Academy of Sciences U.S.A.* 109:19357-19362

Doerfler L, Harris LB, Viebranz E and **Schmidt KH*.** (2011) Differential genetic interactions between DNA-damage checkpoint components and DNA repair factors in the maintenance of chromosome stability in yeast lacking the Sgs1 helicase. *Genome Integrity* 2:8.

Mirzaei H, Syed S, Kennedy J, and **Schmidt KH*** (2011) Sgs1 Truncations Induce Genome Rearrangements but Suppress Detrimental Effects of BLM Overexpression in *Saccharomyces cerevisiae*. *J Mol Biol.* 405(4):877-91.

Schmidt KH*, Viebranz E, Doerfler L, Lester C, Rubenstein A (2010) Formation of Complex and Unstable Chromosomal Translocations in Yeast. *PLoS ONE* 5(8): e12007.

Schmidt KH*, Viebranz EB, Harris LB, Mirzaei-Souderjani H, Syed S, and Medicus R. (2010) Defects in DNA lesion bypass lead to spontaneous chromosomal rearrangements and increased cell death. *Eukaryotic Cell* 9(2):315-24. Epub 2009 Dec 11.

Vijayakumar S, Chapados B, **Schmidt KH**, Kolodner R, Tainer J, Tomkinson A. (2007) The C-terminal domain of yeast PCNA is required for physical and functional interactions with Cdc9 DNA ligase. *Nucleic Acids Research* 35(5):1624-37.

Schmidt KH*, Wu J, and Kolodner RD. (2006) Control of translocations between highly diverged genes by Sgs1, the *Saccharomyces cerevisiae* homolog of the Bloom's syndrome gene. *Mol. Cell. Biol.* 26 (14):5406-5420.

Schmidt KH* and Kolodner RD. (2006) Suppression of spontaneous genome rearrangements in yeast DNA helicase mutants. *Proc. Nat Acad. Sci.* 103(48):18196-18201.

Schmidt KH, Pennaneach V, Putnam CD and Kolodner RD. (2006) Analysis of gross-chromosomal rearrangements in *Saccharomyces cerevisiae*. *Methods Enzymol* 409:462-476.

Smolka MB, Albuquerque CP, Chen S, **Schmidt KH**, Wei XX, Kolodner RD, and Zhou H. (2005) Dynamic changes in protein-protein interaction and protein phosphorylation probed by amine reactive isotope tag. *Mol Cell Proteomics* 4(9):1358-69.

Schmidt KH, and Kolodner RD. (2004) Requirement of Rrm3 helicase for repair of spontaneous DNA lesions in cells lacking Srs2 or Sgs1 helicase. *Mol Cell Biol.* 24(8):3213-26.

Schmidt KH, Derry K, and Kolodner RD. (2002) Rrm3 of *Saccharomyces cerevisiae,* a 5' to 3' DNA helicase, interacts physically with proliferating cell nuclear antigen (PCNA). *J Biol Chem*. 277(47):45331-7.

Cromie GA, Millar CB, **Schmidt KH**, and Leach DR. (2000) Palindromes as substrates for multiple pathways of recombination in Escherichia coli. *Genetics.* 154(2):513-22.

Schmidt KH, Abbott C, and Leach DR, (2000) Two opposing effects of mismatch repair on CTG repeat instability in *Escherichia coli. Mol Microbiol.* 35(2):463-71.

ORAL PRESENTATIONS

The Role of DNA Damage Checkpoints and DNA Repair in the Maintenance of Genomic Stability in Yeast. Department of Cell Biology and Pathology, College of Medicine, University of South Florida, Tampa, FL. April 25, 2011.

Mechanisms of Genome Instability. Department of Microbiology and Cell Science, University of Florida, Gainesville, FL. March 31, 2008.

Yeast as a Model for Cancer Genetics. H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL. October 16, 2007.

Control of Translocations between highly diverged genes in *S. cerevisiae* by Sgs1. FASEB Summer Research Conference: Yeast Chromosome Replication and Segregation. Indian Wells, CA. June 24-29, 2006.

Molecular Mechanisms of Eukaryotic Genome Instability. BioStat International/ Molecular Medicine Seminar Series, College of Medicine, University of South Florida, Tampa, FL. April 7, 2006.

Genome Instability in DNA Helicase Mutants of *Saccharomyces cerevisiae*. Southeast Regional Yeast Meeting 2006, University of Southern Mississippi, MS. April 1, 2006.

Human Genome Instability: Mutation and Repair. Biomedical Genomics and Genetics Lecture, College of Medicine, University of South Florida, Tampa, FL. February 1, 2006.

Genome instability in DNA helicase mutants of *Saccharomyces cerevisiae*. Experimental Biology/XXXV International Congress of Physiological Sciences, San Diego, CA. April 2-6, 2005.

Requirement of DNA Helicases for Genome Integrity. Salk Institute, La Jolla, CA. January 2004.

Role of DNA Helicases in Recombinational Repair of Replication Damage. Center for Molecular Genetics Seminar Series. University of California – San Diego, La Jolla, CA. April 2003.

Influence of DNA repair on $(CTG)_{41}$ repeat instability in Escherichia coli" EMBO Workshop on Triplet Repeat Expansion Diseases in the Context of Micro- and Mini satellite Evolution. London, UK. April 1-3, 1998.

In vivo Study of Instability and secondary structure formation of trinucleotide repeats in

Escherichia coli. 1st International Conference on Unstable Triplets, Microsatellites and Human Disease. Santa Fe, NM. April 1-6, 1997.

CONFERENCE PRESENTATIONS

Kennedy J, Daughdrill GW, and **Schmidt KH**. Two transient alpha-helices in the disordered N-terminus of Sgs1 are critical for chromosome stability and Rmi1-dependent physical interaction with Top3. Keystone conference on "DNA replication and Recombination" Banff, Canada. (Accepted, to be presented March, 2013)

Doerfler L and **Schmidt KH**. Functional interaction between *SGS1* and *EXO1* in maintaining genome stability in *S. cerevisiae*. "Maintenance of Genome Stability" Biannual Conference, Nassau, Bahamas.

Mirzaei H, Damit M and **Schmidt KH**. Identification of coding single nucleotide polymorphisms that impair the function of BLM helicase, a human RecQ-like DNA helicase associated with Bloom's syndrome. Gordon Conference "DNA Damage, Mutation and Cancer", Ventura Beach, CA.

Achors K, Prewitt C, Mirzaei H, and **Schmidt KH**. Identification of Protein Interacting Partners of Human RecQL4 DNA helicase associated with Rothmund-Thompson Syndrome. USF Undergraduate Research Symposium. April 2012.

Mendez J, Beach B, **Schmidt KH** and Westerheide S. Uncovering Novel *S. cerevisiae* HSF1 Interacting Partners via a Genome-Wide Yeast-Two Hybrid Screen. Research One Symposium, USF April 5, 2012.

Harris LB, Doerfler L and **Schmidt KH**. Genetic Determinants of Chromosomal Rearrangement Formation in Yeast. Keystone Symposium on Genome Instability and DNA Repair, Keystone, CO. January 30-February 4, 2011.

Kennedy J, Daughdrill G and **Schmidt, KH**. Structural and Functional Characterization of a RecQ-like Helicase in *S. cerevisiae* with a 640 Residue Disordered Region. 55th Annual Meeting of the Biophysical Society, Baltimore, MD. March 5-9, 2011.

Mirzaei-Souderjani, H and **Schmidt KH**. Characterization of BLM expression in humanized diploid *Saccharomyces cerevisiae* cells. 50th Annual Meeting of the American Society of Cell Biology, Philadelphia, PA. December 11-15, 2010.

Syed S and **Schmidt KH**. Functional Domains of Sgs1 Required for Suppressing Genome Instability. 50th Annual Meeting of the American Society of Cell Biology, Philadelphia, PA. December 11-15, 2010.

Mirzaei H, Syed S and **Schmidt KH**. The Role of RecQL Helicases Sgs1 and BLM in Maintaining Genome Stability in *Saccharomyces cerevisiae.* University of South Florida Research One Graduate Research Symposium. October 14, 2010.

Syed S**,** Mirzaei H and **Schmidt KH**. The role of DNA helicases Sgs1 and Blm in the maintenance of genome stability. University of South Florida Research One Graduate Research Symposium. October 8, 2009.

Syed S, Mirzaei H and **Schmidt KH**. The Role of the C-terminus of Sgs1 in Suppressing Genome Instability. American Society of Microbiology Conference on DNA Repair and Mutagenesis. Whistler, Canada. May 30-June 5, 2009.

Mirzaei H, Syed S and **Schmidt KH**. Functional and mutational analysis of BLM and various Bloom's syndrome associated BLM alleles in humanized Saccharomyces cerevisiae. ASM Conference "DNA Repair and Mutagenesis. Whistler, Canada. May 30-June 5, 2009.

Wilson S, **Schmidt KH**, and Pollenz RS. Analysis of Ahr Protein Stability in a Yeast Expression Model, Society of Toxicology Annual Meeting. Poster. March 15-19, 2009.

Schmidt KH, Viebranz E, Rubenstein A, Lester C and Kennedy J. Formation of intra- and interchromosomal genome rearrangements in the absence of Sgs1. Keystone Symposium on Genome Instability and DNA Repair, Taos, NM. March 1-6, 2009.

Wilson S, **Schmidt KH** and Pollenz, RS. Characterization of AHR and ARNT Protein Expression in Yeast. Society of Toxicology Annual Meeting. March 16-20, 2008.

Schmidt KH, Wu J, and Kolodner RD. Suppression of recurring translocations by Sgs1 DNA helicase. Genetics Society of America Conference on Yeast Genetics and Molecular Biology, Princeton University, NJ. July 25-30, 2006.

Schmidt KH and Kolodner RD. Rrm3 helicase functions with Srs2 and Sgs1 to prevent lethal homologous recombination. FASEB Summer Research Conference on Genetic Recombination and Chromosomal Rearrangements, Snowmass, CO, July 26-31, 2003.

Schmidt KH, Derry K, and Kolodner RD. RRM3 of *Saccharomyces cerevisiae* interacts with PCNA via a conserved PCNA binding motif. Cold Spring Harbor Conference on Eukaryotic DNA Replication, Cold Spring Harbor, NY. September 5-9, 2001.

Schmidt KH and Leach DR. Opposing Effects of Mismatch Repair Genes on (CAG).$(CTG)_{41}$ Repeat Instability in *Escherichia coli*. New York Academy of Sciences Conference on Molecular Strategies in Biological Evolution, Rockefeller University, New York, NY. June 27-29, 1998.

Schmidt KH, Darlow JM, and Leach DR. In vivo Study of Instability and secondary structure formation of trinucleotide repeats in *Escherichia coli*. Cambridge Symposium on Unstable Triplets, Microsatellites and Human Disease. Santa Fe, NM. April 1-6, 1997.

COMMITTEES

- Faculty Advisory Committee/Tenure & Promotion Committee (**Chair**) 2012-present
- SNSM Tenure and Promotion Committee 2012-present
- Faculty Council (College of Arts and Sciences) 2011-present
- CMMB Strategic Research Planning Committee **(Chair)** 2010-present
- Ad-hoc Interdisciplinary Science Building Relocation Committee 2010
- Provost's Award for Outstanding Teaching by a Graduate Teaching Assistant, Selection Committee 2010
- Faculty Search Committee: Computational Biology, Molecular Biology 2009-2010
- Ad-hoc ISA Laboratory Design Committee 2009
- Faculty Advisory Committee (CMMB Department) 2008-present

- CMMB Faculty Search Committee: Molecular Biology **(Chair)** 2008-2009
- Florida Center of Excellence-BITT Faculty Search Committee 2007-2008
- CMMB Division Seminar Committee 2007-2008
- CMMB Nobel Laureate Lecture Committee 2007
- Steering Committee for the Reorganization of the Biology Department 2006-2008
- Faculty Search Committee: Proteomics and Genomics 2006-2008
- Faculty Search Committee: Mol. Microbiology 2006-2007
- Ad-hoc Committee on Faculty Governance 2006
- Faculty Search Committee: Genomics 2006
- Biology Curriculum Committee 2006
- Biology Department Seminar Committee 2006

Lindsey N. "Les" Shaw, Ph.D.

Contact Information

Address: Department of Cell Biology, Microbiology & Molecular Biology
University of South Florida
4202 East Fowler Avenue, ISA 2015
Tampa, FL 33620

Office Phone: 813-974-2087
Lab Phone: 813-974-5259
Fax: 813-974-1614
email: shaw@usf.edu

EDUCATION

University of Sheffield, Sheffield, UK **1999 - 2002**
Ph.D. in Molecular Microbiology (Major Professor - Professor Simon J. Foster)

University of East Anglia, Norwich, UK **1996 - 1999**
B.Sc. (Hons) in Microbiology

RESEARCH EXPERIENCE/EMPLOYMENT

Associate Professor of Molecular Microbiology (with Tenure)
Department of Cellular Biology, Microbiology & Molecular Biology, University of South Florida
2012 - present

Director of Graduate Studies
Department of Cellular Biology, Microbiology & Molecular Biology, University of South Florida
2009 - present

Assistant Professor of Molecular Microbiology
Department of Cellular Biology, Microbiology & Molecular Biology, University of South Florida
2007 - 2012

Research Assistant Professor: In the laboratory of **Dr George C. Stewart**
Department of Veterinary Pathobiology, University of Missouri
2006 - 2007

Post-doctoral Research Fellow: In the laboratory of **Dr James Travis**
Department of Biochemistry, University of Georgia
2002 - 2006

Doctoral Research: In the laboratory of **Professor Simon J. Foster**
Department of Molecular Biology & Biotechnology, University of Sheffield, UK
1999 - 2002

Undergraduate Honors Research: In the laboratory of **Professor Richard James**
University of East Anglia, Norwich, UK

1998 - 1999

PROFESSIONAL AFFILIATIONS

- Member, American Society for Microbiology **2002 - present**
- Consultant, European Union research consortium on Anti-staphylococcal therapies. **2002 - 2006**
- Language Editor, Central European Journal of Biology (Springer) **2005 - 2011**
- Member, American Society for Microbiology Southeast Branch **2007 - present**
- Member, International Proteolysis Society **2007 - present**
- Member, USF Center for Drug Discovery & Innovation (CDDI) **2007 - present**
- Member, Center for Molecular Diversity in Drug Design, Discovery and Delivery (CMD5) **2007 - present**
- Consultant to Nanopharma Technologies Inc, Tampa FL **2008 - 2010**
- Consultant to Zimek Systems, Tampa FL **2009 - present**
- Core Investigator, The Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA; NIH, NIAID) **2010 - present**

HONORS AND AWARDS

- European Union training award from the Center of Excellence program to study at the Institute of Molecular Biology, Jagiellonian University, Krakow, Poland. **2001**
- Gordon Research Conference on Staphylococcal diseases, travel award. **2005**
- Best poster (1 of 5), 2009 Gordon Research Conference on Staphylococcal diseases, Waterville Valley, NH. **2009**
- Gordon Research Conference on Staphylococcal diseases, travel award. **2009**
- Session Chair, Molecular Microbiology Session, American Society for Microbiology Southeastern Branch Annual Meeting, Savannah, GA. Friday 6th November, 2009. **2009**
- Session Chair, Molecular Pathogenesis Session, International Conference on Gram-Positive Pathogens, Omaha, NE. Monday 11th October, 2010. **2010**
- University of South Florida, Outstanding Faculty Research Award **2012**
- Session Chair, Antibacterial Agents, International Conference on Gram-Positive Pathogens, Omaha, NE. Monday 8th October, 2012. **2012**
- Session Chair, Microbial Pathogenesis Session, American Society for Microbiology Southeastern Branch Annual Meeting, Athens, GA. Friday 26th October, 2012. **2012**
- Multi-page feature article in USF Magazine **Fall 2012**

Grant Review Panels

- Florida Center of Excellence in Bio-Imaging and Targeted Therapeutics Seed Grant Review Panel **2007 - 2009**
- Food and Drug Administration (FDA) Office of Women's Health (OWH) Intramural Scientific Research Program **2008 - 2009**
- Maryland Industrial Partnership Program **Summer 2010**
- NIH/NIAID Chemical Approaches to Target Validation for Drug Resistant Pathogens RFA Study Section **Fall 2011**
- Health Research Board of Ireland **Winter 2011**
- DOD, Defense Medical Research and Development Program, Basic Research - Military Infectious Diseases, BR-MID **Spring 2012**
- NIH/NIAID ZRG1 IDM S 92, Special Emphasis Panel on Infectious Disease **Fall 2012**
- NIH/NIAID ZRG1 IDM S 92, Special Emphasis Panel on Infectious Disease **Spring 2013**
- NIH/NIAID IMST (10), Biological Chemistry, Biophysics and Drug Discovery Study Section (SBIR), mail in reviewer **Spring 2013**

Journal Article Peer Review

- Review Editor, Frontiers in Microbiology: Cellular and Infection Microbiology Section
- Ad-hoc reviewer, Central European Journal of Biology
- Ad-hoc reviewer, Microbiology
- Ad-hoc reviewer, Journal of Biological Chemistry
- Ad-hoc reviewer, Biochimie
- Ad-hoc reviewer, Infection and Immunity
- Ad-hoc reviewer, Journal of Microbiological Methods
- Ad-hoc reviewer, Molecular Microbiology
- Ad-hoc reviewer, Innate Immunity
- Ad-hoc reviewer, Journal of Medical Microbiology
- Ad-hoc reviewer, Toxins
- Ad-hoc reviewer, PLoS ONE
- Ad-hoc reviewer, Microbial Drug Resistance
- Ad-hoc reviewer, BMC Microbiology
- Ad-hoc reviewer, Analytical Chemistry
- Ad-hoc reviewer, Journal of Proteome Research
- Ad-hoc reviewer, Journal of Bacteriology
- Ad-hoc reviewer, EMBO Journal
- Ad-hoc reviewer, Biological Chemistry
- Ad-hoc reviewer, PLoS Pathogens
- Ad-hoc reviewer, Biotechnology and Applied Biochemistry

Book Reviews

- Anthrax: History, Biology, Epidemiology, Genetics, and Molecular Biology, by Robert E. Levin. Elsevier/Academic Press.
- Microbiology Fundamentals: A Clinical Approach, by Marjorie K. Cowan. McGraw-Hill.
- Stress Response in Microbiology, by Jose M. Requena. Appears in ChemBioChem: X(Y): A-B.

ORAL PRESENTATIONS

1. *agr* mediated regulation of virulence determinants synthesis and its role in the pathogenesis of *Staphylococcus aureus*. Jagellonian University Research Symposium for Biotechnology. Mszana, Poland. November 23rd-25th, 2001.

2. Pleiotropic Effects of Disruption of Control of *S. aureus* Intracellular Proteolytic Activity. Potempa J. & Shaw L.N. Gordon Research Conference on Staphylococcal diseases. Newport, Rhode Island. August 21st–26th, 2005.

3. Proteolytic enzymes and their role in the physiology and pathogenesis of *Staphylococcus aureus*. Gothenburg University. Gothenburg, Sweden. September 30th, 2005.

4. The role and regulation of the extracellular proteolytic system of *Staphylococcus aureus*. University of Missouri-Columbia. Columbia, Missouri. March 29th, 2006.

5. Fighting the enemy within: The proteases of *Staphylococcus aureus*. University of Calgary. Calgary, Canada. June 5th, 2006.

6. Extracellular proteases and their role in the progression of *Staphylococcus aureus* mediated disease. University of Georgia. Athens, Georgia. July 7th, 2006.

7. Identification and characterization of σ^S, a novel component of *the Staphylococcus aureus* stress and virulence responses. Southern Illinois University-Carbondale. Carbondale, Illinois. January 4th, 2007.

8. Identification and characterization of σ^S, a novel component of *the Staphylococcus aureus* stress and virulence responses. Ohio University. Athens, Ohio. January 25th, 2007.

9. Identification and characterization of σ^S, a novel component of *the Staphylococcus aureus* stress and virulence responses. University of Wyoming. Laramie, Wyoming. January 30th, 2007.

10. Identification and characterization of σ^S, a novel component of *the Staphylococcus aureus* stress and virulence responses. University of South Florida. Tampa, Florida. February 12th, 2007.

11. Identification and characterization of σ^S, a novel component of *the Staphylococcus aureus* stress and virulence responses. Mississippi State University. Carbondale, Illinois. March 2nd, 2007.

12. Identification and characterization of σ^S, a novel component of *the Staphylococcus aureus* stress and virulence responses. Louisiana State University. Baton Rouge, Louisiana. March 8th, 2007.

13. Fright and Fight: Probing the Stress and Virulence Responses of Staphylococcus aureus. University of Southern Mississippi. 16th November 2007.

14. Fright and Fight: Probing the Stress and Virulence Responses of Staphylococcus aureus. University of Arkansas for Medical Sciences. 31st March 2008.

15. Fright and Fight: Probing the Stress and Virulence Responses of Staphylococcus aureus. University of South Florida College of Medicine. 7th November 2008.

16. Identification and Characterization of σ^S, a novel component of the *Staphylococcus aureus* stress and virulence responses. Gordon Research Conference on Staphylococcal diseases. Waterville Valley, New Hampshire. August 30th – September 4th, 2009.

17. Identification and Characterization of σ^S, a novel component of the *Staphylococcus aureus* stress and virulence responses. University of Florida. 12th October 2009.

18. In search of novel antimicrobials that kill MRSA - how do you defeat a superbug? University of South Florida, Department of Chemistry Drug Discovery Colloquium. 13th April 2010.

19. The Role of Alternative Sigma Factors in the Virulence of *Staphylococcus aureus*. Jagellonian University, Krakow, Poland. 16th September, 2010.

20. Exploring the Pathogenic and Drug Resistance Mechanisms of *Staphylococcus aureus*. University of South Florida, Department of Public Health. 23rd November 2010.

21. Exploring the Role of σ^S in *S. aureus* Virulence: the Trials and Tribulations of Studying a Stealth Protein. University of South Florida, Department of Molecular Medicine. 15th June 2011.

22. Exploring the Pathogenic and Drug Resistance Mechanisms of *Staphylococcus aureus*. University of South Florida, Department of Cell Biology, Microbiology & Molecular Biology – Tenure Seminar. 2nd September 2011.

23. Exploration of the role of a novel sigma factor, σ^S, in *S. aureus* pathogenesis. American Society for Microbiology Southeastern Branch Meeting. Gainesville, FL. 21st October, 2011.

24. Exploring the Pathogenic and Drug Resistance Mechanisms of *Staphylococcus aureus*. The University of Iowa, Department of Microbiology, Carver College of Medicine. 25th October, 2011.

25. Exploring the Pathogenic and Drug Resistance Mechanisms of *Staphylococcus aureus*. Old Dominion University, Department of Biological Sciences, 24th January, 2012.

26. Exploring the Pathogenic and Drug Resistance Mechanisms of *Staphylococcus aureus*. University of South Florida, Morsani College of Medicine, Signature Interdisciplinary Program in Allergy, Immunology & Infectious Diseases Seminar. 9th February, 2012.

27. Is a *Staphylococcus aureus* Vaccine Possible? 2nd Conference on Vaccinology in the Tropics: Vaccines in a Globalized World. Panama City, Panama. 16th March, 2012.

28. Antibacterial Drug Discovery: Targeting the ESKAPE Pathogens. Torrey Pines Institute for Molecular Studies. 9th January, 2013.

POSTER PRESENTATIONS

1. The role and Regulation of the extracellular proteases of *Staphylococcus aureus*. Golonka E., Shaw L.N., Potempa J., Foster S.J. Tokyo, Japan, August, 2003.

2. Environmental regulation of extracellular protein synthesis in *Staphylococcus aureus*. Davenport J.E., Potempa J., Travis J., Shaw L.N. 5th Annual Undergraduate Research Symposium, Athens, Georgia, March 2004.

3. Distribution of genes encoding the microbial non-oxidative reversible hydroxyarylic acid decarboxylases/phenol carboxylases. Lupa B., Shaw L.N., Lyon D., Wiegel J. 104th ASM Annual General meeting, 23rd–27th May, 2004, New Orleans, 2004.

4. Isolation and Properties of Extracellular Proteinases of *P. marneffei*. Moon J., Shaw L.N., Mayo J., Potempa J., Travis J. 104th ASM Annual General meeting, 23rd–27th May, 2004, New Orleans, 2004.

5. Are intracellular metallopeptidases important for *S. aureus* virulence and survival? The *in vivo* vs. *in vitro* dichotomy. Shaw L.N., Mydel P., Kubica M., Jonsson I.M., Travis J., Potempa J., Tarkowski A. Gordon Research Conference, Rhode Island, USA, August 21st–26th, 2005.

6. Pathogenicity of IdeS Protease Homologue in *Treponema denticola*. Ishihara K., Miyamoto M., Ito R., Shaw L.N., Wawrzonek K., Potempa J., Okuda K. 84th Meeting of the International Association for Dental Research, June 28th–July 1st, 2006, Brisbane, Australia.

7. Inactivation of *traP* has no effect on the Agr quorum sensing system or virulence of *Staphylococcus aureus*. Shaw LN, Jonsson IM, Singh V, Tarkowski A, Stewart GC. University of Missouri Life Sciences Symposium, April 16th-20th, 2007, Columbia, MO, USA.

8. Inactivation of *traP* has no effect on the Agr quorum sensing system or virulence of *Staphylococcus aureus*. Shaw LN, Jonsson IM, Singh V, Tarkowski A, Stewart GC. Gordon Research Conference, September 2nd–7th, 2007, Les Diablerets, Switzerland.

9. The influence of external stress on the expression of Aminopeptidase S in *Staphylococcus aureus*. Hayner, J. & Shaw, L.N. 6th Annual Undergraduate Research Symposium, April 2nd 2008, Tampa, FL.

10. Analysis of the HtrA-Serine Proteases of *Staphylococcus aureus*. Rivera, F., Jonsson, I.M., Foster, T.J., Tarkowski, A. & Shaw, L.N. Annual Undergraduate Research Symposium, April 2nd 2008, Tampa, FL.

11. Identification and Characterization of σ^S, a novel component of the *Staphylococcus aureus* stress and virulence responses. Miller, H.K., Lindholm, C., Prajsnar, T.K., Brown, M.C., Golonka, E., Stewart, G.C., Tarkowski, A., Potempa, J. & Shaw, L.N. Gordon Research Conference on Staphylococcal diseases. Waterville Valley, New Hampshire. August 30th – September 4th, 2009.

    - Chosen as best poster (1 of 5)

12. Characterization of a Staphylococcus aureus Two Component System Important in Transport and the Switch to Fermentation. Kolar, S. & Shaw, L.N. 8th October 2009. University of South Florida Research One Graduate Research Symposium.

13. Analysis of the Role and Regulation of σ^S in *Staphylococcus aureus*. Miller, H., Stevens, S.M. & Shaw, L.N. 8th October 2009. University of South Florida Research One Graduate Research Symposium.

14. Development of Proteomic Techniques for the Analysis of HA-MRSA and CA-MRSA Secretomes. Rivera, R., Stevens, S.M. & Shaw, L.N. American Society for Microbiology Southeastern Branch Meeting. Savannah, GA. 6th – 7th November 2009.

15. Identification of Regulators of σ^S Expression in *Staphylococcus aureus*. Krute C.K., Miller, H.K. & Shaw L.N. 8th Annual Undergraduate Research Symposium, April 1st 2010, Tampa, FL.

16. Analysis of a Library of Porphyrin Based Compounds for Antimicrobial Activity Against Multi-Drug Resistant *Staphylococcus aureus*. Burda, W. Burt, R. Fields, K. Zhang, P. & Shaw L.N. 8th Annual Undergraduate Research Symposium, April 1st 2010, Tampa, FL.

17. Identification of Regulators of σ^S Expression in *Staphylococcus aureus*. Krute C.K., Miller, H.K. & Shaw L.N. USF Honors College Research Day, April 30th 2010, Tampa, FL.

18. Analysis of the Role and Regulation of σ^S in *Staphylococcus aureus*. Miller HK, Sahukhai G, Kolar SL, Krute C, Koziel J, Elasri MO, Stevens SM, Shaw LN. International Conference on Gram-Positive Pathogens, Omaha, NE. October 10th – 13th, 2010.

19. The Two-Component System RbtRS of *Staphylococcus aureus* Regulates Multiple Transport Mechanisms and is Important in Biofilm Formation. Kolar SL, Nagarajan V, Oszmiana A, Rivera FE, Miller HK, Davenport JE, Ulanov A, Li Z, Riordan JT, Potempa J, Barber DS, Koziel J, Elasri MO, Shaw LN. International Conference on Gram-Positive Pathogens, Omaha, NE. October 10th – 13th, 2010.

20. Characterization of Aminopeptidase PepZ in *Staphylococcus aureus* Virulence. Robison TM, Jonsson IM, Koziel J, Kolar SL, Tarkowski AJ, Potempa J, Stevens SM, Shaw LN. International Conference on Gram-Positive Pathogens, Omaha, NE. October 10th – 13th, 2010.

21. Stopping the flow of extracellular proteases: The role of *sarA* in promoting the ability of *agr* to modulate the phenotype of *Staphylococcus aureus* clinical isolates. Zielinska A, Beenken KE, Mrak L, Griffin LM, Lee CY, Luong TT, Joo HS, Shaw LN, Otto M, Smeltzer MS. International Conference on Gram-Positive Pathogens, Omaha, NE. October 10th – 13th, 2010.

22. A Novel Environmental Decontamination Process for the Disinfection of MRSA from Surfaces in Athletic Facilities. Pirozzolo J, Chaves JS, Shaw LN. American College of Sports Medicine AGM, Denver, CO. May 31st – June 4th, 2011.

23. Quinazoline Based Compounds as Effective Antimicrobial Agents Against Multi-Drug Resistant *Staphylococcus aureus*. Burda WN, Van Horn K, Manetsch R, Shaw LN. 55th Annual Wind River Conference on Prokaryotic Biology, Estes Park, CO. June 8th – 12th, 2011.

24. Investigating the Mechanisms that Regulate Activity of σ^S in *Staphylococcus aureus*. Krute CN, Carroll RK, Miller HK, Ibarra-Garcia JA, Shaw LN. 55th Annual Wind River Conference on Prokaryotic Biology, Estes Park, CO. June 8th – 12th, 2011.

25. Global Analysis of Transcriptional Regulators in Multiple *Staphylococcus aureus* Strains. Ibarra-Garcia JA, Perez-Rueda E, Shaw LN. 55th Annual Wind River Conference on Prokaryotic Biology, Estes Park, CO. June 8th – 12th, 2011.

26. Analysis of the Role and Regulation of σ^S in *Staphylococcus aureus*. Miller HK, Carroll RK, Krute CN, Shaw LN. 12th Gordon Research Conference on Staphylococcal Diseases, Lucca, Italy. July 24th – 29th, 2011.

27. NsaRS is a Cell-Envelope-Stress Sensing Two-Component System of *Staphylococcus aureus*. Kolar SL, Nagarajan, V, Oszmiana A, Rivera FE, Miller HK, Davenport JE, Riordan JT, Potempa J, Barber DS,

Koziel J, Elasri MO, Shaw LN. 12th Gordon Research Conference on Staphylococcal Diseases, Lucca, Italy. July 24th – 29th, 2011.

28. Exploration of the role of a novel sigma factor, σ^S, in *S. aureus* pathogenesis. Krute CN, Carroll RK, Miller HK, Shaw LN. American Society for Microbiology Southeastern Branch Meeting. Gainesville, FL. 20th – 22nd October, 2011.

    - Chosen as best poster

29. Quinazoline Based Compounds as Effective Antimicrobial Agents Against Multi-Drug Resistant *Staphylococcus aureus*. Burda WN, Van Horn K, Manetsch R, Shaw LN. National Academy of Inventors Inaugural Conference, Tampa, FL. February 16th – 17th, 2012.

30. Quinazoline Based Compounds as Effective Antimicrobial Agents Against Multi-Drug Resistant *Staphylococcus aureus*. Burda WN, Van Horn K, Manetsch R, Shaw LN. New Frontiers of Drug Discovery Conference, Tampa, FL. April 6th, 2012.

    - Chosen for oral presentation: given by my student Whittney Burda

31. Investigating the Components Involved in Regulation of σ^S in *Staphylococcus aureus*. Leighton SL, Miller HK, Burda WN, Krute CK, Shaw LN. 10th Annual Undergraduate Research Symposium, April 18th 2012, Tampa, FL.

32. The Antimicrobial Activity of Stilbenoids Against Methicillin-Resistant *Staphylococcus aureus* (MRSA). Harrington LA, Gali M, Bisht K, Shaw LN. 10th Annual Undergraduate Research Symposium, April 18th 2012, Tampa, FL.

33. Characterization of the RNA polymerase δ subunit in *Staphylococcus aureus*. Paoletti J, Ibarra JA, Shaw LN. 10th Annual Undergraduate Research Symposium, April 18th 2012, Tampa, FL.

34. Survivability of *S. aureus* Wild-Type Strains Inside Murine Macrophage-Like Cells. Gagne DT, Ronan K. Carroll, Shaw LN. 10th Annual Undergraduate Research Symposium, April 18th 2012, Tampa, FL.

35. Exploration of the role of a novel sigma factor, σ^S, in *S. aureus* pathogenesis. Krute CN, Carroll RK, Miller HK, Shaw LN. USF Signature Programs in Allergies, Immunology and Infectious Disease (SIPAIID) Annual Meeting. Tampa, FL. 1st June, 2012.

36. Quinazoline Based Compounds as Effective Antimicrobial Agents Against Multi-Drug Resistant *Staphylococcus aureus*. Burda WN, Van Horn K, Manetsch R, Shaw LN. USF Signature Programs in Allergies, Immunology and Infectious Disease (SIPAIID) Annual Meeting. Tampa, FL. 1st June, 2012.

    - Chosen for oral presentation: given by my student Whittney Burda

37. Characterization of the Intracellular Peptidases of *S. aureus* in a Sepsis Model of Infection. Benjamin CJ, Rivera FE, Shaw LN. USF Signature Programs in Allergies, Immunology and Infectious Disease (SIPAIID) Annual Meeting. Tampa, FL. 1st June, 2012.

    - Chosen as best poster

38. Extracellular Proteases are Key Mediators of *S. aureus* Virulence via the Global Modulation of Virulence Determinant Stability. Kolar SL, Rivera, FE, Stevens SM, Horswill AR, Shaw LN. 21st Gordon

Research Conference on Microbial Toxins and Pathogenicity, Waterville Valley, NH. July 8th – 13th, 2012.

39. Investigating the Role of the Site-1 Protease PrsW in S*taphylococcus aureus*. Krute CN, Burda WN, Carroll RK, Camper GJ, Rivera FE, Shaw LN. International Conference on Gram-Positive Pathogens, Omaha, NE. October 7th – 10th, 2012.

40. Exploring the Anti-Staphylococcal Affects of Quinazoline Based Compounds. Burda WN, Van Horn K, Manetsch R, Shaw LN. International Conference on Gram-Positive Pathogens, Omaha, NE. October 7th – 10th, 2012.

41. Extracellular Proteases are Key Mediators of *S. aureus* Virulence via the Global Modulation of Virulence Determinant Stability. Kolar SL, Rivera, FE, Stevens SM, Horswill AR, Shaw LN. International Conference on Gram-Positive Pathogens, Omaha, NE. October 7th – 10th, 2012.

42. Extracellular Proteases are Key Mediators of *S. aureus* Virulence via the Global Modulation of Virulence Determinant Stability. Kolar SL, Rivera, FE, Stevens SM, Horswill AR, Shaw LN. American Society for Microbiology Southeastern Branch Meeting. Athens, GA. 25th – 27th October, 2012.

COURSES CREATED @ USF

- MCB 4320 Molecular Microbiology. **Fall 2007**
- BSC 5931 Prokaryotic Molecular Genetics. **Fall 2008**
- GMS 6103 Foundation in Medical Microbiology and Immunology (Bacteriology Section Director) **Spring 2011**

CLASSES TAUGHT @ USF

- BSC 4933.S6 Molecular Microbiology **Spring 2008**
- BSC 4933.S5 Molecular Microbiology **Fall 2008**
- BSC 5931.S12 Prokaryotic Molecular Genetics **Spring 2009**
- BSC 6930 Lectures in Contemporary Biology **Fall 2009**
- PCB 6920 Advances in Cell & Molecular Biology **Fall 2009**
- BSC 6932 Staphylococcal Genetics **Fall 2009**
- MCB 4320 Molecular Microbiology **Spring 2010**
- PCB 6920 Advances in Cell & Molecular Biology **Fall 2010**
- BSC 6930 Lectures in Contemporary Biology **Fall 2010**
- BSC 6932 Prokaryotic Molecular Genetics **Fall 2010**
- MCB 3020C General Microbiology **Spring 2011**
- GMS 6103 Foundation in Medical Microbiology and Immunology (Bacteriology Section Director) **Spring 2011**
- PCB 6920 Advances in Cell & Molecular Biology **Fall 2011**
- MCB 4934 Microbiology Seminar **Fall 2011**
- MCB 4320 Molecular Microbiology **Spring 2012**
- GMS 6103 Foundation in Medical Microbiology and Immunology (Bacteriology Section Director) **Spring 2012**
- MCB 4320 Molecular Microbiology **Fall 2012**
- PCB 6920 Advances in Cell & Molecular Biology **Fall 2012**

- GMS 6103 Foundation in Medical Microbiology and Immunology **Spring 2013**

COMMITTEES

- USF Nobel Laureate Committee (**Chair**) **Fall 2007 - Fall 2008**
- CMMB Division Seminar Committee (**Chair**) **Fall 2007 - Fall 2009**
- CMMB Graduate Committee (**Chair**) **Spring 2008 - present**
- Florida Center of Excellence, BITT Center Search Committee **Spring 2008 - Fall 2009**
- CMMB Microbiology Education Committee **Summer 2008 - present**
- CAS Undergraduate Grievance Committee **Fall 2008**
- CMMB Microbiology Faculty Search Committee **Fall 2008 - Spring 2009**
- Dept Chemistry "Drug Design" Search Committee **Fall 2008 - Spring 2009**
- CAS Graduate Committee **Fall 2009 - Spring 2010**
- SNSM Graduate Committee **Fall 2010 - present**
- CMMB ALC Committee **Fall 2010 – present**
- CMMB Faculty Advisory Committee (FAC) **Fall 2012 – present**
- CAS Graduate Committee **Fall 2012 – present**

SERVICE & OUTREACH

- Microbes, disease and antibiotic resistance, high school public education program, Wakefield City High School, Wakefield, UK. **2002**
- United States Department of Labor, Research Triangle Institute, Molecular and Cellular Biologist Occupation Profile Update **July 2008**
- USF Department of Biology Genomics Workshop for Florida High School Teachers **August 2008**
- Florida A&M University BRIDGES to the Pharmaceutical Sciences Program **Fall 2008-present**
- Microbes, Man & Impending Global Doom! Durant High School (Plant City) Teach-In, Science Educators Outreach **November 19th 2008**
- Graduate School and the Sciences Presentation. St Leo University (San Antonio, FL) Chapter of Beta Beta Beta, Biology Honors Society. **November 12th 2009**
- Invited Speaker for the USF Undergraduate Chapter for the American Society for Microbiology. **Spring 2009**
- USF Office of Undergraduate Research and USF Honors College Round Table Panel on Improving Institutional Undergraduate Research **Fall 2009**
- National Study on University Faculty Engagement **February 2010**
- Biomedical research exposure presentation, AP honors students from Hillsborough county high schools. **18th March 2010**

- Rutgers University Study "Efficacy Interventions to Promote Research Careers" with my honors student Christina Krute **2010**
- USF Library Improvement Program **Spring 2011**
- The University of New Orleans Study on Doctoral Level Teaching **Spring 2011**
- USF Honors College Expo on the Overuse of Antibiotics – "This is another fine mess we've gotten ourselves into", Keynote Lecture **April 11th 2011**
- University of Minnesota/NIH Project on Scientific Collaboration **Summer 2011**
- Federal Demonstration Partnership, Faculty Workload Study for Federally Funded Investigators **February 2012**
- Invited Speaker for the USF Undergraduate Chapter for the American Society for Microbiology. **Spring 2012**
- Thomson Reuters Academic Reputation Study **Spring 2012**
- Scientific American and Indiana University Study on STEM education **Summer 2012**
- Faculty Study on Student Engagement, Indiana University **Summer 2012**
- USF Writing Center Interdisciplinary Faculty Panel on Dissertation Writing **Summer 2012**
- European Commission Study on the International Mobility of Researchers **Fall 2012**
- University of California, San Francisco study on "the origins and consequences of antibacterial resistance". **Fall 2012**
- Council of Graduate Schools NSF study "Doctoral Initiative on Minority Attrition and Completion" **Spring 2013**

UNDERGRADUATE RESEARCH STUDENTS

Jaclyn Hayner, Undergraduate Researcher **Fall 07 - Summer 08**
- Received a $1000 research grant for her work in my laboratory

Frances Rivera, Honors Student **Fall 07 - Summer 08**
Carl Franconi, Undergraduate Researcher **Spring 08 - Summer 08**
Krystal Patel, Undergraduate Researcher **Spring 08**
Natalie Wright, Undergraduate Researcher (w/ Dr Bill Baker, USF Chemistry) **Spring 08**
Kristina Kuba, Undergraduate Researcher **Summer 08**
Jonathon Martin, Honors Student **Summer 08 - Fall 08**
Courtney Nugent, Graduate Volunteer **Summer 08 - Fall 08**
Ashley Hess, Undergraduate Researcher **Fall 08**
Vikeen Patel, Undergraduate Researcher **Fall 08**
Shabiah Martin, Honors Student **Fall 08 - Spring 09**
Tiffany Robison, Undergraduate Researcher **Spring 09 - Sumer 09**
Melissa Foss, Undergraduate Researcher **Spring 09**
Carl Franconi, Graduate Volunteer **Spring 09 - Summer 09**
Jose Chavez, Graduate Volunteer **Summer 09**
Avishek Mitra, Graduate Volunteer **Summer 09**
Whittney Burda, Honors Student **Spring 09 - Summer 10**
- Published 3 papers from her undergraduate work (two 1st author)

Danielle Fasciano, Undergraduate Researcher **Fall 09**

Christina Krute, Honors Student **Fall 09 - Spring 10**
Mojgan Hosseinipour, Undergraduate Researcher **Spring 2010**
Mandy Martinez, Undergraduate Researcher **Summer 2010**
Katie Trammel, Undergraduate Researcher **Summer 2010 - Spring 2011**
Kevin Allison, Undergraduate Researcher **Summer 2010 – Summer 2012**
Jessica Rubano, Undergraduate Researcher **Fall 2010**
Lacey Harrington, Honors Student **Fall 2010 – Summer 2012**

- Won best undergraduate talk at ASM-SEB meeting in fall 2011
- Won USF Honors College Outstanding Undergraduate Researcher Award, Spring 2012
- Won USF CMMB Outstanding Undergraduate Researcher Award, Spring 2012
- Is an author on 5 manuscripts from her work in my laboratory

Stephanie Lopez, Undergraduate Researcher (w/ Dr Stan Stevens, USF CMMB) **Fall 2010**
Steven Cindric, Undergraduate Researcher (w/ Dr Tom Unnasch, USF COPH) **Spring 2011**
Danielle Gagne, Undergraduate Researcher **Summer 2011 – Fall 2012**
Jessica Paoletti, Undergraduate Researcher **Summer 2011 – Spring 2012**
Shane Leighton, Undergraduate Researcher **Summer 2011 – Fall 2012**
Maria Rincon, Undergraduate Researcher **Spring 2012**
Gary Camper, Undergraduate Researcher **Summer 2012-present**
Mohamed Alak, Graduate Volunteer **Summer 2012**
Jarrod Lindenmuth, Graduate Volunteer **Summer 2012 - Fall 2012**
Renee Fleeman, Undergraduate Researcher **Summer 2012-present**
Stephanny Reyes, Undergraduate Researcher (w/ Dr Bill Baker, USF Chemistry) **Fall 2012**
Rebekah Cook, Honors Student **Fall 2012-present**

ROTATION GRADUATE STUDENTS

Kemisha Gabiddon **Fall 09**
Karthik Madhav Kodigepalli **Spring 10**

- Is middle author on a paper from his rotation project

Rebecca Hershock **Fall 10**
James Kortbus **Fall 10**

CURRENT GRADUATE STUDENTS

Whittney Burda, Ph.D. Student **Fall 10 – present**

- Won the 2011-2012 CMMB Outstanding Graduate Student Researcher Award

Christina Krute, Ph.D. Student **Fall 10 – present**
Andy Weiss, Ph.D. Student **Fall 12 – present**
Jarrod Lindenmuth, M.S. Student **Spring 13 - present**

FORMER STUDENTS

Frances Rivera, M.S. **Fall 08 - Fall 2010**

Thesis Title: The Use of Proteomic Techniques to Study the Physiology and Virulence of *Staphylococcus aureus*.

- Currently a Laboratory Manager in the CMMB department at USF.

Katie Prosen, M.S. **Summer 2010 - Fall 2010**

Thesis Title: Investigating the Mode of Action of a Novel *N-Sec*-butylthiolated β-lactam Against *Staphylococcus aureus*

- Currently a staff scientist at Excel Immune in Woburn, MA.

Tiffany Robison, M.S. **Fall 2009 - Fall 2011**

Thesis Title: Characterization of Aminopeptidase PepZ in *Staphylococcus aureus* Virulence

- Currently an instructor at Fortis College of Nursing, Tampa, FL.

Halie Miller, Ph.D. **Spring 2008 – Summer 2012**

Dissertation Title: Characterization of the Lone Extracytoplasmic Function Sigma Factor, σ^S, and its Role in the *Staphylococcus aureus* Virulence and Stress Responses

- Currently a post-doctoral Research Fellow with Dr Victoria Auerbuch-Stone at UC-Santa Cruz

Stacey Kolar, Ph.D. **Fall 2008 – Summer 2012**

Dissertation Title: The Role and Regulation of NsaRS: a Cell-Envelope Stress Sensing Two-Component System in *Staphylococcus aureus*

- Currently a post-doctoral Research Fellow with Dr George Lui at Cedars-Sinai in LA.
- Won the 2010-2011 CMMB Outstanding Graduate Student Researcher Award

CURRENT STUDENT COMMITTEES

Avishek Mitra, Ph.D. Dissertation Committee (Chair: Riordan) **Spring 2010 – present**
Whittney Burda, Ph.D. Dissertation Committee (Chair: Shaw) **Fall 2010-present**
Christina Krute, Ph.D. Dissertation Committee (Chair: Shaw) **Fall 2010-present**
Shruti Padhee, Ph.D. Dissertation Committee, Dept of Chemistry (Chair: Cai) **Spring 2011-present**
Jason Morgan, Ph.D. Dissertation Committee (Chair: Riordan) **Spring 2011-present**
Nahn Tu, Ph.D. Dissertation Committee, Dept of Molecular Medicine (Chair: Anderson) **Summer 2011-present**
Matthew Battistini, Ph.D. Dissertation Committee, Dept of Chemistry (Chair: Merkler) **Fall 2011-present**
Michael Veri, Ph.D. Dissertation Committee, Dept of Chemistry (Chair: Baker) **Spring 2012-present**
Kurt Van Horn, Ph.D. Dissertation Committee, Dept of Chemistry (Chair: Manetsch) **Spring 2012-present**
Xiomara Tate, Non-thesis M.S. Adviser **Summer 12 – present**
Chao Zhang, Non-thesis M.S. Adviser **Summer 12 – present**
Eric Lewandowski, Ph.D. Dissertation Committee, Dept of Molecular Medicine (Chair: Chen) **Spring 2013 - present**
Danielle Demers, Ph.D. Dissertation Committee, Dept of Chemistry (Chair: Baker) **Spring 2013 - present**

FORMER STUDENT COMMITTEES

Christie McCabe, M.S. Thesis Committee (Chair: Lim) **Fall 2007-Spring 2009**
Katie Prosen, M.S. Thesis Committee (Chair: Shaw/Dao) **Spring 2008-Fall 2010**
Emily Rowland, Ph.D. Dissertation Committee, USF Department of Chemistry (Outside Chair) **Summer 2008**
Gerald Rowland, Ph.D. Dissertation Committee, USF Department of Chemistry (Outside Chair) **Summer 2008**
Frances Rivera, M.S. Thesis Committee (Chair: Shaw/Stevens) **Fall 2008-Fall 2010**
Nada Helal, M.S. Thesis Committee (Chair: Riordan) **Spring 2010 – Spring 2012**
Carl Franconi, Non-Thesis M.S. Committee **Spring 2011**
David Quiceno, Non-Thesis M.S. Committee **Summer 2011**
Shelby McNemar, Non-Thesis M.S. Committee **Fall 2011**
Halie Miller, Ph.D. Dissertation Committee (Chair: Shaw) **Spring 2008-Summer 2012**
Stacey Kolar, Ph.D. Dissertation Committee (Chair: Shaw) **Fall 2008-Summer 2012**
Pamela Fay, M.S. Thesis Committee (Chair: Riordan) **Spring 2010 – Summer 2012**
Jeremy Beau, Ph.D. Dissertation Committee, Dept of Chemistry (Chair: Baker) **Fall 2010-Summer 2012**
David Clark, Ph.D. Defense Dissertation, USF Department of Physics (Outside Chair) **Fall 2012**
Kathryn Trammell, Non-thesis M.S. Adviser **Fall 11 – Fall 2012**
Doug Hamilton, M.S. Thesis Committee (Chair: Garey) **Fall 11 – Fall 2012**

CURRENT POST-DOCTORAL RESEARCH ASSOCIATES

Ronan Carroll, Ph.D. **Fall 2010-present**

FORMER POST-DOCTORAL RESEARCH ASSOCIATES

Jose Antonio Ibarra-Garcia, Ph.D. **Spring 2011-Fall 2012**

CURRENT RESEARCH SUPPORT

Grant #: **1R01 AI080626-01A2**
National Institute of Allergies and Infectious Disease.
Study Section: Bacterial Pathogenesis (BACP)
Title: Characterization of a novel sigma factor, σ^S, in the stress and virulence responses of *Staphylococcus aureus*
Role: PI
Dates: 08/01/2010 – 07/31/2014
Amount: $1,323,000 ($900,000 direct costs, $423,000 indirect costs)

Grant #: **1R21 AI090350-01**
National Institute of Allergies and Infectious Disease
Study Section: ZRG1 IDM-A 90S (Topics in Bacterial Pathogenesis)
Title: The Role of Extracellular Proteases in CA-MRSA Infections
Role: PI
Dates: 06/01/2010 – 05/31/2013
Amount: $404, 250 ($275,000 direct costs, $129,250 indirect costs)

PENDING RESEARCH SUPPORT

Grant #: 1R21AI103715-01
National Institute of Allergies and Infectious Disease
Study Section: Drug Discovery & Mechanisms of Antimicrobial Resistance (DDR)
Title: Bioprospecting in the Fungal Secondary Metabolome
Role: Multi-PI w/Dr Bill Baker, Department of Chemistry, USF
Status: Issued impact score of 32 on 06/19/2012, revised and resubmitted 11/16/2012
Amount: $402, 435 ($275,000 direct costs, $127, 435 indirect costs; Shaw = 50%)

Grant #: 1R21AI107582-01
National Institute of Allergies and Infectious Disease
Study Section: Drug Discovery & Mechanisms of Antimicrobial Resistance (DDR)
Title: Multi-Modal N-Thiolated β-Lactams
Role: Multi-PI w/Dr Edward Turos, Department of Chemistry, USF
Status: Submitted 10/16/2012
Amount: $402, 435 ($275,000 direct costs, $127, 435 indirect costs; Shaw = 50%)

Grant #: 1R01AI106888-01
National Institute of Allergies and Infectious Disease
Title: Libraries of natural product-like cyclic peptides to combat ESKAPE pathogens
Role: Co-PI w/Dr Greg Welmaker, Torrey Pines Research Institute, Florida
Status: Submitted 10/05/2012
Amount: $1,868,750 ($1,250,000 direct costs, $618,750 indirect costs; Shaw = 30%)

Grant #: 1R43AI102282-01A1
National Institute of Allergies and Infectious Disease
Title: Daptomycin and Analog Synthesis to Combat Antimicrobial (Drug) Resistance
Role: Co-I w/Dr Greg Welmaker, Torrey Pines Research Institute, Florida
Status: Submitted 11/30/2012

Grant #: 1R21AI101617-01
National Institute of Allergies and Infectious Disease
Study Section: Drug Discovery & Mechanisms of Antimicrobial Resistance (DDR)
Title: Pilot Efficacy Study of an Optimized N-thiolated β-Lactam for MRSA Infections
Role: Multi-PI w/Dr Edward Turos, Department of Chemistry, USF
Status: Issued impact score of 52 on 02/16/2012
Amount: $402, 435 ($275,000 direct costs, $127, 435 indirect costs; Shaw = 50%)

COMPLETED RESEARCH SUPPORT

Title: The Role of Aminopeptidase Z in MRSA Infections
Agency: University of South Florida, Office of Research and Innovation, New Researcher Grant
Role: PI
Dates: 04/01/2010 – 10/31/2011
Amount: $10,000

Title: The Regulation of Virulence in Methicillin Resistant *Staphylococcus aureus* (MRSA)
University of South Florida, College of Arts and Sciences Faculty Research and Development Grant
Role: PI
Dates: 01/01/2010 – 12-31-2010
Amount: $1,000

BOOK CHAPTERS

- **Potempa J & Shaw LN.** (2012). Chapter 114: Aureolysin*. In The Handbook of Proteolytic Enzymes, 3rd Edition* (Barrett AJ, Rawlings ND, Woessner JF, eds). Academic Press.

- **Kantyka T, Shaw LN & Potempa J.** (2012). Chapter 483: Staphopain A*. In The Handbook of Proteolytic Enzymes, 3rd Edition* (Barrett AJ, Rawlings ND, Woessner JF, eds). Academic Press.

- **Kantyka T, Shaw LN & Potempa J.** (2012). Chapter 484: Staphopain B*. In The Handbook of Proteolytic Enzymes, 3rd Edition* (Barrett AJ, Rawlings ND, Woessner JF, eds). Academic Press.

- **Burda WN, Shaw LN & Shepherd M.** (2012). Porphyrins: Properties and Applications. *In the* Handbook of Chemistry, Biochemistry and Biology: New Frontiers. Nova Publishing.

PUBLICATIONS

1. **Horsburgh MJ, Aish JL, White IJ, Shaw L, Lithgow JK, Foster SJ**. (2002). sigmaB modulates virulence determinant expression and stress resistance: characterization of a functional *rsbU* strain derived from *Staphylococcus aureus* 8325-4. Journal of Bacteriology. 184(19): 5457-67.

2. **Shaw L, Golonka E, Potempa J, Foster SJ.** (2004). The role and regulation of the extracellular proteases of *Staphylococcus aureus*. Microbiology. 150(1): 217-28.

3. **Calander AM, Jonsson IM, Kanth A, Arvidsson S, Shaw LN, Foster SJ, Tarkowski A.** (2004). Impact of staphylococcal protease expression on the outcome of infectious arthritis. Microbes and Infection. 6(2): 202-206.

4. **Shaw LN, Golonka E, Szmyd G, Foster SJ, Travis J, Potempa J.** (2005). Cytoplasmic control of premature activation of a secreted protease zymogen: deletion of staphostatin B (SspC) in *Staphylococcus aureus* 8325-4 yields a profound pleiotropic phenotype. Journal of Bacteriology. 187(5): 1751-1762.

5. **Potempa J, Golonka E, Filipek R, Shaw LN.** (2005). Fighting an enemy within: cytoplasmic inhibitors of bacterial cysteine proteases. Molecular Microbiology. 57(3): 605-10.

6. **Moon J, Shaw LN, Mayo J, Potempa J, Travis J**. (2006). Isolation and Properties of Extracellular Proteinases of *P. marneffei*. Biological Chemistry. 387(7): 985-93.

7. **Shaw LN*, Aish J, Davenport JE, Brown MC, Lithgow JK, Simmonite K, Crossley H, Travis J, Potempa J, Foster SJ.** (2006). Investigations into σ^B-Modulated Regulatory Pathways Governing Extracellular Virulence Determinant Production in *Staphylococcus aureus*. Journal of Bacteriology. 188(17): 6070-6080. *Corresponding author.

8. **Golonka E, Potempa J, Travis J, Shaw LN.** (2006). Poison-antidote systems in bacteria: the co-evolution of functional counterparts. Cellular & Molecular Biology. 52(4): 18-22.

9. **Shaw LN, Jonsson IM, Singh V, Tarkowski A, Stewart GC.** (2007). Inactivation of *traP* has no effect on the Agr quorum sensing system or virulence of *Staphylococcus aureus*. Infection & Immunity. 75(9): 4519-4527.

10. **Kubica M, Guzik K, Koziel J, Zarebski M, Richter W, Gajkowska B, Golda A, Maciag-Gudowska A, Brix K, Shaw L, Foster TJ, Potempa J.** (2008). A potential new pathway for *Staphylococcus aureus* dissemination: The silent survival of *S. aureus* phagocytosed by human monocyte-derived macrophages. PLoS One. 3(1):e1409.

11. **Lupa B, Lyon D, Shaw LN, Sieprawska-Lupa M, Wiegel J.** (2008). Properties of the Reversible Non-oxidative Vanillate / 4-hydroxybenzoate Decarboxylase from *Bacillus subtilis* and the Corrected Annotation of its Genes. Canadian Journal of Microbiology. 54(1):75-81.

12. **Johnson BT, Shaw LN, Nelson D, Mayo JA.** (2008). Extracellular proteolytic activities expressed by *Bacillus pumilus* isolated from endodontic and periodontal lesions. Journal of Medical Microbiology. 57(5):643-651.

13. **Tsang LH, Cassat JE, Shaw LN, Beenken KE, Smeltzer MS.** (2008). Factors contributing to the biofilm-deficient phenotype of *Staphylococcus aureus sarA* mutants. PLoS One. 3(10):33361

14. **Shaw LN*, Lindholm C, Prajsnar TK, Miller, HK, Brown, MC, Golonka E, Stewart GC, Tarkowski A, Potempa J.** (2008). Identification and Characterization of σ^S, a novel component of the *Staphylococcus aureus* stress and virulence responses. PLoS ONE. 3(12):e3844. *Corresponding author.

15. **Koziel J, Maciag-Gudowska A, Mikolajczyk T, Bzowska M, Sturdevant DE, Whitney AR, Shaw LN, DeLeo FR, Potempa J.** (2009). Phagocytosis of *Staphylococcus aureus* by Macrophages Exerts Cytoprotective Effects Manifested by the Upregulation of Anti-apoptotic Factors. PLoS ONE. 4(4):e5210.

16. **Beenken KE, Mrak LN, Griffin LM, Zielinska AK, Shaw LN, Rice KC, Horswill AR, Bayles KW, Smeltzer MS.** (2010). Epistatic relationships between *sarA* and *agr* in *Staphylococcus aureus* biofilm formation. PLoS ONE. 5(5):e10790.

17. **Ishihara K, Wawrzonek K, Shaw LN, Inagaki S, Miyamoto M, Potempa J.** (2010). Dentipain, a *Streptococcus-pyogenes*-IdeS-protease homologue, is a novel virulence factor of *Treponema denticola*. Biological Chemistry. 391(9): 1047-55.

18. **Zielinska A, Beenken KE, Joo HS, Mrak L, Griffin LM, Luong TT, Lee CY, Otto M, Shaw LN, Smeltzer MS.** (2011). Defining the Strain-Dependent Impact of the Staphylococcal Accessory Regulator (*sarA*) on the Alpha Toxin Phenotype of *Staphylococcus aureus*. Journal of Bacteriology. 193(12): 2948-2958.

19. **Kantyka T, Shaw LN, & Potempa J.** (2011). Papain-Like Proteases of *Staphylococcus aureus.* Advances in Experimental Medicine and Biology. 712: 1-14.

20. **Kolar SL, Nagarajan, V, Oszmiana A, Rivera FE, Miller HK, Davenport JE, Riordan JT, Potempa J, Barber DS, Koziel J, Elasri MO, Shaw LN.** (2011). NsaRS is a Cell-Envelope-Stress Sensing Two-Component System of *Staphylococcus aureus*. Microbiology. 157(8): 2206-2219.

21. **Padhee S, Hu Y, Niu Y, Bai G, Wu H, Costanza F, West L, Harrington L, Shaw LN, Cao C, Cai J.** (2011). Non-Hemolytic α-AApeptides as antimicrobial peptidomimetics. Chemical Communications. 47: 9729-9731.

22. **Prosen KR, Carroll R, Burda WN, Krute CK, Bhattacharya B, Dao ML, Turos ET, Shaw LN.** (2011). The Impact of Fatty Acids on the Antibacterial Properties of N-Thiolated β-Lactams. Bioorganic and Medicinal Chemistry Letters. 21(18): 5293-5.

23. **Niu Y, Padhee S, Wu H, Bai G, Harrington L, Burda WN, Shaw LN, Cao C, Cai J.** (2011). Identification of γ-AApeptides with potent and broad-spectrum antimicrobial activity. Chemical Communications. 47: 12197-12199.

24. **Rivera F, Miller HK, Kolar SL, Stevens SM, Shaw LN.** (2012). The Impact of CodY on Virulence Determinant Production in Community-Associated Methicillin Resistant *Staphylococcus aureus*. Proteomics. 12(2): 263-268.

25. **Burda WN, Fields KB, Gill JB, Burt R, Shepherd M, Zhang XP, Shaw LN.** (2012). Neutral Metallated and Meso-Substituted Porphyrins as Antimicrobial Agents Against Gram-Positive Pathogens. European Journal of Clinical Microbiology and Infectious Disease. 31(3): 327-335.

26. **Beau J, Mahid N, Burda WN, Harrington L, Shaw LN, Mutka T, Kyle DE, Barisic B, Van Olphen A, Baker BJ.** (2012). Epigenetic Tailoring for the Production of Anti-infective Cytosporones from the Mangrove Endophyte *Leucostoma persoonii*. Marine Drugs. 10(4): 762-774.

27. **Niu Y, Padhee S, Wu H, Bai G, Harrington L, Burda WN, Shaw LN, Cao C, Cai J.** (2012). Lipo-γ-AApeptides as a New Class of Potent and Broad Spectrum Antimicrobial Agents. J Med Chem. 55(8): 4003-4009.

28. **Miller HK, Carroll RK, Burda WN, Krute CN, Davenport JE, Shaw LN.** (2012). The ECF Sigma Factor, σ^S, Protects Against Both Cytoplasmic and Intracellular Stresses in *Staphylococcus aureus*. J Bacteriology. 194(16): 4342-4354.

29. **Carroll RK, Robison TM, Rivera FE, Davenport JE, Jonsson IM, Florczyk D, Tarkowski A, Potempa J, Koziel J, Shaw LN.** (2012). Identification of an intracellular M17 family leucine aminopeptidase that is required for virulence in *Staphylococcus aureus*. Microbes & Infection. 14(11): 989-999.

30. **Cormier R, Burda WN, Harrington L, Edlinger J, Kodigepalli KM, Thomas J, Kapolka R, Roma G, Anderson BE, Turos E, Shaw LN.** (2012). Studies on the antimicrobial properties of N-Acylated ciprofloxacins. Bioorganic & Medicinal Chemistry Letters. 22(20): 6513-6520.

31. **Kolar SL, Ibarra AJ, Rivera FE, Mootz JM, Davenport JE, Stevens SM, Horswill AR, Shaw LN.** Extracellular Proteases are Key Mediators of *S. aureus* Virulence via the Global Modulation of Virulence Determinant Stability. Microbiology Open. *Accepted.*

32. **Carroll RK, Veillard F, Gagne D, Lindenmuth J, Poreba M, Drag M, Potempa J, Shaw LN.** The *Staphylococcus aureus* leucine aminopeptidase is localized to the bacterial cytosol and demonstrates a broad substrate range that extends beyond leucine. Biol Chem. *Accepted*.

33. **Ibarra JA, Perez-Rueda E, Carroll RK, Shaw LN.** Global Analysis of Transcriptional Regulators in *Staphylococcus aureus*. BMC Genomics. *Accepted.*

IN REVISION

- **Jusko M, Potempa J, Kantyka T, Bielecka E, Miller HK, Kulczycka M, Garred P, Shaw LN, Blom AM.** Staphylococcal proteases aid evasion of human complement system. Journal of Innate Immunity. *In Revision*

IN REVIEW

IN PREPARATION

- **Kenny JG, Moran J, Kolar SL, Ulanov A, Zhong L, Shaw LN, Josefsson E, Horsburgh MJ**. Mannitol Utilisation is Required for Protection of *Staphylococcus aureus* from Human Skin Antimicrobial Fatty Acids. BMC Microbiology. *In Preparation.*

- **Van Horn K, Burda WN, Shaw LN, Manetsch R.** Quinazolines are Novel and Potent Antimicrobial Agents Against Multi-Drug Resistant Strains of Methicillin-Resistant *Staphylococcus aureus* (MRSA). Journal of Medicinal Chemistry. *In Preparation*.

PATENTS & DISCLOSURES

1. Anti-infective Cytosporones from the Mangrove Endophyte Leucostoma persoonii. Bill J. Baker, Jeremy Beau, **Lindsey N. Shaw**, Dennis E. Kyle, Alberto van Olphen and the University of South Florida (Provisional patent filed on 4th October, 2011).
2. 2,4-Diaminoquinazolines as Anti-Bacterials. Roman Manetsch, **Lindsey N. Shaw**, Kurt van Horn, Whittney N. Burda and the University of South Florida (Provisional patent filed on 22nd March, 2012).

Ashok B. Upadhyaya

January 2013

Office Address
University of South Florida
4202 E. Fowler Ave., SCA110
Tampa, FL 33620-5200
(813) 974-4524
Fax (813) 974-3263
ashoku@usf.edu

Home Address
6209 Ashbury Palms Dr
Tampa, FL 33647
(813) 975-9425

EDUCATION

Ph.D., Molecular and Cell Biology 2002
The University of Texas at Dallas
Dissertation: *Identification of a novel germ cell-specific protein related to general transcription factor IIA.*
Advisor: Dr. Jeff L. DeJong

M.S., Molecular and Cell Biology 1999
The University of Texas at Dallas

B.S., Molecular Biology 1994
The University of Texas at Austin

TEACHING AND RESEARCH EXPERIENCE

Instructor 2006 – pres.
University of South Florida, Tampa, FL
Taught Cell Biology, Introductory Biology, and Nutrition (nonmajors) courses; developed and taught The Biology of Humans (nonmajors) course, supervised Cell Biology lab course; streamlined and supervised Introductory Biology lab course; mentored Lab Manager James Swigart to assume Introductory Biology lab course supervision

Visiting Instructor 2003 – 2006
University of South Florida, Tampa, FL
Developed and taught Cell Biology, Introductory Biology, and Nutrition (nonmajors) courses; redeveloped and supervised Introductory Biology lab course and rewrote laboratory manual; taught and supervised Cell Biology lab course; advised biology and microbiology undergraduates.

Supplemental Instructor 2003
Brookhaven College, Dallas, TX
Conducted group discussions for SCIT Human Anatomy and Physiology and tutored biology students from diverse backgrounds.

Research Assistant 2000 – 2002
University of Texas at Dallas, Richardson, TX
Identified, cloned, and studied a novel transcription protein.
Mentored 5 graduate and undergraduate students in data analysis and molecular biology laboratory techniques.

Teaching Assistant 1996 – 2000
University of Texas at Dallas, Richardson, TX
Conducted discussion sections and laboratories for both graduate and undergraduate students. Teaching assignments included upper-level courses in cell biology, biochemistry, biochemistry lab, molecular biology lab, and anatomy and physiology.

Lab Technician, Mapping Unit 1995
Genome Science and Technology Center
Principal Investigator: Dr. Glen A. Evans
The University of Texas Southwestern Medical Center
Dallas, Texas

Lab Technician 1993 - 1994
The University of Texas at Austin
Advisor: Dr. Nigel S. Atkinson
Created a detailed restriction map of a 33 kb region of the *Drosophila slowpoke* K^+ channel gene, and mapping the location of 16 alternatively spliced exons using Southern hybridization.
Trained 3 other undergraduate lab technicians.

PUBLICATIONS

Yu J.Y., Upadhyaya A.B., Atkinson N.S. (2006) Tissue-specific alternative splicing of BK channel transcripts in Drosophila. Genes Brain Behav. Jun; 5(4):329-39.

Upadhyaya, A. B., and DeJong, J. (2003) Expression of human TFIIA subunits in *Saccharomyces cerevisiae* identifies regions with conserved and species-specific functions. Biochim. Biophys. Acta. 1625, 88-97.

* Upadhyaya, A. B., Khan, M., Mou, T.-C., Junker, M., Gray, D. M., and DeJong, J. (2002) The germ cell-specific transcription factor ALF: structural properties and stabilization of TBP·DNA complexes. J. Biol. Chem. 277, 34208-34216.

Han, S. Y., Zhou, L., Upadhyaya, A. B., Lee, S.H., Parker, K.L., and DeJong, J. (2001) TFIIAα/β-like factor is encoded by a germ cell-specific gene whose expression is up-

regulated with other general transcription factors during spermatogenesis in the mouse. Biol. Reprod. 64, 548-554.

Upadhyaya, A. B., Lee, S. H., and DeJong, J. (1999) Identification of a general transcription factor TFIIAα/β homolog selectively expressed in testis. J. Biol. Chem. 274, 18040-18048.

(* denotes undergraduates as co-authors)

PUBLISHED ABSTRACTS FROM POSTERS/PRESENTATIONS

* Upadhyaya, A.B., Khan, M., Mou, T.-C., Junker, M., Gray, D.M., and DeJong, J. (2002) The Germ Cell-specific Transcription Factor ALF: Structural Properties and Stabilization of the TBP·DNA complex. Germ Cells, Cold Spring Harbor Laboratory.

Upadhyaya, A.B., and DeJong, J. (2000) Biochemical Similarities Between the General Transcription Factor TFIIAα/β and its Testis-Specific Counterpart, ALF. Lost Pines Conference XVI, University of Texas M.D. Anderson Cancer Center Science Park-Research Division.

Han, S.Y., Zhou, L., Upadhyaya, A.B., Lee, S.H., Parker, K.L., and DeJong, J. (2000) TFIIAα/β-Like Factor (ALF): Genomic Structure, Rapid Evolution and Simultaneous Upregulation with Other General Transcription Factors During Male Germ Cell Differentiation. Lost Pines Conference XVI University of Texas M.D. Anderson Cancer Center Science Park-Research Division.

Upadhyaya, A.B., and DeJong, J. (2000) Annual Biology/Chemistry Spring Symposium, University of Texas at Dallas.

Upadhyaya, A.B., Han, S.Y., Lee, S.H., and DeJong, J. (1999) Identification of a Novel Isoform of Transcription Factor IIA (TFIIA) Specifically Expressed in Testis. Lost Pines Conference XV, University of Texas M.D. Anderson Cancer Center Science Park-Research Division.

(* denotes undergraduates as co-authors)

TEACHING EXPERIENCE

Introductory Biology for Majors (Cellular and Molecular)
Cell Biology
Genetics
Molecular Biology of the Gene
Biology of Aging (for Health Sciences majors)
Biology of Humans (nonmajors)
Food: Personal and Global Perspectives (nonmajors)
Cell Biology and Majors Biology Laboratories

GRADUATE COURSES COMPLETED

Molecular Genetics, Biochemistry, Macromolecular Physical Chemistry, Cell Biology, Structural Biology, Gene Regulation, Membrane Biology, Signal Transduction

TEACHING ENHANCEMENT:

Chairing (Faculty Fellow) Science, Technology, Engineering and Mathematics (STEM) Faculty Leaning Community (Fall 2012)

Academy for Teaching and Learning Excellence (ATLE)
Our goal is to continue exploring ways to enhance our teaching cross-departmentally, for the purpose of producing a functional tool accessible to all STEM faculty.

Member in Science, Technology, Engineering and Mathematics (STEM) Faculty Learning Community (Spring 2012)

Academy for Teaching and Learning Excellence (ATLE)
Conceived of way to improve cross-disciplinary (Biology/Chemistry) teaching
Explored the concept for a single-themed cross-disciplinary 'themester' laboratory experience in use at other institutions.

Co-chaired Synchronization of Teaching Curricula between General Biology and General Chemistry courses (Fall 2011 – present)

Initiated a cross-departmental dialogue with Dr. Ken Caswell to identify concepts that students consistently struggle with, for the purpose of improving the complementarity of our teaching cross-departmentally.

Participant in Summer Institute at Center for 21st Century Teaching Excellence: Increments and Transformations: Using Technology to Enhance Teaching and Learning. The week-long program included follow-up sessions in Fall and Spring. (Summer 2009)

Participant in Workshop for Writing M/C Exams by Academic Assessment. (Spring 2009)

Participant in Summer Assessment Institute by Academic Assessment. The 3-day program included additional follow-up sessions. (Summer 2007)

COURSE DEVELOPMENT:

Courses Developed from Scratch
Introductory Biology (Cellular Processes)
Biology of Nutrition (Food: Personal and Global Perspectives)
Biology of Aging
Biology of Humans

Courses Refined from Pre-exiting Curricula
Cell Biology
Genetics
Molecular Biology of the Gene

Served on committee to modify and standardize Cell Biology curriculum (Spring 2011)

Served on committee to evaluate use of a common Introductory Biology for majors textbook (Spring 2010)

Served on planning committee for online Biology of Humans course (Fall 2009)

Served on General Education Biology Course Development Committee (Fall 2005)

GENERAL EDUCATION COURSE PROPOSALS:

Drafted course proposal to obtain General Education status for Introductory Biology for majors; accepted 2/10 (Fall 2009)

Co-developed and drafted a course proposal for a General Education Biology Course for the newly founded Cell Biology, Microbiology and Molecular Biology Division; accepted 10/07 (Fall 2006-July 2007)

COMMITTEES – DEPARTMENTAL SERVICE

Served on Undergraduate Program Committee (Fall 2012-)

Served on Undergraduate Research Committee (Fall 2009-Spring 2012)

Served on Academic Program (5-Year) Review Committee (Fall 2005)

OTHER DEPARTMENTAL SERVICE

Stampede for Success recruitment fair (Fall 2011)

Designed TA Evaluation Forms (2008)

Assisted Advisor Autumn Mueller by reviewing 'borderline performance' on several majors biology competency exams, which were generated from a published testbank; I then discussed ways of improving competency exams; then prepared an improved competency exam by reworking one of my own biology final exams (Fall 2004-Summer 2005)

COMMITTEES – DEPARTMENTAL FACULTY SEARCH

Served on Instructor Search Committee – Dr. Peter Vandenburgh hired (Spring 2011)

Served on Visiting Instructor Search Committee – Dr. Claudia Cooperman hired (Summer 2010)

Served on Visiting Instructor Search Committee – Dr. Kenyon Daniel hired (Summer 2008)

Served on Visiting Instructor Search Committee – no hire (Summer 2005)

COMMITTEES – EXTRA-DEPARTMENTAL

Chaired College of Arts and Sciences Student Grievance Committee (3/17/04-3/31/04)

AWARDS AND RECOGNITIONS

CAS Outstanding Undergraduate Teaching Award (2012)

Accessi-BULL: Showcasing Abilities Faculty Award (2008)

Recognition for 5-years of service at USF (2008)

Certificate of Appreciation: Outstanding Contributions as a Graduate Teaching Asst. Mentor (Spring 2006)

TEXTBOOK PUBLISHER'S PROJECTS AND FORUMS

Participant in Focus Group: Brooks/Cole Non-Majors Biology Focus Group
(San Francisco; 2/17–18/2012)

Reviewed 2 chapters for 1st edition of Biology of Aging by McDonald (Garland)
(Spring 2012)

Participant in Focus Group: Pearson Majors Biology Forum
(Washington, D.C.; 3/25–27/2011)

Reviewed 1 edited chapter for 2nd edition of Biology by Brooker, et. al. (McGraw Hill)
(Summer 2008)

Solicited feedback from several students on the art quality of the new majors biology textbook Biology by Brooker, et. al. (McGraw Hill) (Fall 2007)

Reviewed 1 chapter of 1st edition of Biology textbook by Brooker, et.al. (Spring 2007)

Reviewed chapter art for 5 chapters of upcoming 3rd edition of Biological Science textbook by Scott Freeman (Spring 2007)

Participant in Focus Group: McGraw-Hill Majors Biology Symposium
(Chicago; 9/21–24/2006)

Reviewed 5 chapters in 2nd edition of Biological Science textbook by Scott Freeman
(Fall 2005)

COMMUNITY SERVICE -- EDUCATIONAL

Co-coordinated HCC-FAMU BRIDGES to the Pharmaceutical Sciences Program (Fall 2010)

Coordinated HCC-FAMU BRIDGES to the Pharmaceutical Sciences Program (Spring 2009)

Spoke for HCC-FAMU BRIDGES to the Pharmaceutical Sciences Program (Spring 2008)

Served on Florida DOE FCAT Science Expert Review Panel in Spring 2004 (Orlando), Spring 2005 (Tampa, Florida), Spring 2006 (Orlando), Spring 2007 (Orlando), Spring 2008 (Orlando), and Spring 2009 (Orlando)

UNIVERSITY SERVICE – EDUCATIONAL

Residence Hall House Calls (Fall 2011 – present)
checking-in on students in their dormitories
contact: Dr. Elizabeth Kaplon

Residence Hall Faculty Fellow (1/11– present)
join students for periodic lunches in the dormitory cafeterias
contact: Dr. Elizabeth Kaplon

Residence Hall Final Review Sessions (2008 – present)
give final exam review sessions in a dormitory lecture hall
contact: Dr. Elizabeth Kaplon

Scholar's Showcase attendee (Spring 2011 and Spring 2012)
Honors College-hosted banquet to recruit prospective undergraduate students

CAS Commencement Platform Party Participant (Fall 2009 – present)

Student Organization Advisor for the Pre-Optometry Society (Fall 2006 – present)

HONORS THESES

Served on Honors Thesis Committee: Mary-Beatrice Harris (defended 12/7/07)
Thesis: Cells That Love: A Case for Universal Order and the Role That Emotions Play

Served on Honors Thesis Committee: Chris Peters (defended 4/27/07)
Thesis: Ethical Issues of Pharmaceutical Companies: Profits or People?

Served on Honors Thesis Committee: Allison Azevedo (defended 4/20/07)
Thesis: Undiagnosed (fictional prose work)

Served on Honors Thesis Committee: Maika Nguyen (defended 4/26/06)
Thesis: *Synaptic Density in ADAMTS1 (a disintegrin and metalloproteinase with thrombospondin motifs)-Deficient Mice*

PERSONAL ACTIVITIES

Miles for Moffitt at USF Race (Tampa, May 12, 2012)
Miles for Moffitt at USF Race (Tampa, May 14, 2011)
Miles for Moffitt at USF Race (Tampa, May 15, 2010)
Miles for Moffitt at USF Race (Tampa, May 9, 2009)
Miles for Moffitt at USF Race (Tampa, May 10, 2008)
Team Member Hood to Coast Relay Race (Portland, OR, August 27-28, 2007)
Team Member Hood to Coast Relay Race (Portland, OR, August 27-28, 2006)
Team Captain of Hood to Coast Relay Race (Portland, OR, August 27-28, 2004)

REFERENCES

At University of South Florida

Dr. Jim Garey, Chair CMMB
University of South Florida
4202 E. Fowler Ave., ISA 2018E
Tampa, FL 33620-5200
(813) 974-7103
garey@usf.edu

Dr. Johnny El-Rady, Instructor, CMMB
University of South Florida
4202 E. Fowler Ave., SCA 303
Tampa, FL 33620-5200
(813) 974-1590
jelrady@usf.edu

Dr. Diane Te Strake, Associate Chair, CMMB
University of South Florida
4202 E. Fowler Ave., ISA 2016
Tampa, FL 33620-5200
(813) 974-1594
testrake@usf.edu

Brant R. Burkhardt, Ph. D.

Assistant Professor
Department of Cell Biology, Microbiology, and Molecular Biology
University of South Florida
bburkhardt@usf.edu

EDUCATION

University of Florida	**Ph.D.**	Microbiology/Immunology	1996-2001
Clemson University	**M.Sc.**	Microbiology	1994-1996
College of New Jersey	**B. Sc.**	Biology	1989-1993

ACADEMIC APPOINTMENTS

Postdoctoral Fellow (with Dr. Mark Atkinson) 2001-2003
Center for Immunology and Transplantation
Department of Pathology, Immunology, and Laboratory Medicine
University of Florida

Postdoctoral Fellow (with Dr. Bryan Wolf) 2003-2006
Department of Pathology and Laboratory Medicine
University of Pennsylvania

Senior Research Associate (with Dr. Bryan Wolf) 2006-2010
Department of Pathology and Laboratory Medicine
Children's Hospital of Philadelphia Research Institute

Adjunct Professor (Concurrent appointment with above) 2010-2011
Department of Science, Math, and Technology
Burlington County College

Assistant Professor (Tenure-track)
Department of Cell Biology, Microbiology, and Molecular Biology 2010-Present
Diabetes Center
University of South Florida

AWARDS

- Graduate Teaching Assistantship, Biology Department, Clemson University, (1994-1996)
- National Institutes of Health Predoctoral Research Fellowship in Infectious Diseases (1997-1999) (T32-AI07110)
- Outstanding Paper Presentation in Molecular Biology, Graduate Student Forum, University of Florida (1999)
- Graduate Research Assistantship, University of Florida (1996, 2000-2001)
- Outstanding Paper Presentation in Biological Sciences, Graduate Student Forum, University of Florida (2000)
- National Institutes of Health Postdoctoral Fellowship in Diabetes and Endocrinology (2003-2006) (T32-DK07314-23)
- University of South Florida New Researcher Grant (2012)

PUBLICATIONS (25 total)

1. **Burkhardt, B**., C. Cobberley, D. Kephart, J. Sleasman, and M. M. Goodenow. 1999 Postmortem isolation and analysis of human genomic DNA from HIV-infected tissues: A Molecular Diagnostics Application. *Promega Notes* 71:16-17.

2. Kouba, A. J., **B. R. Burkhardt**, I. M. Alvarez, M. M. Goodenow, and W. C. Buhi. 2000. Oviductal Plasminogen activator inhibitor-1 (PAI-1): mRNA, protein, and hormonal regulation during the estrous cycle and early preganancy in the pig. *Mol Reproduc Dev* 56(3): 378-86.

3. Perez, E. E., S. L. Rose, B. Peyser, S. L. Lamers, **B. Burkhardt**, B. M. Dunn, A. D. Hutson, J. W. Sleasman, and M. M. Goodenow. 2001. Human immunodeficiency virus type 1 protease genotype predicts immune and viral responses to combination therapy with protease inhibitors (PIs) in PI-naive patients. *J. Infect. Dis*. 184(4): 579-88.

4. Goudy, K., **B. R. Burkhardt,** C. Wasserfall, T. Brusko, S. Song, T. Ellis, T. Flotte, and M. A. Atkinson 2003. Systemic overexpression of IL-10 induces CD4+CD25+ cell populations in-vivo and ameliorates type 1 diabetes in nonobese diabetic mice in a dose-dependant fashion. *J. Immunol*. 171(5):2270-8.

5. **Burkhardt, B. R.**, S. A. Loiler, M. S. Kilberg, J. M. Crawford, T. R. Flotte, K. Goudy, T. M. Ellis, and M. A. Atkinson. 2003. Glucose-responsive expression of the human insulin promoter in HepG2 human hepatoma cells. *Ann. N.Y. Acad. Sci.* 1005: 237-41.

6. Tang, D., L. Cao, **B. R. Burkhardt**, C. Xia, S. A. Litherland, M. A. Atkinson, and L. Yang. 2004. In-vivo and in-vitro characterization of insulin-producing cells obtained from murine bone marrow. *Diabetes*. 53(7):1721-32.

7. Cao, X., J. Yang, **B. R. Burkhardt**, Z. Gao, R. K. Wong, S. Greene, J. Wu, and B. A. Wolf. 2005. Effects of over-expression of Pancreatic Derived Factor (FAM3B) in isolated mouse islets and insulin-secreting βTC3 cells. *Am J Physiol Endocrinol Metab.* 289(4):E543-50.

8. **Burkhardt, B. R.,** M. C. Yang, C. E. Robert, J. Yang, S. R. Greene, K. K. McFadden, Z. Gao, and B. A. Wolf. 2005. Tissue-Specific and Glucose-Responsive Expression of the Pancreatic Derived factor (PANDER) Promoter. *Biochim Biophys Acta.* 25;1730(3):215-25.

9. Yang, J. Z. Gao, C. E. Robert, **B. R. Burkhardt**, H. Gaweska, A. Wagner, J. Wu, S. R. Greene, R. A. Young, and B. A. Wolf. 2005. Structure-function studies of PANDER, an islet specific cytokine inducing cell death of insulin secreting cells. *Biochemistry.* 30;44(34):11342-52.

10. **Burkhardt, B. R.**, M. J. Parker, Y.C. Zhang, S. Sihong, C. H. Wasserfall, and M. A. Atkinson. 2005. Glucose transporter-2 (GLUT2) promoter mediated transgenic insulin production reduces hyperglycemia in diabetic mice. *FEBS Lett.* 24;579(25):5759-64.

11. Yang, J., C. E. Robert, **B.R. Burkhardt**, R. A. Young, J. Wu, Z. Gao and B.A.Wolf. 2005. Mechanisms of glucose-induced secretion of PANDER in pancreatic beta Cells. *Diabetes.* 54(11):3217-3228.

12. Ghaffari, G., D. L. Tuttle, D. R. Briggs, **B. R. Burkhardt**, D. Bhatt, W. A. Andiman, J. W. Sleasman, and M. M. Goodenow. 2005. Complex determinants in human immunodeficiency virus type 1 envelope gp120 mediate CXCR4-dependent infection of macrophages. *J Virol.* 79(21):13250-61.

13. **Burkhardt, B. R.**, R. Lyle, K. Qian, A. S. Arnold, H. Cheng, M. A. Atkinson, and Y. C. Zhang. 2006. Efficient delivery of siRNA into cytokine-stimulated insulinoma cells silences Fas expression and inhibits Fas-mediated apoptosis. *FEBS Lett.* 580(2):553-560.

14. **Burkhardt, B. R**., S. R. Greene, P. White, R. K. Wong, J. E. Brestelli, J. Yang, C. E. Robert, T. Brusko, C. H. Wasserfall, K. H. Kaestner, J. Wu, M. A. Atkinson, and B. A. Wolf. 2006. PANDER-Induced Cell-Death

Genetic Networks Reveals Central Role for Caspase-3 and Cyclin-Dependent Kinase Inhibitor 1A in Islet Apoptosis. *Gene.* 369C:134-141.

15. **Burkhardt, B. R**., M. S. Salemi, R. R. Gray, G. Ghaffari, J. W. Sleasman, and M. M. Goodenow. 2007. Phylodynamics of HIV-1 in Lymphoid and Non-Lymphoid Tissues Reveals a Central Role for the Thymus in Emergence of CXCR4-Using Quasispecies. *PloS One*. 26;2(9):e950. **(Co-Authorship)**

16. **Burkhardt, B. R.**, J. R. Cook, R. A. Young, and B. A. Wolf. 2008. PDX-1 Interaction and Regulation of the Pancreatic Derived Factor (PANDER, FAM3B) Promoter. *Biochim Biophys Acta*. 1779(10):645-51 **(Co-Authorship)**

17. Yang, J. C. Wang, **B. R. Burkhardt**, C. E. Robert-Cooperman, C. Wilson, Z. Gao, and B. A. Wolf. 2009. PANDER binds to the liver cell membrane and inhibits insulin signaling in HepG2 cells. *FEBS Lett.* 583(18):3009-15.

18. Yang, J., J. Li, Y. Chi, **B. R. Burkhardt**, Y. Guan, and B. A. Wolf. 2010. Leucine metabolism in regulation of insulin secretion from pancreatic beta cells. *Nutrition Reviews*. 68(5):270-9.

19. Carnegie, J. R., C. E. Robert-Cooperman, J. Wu, R. A. Young, B. A. Wolf, and **B. R. Burkhardt**. 2010. Characterization of the Expression, Localization, and Secretion, of PANcreatic DERived Factor (PANDER, FAM3B) in Pancreatic Alpha Cells. *Mol. Cell. Endo*. 325(1-2):36-45.

20. Robert-Cooperman, C. E., J. R. Carnegie, C. G. Wilson, J. Yang, J. R. Cook, J. Wu, R. A. Young, B. A. Wolf, and **B. R. Burkhardt**. 2010. Targeted Disruption of PANcreatic-DERived Factor (PANDER, FAM3B) Impairs Pancreatic β-Cell Function. *Diabetes*. 59(9):2209-18.

21. Wilson, C. G., M. Schupp, **B.R. Burkhardt**, J. Wu, and B.A. Wolf. 2010. Liver-Specific Overexpression of Pancreatic-Derived Factor Induces Fasting Hyperglycemia in Mice. *Endocrinology*. 151(11):5174-84.

22. Robert-Cooperman, C. E., C. G. Wilson, and **B. R. Burkhardt**. 2011. PANDER KO mice on high-fat diet are glucose-intolerant yet resistant to fasting hyperglycemia and hyperinsulinemia. *FEBS Lett.* 585(9):1345-9.

23. Wilson, C. G., C. E. Robert-Cooperman, and **B. R. Burkhardt**. 2011. PANcreatic-DERived Factor: Novel Hormone PANDERing To Glucose Regulation. *FEBS Lett.* 585(14):2137-43.

24. Wang, C., **B. R. Burkhardt**, Y. Youfei, and J. Yang. 2012. Implication of pancreatic derived factor (PANDER) in type 2 diabetes: evidence from pancreatic β cells and liver. *Nutrition Rev.* 70(2):100-6.

25. Dong-Qi, T., Q. Wang, **B.R. Burkhardt**, S. A Litherland, M.A. Atkinson, and L. Yang. 2012. In vitro generation of functional insulin-producing cells from human bone marrow-derived stem cells, but long-term culture running risk of malignant transformation. *Am J Stem Cell.* 1(2):114-127.

BOOK CHAPTERS

- Kapturczak, M. H., **B. R. Burkhardt**, and M. A. Atkinson. 2005. Gene therapy for prevention and treatment of type I diabetes. *Laboratory Techniques in Biochemistry and Molecular Biology.* Volume 31:125-159.

RESEARCH SUPPORT

Current

- University of South Florida
  Department of Cell Biology, Microbiology, and Molecular biology
  Total Start-Up Funds: $350,000
  Faculty start up package initiated on 3/1/2011 for the purpose of supporting initial laboratory costs.

- **"Mechanism of Pancreatic-Derived factor (PANDER) induced glycemic regulation"**
  University of South Florida
  Division of Sponsored Research
  New Researcher Grant
  Total Costs: $20,000
  The New Researcher Grants are available for promising new junior faculty who are pursuing a faculty/research career in any field at USF.

Completed

- **"Mechanism of PANDER-Induced Apoptosis"**
  PI: Brant R. Burkhardt
  Agency: NIH-NIDDK
  Type: K01 (DK070744-A1) Period: 04/01/06-03/31/11
  Total Costs: $669,600
  Effort- 100%
  The long-term goal of this project is to elucidate the mechanism of PANcreatic DERived factor (PANDER)-induced islet cell apoptosis.

ABSTRACTS (1998-Present)

1. **Burkhardt, B. R.,** Perez, E. E., Mueller, B., Pizzo, P., Sleasman, J. W., and Goodenow, M. M. "Emergence of Genotypic Resistance in HIV-1 Protease in Children with Reduced Virus Burden and Significant Immune Reconstitution in Response to Highly Active Retrovirus Therapy". The 5th Conference on Retroviruses and Opportunistic Infections, February 1-5, 1998, Chicago, Ill.

2. Perez, E. E., **Burkhardt, B.,** Mueller, B., Pizzo P., Sleasman, J. W., and Goodenow, M. M. "Genotypic Resistance in HIV-1 Protease Emerges in Infected Pediatric Patients with Reduced Virus Burden and Immune Reconstitution in Response to HAART". Southern Society for Pediatric Research Meeting, February 7-9, 1998, New Orleans, LA.

3. **Burkhardt, B. R.,** Taylor, G. S., Lee, F. E., Nykiel, G., Lamers, S. L., Tuttle, D. L., Sleasman, J. W. and Goodenow, M. M. "Tissue Specific Segregation of HIV-1 in Vertically Infected Patients as Determined by Long Terminal Repeat (LTR) and Envelope (Env) Sequences". Retroviruses, May 25-30, 1999, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

4. **Burkhardt, B. R.,** Taylor, G. S., Lee, F. E., Nykiel, G., Lamers, S. L., Tuttle, D. L., Sleasman, J. W. and Goodenow, M. M. "Phylogenetic Segregation of HIV-1 among the Lung, Brain, and Blood, of Vertically Infected Patients as Determined by Long Terminal Repeat (LTR) and Envelope (Env) Sequences". Graduate Student Forum, April 2, 1999, University of Florida, Gainesville, FL.

5. **Burkhardt, B. R.**, Oshier, J. T., Taylor, G. S., Lee, F. E., Tuttle, D. L., Sleasman, J. W., and Goodenow, M. M. "Promoter Analysis of HIV-1 Reveals Distinct Functional Differences among Tissue Specific Long Terminal Repeats (LTRs)". Retroviruses, May 25-30, 2000, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

6. Briggs, D., **Burkhardt, B. R.**, Taylor, G. S., Tuttle, D. L., Goodenow, M. M., and Sleasman, J. W. "Phylogenetic Identification and Functional Characterization of HIV-1 Quasispecies from the Thymus". Retroviruses, May 25-30, 2000, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

7. **Burkhardt, B. R.**, Oshier, J. T., Taylor, G. S., Lee, F. E., Tuttle, D. L., Sleasman, J. W., and Goodenow, M. M. "Promoter Analysis of HIV-1 Reveals Distinct Functional Differences among Tissue Specific LTRs". Graduate Student Forum, April 14, 2000, University of Florida, Gainesville, FL.

8. Goudy, K., Wasserfall C., **Burkhardt B.**, Brusko, T., Song S., Ellis, T., Flotte, T., and Atkinson, M. "Dose and time dependency of AAV-IL-10 gene therapy disease prevention in NOD mice". American Diabetes Association, 62nd Scientific Sessions, June 14-18, 2002, San Francisco, CA.

9. Goudy, K., Wasserfall C., **Burkhardt B.**, Brusko, T., Song S., Ellis, T., Flotte, T., and Atkinson, M.. "Elucidation of time and dose dependencies using AAV-IL-10 gene therapy for the prevention of type 1 diabetes in the NOD mouse". 5th Annual American Society of Gene Therapy Meeting, June 5-9, 2002, Boston, MA.

10. **Burkhardt, B. R.**, Ghaffari, G., Oshier, J. T., Sleasman, J. W., and Goodenow, M. M. "Functional Analysis of Tissue Specific LTRS from Primary HIV-1 Display Distinct Promoter Function in Macrophages and PBMC". Retroviruses, May 21-26, 2002, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

11. Tuttle, D. L., Briggs, D. R., Arnold, J. L., **Burkhardt, B. R**., Poole, P. P., Jeffers, L. K., Bhatt, D., Sleasman, J. W., and Goodenow, M. M. "HIV-1 Envelope V1 Determinants Are Critical for CXCR4-Mediated Infection of Macrophages". Retroviruses, May 21-26, 2002, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

12. **Burkhardt, B. R.**, Loiler, S. A., Kilberg M. S., Crawford, J. M., Flotte, T. R., Goudy, K., Ellis, T. M., Atkinson, M. A. "Glucose-Responsive Expression Of The Human Insulin Promoter in HepG2 Human Hepatoma Cells". The 6th International Congress of the Immunology of Diabetes Society and American Diabetes Association Research Symposium, October 3-6, 2002, Copper Mountain Resort, Copper Mountain, CO.

13. Goudy, K., Wasserfall C., **Burkhardt B.**, Brusko, T., Song S., Ellis, T., Flotte, T., and Atkinson, M. "Gene Therapy Using AAV-IL-10 Prevents Diabetes in NOD Mice in a Dose and Time Dependent Fashion Through Immunoregulatory Enhancement". The 6th International Congress of the Immunology of Diabetes Society and American Diabetes Association Research Symposium, October 3-6, 2002, Copper Mountain Resort, Copper Mountain, CO.

14. **Burkhardt, B. R.**, Zhang, Y. C., Anderson J., Loiler, S. A., Crawford, J. M., Flotte, T. R., Ellis, T. M., and Atkinson, M. A. "Insulin Regulated Transgene Expression via Human Insulin Promoter Driven Recombinant Adeno-Associated Virus". American Diabetes Association, 63nd Scientific Session, New Orleans, LA.

15. Tang, D., Cao, L., **Burkhardt, B. R.**, and Atkinson, M. A. "Derivation and Characterization of Functional Insulin-Producing Cells from Human and Mouse Bone-Marrow Derived Stem Cells". American Diabetes Assocation, 63nd Scientific Sessions, New Orleans, LA.

16. **Burkhardt, B. R.**, Zhang, Y. C., Anderson J., Loiler, S. A., Crawford, J. M., Flotte, T. R., Ellis, T. M., and Atkinson, M. A. "Regulated Transgene Expression in both HepG2 Hepatoma Cells and Primary Rat Hepatoctyes via Human Insulin Promoter Driven Recombinant Adeno-Associated Virus". 6th Annual American Society of Gene Therapy Meeting, June 5-9, 2003, Washington D. C.

17. **Burkhardt, B. R**., Yang, M. C., Robert, C. E., Gao, Z., and Wolf, B. A. "Identification and Characterization of the Murine PANDER Promoter Reveals Dominant α-TC3 Specific Expression". American Diabetes Association, 64th Scientific Session, June 4-8, 2004, Orlando, FL.

18. Yang, L., Tang, D. **Burkhardt, B.**, Cao, L., Litherland, S., and Atkinson, M. "Derivation of Functional Insulin Producing Cells from Mouse and Bone Marrow-Derived Stem Cells". American Diabetes Association, 65th Scientific Session, June 4-8, 2004 Orlando, FL.

19. Zhang, Y. C., **Burkhardt, B. R**., Atkinson, M., Tang, Y., Qian, K. and Shen, L. " Small Interference RNA Silencing of Fas on Cytokine-Stimulated Pancreatic Islet Cells for Improving Islet Transplantation and Preventing Islet Cell Loss". American Diabetes Association, 65th Scientific Session, June 4-8, 2004 Orlando, FL.

20. **Burkhardt, B. R**., Yang, M. C., Robert, C. E., Gao, Z., and Wolf, B. A. "Islet Cell-Line Specific and Glucose-Responsive Expression of the PANDER Promoter". American Diabetes Association, 65th Scientific Session, June 10-14, 2005, San Diego, CA.

21. Robert C. E., Koeberlein, B., Wu, J., **Burkhardt, B. R.,** Naji, A., and Wolf, B. A. "Transgenic Mice Overexpressing the Novel Islet Specific Cytokine, PANDER, Exhibit Glucose Intolerance and Decreased β Cell Mass." American Diabetes Association, 65th Scientific Session, June 10-14, 2005, San Diego,CA. (Late Breaking Abstract).

22. Yang J., Robert, C. E., **Burkhardt, B. R.**, Young, R. A., Wu, J., Gao, Z., and Wolf, B. A. "Mechanisms of Glucose-Induced Secretion of PANDER in Pancreatic β Cells". American Diabetes Association, 65th Scientific Session, June 10-14, 2005, San Diego, CA.

23. Yang, J., Robert, C. E., **Burkhardt, B. R.**, Wilson, C., Gao, Z., and Wolf, B. A. "PANcreatic DERived Factor (PANDER, FAM3B) Inhibits Liver Cell Insulin Signaling In Vitro and In Vivo." American Diabetes Association, 66th Scientific Session, June 9-13, 2006, Washington D.C.

24. Cook, J. R., **Burkhardt, B. R.**, Young, R. A., and Wolf, B. A. "Pdx-1 Binds To The Promoter Region Of And Upregulates Expression Of Pancreatic Derived Factor (PANDER), A Novel Islet-specific Cytokine." American Diabetes Association, 67th Scientific Session, June 22-26, 2007, Chicago, Il. **(Co-authorship)**

25. Carnegie, J. R., Cooperman, C. E., **Burkhardt, B. R.**, Wu, J., Wilson, C. G., and Wolf, B. A. "Expression and Regulation of PANDER from pancreatic alpha cells." American Diabetes Association, 67th Scientific Session, June 22-26, 2007, Chicago, IL.

26. **Burkhardt, B. R.**, Carnegie, J. R., Robert-Cooperman, C. E., Young, R. A., Wu, J., Wolf, B. A. "Targeted Disruption of Pancreatic Derived Factor (PANDER, FAM3B) Impairs Glucose Tolerance, Insulin Secretion, and Hepatic Glucose Production." American Diabetes Association, 69th Scientific Session, June 5-9, 2009, New Orleans, LA. **(Oral Presentation)**

27. Carnegie, J. R., Robert-Cooperman, C. E., **Burkhardt, B. R.**, Wu, J., Young, R. A., and Wolf, B. A. "Expression, Localization, and Regulation of PANcreatic DERived Factor (PANDER) in Pancreatic α-Cells." American Diabetes Association, 69th Scientific Session, June 5-9, 2009, New Orleans, LA.

28. Dougan, G. C., Moak, S. L., Athanason, M. G., Danse, W. A., Kuehl, M. N., Robert-Cooperman, C. E., and **Burkhardt, B. R.** "Pancreas-Specific PANDER Over Expression Induces Hepatic Insulin Resistance." American Diabetes Association, 72nd Scientific Session, June 8-12, 2012, Philadelphia, PA.

29. Moak, S. L., Athanason, M. G., Dougan, G. C., Kuehl, M. N., Danse, W. A., Robert-Cooperman, C. E., and **Burkhardt, B. R.** "Expression and Distribution of PANcreatic-DERived Factor (PANDER) in Human Gastric and Intestinal Tissues." American Diabetes Association, 72nd Scientific Session, June 8-12, 2012, Philadelphia, PA.

University of South Florida
Department of Cell Biology, Microbiology and Molecular Biology
4202 E. Fowler Ave., BSF 217
Tampa, FL 33620

Phone: 813-974-9307
Fax: 813-905-9919
Email: mariacecilia@usf.edu

Maria Cecilia do Nascimento Nunes

Education

1995	Ph.D. in Biotechnology with specialty in Food Science and Engineering- College of Biotechnology (ESB), Catholic University of Portugal, Porto, Portugal. Research subject: *"Physiology of strawberry fruits during ripening and as influenced by postharvest temperature and atmosphere*". Cooperative Research Program between the Horticultural Sciences Department, University of Florida, Gainesville, Florida, USA and the College of Biotechnology (ESB), Catholic University of Portugal, Porto, Portugal (http://www.esb.ucp.pt/)
1992	Master (non-thesis M.S.) degree in Food Science and Engineering - College of Biotechnology (ESB), Catholic University of Portugal, Porto, Portugal (http://www.esb.ucp.pt/)
1989	Licentiate degree in Nutritional Sciences - College of Food Science and Human Nutrition (FCNAUP), University of Porto, Portugal https://sigarra.up.pt/fcnaup/web_page.inicial
1985	Bachelor (B.Sc.) degree in Nutritional Sciences - College of Food Science and Human Nutrition (FCNAUP), University of Porto, Portugal

Academic Experience

2012 to present	Assistant Professor at the University of South Florida, Department of Cell Biology, Microbiology and Molecular Biology, Tampa, USA.
2010 to 2012	Assistant Professor of Food Science and Director of the Food Quality Laboratory at the University of South Florida in Lakeland, Florida, USA.
2010 to present	Courtesy Faculty at the University of Florida, Department of Food Science and Human Nutrition, Gainesville, Florida, USA.
2005 to 2010	Assistant Scientist at the University of Florida, Department of Food Science and Human Nutrition, Gainesville, Florida, USA.
2003-2005	Visiting Scientist at the University of Florida, Department of Horticultural Sciences, Gainesville, Florida, USA.
2000-2005	Senior Research Associate at the University Laval, College of the Science of Food and Agriculture, Quebec, Canada.
2003 to present	Founder Member of the Center for Food Distribution and Retailing and the University of Florida, Institute of Food and Agricultural Science.
2000 to present	Courtesy Faculty at the Department of Horticultural Sciences, University of Florida - IFAS, Gainesville, Florida, USA.

Professional Experience

2000-2002	Consultant: Edition of texts for the food and nutrition section of the magazine on-line Prática, Media Capital, a Multimedia Editorial Company, Portugal.

1998-2000 Consultant: Collaboration in the edition of monthly brochures "Other Suggestions from Pingo Doce", food and nutrition section, for Pingo Doce a Food Distribution and Retailing Company, Portugal.

1991-1991 Nutritional Advisor and Laboratory Representative for NUTRICIA - Baby Food and Clinical Nutrition (http://www.nutricia.com/), Lisbon, Portugal.

1987-1991 Manager in Food and Nutrition Systems; Food Quality Control; Nutrition Education for the Public. GERTAL Catering Company, Lisbon, Portugal.

1986-1988 Clinical and Research Nutritionist in Pediatric Nutrition. S. João Hospital Pediatric Unit- Porto, Portugal.

Postdoctoral Experience

1996-2000 Postdoctoral Associate - University Laval - College of the Science of Food and Agriculture, Quebec, Canada. Research area: *Temperature management to maintain the postharvest quality of fresh horticultural crops during storage and air transportation* (http://www.fsaa.ulaval.ca/)

Research Interests

The main objective of my research program consist in studying the changes in the quality and composition of foods, particularly fresh fruits and vegetables, in response to growing/production environment (i.e., pesticide usage) and to environmental (i.e., temperature, humidity, atmosphere) and physical (i.e., packaging) conditions normally encountered throughout the food supply chain. Other aspect of my research consists in using directed postharvest stress and temperature optimization to maximize the genetic potential of fruits and vegetables for sensory and nutritional quality, in particular bioactive compounds. Results from this research help to understand the impact of environmental and physical conditions on the quality and composition of food, particularly fresh fruits and vegetables, and help improving the handling, distribution and retail system in order to provide the consumer food with better quality.

Food Quality Laboratory

2010-2011 Establishment of the Food Quality Laboratory at the University of South Florida in Lakeland. The main goals of this Research Laboratory are: 1) perform industry and federal sponsored research; 2) host and supervise undergraduate and graduate students on special projects; 3) host small companies and offer services to the industry: 4) perform customized laboratory work on shelf life studies, food quality and composition.

Current Contracts and Grants

2012-2013 Co-principal Investigator: *Identification of barriers to and the development of a nutrition education program to increase fruit and vegetable intake in children from food insecure households*. USF Entrepreneur Challenge Plus. Total received: $10,000; Co-PI: no share.

2011-2013 Principal Investigator: *Remote Environmental Monitoring and Diagnostics in the Perishables Supply Chain – Part II,* sponsored by US Department of Defense Natick Soldier Research, Development and Engineer Center. Participants: University of Florida (lead institution), University of South Florida and Georgia Institute of Technology. Total received: $2,079,548; USF share: $1,300,000; PI share: $829,906.

2009-2013 Principal Investigator: *Increasing consumption of specialty crops by enhancing their quality and safety,* sponsored by USDA Specialty Crop Research Initiative. Participants: University of California Davis (lead institution), University of Florida, University of South Florida and USDA-ARS. Total received: $3,854,696; USF share: $69,314 (for 2011-2013 only); PI share: $55,011.

Contracts and Grants Received

2008-2010	Co-Principal Investigator: *Remote Environmental Monitoring and Diagnostics in the Perishables Supply Chain,* sponsored by US Department of Defense Natick Soldier Research, Development and Engineer Center. University of Florida (lead institution), University of South Florida and Georgia Institute of Technology. ($4,008,960)
2008-2009	Co-Principal Investigator: *Time-temperature combinations that induce chilling injury in mangoes*, sponsored by National Mango Board. Participant: University of Florida ($50,000)
2007-2008	Co-Principal Investigator: *Optimization of quality and safety of fresh perishables*, sponsored by Kroger Corporation. Participant: University of Florida. ($247,998)
2007-2010	Co-Principal Investigator: *Maximizing tomato genetic potential for sensory and nutritional quality by directed postharvest stress and temperature optimization*, sponsored by U.S. Department of Agriculture, Cooperative State Research, Education and Extension Services (CSREES), National Research Initiative (NRI) Competitive Grant. Participants: University of Florida (lead institution), Michigan State University and USDA-ARS. ($422,582)
2007-2010	Principal Investigator: *Effects of environmental conditions on the quality of fresh fruits and vegetables*, sponsored by Ingersoll Rand Corporation & Thermo King Corporation– Climate Control Division. Participants: University of Florida. ($511,673)
2006-2009	Co-Principal Investigator: *Refrigerated display*, sponsored by Ingersoll Rand Corporation. Participant: University of Florida. ($62,500)
2004-2008	Co-Principal Investigator: *Systems Approach to Identifying Critical Handling Steps and Cost-effective Technologies to Maintain Quality of Fresh Fruits and Vegetables*. USDA- Tropical & Subtropical Agriculture Research. Participant: University of Florida. ($150,000)
2005-2007	Principal Investigator: *Effect of in-store conditions on the quality of fresh fruits and vegetables*, sponsored by Publix Supermarkets. Participant: University of Florida. ($76,000)
2002-2005	Co-Principal Investigator: *Food Quality Initiative in Northern Canada,* sponsored by Canada Post. Participant: University Laval. ($260,000)
2002-2003	Co-Principal Investigator: *Effects of the distribution chain on the quality of perishables,* sponsored by Envirotainer Holding, Sweden. Participant: University Laval. ($275,000)
1998-2002	Co-Principal Investigator: *Improvement of the quality and preservation of perishable products during airport operations*, sponsored by PERISCO Inc. Participant: University Laval. ($1,000,000)
1998	Co-Principal Investigator: *Optimization of the retail store cold chain: improvement of the refrigerated retail display cabinets for fruits and vegetables*, sponsored PROVIGO Distribution Inc. Participant: University Laval. ($100,000)
1997	Co-Principal Investigator: *Postharvest quality evaluations of bell pepper pre-cooled and stored under different conditions*, sponsored by M.A.P.A.Q. (Quebec Ministry of Agriculture) and Farm Jocelyn Roberge. Participant: University Laval. ($1,000)
1996 - 1997	Co-Principal Investigator: *Development of packaging systems allowing efficient distribution of perishable products (fruits and vegetables) in New-Quebec*, sponsored by La Fédération des Coopératives du Nouveau-Quebec. Participant: University Laval. ($38,000)
1996	Co-Principal Investigator: *Evaluation of the losses in fresh fruits and vegetables during air transportation*, sponsored by British Airways and IATA. Participant: University Laval. ($108,000)

1996-1997 Co-Principal Investigator: *Improvement of the postharvest quality of carrots to be used as "4^{éme}gamme" products*, sponsored by The Orleans Island Growers, Quebec, Canada. Participant: University Laval. ($300,000)

1993-1994 Collaborator: *Quality of Tomatoes after Storage under Controlled Atmosphere*, in collaboration with the College of Biotechnology (ESB), Catholic University of Portugal, Porto, Portugal; University of Florida, Horticultural Sciences Department and Vairão Agricultural Experiment Station, Portugal. Supported by a grant from the Portuguese Government, Junta Nacional de Investigação Científica e Técnologica (JNICT), Portugal.

1986-1989 Collaborator: *Risk Factors of Cardiovascular Pathology in a Rural Population of Children Aged Between 24 and 59 Months*, sponsored by the Portuguese Government (Ministério dos Assuntos Sociais, Gabinete de Estudos e Planeamento, Programa de Cooperação Luso-Norueguesa no Sector da Saúde) and by the Norwegian Government.

Teaching Experience

2011 to present Instructor for the course HUN 3932 Food Quality and Composition at the University of South Florida, USA.

2010-2011 Development of a new course for the USF System: Food Quality and Composition (3 credit course).

2009 Guest lecturer for the graduate course FOS 4321C Food Analysis, Food Science and Human Nutrition Department, University of Florida. Special lecture on principles and practice of physical and chemical methods for analyzing the quality of fresh fruit and vegetables.

1996-1997 Teaching assistant for the undergraduate course Handling of Solids, topic of the 2nd year of the B.Sc. program in Food Engineering, University Laval, Dept. of Soils and Agri-Food Eng., College of Food Sciences and Agriculture, Quebec, Canada.

1996 Teaching assistant for the postgraduate course GAL-20236 Postharvest Technology. Department of Soils and Agrifood Engineering, College of Food Sciences and Agriculture, Quebec, Canada.

1992-1993 Teaching assistant for the undergraduate course of Chemistry, Physics and Kinetics, topic of the 1st year of the B.Sc. program in Food Engineering, College of Biotechnology, Catholic University of Portugal.

1991-1992 Teaching Assistant for the undergraduate course of General Chemistry, topic of the 1st year of the B.Sc. program in Food Engineering, College of Biotechnology, Catholic University of Portugal.

1991-1992 Teaching assistant for the undergraduate course of Biochemistry I, topic of the 3rd year of the B.Sc. program in Food Engineering, College of Biotechnology, Catholic University of Portugal.

1989-1990 Pedagogical coordinator and instructor for the Professional Course of Catering and Nutrition, Pina-Manique School, Lisbon, Portugal.

1987 Instructor for the Professional Course of Hygiene and Food Preservation, Economic Community (EC) Grant Courses, Lisbon, Portugal.

1986-1991 Guest speaker for short courses in Food, Nutrition and Health in schools, hospitals and sport organizations.

1985-1986 Teaching Assistant for the course on Food Epidemiological and Motherly-Infantile Nutrition, topic of the 3rd year of the B.Sc. in Human Nutrition Sciences, University of Porto, Porto, Portugal

Professional, Editorial, Community and University Service

2013	Reviewer: Postharvest Biology and Technology
2013	Member of a mock interview panel organized by the USF-Office of National Scholarships for Ph.D. candidate Christie Campla in preparation for and interview for the National Institutes of Health Oxford-Cambridge Scholars Program
2012	University of South Florida, Department of Cell Biology, Microbiology and Molecular Biology - Teaching Peer Reviewer for Dr. Kelly M. Leach – PCB 3023 Cell Biology
2011-2013	Vice President elected for the Handling and Processing Section of the Florida State Horticultural Society. Duties: invite speakers; organize and moderate section.
2012	Judge for student best oral presentation (17 oral presentations) at the Florida State Horticultural Society Annual Meeting, June 3-5, Delray Beach, FL
	Moderator for the Handling and Processing Section (June 5, 2012). Florida State Horticultural Society Annual Meeting, June 3-5, Delray Beach, FL
2011-2013	Judge for the student best paper (2011: 4 papers; 2012: TBA) – Proceedings of the Florida State Horticultural Society.
2012	Reviewer:
	Postharvest Biology and Technology - Elsevier
	International Journal of Food Science and Technology
	Journal of Food Quality
	Journal of Textural Studies
	Nutrition Journal
	International Journal of Postharvest Technology and Innovation
	IR-4 Southern Laboratory Project Proposal: “Southern Region Program to Clear Pest Control Agents for Minor Uses”. PI-Maurice Marshall, Department of Food Science and Human Nutrition, University of Florida
2011	Reviewer:
	Journal of Horticultural Science and Biotechnology
	Acta Horticulturae – International Society for Horticultural Sciences
	Journal of the Science of Food and Agriculture – Wiley
	IR-4 Southern Laboratory Project Proposal: “Southern Region Program to Clear Pest Control Agents for Minor Uses”. PI-Maurice Marshall, Department of Food Science and Human Nutrition, University of Florida
2010	Reviewer:
	Research Proposals - Agriculture and Agri-Food Canada
	Journal of the Science of Food and Agriculture - Wiley
	IR-4 Southern Laboratory Project Proposal: “Southern Region Program to Clear Pest Control Agents for Minor Uses”. PI-Maurice Marshall, Department of Food Science and Human Nutrition, University of Florida
	HortScience - American Society for Horticultural Science (ASHS)
2009	Reviewer:
	Algorithms Open Access Journal – MDPI Open Access Publishing, Switzerland (ISSN 1999-4893; CODEN: ALGOCH)

	CRIS Project – Review of the Research Proposal by K. Schneider, Department of Food Science and Human Nutrition, University of Florida
	Proceedings of the Florida State Horticultural Society
	International Journal of Food Science and Technology– Wiley Publishers
	Postharvest Biology and Technology - Elsevier
	Wiley Publishers– Book Review (Handbook of Tropical and Sub-Tropical Fruits: Post-harvest Physiology, Processing and Packaging Technologies by Siddiq, Ahmed, Lobo-Rodrigo and Ozadali)
	HortScience – American Society for Horticultural Sciences (ASHS)
2007-2009	Member of the Marketing Committee for the Florida State Horticultural Society.
2007-2009	Vice President elected for the Florida State Horticultural Society - Handling and Processing Section.
2006	Reviewer:
	Journal of Food Science – Institute of Food Technologists (IFT)
	HortScience – American Society for Horticultural Sciences (ASHS)
	Ad Hoc Reviewer for CSREES – USDA Cooperative State Research, Education, and Extension Service; Higher Education Multicultural Scholars Program
2005	Reviewer for Journal of the Science of Food and Agriculture– Wiley Publishers
2002	Reviewer for Acta Horticulturae- International Society for Horticultural Sciences (ISHS)

Professional Societies and Associations

Since 2005	Member of the Institute of Food Technologists (IFT)
Since 2003	Member of the Florida State Horticultural Society (FSHS)
Since 2000	Member of the International Society for Horticultural Sciences (ISHS)
Since 1996	Member of the American Society for Horticultural Sciences (ASHS)

Governance and Committees

2012 to present	Undergraduate Program Committee Member – Department of Cell Biology, Microbiology and Molecular Biology, University of South Florida.
2011-2012	Faculty Senator - University of South Florida in Lakeland Faculty Senate.
	Member of the Faculty Senate Undergraduate Council - University of South Florida in Lakeland.
	Member of the Faculty Senate Research Council - University of South Florida in Lakeland.
	Search Committee Member for the position of Assistant Professor in Chemistry/Biochemistry, University of South Florida in Lakeland.
2011	Search Committee Member for the position of Unit Research Administrator, University of South Florida in Lakeland.
	Tenure and Promotion Committee Member – Establish Tenure and Promotion Criteria for the College of Human and Social Sciences, University of South Florida in Lakeland.

	Curriculum Committee Member– Development and evaluation of new courses and programs for the College of Human and Social Sciences, University of South Florida in Lakeland.
2010	Chair of the Search Committee for the position of Biological Scientist - Food Quality Laboratory, College of Human and Social Sciences, University of South Florida in Lakeland.

Honors and Awards

1996-2001	Fellowship attributed by the College of Agriculture, Food Science and Human Nutrition, Laval University, Quebec, Canada to sponsor a Postdoctoral program.
1996-1997	Award attributed by the Government of Quebec, Canada – Quebec Excellence Grant Program for Young Post-Graduated Foreigners. (Programme Québécois de Bourses d'Exellence Pour Jeunes Diplômés Étrangers, 1995-1996) to sponsor Postdoctoral program.
1992-1995	Award attributed by the Portuguese Government, Junta Nacional de Investigação Científica e Tecnológica (JNICT), Portugal to sponsor a Ph.D. program in Biotechnology.
1992-1993	Award attributed by the Portuguese Government, Junta Nacional de Investigação Científica e Técnologica (JNICT), Portugal to sponsor a Master's program in Food Science and Engineering.

Pedagogy and Teaching

2011-2013	Co-mentor for MSc. student in the Horticultural Sciences Department at the University of Florida: Yanina Perez.
2010-2013	Graduate committee member for Ph.D. student in the Horticultural Sciences Department at the University of Florida: Angelos Deltsidis.
2011-2012	Supervisor and mentor for Postdoctoral Associate: Sharon Dea, Food Quality Laboratory, University of South Florida.
2008-2010	Graduate committee member for MSc student in the Agricultural and Biological Engineering Department at the University of Florida: Kristina Anderson.
2008-2010	Supervisor and mentor for Postdoctoral Associate: Yavuz Yagiz, Food Science and Human Nutrition Department, University of Florida
2007-2010	Graduate committee member for Ph.D. student in the Agricultural and Biological Engineering Department at the University of Florida: Cecilia Amador.
2007-2010	Chair for M.Sc Student in the Food Science and Human Nutrition Department at the University of Florida: Yun-Pai Lai.
2008	Supervisor and mentor for Postdoctoral Associate: Artemio Zabala Tulio, Jr., Food Science and Human Nutrition Department, University of Florida
2005-2009	Co-chair of Ph.D. student in the Horticultural Sciences Department at the University of Florida: Sharon Dea.
2006-2007	Supervisor and mentor for Postdoctoral Associate: Sibel Damar, Food Science and Human Nutrition Department, University of Florida
2002-2005	Co-chair of Ph.D. student in the Food Science and Human Nutrition Department at University Laval in Canada: Emilie Laurin.
1999-2004	Graduate committee member and supervisor for Master and Ph.D. students in the Food Science and Human Nutrition Department and in the Department of Soils and Agrifood Engineering at University Laval, Canada: Sébastien Villeneuve, M.Sc. and Ph.D.; Emilie Laurin, M.Sc.; Emilie Proulx, M.Sc., Andrea Molinari, Ph.D. and Eugéne N. Nicoué, M.Sc.

Collaborators and Other Affiliations

2011 to present	Collaboration with Dr. Natalia Peres, professor from the University of Florida - Gulf Coast Research and Education Center, Wimauma, FL. Objective*: Evaluate the effect of different types of pesticide application regimes on the quality of strawberries.*
2011 to present	Collaboration with Dr. Vance Whitaker, professor from the University of Florida - Gulf Coast Research and Education Center, Wimauma, FL. Objective: *Compare the quality and shelf life of commercial strawberry varieties with new genotype releases developed by the University of Florida Strawberry Breeding Program*.
2010-2011	Innovative Fresh, Heemskerk, The Netherlands http://www.innovativefresh.com/
2010 to present	Collaboration with Drs. Elizabeth Baldwin and Anne Plotto, scientists from USDA-ARS US Horticultural Research Laboratory, Ft. Pierce, FL.
2009 to present	Collaboration with researchers from the Postharvest Technology Center, at the University of California Davis.
2005 to present	Collaboration with Dr. Charles A. Sims, professor from the Food Science and Human Nutrition Department at the University of Florida.
1996 to present	Collaboration with Dr. Jeffrey K. Brecht, professor from the Horticultural Sciences Department at the University of Florida.

Book Sole Author

1. Nunes, M.C.N. 2008. Color Atlas of Postharvest Quality of Fruits and Vegetables. Edited by M.C.N. Nunes, Wiley-Blackwell Publishing, 463 pp.

Books and Monographs

1. Emond, J-P., Nunes, M.C.N. and Dea, Sharon. 2003. Perishable Cargo Handling Manual, 4th edition. IATA-International Air Transport Association, Montreal, Geneva.
2. Emond, J-P., Nunes, M.C.N. and Mercier, F. 2000. Perishable Cargo Handling Manual, 3rd edition. IATA-International Air Transport Association, Montreal, Geneva.
3. Emond, J-P., Nunes, M.C.N. and Mercier, F. 1998. Perishable Cargo Handling Manual, 2nd edition. IATA-International Air Transport Association, Montreal, Geneva.
4. Emond, J-P., Nunes, M.C.N. and Mercier, F. 1996. Perishable Cargo Handling Manual, 1st edition. IATA-International Air Transport Association, Montreal, Geneva.

Book Chapters

1. Simonne, A., Nunes, M.C.N. and Brecht, J.K. 2011. Tomato and other Solanaceous fruit. In: Health-promoting properties of fruits and vegetables, edited by Leon A. Terry, pp. 321-351. CABI, Wallingford, UK.
2. Emond, J-P.and Nunes, M.C.N. 2006. Chapter 16. Packaging and Unitization. In Fresh Citrus Fruits 2nd Edition, edited by Wilfred F. Wardowski, William M. Miller, David J. Hall and William Grierson, pp. 451-469. Florida Science Source, Longboat Key, Florida, USA.
3. Nunes, M.C.N. 2004. Rutabaga. In: The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Crops, edited by Gross, Kenneth C., Chien Yi Wang, and Mikal Saltveit. An Adobe Acrobat pdf of a draft version of the forthcoming revision to U.S. Department of Agriculture, Agriculture Handbook 66 on the website of the USDA, Agricultural Research Service, Beltsville Area http://www.ba.ars.usda.gov/hb66/index.html.

4. Nunes, M.C.N. and Emond, J.-P. 2002. Chapter 8. Storage Temperature. In: Postharvest Physiology and Pathology of Vegetables, 2nd Edition revised and expanded, Edited by Jerry A. Bartz and Jeffrey K. Brecht, pp. 209-228. Marcel Dekker, New York.

Publications in Refereed Journals

1. Dea, Sharon, Brecht, J.K., Nunes, M.C.N and Baldwin, E.A. 2013. Optimal ripeness stage for processing 'Kent' mango into fresh-cut slices. HortTechnology (in press).
2. Whitaker, V.M., Chandler, C.K., Santos, B.M., Peres, N., Nunes, M.C.N., Plotto, A., Sims, C.A. 2012. Florida Medallion™ ('FL 05-107') Strawberry. HortScience 47(2): 296-298.
3. Wang, W., Yagiz, Y., Buran, T.J., Nunes, M.C.N. and Gu, L. 2011. Phytochemicals from berries and grapes inhibited the formation of advanced glycation end-products by scavenging reactive carbonyls. Food Research International 44(9): 2666-2673.
4. Pelletier, W., Brecht, J.K., Nunes, M.C.N. and Emond, J.P. 2011. Quality of strawberries shipped by truck from California to Florida as influenced by postharvest temperature management practices. HortTechnology 21(4): 482-493.
5. Nunes, M.C.N., Emond, J.P. and Yagiz, Y. 2011. Distribution center and retail conditions affect the sensory and compositional quality of bulk and packaged slicing cucumber. Postharvest Biology and Technology 59: 280-288.
6. Proulx, E., Yagiz, Y., Nunes, M.C.N. and Emond, J.P. 2010. Quality attributes limiting snap bean (*Phaseolus vulgaris* L.) postharvest life at chilling and non-chilling temperatures. HortScience 45(8): 1238-1249.
7. Dea. S., Brecht, J.K., Nunes, M.C.N. and Baldwin, E.A. 2010. Occurrence of chilling injury in fresh-cut 'Kent' mangoes. Postharvest Biology and Technology 57: 61-71.
8. Dea. S., Brecht, J.K., Nunes, M.C.N. and Baldwin, E.A. 2010. Quality of fresh-cut 'Kent' mango slices prepared from hot water or non-hot water treated fruit. Postharvest Biology and Technology 56: 171-180.
9. Amador, C., Emond, J.P., Nunes, M.C.N., Chau, K.V. 2009. Application of RFID technologies in the temperature mapping of the pineapple supply chain. Sensing and Instrumentation for Food Quality 3:26-33.
10. Nunes, M.C.N., Emond, J.P., Rauth, M., Dea, S. and Chau, K.V. 2009. Environmental conditions encountered during typical retail display affect fruit and vegetable quality and amount of waste. Postharvest Biology and Technology 51:232-241.
11. Nunes, M.C.N. 2008. Impact of environmental conditions on fruit and vegetable quality. Stewart Postharvest Review 4(2):1-14.
12. Nunes, M.C.N., Emond, J.P., Brecht, J.K, Dea, Sharon and Proulx, E. 2007. Quality curves for mango as a function of the storage temperature. Journal of Food Quality 30:104-120.
13. Nunes, M.C.N., Emond, J.P. and Brecht, J.K. 2006. Brief deviations from set point temperatures during normal airport handling operations negatively affect the quality of papaya (*Carica papaya* L.) fruit. Postharvest Biology and Technology 41(3):328-340.
14. Laurin, E., Nunes, M.C.N., Emond, J.P. and Brecht, J.K. 2006. Residual effect of low-pressure stress during air transport of Beit Alpha-type cucumbers: stomata behavior. Postharvest Biology and Technology 41: 121-127.
15. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 2006. Physical and chemical changes in strawberry development in the field compared to those occurred during storage. Journal of the Science of Food and Agriculture 86: 180-190.
16. Pelletier, W., Nunes, M.C.N and Emond, J.P. 2005. Air transportation of fruits and vegetables: an update. Stewart Postharvest Review, 1: 1-7.

17. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 2005. Possible influences of water loss and polyphenol oxidase activity on anthocyanin content and discoloration in fresh ripe strawberry (cv. Oso Grande) during storage at 1 °C. Journal of Food Science 70(1): S79-84.

18. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 2005. Prompt cooling reduces incidence and severity of decay caused by *Botrytis cinerea* and *Rhizopusstolonifer* in strawberry. HortTechnology 15(1): 153-156.

19. Nicoué, E.E., Emond, J.P., Vuillemard, J.C. and Nunes, M.C.N. 2004. Destruction of *Rhizopusstolonifer* and *Botrytis cinerea* by ozone/ions treatments. Phytoprotection 85(2): 81-87.

20. Nunes, M.C.N., J.P. Emond and J.K Brecht. 2004. Quality curves for highbush blueberries as a function of the storage temperature. Small Fruits Review 3: 423-440.

21. Brecht, J.K., Chau, K.V., Fonseca, S.C., Oliveira, F.A.R., Silva, F.M., Nunes, M.C.N. and Bender, R.J. 2003. Maintaining optimal atmosphere conditions for fruits and vegetables throughout the postharvest handling chain. Postharvest Biology and Technology 27:87-101.

22. Laurin, E., Nunes, M.C.N. and Emond, J.P. 2003. Forced-air cooling after air-shipment delays asparagus deterioration. Journal of Food Quality 26: 43-54.

23. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 2002. Fruit maturity and storage temperature influence the response of strawberries to controlled atmospheres. Journal of the American Society for Horticultural Science 127(5): 836-842.

24. Villeneuve, S., Emond, J.P., Mercier,F. and Nunes,M.C.N. 2002. Analyse de la température de l'air dans un comptoir réfrigéré. Revue Générale du Froid 1025:17-21.

25. Nunes, M.C.N. and Emond, J.P. 1999. Chlorinated water treatments affects postharvest quality of green bell peppers. Journal of Food Quality 22: 353-361.

26. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1998. Controlling temperature and water loss to maintain ascorbic acid levels in strawberries during postharvest handling. Journal of Food Science 63 (6): 1033-1036.

27. Nunes, M.C.N.; J.K. Brecht; Morais, A.M.M. and Sargent, S.A. 1996. Quality of pink tomatoes (cv. Buffalo) after storage under controlled atmosphere at chilling and non-chilling temperatures. Journal of Food Quality 19 (5): 363-374.

28. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1995. Effects of delays to cooling and wrapping on strawberry quality (cv. Sweet Charlie). Journal of Food Control 6 (6): 323-328.

29. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1995. Physical and chemical quality characteristics of strawberries after storage are reduced by a short delay to cooling. Postharvest Biology and Technology 6: 17-28.

30. Guerra, A., Santos, N. Teixeira, Prata, A., Nunes, M.C.N. and Aguiar, A. 1991. Comparative study between different classifications of the nutritional status of children (0 to 60 months) from the Pediatric Unit of the Hospital de S. João, Porto. Arquivos de Medicina, 4(3): 209.

31. Guerra, A.J.M., Santos, N.T., Santos, L.A., Carreiro, E., Nunes, M.C.N., Prata, A. and Veloso, D. 1990. Comparative study of breast-feeding, infection morbidity and growth in two communities with low social-economic and cultural level. Revista Portuguesa de Nutrição 2 (2):19.

32. Guerra, A, Santos, N. Teixeira, Santos, L.A., Carreiro, E., Morais, M.R., Prata, A., Nunes, M.C.N. and Silva, D. 1990. Literature review on the current methodology used for the evaluation of the infant nutritional status: anthropometrical and nutritional evaluation of Portuguese infant communities. 9th Nestlé Prize of Pediatrics and Puriculture. Revista Portuguesa de Pediatria 21(5): 5.

33. Guerra, A.J.M., Santos, N.T., Santos, L.A., Carreiro, E., Nunes, M.C.N.., Prata, A. and Veloso, D. 1989. Comparative study of breast feeding, infection morbidity and growth in two communities with low social-economic and cultural levels. Revista Paulista de Pediatria 7: 126.

34. Martins, A., Silva, D., Labandeiro, L., Nunes, M.C.N., Rodrigues, F., Vieira, M.J. and Santos, N.T. 1988. Kwashiorkor secondary to Celiac disease: a clinical case. Journal do Médico 2249: 166.

Publications in Conference Proceedings with Peer Review

1. Nunes, M.C.N, Delgado, A. and Emond, J.P. 2012. Quality curves for green bell pepper (*Capsicum annuum* L) stored at low and recommended relative humidity levels. Acta Horticulturae 945:71-78.
2. Chilson, D., Delgado, A. and Nunes, M.C.N. 2011. Shelf life of vine tomato (*Lycopersicum esculentum*) stored at non-chilling temperature and different relative humidity levels. Proceedings of the Florida State Horticultural Society 124: 246-255.
3. Lai, Y.P. and Nunes, M.C.N. 2011. Environmental conditions encountered during distribution from the field to the store affect the quality of strawberry (cv. Albion). Proceedings of the Florida State Horticultural Society 124: 213-220.
4. Dea, S., Brecht, JK, Nunes, M.C.N., Emond, J.P. 2010. Modified atmosphere packaging for fresh-cut 'Kent' mango. Proceedings of the Florida State Horticultural Society 123:278-289.
5. Dea, S., Brecht, J.K. and Nunes, M.C.N. 2008. Impact of environmental conditions during distribution on tomato quality and decay (Best Student Paper Award). Proceedings of the Florida State Horticultural Society 121:289-296.
6. Dea, S., Brecht, J.K. and Nunes, M.C.N. 2007. Visualization of polyphenoloxidase and phenolics distribution in mesocarp of fresh-cut mango (cv. Kent) during storage. Proceedings of the Florida State Horticultural Society 120:263-266.
7. Nunes, M.C.N. and Emond, J.P. 2007. Relationship between weight loss and visual quality of fruits and vegetables. Proceedings of the Florida State Horticultural Society 120:235-245.
8. Proulx, E., Nunes, M.C.N., Emond, J.-P. and Brecht, J.K. 2005. Quality attributes limiting papaya postharvest life at chilling and non-chilling temperatures. Proceedings of the Florida State Horticultural Society 118: 389-395.
9. Laurin, E., Nunes, M.C.N., Emond, J.P. and Brecht, J.K. 2005. Vapor pressure deficit and water loss patterns during simulated air shipment and storage of *Beit Alpha* cucumber. Acta Horticulturae 682: 1697-1703.
10. Laurin, E., Nunes, M.C.N., Emond, J.P. 2005. Re-cooling of strawberries after air-shipment delays fruit senescence. Acta Horticulturae 682: 1745-1751.
11. Nunes, M.C.N., Emond, J.P. and Brecht, J.K. 2004. Quality curves for highbush blueberries as a function of the storage temperature. In: Proceedings of the Ninth North American Blueberry Research and Extension Workers Conference. Charles F. Forney and Leonard J. Eaton (Eds.). P. 423-438. Food Products Press, An imprint of The Haworth Press. Inc., New York.
12. Nunes, M.C.N., Emond, J.P. and Brecht, J.K. 2003. Predicting shelf life and quality of raspberries under different storage temperatures. Acta Horticulturae 628: 599-606.
13. Nunes, M.C.N., Proulx, E., Emond, J.P. and Brecht, J.K. 2003. Quality characteristics of 'Horn of Plenty' and 'Medallion' yellow summer squash as a function of the storage temperature. Acta Horticulturae 628:607-617.
14. Nunes, M.C.N., Emond, J.P. and Brecht, J.K. 2003. Quality of strawberries as affected by temperature abuse during ground, in-flight and retail handling operations. Acta Horticulturae 604: 239-246.
15. Laurin, E., Nunes, M.C.N., Emond, J.P. and Brecht, J.K. 2003. Quality of strawberries after simulated airfreight conditions. Acta Horticulturae 604: 659-664.
16. Emond, J.P., Mercier, F., Laurin, E. and Nunes, M.C.N. 2003. Cold chain management of perishable distribution in northern communities of Canada. In: Proceedings of the 21st International Congress of Refrigeration. Paper No. ICR0334. International Institute of Refrigeration (IIF/IIR), Washington, DC, August 17-22, 2003.
17. Laurin, E., Nunes, M.C.N. and Emond, J.P. 2001. Use of pre-cooling systems as a treatment against temperature abuse during air shipment of asparagus. Pp. 51-58. In: Proceedings of the International

Institute of Refrigeration – Rapid Cooling of Food. Conference of the International Institute of Refrigeration Commission C2. University of Bristol, UK, 28-30 March 2001.

18. Villeneuve, S., Emond, J.P., Mercier, F. and Nunes, M.C.N. 1999. Analyse de la température de l'air à l'intérieur d'un comptoir réfrigéré destiné à la vente au détail des fruits et légumes frais. Paper No. 283 In: Proceedings of the 20th International Congress of Refrigeration. Sydney, September 19-24, 1999.
19. Emond, J.P., Mercier, F. and Nunes, M.C.N. 1999. In-Flight temperature conditions in the Holds of a Widebody Aircraft. Paper No. 281. IN: Proceedings of the 20th International Congress of Refrigeration. Sydney, September 19-24, 1999.
20. Nunes, M.C.N., Villeneuve, S. and Emond, J.P. 1999. Retail display conditions affects quality characteristics of broccoli florets. Paper No. 277. In: Proceedings of the 20th International Congress of Refrigeration. Sydney, September 19-24, 1999.
21. Nunes, M.C.N. and Emond, J.P. 1999. Quality of strawberries after storage in constant or fluctuating temperatures. Paper No. 205. In: Proceedings of the 20th International Congress of Refrigeration. Sidney, September 19-24, 1999.
22. Nunes, M.C.N., Brecht, J.K., Morais, A.M.M. and Sargent, S.A. 1995. Quality of strawberries after storage in controlled atmospheres at above optimum storage temperatures. In: Proceedings of the Florida State Horticultural Society 108: 237-278.
23. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1995. Controlling temperature and water loss to maintain vitamin C levels in strawberries during postharvest handling. In: Proceedings of the IV North American Strawberry Conference, Marvin P Pritts, Craig K. Chandler and Timothy E. Crocker (Ed.), P. 322. Published by Horticultural Sciences Department-University of Florida.
24. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1995. Quality of strawberries after storage is reduced by a short delay to cooling. In. Proceedings of the International Conference of Harvest and Postharvest Technologies for Fresh Fruits and Vegetables, L. Kushwaha, R. Serwatowski and R. Brook (Ed.), P.15. ASAE Publication 1-95, St. Joseph, MI, USA.

Publications Submitted

1. Nunes, M.C.N and Delgado, A. Quality of organic compared to conventionally grown strawberries at the retail level. Acta Horticulturae.
2. Nunes, M.C.N., Morais, A.M.M.B., Brecht, J.K., Sargent, S.A., Bartz, J.A., Allen, R.A., Lee, J.H., Pires, D.M. and Pittet-Moore, J. Development of Botrytis rot in stored strawberries as affected by ripeness, temperature and atmosphere. Proceedings of the Florida State Horticultural Society.
3. Nunes, M.C.N. and Emond, J.P. Influence of environmental conditions on the quality attributes and shelf life of 'Goldfinger' bananas. Postharvest Biology and Technology.

Publications in Preparation

1. Nunes, M.C.N and Whitaker, V.M. Quality and shelf life of new versus commercial strawberry genotypes. Postharvest Biology and Technology.
2. Nunes, M.C.N. and Emond, J.P. Shelf life prediction models for strawberry. Journal of Food Science.
3. Lai, Y.P., Emond, Sims, C.A., J.P. and Nunes, M.C.N. Impact of environmental conditions during distribution and retailing on the quality of strawberry. Journal of Food Quality.
4. Nunes, M.C.N., Odabasi, A., Yagiz, Y. and Sims, C. Sensory, physical and compositional changes in applesauce exposed to abuse temperatures. Journal of Food Science.

Abstracts Published in Conference Proceedings

1. Nunes, M.C.N and Delgado, A. 2012. Quality of Organic compared to conventionally grown strawberries at the retail level. In: ISHS 7th International Strawberry Symposium Book of Abstracts, pp. 143.

2. Nunes, M.C.N., Dea, S. and Emond, J.P. 2011. Visual and compositional quality of bulk and packed yellow summer squashes displayed under simulated retail conditions. HortScience (46(9): S334-S335.

3. Nunes, M.C., Delgado, A. and Emond, J.P. 2011. Quality curves for green bell pepper (*Capsicum annuum* L) stored at low and recommended relative humidity levels. In: IV Postharvest Unlimited Conference Book of Abstracts, pp. 101 (Abstr. P20)

4. Yavuz, Y. and Nunes, M.C.N. 2010. Quality and compositional changes in First Strike Ration (FSR) products stored at different temperatures: preliminary results In: Institute of Food Technologists Annual Meeting Book of Abstracts, Chicago, IL. July 17-20 6-9, 2010. (Abst. 289-36).

5. Dea, S., Brecht, J.K., Nunes, M.C.N., Baldwin, E.A., 2010. Reduced O_2 and elevated CO_2 tolerance limits of fresh-cut 'Kent' mango during retail display. SRASHS annual meeting, Orlando, FL, February 6-8, 2010 (Abstr.). HortScience.

6. Dea, S., Brecht, J.K., Nunes, M.C.N., Baldwin, E.A., 2009. Determination of the optimal ripeness stage for processing 'Kent' mango into fresh-cut slices. SRASHS annual meeting, Atlanta, GA, January 31 to February 2, 2009. (Abstr.). HortScience.

7. Lai, Y.P., Emond, J.P. and Nunes, M.C.N. 2009. Impact of environmental conditions during distribution on the quality of strawberry fruit: A case study. In: Institute of Food Technologists Annual Meeting Book of Abstracts, Anaheim, CA. June 6-9, 2009; pp. 263 (Abstr. 204-34).

8. Amador, C., Emond, J.P. and Nunes, M.C.N. 2009. Analysis of the variability and performance of the pineapple cold chain with respect to transportation methods, location within the cargo and packaging. In: Institute of Food Technologists Annual Meeting Book of Abstracts, Anaheim, CA. June 6-9, 2009; pp. 176 (Abstr.137-12).

9. Amador, C., Emond, J.P., Nunes, M.C.N. 2008. Application of RFID technologies in the temperature mapping of the pineapple supply chain. In Proceedings of the Food Processing Automation Conference, Providence, RI, USA: ASABE.

10. Amador, C., Emond, J.P., Nunes, M.C.N. and Chau, K.V. 2007. Temperature tracking using RFID in the pineapple supply chain (Abstract). Proceedings of the Florida State Horticultural Society 120:262.

11. Nunes, M.C.N., Emond, J-P and Brecht, J.K. 2001. Temperature abuse during ground and in-flight handling operations affects quality of snap beans (Abstr.). HortScience 36(3): 510.

12. Proulx, E., Nunes, M.C.N., Emond, J-P and Brecht, J.K.B. 2001. Quality curves for tomato exposed at chilling and non-chilling temperatures (Abstr.). HortScience 36(3): 509.

Abstracts Submitted for Presentation in Scientific Meetings

1. Nunes, M.C.N. and Yagiz, Y. Chemical degradation of ascorbic acid in First Strike Ration foods exposed to abuse temperatures. Institute of Food Technologists Annual Meeting & Food Expo, July 13-16, 2013, Chicago, Illinois, USA.

2. Yanina Perez-Cayo, M. Cecilia do Nascimento Nunes and Vance M. Whitaker. Total anthocyanin and total phenolic contents of strawberry cultivars and advanced selections from the University of Florida Breeding Program. Institute of Food Technologists Annual Meeting & Food Expo, July 13-16, 2013, Chicago, Illinois, USA.

3. Astrid Delgado, Yavuz Yagiz, J.P. Emond and M. Cecilia N. Nunes. Influence of field temperatures on the moisture and sugar contents of sweetcorn. Florida State Horticultural Society Annual Meeting, June 2-4, 2013, Sarasota, Florida, USA.

4. Yanina D. Perez Cayo, M. Cecilia N. Nunes and Vance M. Whitaker. Effect of date of harvest on the soluble solid contents and sugar profiles of commercial strawberry cultivars and advanced selections from the University of Florida Breeding Program. Florida State Horticultural Society Annual Meeting, June 2-4, 2013, Sarasota, Florida, USA.

5. J.P. Emond and M. Cecilia N. Nunes. Effects of temperature controlled fumigation process on produce quality. Florida State Horticultural Society Annual Meeting, June 2-4, Sarasota, Florida, USA.

Presentations in Scientific Meetings

1. Plotto, A., Dea, S., Nai, J., Manthey, J., Nunes, M.C.N., Narciso, J., Irey, M. and Baldwin, L. Further studies on the effects of greening on juice quality: do nutritional sprays ameliorate HLB-induced off-falvor? 3rd International Research Conference on Huanglongbing (HLB), February 4-8, 2013, Orlando, Florida, USA.
2. Nunes, M.C.N., Morais, A.M.M.B., Brecht, J.K., Sargent, S.A., Bartz, J.A., Allen, R.A., Lee, J.H., Pires, D.M. and Pittet-Moore, J. 2012. Development of Botrytis rot in stored strawberries as affected by ripeness, temperature and atmosphere. Oral presentation at the Florida State Horticultural Society Annual Meeting, June 3-5, Delray Beach, Florida, USA.
3. Nunes, M.C.N and Delgado, A. 2012. Quality of Organic compared to conventionally grown strawberries at the retail level. Oral presentation at the ISHS 7th International Strawberry Symposium, February 18-22, 2012, Beijing, China.
4. Nunes, M.C.N., Dea, S. and Emond, J.P. 2011.Visual and compositional quality of bulk and packed yellow summer squashes displayed under simulated retail conditions. Poster presentation at the American Society for Horticultural Sciences Annual Meeting, September 25-28, Waikelea, Hawaii, USA.
5. Nunes, M.C., Yagiz, Y., Delgado, A. and Emond, J.P. 2011. Moisture and total sugar contents of sweetcorn harvested at different hours of the day. Poster presentation at the Institute of Food Technologists, June 11-14, New Orleans, Louisiana, USA.
6. Chilson, D., Delgado, A. and Nunes, M.C.N. 2011. Shelf life of vine tomato (*Lycopersicum esculentum*) stored at non-chilling temperature and different relative humidity levels, June 5-7, St. Petersburg, Florida, USA.
7. Lai, Y.P. and Nunes, M.C.N. 2011. Environmental conditions encountered during distribution from the field to the store affect the quality of strawberry (cv. Albion). Oral presentation at the Florida State Horticultural Society, June 5-7, St. Petersburg, Florida, USA.
8. Nunes, M.C., Delgado, A. and Emond, J.P. 2011. Quality curves for green bell pepper (*Capsicum annuum* L) stored at low and recommended relative humidity levels. Poster presentation at the IV Postharvest Unlimited Conference, Leavenworth, WA, USA, May 23-26, 2011.
9. Yavuz, Y. and Nunes, M.C.N. 2010. Quality and compositional changes in First Strike Ration (FSR) products stored at different temperatures: preliminary results. Poster presentation at the Institute of Food Technologists Annual Meeting, Chicago, IL. July 17-20 6-9, 2010.
10. Dea, S., Brecht, J.K., Nunes, M.C.N., Baldwin, E.A., 2010. Reduced O_2 and elevated CO_2 tolerance limits of fresh-cut 'Kent' mango during retail display. Oral presentation at the SRASHS annual meeting, Orlando, FL, February 6-8, 2010.
11. Dea, S., Brecht, J.K., Nunes, M.C.N., Baldwin, E.A., 2010. Determination of the optimal ripeness stage for processing 'Kent' mango into fresh-cut slices. Oral presentation at the SRASHS annual meeting, Atlanta, GA, January 31 to February 2, 2009.
12. Dea, S., Brecht, JK, Nunes, M.C.N., Emond, J.P. 2010. Modified atmosphere packaging for fresh-cut 'Kent' mango. Oral Presentation at the Florida State Horticultural Society, Crystal River, Florida, June 6-8, 2010.
13. Lai, Y.P., Emond, J.P. and Nunes, M.C.N. 2009. Impact of environmental conditions during distribution on the quality of strawberry fruit: A case study. Poster presentation at the Institute of Food Technologists Annual Meeting, Anaheim, CA. June 6-9, 2009.

14. Amador, C., Emond, J.P. and Nunes, M.C.N. 2009. Analysis of the variability and performance of the pineapple cold chain with respect to transportation methods, location within the cargo and packaging. Oral and poster presentation at the Institute of Food Technologists Annual Meeting, Anaheim, CA. June 6-9, 2009.
15. Amador, C., Emond, J.P. and Nunes, M.C.N. 2008. Application of RFID technologies in the temperature mapping of the pineapple supply chain. Oral presentation at the "Food Processing Automation Conference", Providence, RI. June 2008.
16. Amador, C., Emond, J.P. and Nunes, M.C.N. 2008. Temperature mapping of a pineapple supply chain. Oral presentation at the Florida State Horticulture Society Annual Meeting", Fort Lauderdale, FL. June 2008.
17. Amador, C., Emond, J.P, Nunes, M.C.N. and Chau, K.V. Temperature tracking using RFID in the pineapple supply chain. Oral Presentation at the Florida State Horticultural Society, West Palm Beach, Florida, June 1-3, 2007.
18. Nunes, M.C.N. and Emond, J.P. 2007. Relationship between weight loss and visual quality of fruits and vegetables. Oral Presentation at the Florida State Horticultural Society, West Palm Beach, Florida, June 1-3, 2007.
19. Amador, C., Emond, J.P. and Nunes, M.C.N. 2006. Temperature tracking using RFID in the pineapple supply chain. "2nd Cold Chain Academy", Gainesville, FL. October 2006. (Oral presentation).
20. Dea, S., Brecht, J.K., Nunes, M. C.N. and Emond, J.P. 2006. How variations in temperature and humidity during tomato distribution affect the acceptability of the load. Poster Presented at Cool Chain Academy Annual Meeting, 10/04/2006, Gainesville, Florida, USA.
21. Ge, J., Wysocki, A.F., House, L.A., Welt, B.A., Emond, J.P., Brecht, J.K. and Nunes, M.C.N. 2005. Simulation modeling of international tomato supply chain distribution system: Analyzing the impact of food quality technology on all supply chain players. Research Update Presentation, Food Distribution Research Association Annual Meeting, Washington D.C., October 15-19, 2005.
22. Nunes, M.C.N. 2006. Shelf life modeling and prediction. Oral presentation at the Cool Chain Academy Annual Meeting, 10/04/2006, Gainesville, Florida, USA.
23. Ge, J., Wysocki, A.F., House, L.A., Welt, B.A., Emond, J.P., Brecht, J.K. and Nunes, M.C.N. 2005. International tomato supply chain simulation modeling analysis: Tomato grower's packing house modeling and benefit-cost ratio simulation analysis. Presentation at the Western Extension Research and Education Regional Committee on Agribusiness Meetings, Las Vegas, NV, June 21, 2005.
24. Nunes, M.C.N., Emond, J-P and Brecht, J.K. 2001. Temperature abuse during ground and in-flight handling operations affects quality of snap beans. Poster presented at the 98th International Conference of the ASHS, Sacramento, California, USA, July 22-25, 2001.
25. Proulx, E., Nunes, M.C.N., Emond, J-P and Brecht, J.K.B. 2001. Quality curves for tomato exposed at chilling and non-chilling temperatures. Poster presented at the 98th International Conference of the ASHS, Sacramento, California, USA, July 22-25, 2001.
26. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1995. Effects of temperature, packaging and storage time on weight loss and ascorbic acid content of strawberries. Poster presented at the 9th Congress of Food Science and Technology. Budapest, Hungary, July-August 1995.
27. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1994. Effects of delay to cooling and storage on postharvest decay of strawberry (cv. Chandler). Poster presented at the BIOTEC'94 II Congresso Ibérico de Biotecnologia. Vilamoura, Portugal, October 1994.
28. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1994. Quality evaluation of tomato (cv. Buffalo) stored under controlled atmosphere. Poster presented at the Vision EUREKA Lillehammer '94 - Food Processing '94. Lillehammer. Norway, June 1994.

29. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1993. Color changes of three different strawberry cultivars: Sweet Charlie, Oso Grande and Chandler, during storage. Poster presented at the EFFoST Conference “Food Control - On-Line Control for improved Quality”. Porto, Portugal, September 1993.

30. Nunes, M.C.N., Brecht, J.K.; Morais, A.M.M. and Sargent, S.A. 1993. Effects of delays to cooling and packaging on strawberry quality. Poster presented at the EFFoST Conference “Food Control - On-Line Control for Improved Quality”. Porto, Portugal, September 1993.

Scientific Reports

1. Brecht, J.K., Emond, J.P., Nunes, M.C.N., Sims, C.A., Sargent, S.A. and Huber, D. 2013. Remote environmental monitoring and diagnostics in the perishables supply chain – Phase II. US Army Contract W911QY-11-C-0011. Seventh Quarterly Report September 2012-December 2013. Center for Food Distribution & Retailing, University of Florida, Gainesville and University of South Florida, pp. 10.

2. Brecht, J.K., Emond, J.P., Nunes, M.C.N., Sims, C.A., Sargent, S.A. and Huber, D. 2012. Remote environmental monitoring and diagnostics in the perishables supply chain – Phase II. US Army Contract W911QY-11-C-0011. Sixth Quarterly Report July 2012-September 2012. Center for Food Distribution & Retailing, University of Florida, Gainesville and University of South Florida, pp. 20.

3. Brecht, J.K., Emond, J.P., Nunes, M.C.N., Sims, C.A., Sargent, S.A. and Huber, D. 2012. Remote environmental monitoring and diagnostics in the perishables supply chain – Phase II. US Army Contract W911QY-11-C-0011. Fifth Quarterly Report March 2012-June 2012. Center for Food Distribution & Retailing, University of Florida, Gainesville and University of South Florida, pp. 10.

4. Brecht, J.K., Emond, J.P., Nunes, M.C.N., Sims, C.A., Sargent, S.A. and Huber, D. 2012. Remote environmental monitoring and diagnostics in the perishables supply chain – Phase II. US Army Contract W911QY-11-C-0011. Fourth Quarterly Report January 2012-March 2012. Center for Food Distribution & Retailing, University of Florida, Gainesville and University of South Florida, pp. 15.

5. Brecht, J.K., Emond, J.P., Nunes, M.C.N., Sims, C.A., Sargent, S.A. and Huber, D. 2011. Remote environmental monitoring and diagnostics in the perishables supply chain – Phase II. US Army Contract W911QY-11-C-0011. Third Quarterly Report October 2011-December 2011. Center for Food Distribution & Retailing, University of Florida, Gainesville and University of South Florida, pp. 17.

6. Brecht, J.K., Emond, J.P., Nunes, M.C.N., Sims, C.A., Sargent, S.A. and Huber, D. 2011. Remote environmental monitoring and diagnostics in the perishables supply chain – Phase II. US Army Contract W911QY-11-C-0011. Second Quarterly Report July 2011–September 2011. Center for Food Distribution & Retailing, University of Florida, Gainesville and University of South Florida, pp. 10.

7. Brecht, J.K., Emond, J.P., Nunes, M.C.N., Sims, C.A., Sargent, S.A. and Huber, D. 2011. Remote environmental monitoring and diagnostics in the perishables supply chain – Phase II. US Army Contract W911QY-11-C-0011. First Quarterly Report April 2011–June 2011. Center for Food Distribution & Retailing, University of Florida, Gainesville and University of South Florida, pp. 12

8. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2011. Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. Final Report. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 208.

9. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2010. Remote Environmental Monitoring and Diagnostics in the Perishables Supply Chain US Army Contract W911QY-08-C-0136. Eighth Quarterly Report July 2010-September 2010. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 5.

10. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2010 Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. Seventh Quarterly Report April 2010-June 2010. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 5.

11. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2010. Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. Sixth Quarterly Report January 2010-March 2010. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 5.
12. Nunes, M.C.N.N. 2010. Quality curves for 'Berneker' Florida avocado as function of storage humidity. Research Report for Ingersoll Rand Corporation, 16 pp.
13. Nunes, M.C.N.N. 2010. Quality curves for banana 'F1 Goldfinger' as function of the storage temperature-second harvest. Research Report for Ingersoll Rand Corporation, 15 pp.
14. Nunes, M.C.N.N. 2010. Quality curves for Pink Lady' green papaya stored in fluctuating temperatures. Research Report for Ingersoll Rand Corporation, 16 pp.
15. Nunes, M.C.N.N. 2010. Quality curves for 'Revolution' green bell pepper from two harvests as function of storage humidity. Research Report for Ingersoll Rand Corporation, 18 pp.
16. Nunes, M.C.N.N. 2010. Quality curves for 'Revolution' green bell pepper exposed to fluctuating temperatures. Research Report for Ingersoll Rand Corporation, 15 pp.
17. Nunes, M.C.N.N. 2010. Quality curves for 'Choquette' Florida avocado stored in fluctuating temperatures. Research Report for Ingersoll Rand Corporation, 16 pp.
18. Nunes, M.C.N. 2010. Quality curves for 'Pink Lady' green papaya as function of the storage humidity-second harvest. Research Report for Ingersoll Rand Corporation, 19 pp.
19. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2009 Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. Fifth Quarterly Report October 2009-December 2009. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 6.
20. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2009. Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. Fourth Quarterly Report July 2009-September 2009. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 7.
21. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2009. Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. Third Quarterly Report April 2009-June 2009. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 8.
22. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2009. Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. Second Quarterly Report January 2009-March 2009. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 5.
23. Nunes, M.C.N. 2009. Quality curves for 'Kent' mango as function of the storage humidity-second harvest. Research Report for Ingersoll Rand Corporation, 20 pp.
24. Nunes, M.C.N. 2009. Quality curves for grape tomato from two different harvests as function of storage temperature. Research Report for Ingersoll Rand Corporation, 24 pp.
25. Nunes, M.C.N. 2009. Quality curves for sweetcorn as function of the storage humidity. Research Report for Ingersoll Rand Corporation, 14 pp.
26. Nunes, M.C.N. 2009. Quality curves for banana as function of storage relative humidity – second harvest. Research Report for Ingersoll Rand Corporation, 15 pp.
27. Nunes, M.C.N. 2009. Quality curves for tomato on the vine as function of storage temperature. Research Report for Ingersoll Rand Corporation, 23 pp.
28. Nunes, M.C.N. 2009. Quality curves for tomato on the vine from two different harvests as function of storage relative humidity. Research Report for Ingersoll Rand Corporation, 23 pp.

29. Nunes, M.C.N. 2009. Quality curves for strawberries Albion and Treasure harvested at different times during the season as function of the storage temperature. Research Report for Ingersoll Rand Corporation, 50 pp.
30. Nunes, M.C.N. 2009. Moisture and total sugar contents of sweetcorn harvested at different times during the day. Research Report for Kroger Corporation, 9 pp.
31. Nunes, M.C.N. 2009. Quality of strawberry during handling and distribution from the field to the store. Research Report for Kroger Corporation, 14 pp.
32. Nunes, M.C.N. 2009. Quality of strawberry shipped with or without TECTROL. Research Report for Kroger Corporation, 24 pp.
33. Nunes, M.C.N. 2009. Quality of sweetcorn packed in RPC or wood crate and pre-cooled using different methods. Research Report for Kroger Corporation, 19 pp.
34. Nunes, M.C.N. 2009. Quality of sweetcorn stored at different temperatures under simulated retail display. Research Report for Kroger Corporation, 20 pp.
35. Nunes, M.C.N. 2009. Quality curves for 'Simmonds' early season Florida avocado as function of the storage humidity. Research Report for Ingersoll Rand Corporation, 17 pp.
36. Nunes, M.C.N. 2009. Quality curves for 'Choquette' late season Florida avocado as function of the storage temperature. Research Report for Ingersoll Rand Corporation, 18pp.
37. Nunes, M.C.N. 2009. Quality curves for 'Booth 8' midseason Florida avocado as function of the storage temperature. Research Report for Ingersoll Rand Corporation, 18pp.
38. Nunes, M.C.N. 2009. Quality curves for banana 'F1 Goldfinger' as function of storage relative humidity. Research Report for Ingersoll Rand Corporation, 16pp.
39. Nunes, M.C.N. 2009. Quality curves for banana 'F1 Goldfinger' as function of the storage temperature. Research Report for Ingersoll Rand Corporation, 17 pp.
40. Nunes, M.C.N. 2009. Quality curves for 'Kent' mango as function of the storage humidity. Research Report for Ingersoll Rand Corporation, 20 pp.
41. Nunes, M.C.N. 2009. Quality curves for 'Pink Lady' green papaya as function of the storage humidity. Research Report for Ingersoll Rand Corporation, 19 pp.
42. Nunes, M.C.N. 2009. Quality curves for early harvested sweetcorn as function of the storage temperature. Research Report for Ingersoll Rand Corporation, 16 pp.
43. Nunes, M.C.N. 2009. Quality curves for late harvested sweetcorn as function of the storage temperature. Research Report for Ingersoll Rand Corporation, 16 pp.
44. Brecht, J.K., Emond, J.P., Nunes, M.C.N. and Sims, C.A. 2008. Remote environmental monitoring and diagnostics in the perishables supply chain US Army Contract W911QY-08-C-0136. First Quarterly Report October 2008-December 2008. Center for Food Distribution & Retailing, University of Florida, Gainesville, pp. 4.
45. Nunes, M.C.N, Emond, J.P., Damar, S., Dea, S. and Cordasco, K. 2007. Quality of packed and bulk vegetables during retail display. Research Report for Publix Super Markets Inc. 155 pp.
46. Nunes, M.C.N. 2005. Tomato production and handling system in Puerto Rico and export from Puerto Rico to Florida, USA. Research Report for USDA – TSTAR, April 2005. 5 pp.
47. Nunes, M.C.N., Emond, J.P., Chau K.V., Rauth, M., Dea, S. and Pelletier, W. 2005. Effects of in-store conditions on the quality of fresh fruits and vegetables. Research Report for Publix Super Markets Inc. 262 pp.
48. Nunes, M.C.N. and Emond, J-P. 2004. Special Handling - Procedures for cooling, packaging and transport of selected fresh fruits and vegetables. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 87 pp.

49. Nunes, M.C.N. and Emond, J-P. 2003. Chemical characteristics of papaya, snap bean, and yellow summer squash as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 17 pp.
50. Nunes, M.C.N. and Emond, J-P. 2003. Quality curves for witloof chicory as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 28 pp.
51. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for two different peach cultivars as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 33 pp.
52. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for green bell pepper as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 36 pp.
53. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for two different snap bean cultivars as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 33 pp.
54. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for strawberries as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 26 p.
55. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for green asparagus as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 23 pp.
56. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for white mushrooms (AgaricusBisporus) as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 28 pp.
57. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for tomato as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report to Envirotainer Holding, Sweden. 30 pp.
58. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for yellow summer squash as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 36 p.
59. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for papaya as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 33 p.
60. Nunes, M.C.N. and Emond, J-P. 2002. Quality curves for highbush blueberries as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 31 pp.
61. Laurin, E., M.C.N.Nunes, J-P. Emond. 2001. Guidelines for inspection of perishables of the food mail program in Labrador. Canada Post, June 2001, 23 pp.
62. Laurin, E., M.C.N. Nunes, J-P. Emond. 2001. Guidelines for the quality and sanitation program of the food mail program in Labrador. Canada Post, June 2001, 20 pp.
63. Mercier, F., E. Laurin, F. Ahway, M.C.N. Nunes, J-P. Emond. 2001. Guidelines for handling of perishables for the food mail program in Labrador. Canada Post, June 2001, 10 pp.
64. Mercier, F., E. Laurin, F. Ahway, M.C.N. Nunes, J-P. Emond, 2001. Guidelines for facilities of the food mail program in Labrador. Canada Post, June 2001, 10 pp.
65. Mercier, F., E. Laurin, F. Ahway, M.C.N. Nunes, J-P. Emond, 2001. Guidelines for packaging of the food mail program in Labrador. Canada Post, June 2001, 21 pp.

66. Nunes, M.C.N. and Emond, J-P. 2001. Quality curves for red raspberries as function of the storage temperature. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 32 pp.

67. Nunes, M.C.N. and Emond, J-P. April 2001. Quality curves for selected horticultural commodities as function of the storage temperature: Preliminary Results. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainert Holding, Sweden. 254 pp.

68. Nunes, M.C.N. and Emond, J-P. 2000. Quality curves for selected horticultural commodities as function of the storage temperature: The Guide. Air Cargo Transportation Research Group, University Laval. Research Report for Envirotainer Holding, Sweden. 82 pp.

69. Villeneuve, S., Mercier, F., Emond, J-P. et Nunes, M.C.N. 1999. Amélioration de l'utilisation des comptoirs pour l'étalage des fruits et légumes. Université Laval. Département des Sols et du Génie Agroalimenteire. Research Report for Provigo Distribution Inc. 71 pp.

70. Nunes, M.C.N. and Emond, J-P. 1999. Perishable commodities and live animal most frequently transported by air. Air Cargo Transportation Research Group, University Laval, Canada. Research Report for Perisco Inc. 18 pp.

71. Nunes, M.C.N., Mercier, F. et Emond, J.P. 1997. Qualité de la racine de carotte: influence de la conservation au froid humide sur la composition physique et biochimique. Le Centre de Recherche en Horticulture, Université Laval. Reseach Report for La Ferme Armand Chabot Inc., JPL Maraîcher & Fils Inc. et Les Fermes Jacques Coulombe et Fils Litée. 22 pp.

72. Emond, J-P., Mercier, F. Nunes, M.C.N. and Bourré, M. 1997. Entrepôt expérimental pour le poivron doux: évaluation des conditions environnementales et des effets sur la qualité. No. 24-349247-02048. Université Laval, Département des Sols et du Génie Agroalimenteire. Research Report for Ferme Roberge, Québec, Canada. 33 pp.

73. Fraser, Mercier., F., Baert, B., Bourré, M., Nunes, M.C.N. and Emond J-P. 1997. Shipping produce from Salinas, California to Toronto, Ontario in reusable plastic containers. Ontario Ministry of Agriculture, Food and Rural Affairs, Vineland, Ontario. 51 pp.

74. Nunes, M.C.N., Mercier, F. and Emond J-P. 1996. Development of packaging systems allowing efficient distribution of perishable products (fruits and vegetables) in New-Quebec. Air Cargo Transportation Research Group, University Laval. Research report for La Fédération des Coopératives du Nouveau-Québec.15 pp.

News and Press Releases

2011	Poly prof working to improve soldier food. Polk County Democrat, SCMG Central Florida, Wednesday, July 20, 2011, page 3B.
2011	USF food study aims to get the best nutritional MREs to US soldiers. Newsletter from the Senior Vice President. Research, Innovation & Global Affairs, University of South Florida Volume 3, Edition 10. Available at http://www.research.usf.edu/newsletter/archive.asp?v=3&e=10
2010	About the new USFP Food Quality Laboratory. The Ledger. Available at http://www.theledger.com/article/20101128/NEWS/11285058
2010	American Society for Horticultural Sciences Press Release on published research. Available at http://ashs.org/pressrelease/index.php?option=com_content&view=article&id=1120:storage-temperature-significant-for-fresh-snap-beans-&catid=1:hortscience&Itemid=3

Spoken Languages

1990	English Language Diploma – Program in English as a Foreign Language. The American Language Institute of Lisbon, Portugal.
1981	French Language Diploma – Alliance Française, École Internationale de Langue et Civilisation Française.
	Spanish - Read and Currently Spoken
	Portuguese – Native Language

Claudia E. Robert-Cooperman, Ph.D.

Director, Health Sciences Program
Instructor CMMB Department
University of South Florida
Department of Cell Biology, Microbiology and Molecular Biology
(813)442-8259
genedr127@gmail.com

Education

University of Pennsylvania	Ph.D.	Cell & Molecular Biology	2000 - 2006
University of Central Florida	B.S.	Molecular Biology	1997 - 2000
Mount Holyoke College	B.S.	Biology	1990 - 1994

Academic Appointments

Director / Instructor Health Sciences Program 2011 - current
University of South Florida
Department of Cell Biology, Microbiology and Molecular Biology

Visiting Instructor 2010 - 2011
University of South Florida
Department of Cell Biology, Microbiology and Molecular Biology

Research Laboratory Director *(Dr. Bryan Wolf's Lab)* 2007 - 2010
Department of Pathology and Laboratory Medicine
Children's Hospital of Philadelphia Research Institute

Adjunct - Assistant Professor of Biology 2006 - 2010
School of Science and Health
Philadelphia University

Postdoctoral Fellow *(with Dr. Bryan Wolf)* 2006 - 2007
Department of Pathology and Laboratory Medicine
Children's Hospital of Philadelphia Research Institute
University of Pennsylvania

Teaching Assistant 2006
Department of Biological Sciences
University of Pennsylvania

Pre-Doctoral Graduate Student 2000-2006
Department of Biomedical Graduate Studies
Cell and Molecular Biology
University of Pennsylvania School of Medicine

Teaching Assistant & Graduate Student 1997 - 2000
Department of Biological Sciences
University of Central Florida

Courses Taught & Developed

- Introductory Biology for Non Majors
- Cellular and Molecular Biology
- Cellular Processes (Bio 1 for Majors)
- Cell Biology
- Genetics
- Molecular Biology of the Cell
- STEM Pedagogy (Mentor)
- Techniques in Cell and Molecular Biology (new course developed)
- Introduction to Health Professions (new course developed)
- Career Development for Health Science (new course developed)
- Field Placement for Health Science (new course developed)

University Service

- State of FL Board of Governors, Committee on State Mandated Prerequisites
- USF Faculty Senate Admissions Council
- USF Undergraduate Council
- USF Faculty Learning Community
- USF Food Studies Council
- USF Pre-Health Advisory Council
- USF CMMB Health Science Curriculum Committee (chair)

Grant Activity

- Frameworks Student Success/Field Placement grant in support of the Health Sciences Program, in preparation for submission (2013).
- USF Upward bound, Dept. of Education, Collaborator (2012)
- National Institutes of Health Pre-doctoral Minority Research Fellowship (2003-2005)

Honors and Awards

- Invited Speaker, Keystone Symposium "Toward Understanding Islet Biology." (2006).
- National Institutes of Health Pre-doctoral Minority Research Fellowship (2003-2005).
- Invited Presenter, American Diabetes Association Annual Meeting (2004, 2005).
- Invited Presenter, University of Pennsylvania BGS Research Conference (2004, 2005).
- Graduate Research Assistantship, University of Pennsylvania (2000-2002).
- Graduate Teaching Assistantship, Molecular Biology Department, University of Central Florida (1998-2000).
- Graduate Research Assistantship, University of Central Florida (1998-2000).
- Deans List, University of Central Florida (1998-2000).
- Deans Advisory Council, University of Central Florida (1999).

Publications

1. **Robert-Cooperman CE** and Stanback, B. 2012. Development of Field Placement Programs and Their Impact on Student Success. *(in preparation)*

2. **Robert-Cooperman CE**, Carnegie JR, Koberlein B, Yang J, Wu J, Cooperman J, Young RA, Naji A, Wolf BA, Burkhardt BR. 2011. Islet-specific Overexpression of PANDER in Mice Induces Glucose Intolerance via Hepatic Insulin Resistance. *(in preparation)*

3. Wilson, C. G., **Robert-Cooperman CE**, and Burkhardt,BR. 2011. PANcreatic-DERived Factor: Novel Hormone PANDERing To Glucose Regulation. FEBS Lett. 21;585(14):2137-43.

4. **Robert-Cooperman, C. E.,** C. G. Wilson, and B. R. Burkhardt. 2011. PANDER KO mice on high-fat diet are glucose-intolerant yet resistant to fasting hyperglycemia and hyperinsulinemia. *FEBS Lett.* 585(9):1345-9.

5. **Robert-Cooperman CE**, Carnegie JR, Wilson, CG, Yang J, Cook J, Wu J, Young RA, Wolf BA, Burkhardt BR. 2010. Targeted Disruption of PANcreatic DERived Factor (PANDER, FAM3B) Impairs Pancreatic Beta-Cell Function. *Diabetes. 59(9):2209-18.*

6. Carnegie JR, **Robert-Cooperman CE**, Wu J, Young RA, Wolf BA, Burkhardt BR. 2010. Characterization of the Expression, Localization, and Secretion, of PANDER in Alpha Cells. *Molec. Cellular Endo. 325(1-2):36-45*

7. Yang J, Wang C, Li J, Burkhardt BR, **Robert-Cooperman CE**, Wilson C, Gao, Wolf BA. 2009. PANDER binds to the liver cell membrane and inhibits insulin signaling in HEPG2 cells. *FEBS Letters Sep 17;583(18):3009-15.*

8. Patterson S, **Robert C**, Whittle C, Chakrabarti R, Doerig C, Chakrabarti D. 2006 Pre-replication Complex Organization in the Atypical DNA Replication Cycle of Plasmodium falciparum: Characterization of the mini chromosome maintenance (MCM) complex formation. *Molecular and Biochemical Parasitology Jan;145(1)50-9* .

9. Burkhardt BR, Greene SR, White P, Wong RK, Brestelli PE, Yang J, **Robert CE**, Brusko T, Wasserfall CH, Kaestner KH, Wu J, Atkinson MA, Wolf BA. 2005. PANDER-Induced Cell-Death Genetic Networks Reveals Central Role for Caspase-3 and Cyclin-Dependent Kinase Inhibitor 1A in Islet Apoptosis. *Gene. March;369: 134-141*

10. Yang J, **Robert CE,** Burkhardt BR, Young RA, Wu J, Gao Z, Wolf BA. 2005. Mechanisms of Glucose-Induced Secretion of PANDER in Pancreatic Beta Cells. *Diabetes, Nov; 54(11):3217-3228*

11. Burkhardt BR, Yang MC, **Robert CE**, Yang J, Greene SR, McFadden KK, Gao Z, Wolf, B.A. 2005. Tissue Specific and Glucose-Responsive Expression of the Pancreatic Derived Factor (PANDER) Promoter. *Biochim. Biophys. Acta. Sept 25;1730(3);215-225.*

12. Yang, J, Gao Z, **Robert CE**, Burkhardt BR, Gaweska H, Wagner A, Wu J, Greene SR,Young RA, Wolf BA. 2005 Structure-Function Studies of PANDER, an Islet Specific Cytokine Inducing Cell Death of Insulin Secreting Cells. *Biochemistry; Aug30;44(34) 11342-52.*

13. Cao X, Gao Z, **Robert CE,** Greene S, Xu G, Xu W, Bell E, Campbell D, Zhu Y, Young R, Trucco M, Markmann JF, Naji A, Wolf BA. 2003. Pancreatic-derived factor (FAM3B), a novel islet cytokine, induces apoptosis of insulin secreting β-cells. *Diabetes Sep; 52(9):2296-303.*

14. Xu W, **Robert CE**, Thornton PS, Spinner NB. 2003. Complete androgen insensitivity syndrome due to X chromosome inversion: a clinical report. *American Journal of Medical Genetics. Jul30; 120A(3):434-6*

15. Patterson S, Whittle C, **Robert C**, Chakrabarti D. 2002. Molecular characterization and expression of an alternate proliferating cell nuclear antigen homologue, PfPCNA2, in Plasmodium falciparum. *Biochem Biophys Res Commun. Nov 1;298(3):371-6.*

Presentations/Abstracts

1. Burkhardt, BR, Carnegie JR, **Robert-Cooperman CE**, Young RA, Wu J, Wolf BA. "Targeted Disruption of Pancreatic Derived Factor (PANDER, FAM3B) Impairs Glucose Tolerance, Insulin Secretion, and Hepatic Glucose Production." American Diabetes Association, 69th Scientific Session, June 5-9, 2009, New Orleans, LA. (Oral Presentation)

2. Carnegie JR., **Robert-Cooperman CE**, Burkhardt BR, Wu J, Young RA, Wolf BA. "Expression, Regulation and Role of PANcreatic DERived Factor (PANDER, FAM3B) in Pancreatic α-Cells." American Diabetes Association, 69th Scientific Session, June 5-9, 2009, New Orleans, LA.

3. Carnegie JR, **Robert-Cooperman CE**, Burkhardt BR, Wu J, Wilson CG, Wolf BA. "Expression and Regulation of PANDER from pancreatic alpha cells." American Diabetes Association, 67th Scientific Session, June 22-26, 2007, Chicago, IL.

4. **Robert CE**, Koeberlein B, Wu J, Burkhardt BR, Naji A, Wolf. BA. "Transgenic Mice Overexpressing the Novel Islet Specific Cytokine, PANDER, Exhibit Glucose Intolerance On a High Fat Diet." Keystone Symposium. "Toward Understanding Islet Biology" February 23-28, 2006. Taos, NM. (Abstract and Oral Presentation)

5. Yang J, **Robert CE**, Burkhardt BR, Wilson C, Gao Z, Wolf BA. "PANcreatic DERived Factor (PANDER, FAM3B) Inhibits Liver Cell Insulin Signaling In Vitro and In Vivo." American Diabetes Association, 66th Scientific Session, June 9-13, 2006, Washington D.C.

6. **Robert CE**, Koeberlein B, Wu J, Burkhardt BR, Naji A, Wolf BA. "Transgenic Mice Overexpressing the Novel Islet Specific Cytokine, PANDER, Exhibit Glucose Intolerance and Decreased β Cell Mass." American Diabetes Association, 65th Scientific Session, June 10-14, 2005, San Diego,CA. (Late Breaking Abstract)

7. Burkhardt BR, Yang MC, **Robert CE**, Gao Z, Wolf BA. "Islet Cell-Line Specific and Glucose-Responsive Expression of the PANDER Promoter". American Diabetes Association, 65th Scientific Session, June 10-14, 2005, San Diego, CA.

8. Yang, J, **Robert CE**, Burkhardt BR, Young RA, Wu J, Gao Z, Wolf BA. "Mechanisms of Glucose-Induced Secretion of PANDER in Pancreatic β Cells." American Diabetes Association, 65th Scientific Session, June 10-14, 2005, San Diego, CA.

9. Yang J, **Robert CE**, Wagner A, Gao Z, Wolf B.A. "Structure-function studies of PANDER cytokine induction of β-cell death" June 4-8, 2004. The American Diabetes Association 64th Annual Scientific Sessions. June 4-8, 2004. Orlando, FL.

10. Burkhardt B, Yang M, **Robert CE**, Gao Z, Wolf BA. "The identification and characterization of the murine PANDER promoter reveals alpha cell specific expression." The American Diabetes Association 64th Annual Scientific Sessions. June 4-8, 2004. Orlando, FL.

11. **Robert CE**. "Genetic approaches to multiple sclerosis." Neurology Consultants/AMA seminar series. June, 2004. Orlando FL.

12. **Robert CE**, Wolf BA. "The role of PANDER, a novel pancreatic cytokine, in β cell function." The University of Pennsylvania BGS Research Conference. October, 2003. Philadelphia, PA.

13. Cao X, Gao Z, **Robert CE**, Greene S, Xu G, Xu W, Bell E, Campbell D, Zhu Y, Young R, Trucco M, Markmann JF, Naji A, Wolf BA. "Pancreatic-derived factor (FAM3B), a novel islet cytokine, induces apoptosis of insulin secreting β cells." The American Diabetes Association 62nd Annual Scientific Sessions. June 2-16, 2002. San Francisco, CA.

14. Patterson S, Whittle C, **Robert CE**, Chakrabarti D. 2002. "Molecular characterization and expression of an alternate proliferating cell nuclear antigen homologue, PfPCNA2, in *Plasmodium falciparum*." Annual Molecular Parasitology Meeting. September, 2001. Woods Hole, MA.

15. **Robert CE**, Moe D, Chakrabarti D. "MCM complex formation in *Plasmodium falciparum*." Annual Molecular Parasitology Meeting. October, 2000. Woods Hole, MA.

Curriculum Vitae

James T. Riordan, Ph.D.

Interdisciplinary Research Bldg (ISA) 6206
Department of Cell Biology, Microbiology & Molecular Biology
University of South Florida
4202 East Fowler Avenue
Tampa, FL 33620

Tel: 813-974-7457 (office)
813-428-2217 (cell)
Email: jtriordan@usf.edu
Web: http://biology.usf.edu/cmmb/faculty/jriordan

Education

2006 Ph.D. in Molecular Biology, New Mexico State University, Las Cruces, N.M. Dissertation: "Salicylate-inducible multiple drug resistance in *Staphylococcus aureus*." Advisor, Dr. John Gustafson

2003 M.S. in Molecular Biology, New Mexico State University, Las Cruces, N.M. (2001-2003)
Thesis: "Study of two pathogens representative of industrial and environmental settings in the Rio Grande transborder region: *Vibrio cholerae* and *Escherichia coli* O157:H7." Advisor, Dr. Geoffrey B. Smith

1999 B.S. in Biology, University of Massachusetts, Boston, MA (1995-1999)
Honors Thesis: "Accelerated mutagenesis in resting and structured bacterial populations." Advisor, Dr. Michael Shiaris

Academic positions held

2009-Present *Assistant Professor*, the University of South Florida, Department of Cell Biology, Microbiology and Molecular Biology, Tampa, FL. Advisor, Dr. John Greene

2006-2009 *Postdoctoral Fellow*, Michigan State University, Department of Microbiology and Molecular Genetics, East Lansing, MI. Advisor, Dr. Thomas Whittam

2001-2006 *Graduate Research/Teaching Assistant*, New Mexico State University, Las Cruces, NM

Non-academic positions held

1999-2001 *Research and Development Biologist*, American Type Culture Collection, Manassas, VA. Advisor, Dr. Jane Tang

Teaching and Mentorship

Courses Taught

2009-Present *University of South Florida:*

BSC6932	Foundations in Medical Microbiology and Immunology, Pathogenesis and Gene Regulation in Enteric Bacteria (Graduate Course)
MCB3020	General Microbiology (Undergraduate Course)
MCB5206	Bacterial Pathogenesis (Graduate Course)
BSC4934	Seminar in Microbiology (Undergraduate Course)
BSC6932	Advances in Scientific Review (Graduate Course)
MCB4320	Molecular Microbiology (Undergraduate Course)
BSC6932	Public Health and Pathogenic Microbiology (Undergraduate/Graduate Course)
BSC6910/7910	Directed Research (Graduate Course)
MCB4905	Microbiology Undergraduate Research (Undergraduate Course)

2001-2005 *New Mexico State University:*

BIOL 311	General Microbiology Laboratory Teaching Assistantship (Undergraduate Course)
BIOL 479	Medical Microbiology Teaching Assistantship (Undergraduate Course)

Mentored Students

Graduate students:

2009-2010	Francis Rivera (MS student, committee member) (Research Technician, USF)
2009-2011	Tiffany Robison (MS student, committee member) (MS; USF)
2009-Present	Avishek Mitra (PhD student, chair)
2009-2012	Stacey Kolar (PhD student, committee member); (Postdoc, Univ. Calif. Santa Cruz)
2009-2012	Halie Miller (PhD student, committee member); (Postdoc, Univ. Calif. Santa Cruz)
2010-2011	Trevor Williams (MS student, committee member); (Dental School)
2010-2012	Pamela Fay (MS student, chair)
2010-2012	Nada Helal (MS student, chair); (R&D, Luitpold Pharmaceuticals, N.Y.)
2010-Present	Mary Mangiapia (MS student, committee member)
2010-Present	Pauline Wanjungi (PhD student, committee member)
2010-Present	Jason Morgan (PhD student, chair)
2010-Present	Christina Krute (PhD student, committee member)
2010-Present	Whittney Burda (PhD student, committee member)
2011-2012	Katherine Trammel (MS student, co-chair with Dr. L. Shaw); (NT-MS, USF)
2012-Present	Katherine Flickinger (MS student, chair)
2012-Present	Suzanne Young (PhD student, committee member)
2012-Present	Priyanka Dutta (PhD student, committee member)
2012-Present	Kathleen Jackson (MS student, committee member)

Undergraduate students:

2009-2010	Salvatore Versaggi	Sigma N; (Medical School, Armed Services Univ.)
2010	Leonardo Estevez	Sigma N
2010	Tasha Hinds	Recombinant DNA
2010	Dena Fauske	Sigma N (Veterinary School, Univ. North Carolina)
2010-2011	Cesar Taborta	Moffitt study (Graduate School, COM-USF)
2010-2011	Danielle Gagne	Recombinant DNA (Pharmacy School, COM-USF)
2010	Neel Nabar	SAGAR phenotype
2010-2011	Jessica Cheer	SAGAR phenotype
2010	Mayennha Greuerre	Sigma N (Graduate School, COM-USF)
2010-2011	Bradley Creamer	Sigma N (Graduate School, CAS-USF)
2010-Present	Khoury Vendura	Rcs relay (Graduate School, COM-USF)
2011-2012	Jacint Sachez	(Graduate School, Univ. of Virginia)
2011-Present	Carly Harro	Bioinformatics of Moffitt isolates
2011-2013	Erin Kennedy	(Pharmacy School, COM-USF)
2011-2012	Chelsea Gorsline	(Honors Thesis/USF Medical School) Thesis: "Genotypes of *E. coli* isolated from extraintestinal infections in cancer patients."
2011-Present	Alyssa Rolfe	Bacterial SAGAR phenotype (Honors Thesis)
2011	Lori Head	Recombinant DNA
2012-Present	Zimrisha Alla	Nitrogen and sigma N regulation in EHEC
2013-Present	Shayna Smeltzer	Moffitt study
2013-Present	Riley Bednar	Sigma N

Scholarly Activity

Publications

Peer reviewed journal articles:

Morgan, J. K., K. W. Vendura, S. M. Stevens Jr., and **J. T. Riordan*** (2013) Contribution of RcsB to the locus of enterocyte effacement (LEE) expression and adherence phenotype of virulent 2006 U.S. spinach outbreak *Escherichia coli* O157:H7 strain TW14359. Molecular Microbiology (In Review, manuscript number MMI-2013-13031)

Mitra A., P. Fay, J. Morgan, K. Vendura, S. Versaggi and **J. T. Riordan*** (2012) Sigma factor N, liaison to an *ntrC*- and *rpoS*-dependent regulatory pathway controlling acid resistance and LEE expression in enterohemorrhagic *Escherichia coli*. PLoS One. 7(9): e46288 (PMID 23029465) PubMed

Riordan J.T.*, J.M. Dupre, S.A. Cantore-Matyi, A. Kumar-Singh, Y. Song, S. Zaman, S. Horan, N. Helal, V. Nagarajan, M. O. Elasri, B.J. Wilkinson, and J.E. Gustafson (2011) Alterations in the transcriptome and antibiotic susceptibility of *Staphylococcus aureus* grown in the presence of diclofenac. Annals Clin. Microbiol. Antimicrob. 21(10): 30. (PMID 21774834) PubMed

Neupane, M.S., G. S. Abu-Ali, A. Mitra, S. D. Manning, and **J.T. Riordan*** (2011) Shiga toxin 2 overexpression in Escherichia coli O157:H7 strains associated with severe human disease. Microbial Pathogenesis. 51(6): 466. (PMID 21864671) PubMed

Kolar, S.L., V. Nagarajan, A. Oszmiana, F. E. Rivera, H. K. Miller, J. E. Davenport, **J. T. Riordan**, J. Potempa, D. S. Barber, J. Koziel, M. O. Elasri, and L. N. Shaw* (2011) NsaRS is a Cell-Envelope-Stress Sensing Two-Component System of *Staphylococcus aureus*. Microbiol. 157:2206. (PMID 21565927) PubMed

Abu-Ali, G., Ouellette, Henderson, Lacher, **J.T. Riordan**, T. S. Whittam, and S. D. Manning* (2010) Increased adherence and expression of virulence genes in a lineage of *Escherichia coli* O157:H7 commonly associated with human infections. PLoS One. **5**(4): e10167. (PMID 20422047) PubMed

Riordan, J.T.*, J.A. Tietjen, and Coilin W. Walsh, J. E. Gustafson, and T. S. Whittam (2009) Inactivation of alternative sigma factor 54 (RpoN) leads to increased acid resistance, and alters locus of enterocyte effacement (LEE) expression in *Escherichia coli* O157:H7. Microbiol. **156**(Pt. 3): 719-730. (PMID 19942657) PubMed

Lamichhane-Khadka, R, S.A. Cantore, **J.T. Riordan**, A. Delgado, A.E.A. Norman, S. Duenas, S. Zaman, S. Horan, B.J. Wilkinson, and J.E. Gustafson* (2009) *sarA* inactivation reduces vancomycin-intermediate and ciprofloxacin-resistance expression by *Staphylococcus aureus*. Int. J. Antimicrob. Agents. **34**(2): 136-41. (PMID 19324528) PubMed

Lamichhane-Khadka, R., **J.T. Riordan**, A. Delgado, A. Muthaiyan, T.D. Reynolds, B.J. Wilkinson and J.E. Gustafson* (2008) Genetic changes that correlate with the pine oil disinfectant-reduced susceptibility mechanism of *Staphylococcus aureus*. J. App. Microbiol. **105**(6): 1973. (PMID 19120644) PubMed

Riordan, J.T., S.B. Viswanath, S.D. Manning, and T.S. Whittam* (2008) Genetic differentiation of *Escherichia coli* O157:H7 clades associated with human disease by real-time PCR. J. Clin. Microbiol. **46**(6): 2070. (PMID 18400915) PubMed

Bergholz, T.M., L.M. Wick, W. Qi, **J.T. Riordan**, L.M. Oullette, and T.S. Whittam* (2007) Global transcriptional response of *Escherichia coli* O157:H7 to growth transitions in glucose minimal media. BMC Microbiol. **7**: 97. (PMID 17967175) PubMed

Delgado, A., **J.T. Riordan**, R. Lamichhane-Khadka, D.C. Winnett, J. Jimenez, K. Robinson, F.G. O'Brien, S.A. Cantore, and J.E. Gustafson* (2007) Presence of a hetero-vancomycin-intermediate methicillin-resistant *Staphylococcus aureus* isolate from a medical center in Las Cruces, New Mexico. Journal of Clinical Microbiology. **45**(4): 1325. (PMID 17267639) PubMed

Riordan, J.T., A. Muthaiyan, W. Van Voorhies, C.T. Price, J.E. Graham, B.J. Wilkinson, and J.E. Gustafson* (2007) Response of *Staphylococcus aureus* to salicylate challenge. J. Bacteriol. **189**(1): 220. (PMID17056754) PubMed

Riordan, J.T., J.O. O'Leary, and J.E. Gustafson* (2006) Contributions of *sigB* and *sarA* to distinct multiple antimicrobial resistance mechanisms of *Staphylococcus aureus*. Int. J. Antimicrob. Agents. **28**(1): 54. (PMID 16777384) PubMed

Funk, P.A.*, C.B. Armijo, A.T. Hanson, Z.A. Samani, M.A. Macias-Garza, G.B. Smith, and **J.T. Riordan** (2005) Converting gin and dairy wastes to methane. Transactions of the ASAE. **48**(3): 1197.

(*Corresponding author)

Book Chapters

Galeb S. Abu-Ali, A. Cody Springman, Lindsey M. Ouellette, Lukas Wick, Weihong Qi, Sivapriya Kalisan Vanaja, Teresa M. Bergholz, David W. Lacher, Seth T. Walk, Jillian A. Tietjen, Hans Steinsland, **James T. Riordan**, and Shannon D. Manning*. Molecular evolution of enterohemorrhagic *E. coli* and application to epidemiology. In, Population genetics of bacteria: a tribute to Thomas S. Whittam. ASM Press (ISBN 978-1-55581-535-6).

Manuscripts in Preparation

Mitra A., A. Zimrisha, K. Vendura, and **J.T. Riordan*** (to be submitted in Feb. 2013). NtrC-RpoN directed regulation of sigma S and the locus of enterocyte effacement in enterohemorrhagic *Escherichia coli*.

Helal N., Cheer J., Bumbaugh A., Shaw LN, Gustafson JE, and **J.T. Riordan*** (to be submitted in March 2013) The salicylate-associated antibiotic resistance phenotype.

Invited Seminars, Poster Presentations, and Workshops

Seminars & Workshops:

Feb. 2013	Invited Seminar, Center for Infection Research in Cancer (CIRC), Moffitt Cancer and Research Center, Tampa, FL. "Correlates of invasive *Escherichia coli* infections in patients with cancer."
Feb. 2013	Invited Seminar, Department of Biology, Saint Joseph's University, Philadelphia, PA. "Determinants of virulence regulation and pathogenic potential in *Escherichia coli*."
Oct. 2012	Invited Plenary Talk, 98th Meeting of the Regional ASM, Athens, GA. "Genetic basis of hypervirulence in EHEC associated with severe human disease."
Feb. 2012	Invited Seminar, School of Life Sciences, University of Las Vegas, Las Vegas, NV. "Sigma N: molecular liaison to discrete pathogenic mechanisms in EHEC."
Oct. 2011	Invited Plenary Talk, 97th Meeting of Regional ASM, Gainesville, FL. "Sigma factor N: molecular liaison to discrete pathogenic mechanisms in EHEC."
Sept. 2011	Invited Seminar, College of Medicine, University of South Florida, Tampa, FL. "Sigma factor N: molecular liaison to discrete pathogenic mechanisms in EHEC."
May 2011	USF Sponsored Research, NIH Training Seminars on Grant Writing and Review.
March 2010	Invited Seminar, Department of Food Science, Pennsylvania State University, State College, PA. Death by acid: sigma N commits *Escherichia coli* O157:H7 to death under extreme acid stress.
Jan. 2009	Invited Seminar, Department of Biology, University of North Florida, Jacksonville, FL. Topic: Death by acid: sigma N commits *Escherichia coli* to certain death under acid stress.
Jan. 2009	Invited Seminar, Department of Cell, and Molecular Microbiology, University of South Florida, Tampa, FL. Topic: Sigma N: A novel regulator of acid resistance and type III secretion in pathogenic *Escherichia coli*.

June 2008 Invited Plenary Talk, Boston, MA. 108th meeting of the American Society for Microbiology, *colloquium* on the "Transmission of enteric pathogens through fresh produce: bacterial hitchhiking or adaption?" Topic: Genetic resolution of *Escherichia coli* O157:H7 genotypes using single nucleotide polymorphisms.

July 2007 Advanced Microarray Data Analysis. Pathogen Functional Genomics Resource Center, J. Craig Venter Institute, Rockville, MD.

April 2007 STEC associated HUS: Epidemiology, Pathogenesis, and Therapy/Prevention Workshop. Food and Waterborne Diseases Integrated Research Network. Cummings School of Veterinary Medicine, Tufts University, North Grafton, MA.

June 2006 Invited Seminar, Department of Genetics and Microbiology, Michigan State University, National Food Safety and Toxicology Center, East Lansing, MI. Topic: Salicylate inducible multiple drug resistance in *Staphylococcus aureus*.

May 2006 Invited Seminar, Rocky Mountain Laboratories (RML) NIH-NIAID, Hamilton, MT. Topic: Salicylate-inducible multiple drug resistance in *Staphylococcus aureus*.

Oct. 2005 Guest Seminar, Department of Biology, Illinois State University, Normal, IL. Topic: The pine-oil reduced susceptibility phenotype of *Staphylococcus aureus*: cross resistance to antimicrobials.

Posters and Abstracts:

Oct. 2012 98th Regional Meeting of the ASM, Athens, GA. Flickinger K., Fay P., Kennedy E., Ruge D., Sandin R., Greene J., and **J.T. Riordan *** "Genotypic analysis of *Escherichia coli* isolated from extraintestinal infections in patients with cancer." (Poster presentation by K. Flickinger, Riordan Lab M.S. candidate).

Oct. 2012 98th Regional Meeting of the ASM, Athens, GA. Mitra A., Alla Z., and **J.T. Riordan *** "Nitrogen availability influences extreme acid resistance and LEE expression in enterohemorrhagic *Escherichia coli*. (Poster presentation by A. Mitra, Riordan Lab Ph.D. candidate).

Oct. 2012 98th Regional Meeting of the ASM, Athens, GA. Morgan J., Vendura K., Stevens S., and **J.T. Riordan *** "RcsB directs LEE overexpression and decreased motility in an *E. coli* O157:H7 strain associated with severe human disease." (Poster presentation by J. Morgan, Riordan Lab Ph.D. candidate).

May 2012 8th Int'l Symposium on VTEC Infections, Amsterdam, Netherlands. Mitra A., P. Fay, J. Morgan, and **J.T. Riordan ***. "Interplay of sigma factors dictates expression of extreme acid resistance and type III secretion in *Escherichia coli* O157:H7 (Poster presentation by A. Mitra, Riordan Lab Ph.D. candidate)

May 2012 8th Int'l Symposium on VTEC Infections, Amsterdam, Netherlands. Morgan, J., S. Stevens, and **J.T. Riordan ***. "RcsB directs LEE overexpression in EHEC O157:H7 strains associated with severe human disease." (Oral presentation by J. Morgan, Riordan Lab Ph.D. student)

Apr. 2012 USF Undergraduate Research Colloquium, Tampa, FL. Sanchez, J., P. Fay, and **J.T. Riordan ***. "Phenotypic analysis of *rpoN* operon genes in *E. coli* O157:H7." (Poster presented by J. Sanchez, Riordan Lab B.S. student)

Apr. 2012 USF Undergraduate Research Colloquium, Tampa, FL. Gorsline, C., P. Fay, D. Ruge, R. Sandin, J. N. Greene, and **J.T. Riordan ***. "Genotyping of *Escherichia coli* isolated from extraintestinal infections in patients with cancer." (Poster presented by C. Gorsline, Riordan Lab B.S. student)

Apr. 2012 USF Undergraduate Research Colloquium, Tampa, FL. Vendura, K., A. Mitra, and **J.T. Riordan ***. "Role of sigma N and enhancer-binding proteins in extreme acid resistance and type III secretion in *Escherichia coli* O157:H7." (Poster presented by K. vendura, Riordan Lab B.S. student)

Oct. 2011 97th Regional meeting of the ASM, Gainesville, FL. Helal, N., J. Cheer, L. Shaw, and **J.T. Riordan** *. Salicylate-inducible genotypic antibiotic resistance in *Staphylococcus aureus*. (Oral presentation by N. Helal, Riordan Lab Ph.D. student)

Oct. 2011 97th Regional meeting of the ASM, Gainesville, FL. Fay, P., B. Creamer, A. Mitra, and **J.T. Riordan ***. Role for sigma N in the extreme acid resistance phenotype of *Escherichia coli*. (Oral presentation by P. fay, Riordan Lab M.S. student)

Oct. 2011 97th Regional meeting of the ASM, Gainesville, FL. Mitra, A., J. Morgan, K. Vendura, and **J.T. Riordan ***. Sigma N-dependent regulation of distinct mechanisms of pathogenesis in enterohemorrhagic *E. coli*. (Oral presentation by Dr. Riordan)

Oct. 2011 97th Regional meeting of the ASM, Gainesville, FL. Morgan, J., S. Stevens, and **J.T. Riordan ***. A comparative proteometric analysis of distinct genetic lineages of enterohemorrhagic *Escherichia coli* O157:H7. (Poster presentation by J. Morgan, Riordan Lab Ph.D. student)

Sept. 2011 Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington D.C. J.T. Gant, N. S. Helal, W. Yu, M. Varela, **J.T. Riordan**, and J. E. Gustafson*. A gene that affects fusidic acid resistance in *Staphylococcus aureus*.

June 2011 Wind River Conference on Prokaryotic Microbiology, Estes Park, CO. Mitra, A., P. Fay, J. Morgan, and **J.T. Riordan ***. "Sigma N-dependent regulation of distinct mechanisms of pathogenesis in enterohemorrhagic *E. coli*.

March 2010 Tamap FL. CMMB Graduate Student Open House. Avishek Mitra, Leonardo Estevez, and **J.T. Riordan ***. Pleiotropic effects of *rpoN* inactivation in *Escherichia coli* O157:H7.

May 2009 Philadelphia, PA. 109th meeting of the American Society for Microbiology (ASM). **Riordan, J.T.***, J. Tietjen, and C. Walsh. Characterization of sigma N contribution to acid resistance and type III secretion in EHEC.

June 2008 Boston, MA. 108th meeting of the American Society for Microbiology (ASM). **Riordan, J.T.***, A. C. Springman, and T.S. Whittam. Contribution of sigma S and sigma N to stress fitness and virulence gene regulation in *Escherichia coli* O157:H7.

June 2008 Boston, MA. 108th meeting of the American Society for Microbiology (ASM). Sivapriya K.V., **J.T. Riordan**, T.E. Besser, and T.S. Whittam*. Identification of differentially expressed genes in clinical- and bovine-specific genotypes of *Escherichia coli* O157:H7.

May 2007 Toronto, Canada. 107th meeting of the American Society for Microbiology (ASM). Lamichhane-Khadka, R., **J.T. Riordan**, A. Muthaiyan, T. D. Reynolds, B. J. Wilkinson, and J. E. Gustafson*. 2007. Transcriptome and comparative genomic sequencing analysis of household disinfectant reduced susceptibility mutants of *Staphylococcus aureus*.

May 2007 Toronto, Canada. 107th meeting of the American Society for Microbiology (ASM). Kailasan-Vanaja, S., Bergholz, T.M., **Riordan, J.T**, Schaeffer, K. Whittam, T.S.* 2007. Characterization of acid resistance in *Escherichia coli* O157:H7 *gadE* and *gadC* mutants.

May 2006 Orlando, FL. 106th meeting of the American Society for Microbiology (ASM). **Riordan, J.T**, W. Van Voorhies, and J.E. Gustafson*. Salicylate inhibits glycolysis and gluconate metabolism in *Staphylococcus aureus*.

Dec. 2005 New Orleans, LA. Annual meeting of the Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC). **Riordan, J.T**, Muthaiyan, A., Reihani, S., Hattangady, D.S.,

Wilkinson, B.J., Graham, J.E., Price, C.D.T., and J. E. Gustafson.* Transcriptional Profile of the Salicylate-Inducible Multiantimicrobial Resistance Phenotype of *Staphylococcus aureus*.

June 2005 Atlanta, GA. 105th meeting of the American Society for Microbiology (ASM). Delgado, A., O'Brien, F.G., **J.T. Riordan**, Winnett, D.C., Robinson, K. and Gustafson, J.E.* Survey of Las Cruces Methicillin Resistant *Staphylococcus aureus*.

May 2005 Washington DC. 104th meeting of the American Society for Microbiology (ASM). **Riordan, J.T**, M. Vasquez, P.A. Funk, Z. Samani, A. Hanson, and G.B. Smith.* Elimination of fecal coliforms, including enterohaemorrhagic *Escherichia coli* (EHEC) O157:H7, during the anaerobic digestion of dairy cow manure and cotton gin waste.

May 1999 Chicago, IL. 98th meeting of the American Society for Microbiology (ASM). **Riordan, J.T**, and M.P. Shiaris*. Accelerated mutagenesis in structured and aging bacterial populations.

*Corresponding author

Awards and Honors

2012 CMMB Outstanding Undergraduate Research Award to E. Kennedy (Undergraduate Honors Student, Riordan Lab)
2012 USF Excellence in Undergraduate Research Awards to K. Vendura and J. Sanchez (Undergraduate Student Researchers, Riordan Lab) totaling $600.00
2012 USF Excellence in Undergraduate Research to J. Sanchez (Undergraduate Research Student, Riordan Lab), $300.00
2012 CDDI Travel Award to J. Morgan (PhD Candidate, Riordan Lab), $1,200.00
2012 VTEC Travel Awards to J. Morgan and A. Mitra (PhD Candidates, Riordan Lab), $1,000.00
2011 ASM Annual SE Regional Meeting Travel Awards to J. Morgan, A. Mitra, N. Helal, and P. Fay (Graduate Students, Riordan Lab), $1,200.00
2010 USF NIH Grants Proposal Award to J. Riordan, $500.00.
2005 Graduate Assistant Award, Department of Biology, New Mexico State University to J. Riordan, $1,000.00
2004 ASM Travel Grant to J. Riordan, $500.00
2002 Student Travel Grant, Biology Department, New Mexico State University to J. Riordan, $200.00
1998 NSF Research Experiences for Undergraduates Grant (NSF-REU) to J. Riordan, $3,000.00

Professional Service

Journal Review:

Bentham e-Books, "Pathogenic *Escherichia coli* in Latin America", Dr. Alfredo Torres
Clinical Microbiology and Infection
PLoS One
Foodborne Pathogens and Disease
The Encyclopedia of Biotechnology in Agriculture and Food
Journal of Bacteriology
Microbial Pathogenesis

Grant review:

2012	Panel Reviewer for the US DOD Defense Medical Research and Development Program
2011	External Reviewer for the Netherlands Organization for Scientific Research (NWO). Veni grants in the Innovational Research Incentives Scheme
2006	External Reviewer for the U.S. Army Research Laboratory's, Army Research Office (ARO)

Symposia:

Oct. 2012	Clinical Microbiology Session Chair, 98th meeting of the ASM SEB
	Clinical Microbiology Session Judge, 98th meeting of the ASM SEB

Committee Assignments:

USF Departmental Graduate Committee
USF Departmental Undergraduate Research Committee
USF Departmental Textbook Review *ad hoc* Committee
USF Research Strategy Committee
USF Cell and Computational Biology Search Committee
USF Advisory Committee for Departmental move to ISA

Professional Society Memberships:

2010-Present	American Society for Microbiology Southeast Branch (ASM-SEB)
1999-Present	American Society for Microbiology (ASM)
2011-Present	Moffitt, Center for Infections in Cancer (CIRC)

Community service:

2010-Present	Hillsborough Community College, Tampa, FL BRIDGES Program Sponsor
2001-2005	Research mentor for NM Research Initiative for Scientific Enhancement (RISE) Program and for the NM BRIDGES Program for American Indians in Sciences and Humanities

CURRICULUM VITAE

JOHNNY ELIAS EL-RADY

Department of Cell Biology, Microbiology and Molecular Biology
University of South Florida
4202 E. Fowler Ave, ISA2015
Tampa, FL 33620
Phone: (813) 974-1590 jelrady@usf.edu

EDUCATION

1996 Ph.D., Biological Sciences (Molecular Biology emphasis)
University of Southern Mississippi, Hattiesburg, Mississippi
Dissertation Title: Isolation and Characterization of the Calmodulin and Actin Genes from the Dimorphic Pathogenic Fungus *Histoplasma capsulatum*.

1988 B.S., Biology
American University of Beirut, Beirut, Lebanon

TEACHING EXPERIENCE

August 1997 – Present
Senior Instructor, University of South Florida, Tampa, Florida
Courses: **The Biology of Humans** (BSC 1020) ; **Sex and Today's World** (BSC 2035) ; **General Microbiology** (MCB 3020) ; **General Genetics** (PCB 3063) ; **Microbial Physiology and Genetics** (MCB 4404) ; **Determinative Bacteriology** (MCB 4415) ; **Human Genetics** (PCB 4663) ; **Public Health & Pathogenic Microbiology** (MCB 5206) ; **Medical Mycology** (MCB 5815) ; **Honors Major Works/Major Issues** (IDH 4000).

June 1996 - July 1997
Visiting Assistant Professor, University of Southern Mississippi, Hattiesburg, Mississippi
Courses: **Food Microbiology** (BSC 280 – lecture and laboratory) ; **Microbiology in Health and Diseases** (BSC 281) ; **General Microbiology** (BSC 380) ; **Pathogenic Microbiology** (BSC 481/581 – lecture and laboratory)

Aug. 1990 - May 1996
Teaching Assistant, University of Southern Mississippi, Hattiesburg, Mississippi
Taught laboratories for General Biology and General Microbiology courses

Sept. 1988 – Nov. 1989
Instructor, St. Joseph High School, Cornet Chehwan, Lebanon
Taught classes in Sciences and Mathematics

HONORS AND AWARDS

2011 edition of *Who's Who in America*
Chosen as USF's inaugural **"Last Lecture"** presenter, Spring 2010
Nominated for the 2007 & 2008 *U.S. Professor of the Year award* (www.usprofessorsoftheyear.org)
Outstanding Undergraduate Teaching Award, USF, 2005
Named one of the Best Five Teachers at USF in a 2004 survey of 1,200 graduating seniors
Who's Who Among America's Teachers, 2002, 2004, 2005, 2006 and 2010
Golden Apple Award, 1999-2000, 2001-2002 and 2002-2003
Honorary Faculty Member of the Golden Key International Honour Society

PROFESSIONAL SERVICE

Chair: **Microbiology Education session**, at the Annual Meeting of the Southeastern Branch of the American Society of Microbiology, St. Petersburg, FL, October 2005.
Key Note Panel Address: "**To Click or Not to Click",** at the Symposium on 21st Century Teaching Technologies, USF, March 2005.
Presentation: "**Enhancing Teaching and Learning with Technology"** at the League of Innovation Conference on Information Technology, Tampa Convention Center, Nov. 2004.

NATIONAL AND STATE PUBLIC SERVICE

National Judge: **Christopher Columbus Awards** (www.christophercolumbusawards.com), Orlando, FL, 2008-Present.
Member: **FCAT Science Expert Review Committee**, FL Dept. of Education, 2001-Present.
Member: **Florida Teacher Certification Exam Committee**, FL Dept. of Edu., 2008-Present.

UNIVERSITY SERVICE

Member: **USF Commencement Marshals,** 2005-Present
Member: **USF Textbook Affordability Project –** Pilot work group, 2012-Present
Member: **2012-2013 CAS Professional Development Ad Hoc Committee**
Facilitator: **Undergraduate Research and Arts Colloquium,** 2012
Member: **Center for Integration in Research, Teaching and Learning (CIRTL)** (www.cirtl.net/) **Steering and Planning Committee,** 2011-2012
Member: **Instructor Search Committee – Chemistry Department**, 2011
Panelist: **Academic Assessment Colloquium,** 2008
Faculty Fellow: **Housing and Residential Education**, 2008- Present
Member: **Course Management Advisory Group,** 2008-Present.
Member: **Faculty Advisory Committee for Classroom Technology Services,** 2005-Present.
Member: **Project Kaleidoscope** (www.pkal.org), 2005-2008.
Judge: **Provost's Award for Outstanding Teaching by a Graduate TA,** 2005 and 2007.
Judge: **McNair Scholars Program Research Symposium**, 2003-2007.

PROFESSIONAL PRESENTATIONS

Talk: "**Poster Madness",** USF's Annual Undergraduate Research Symposium, 2004-2011
Workshop: "**Using Clickers to Engage Students and Assess Learning**", co-facilitator for the USF Center for 21st Century Teaching Excellence, 2006-2011
Talk: "**The Beauty of Biotechnology**", High School Science Day; Hosted by the American Chemical Society, USF, March 2010
Talk: "**The Wonder of Microbiology**", Honors College Experience, February 2010
Poster: "**El-Rady's Virtual Tour of a Bacterial Cell**", at the Symposium on 21st Century Teaching Technologies, USF, March 2005.
Talk: "**Enhancing Teaching and Learning with PowerPoint**", co-presented with William Patterson, for New Faculty and Graduate Teaching Assistants, USF, August 2001-2003
Poster: "**Teaching Microbiology and Genetics Using WebCT and PowerPoint**", at the Symposium on 21st Century Teaching Technologies, USF, March 2000.
Talk: "**Prokaryotic Structure and Function**", for graduate and undergraduate chemistry majors enrolled in the course "Antibiotics (CHE 6938/4932)", USF, September 1999.
Talk: "**Antibacterial Chemotherapy**", for nurses in the Masters program enrolled in the Course "Primary Care of the Older Adult (NGR 6255)", USF, May 1999.

INVITED TALKS

Mendel, OMics, Oh My! – Hillsborough Community College, Tampa, FL, November 2011
Disease Madness – Hillsborough Community College, Tampa, FL, March 2009
Microbiology: An Introduction – Eckerd College, St. Petersburg, FL, November 1999

TEXTBOOK SUPPLEMENT DEVELOPMENT

Prepared end-of-chapter questions/problems for:
Introduction to Genetic Principles, by David Hyde (2008), McGraw-Hill, Dubuque, Iowa

Prepared PowerPoint Lectures for the following textbooks:

- Slonczewski, J., and Foster, J. 2011. *Microbiology*, 2nd ed. WW Norton, New York, NY
- Ricki Lewis. 2010. *Human Genetics*, 9th edition. McGraw-Hill, Dubuque, Iowa
- Raven, P., Johnson, G., *et al*. 2008. *Biology*, 8th edition. McGraw-Hill, Dubuque, Iowa
- Johnson, G. B. 2006. *Essentials of the Living World*, 1st ed. McGraw-Hill, Dubuque, IA
- Johnson, G. B. 2006. *The Living World*, 4th edition. McGraw-Hill, Dubuque, Iowa
- Brooker, R. 2005. *Genetics: Analysis and Principles*, 2nd ed. McGraw-Hill, Dubuque, IA

Subject Matter Expert for *LearnSmart* Project: McGraw-Hill, Dubuque, Iowa

Consultant for Biology and Genetics Animations: WH Freeman, New York, NY

Consultant for Microbiology Animations & Assessment Developer: WW Norton, New York, NY

PUBLICATIONS

Textbook supplement:

El-Rady, J., and Brooker, R**.** 2011. Student Study Guide and Solutions Manual for *Genetics: Analysis and Principles*, 4th edition, McGraw-Hill Publishers, Dubuque, Iowa

Journals:

El-Rady, J. 2006. To Click or Not to Click. *Innovate* – Journal of Online Education. Vol.2, Issue 4 (April/May 2006) (http://www.innovateonline.info/)

El-Rady, J., and G. Shearer, Jr. 1996. Cloning and analysis of an actin-encoding cDNA from the dimorphic pathogenic fungus *Histoplasma capsulatum*. *J. Med. Vet. Mycol*. **35**: 159-166.

El-Rady, J., and G. Shearer, Jr. 1996. Isolation and characterization of a calmodulin-encoding cDNA from the pathogenic fungus *Histoplasma capsulatum*. *J. Med. Vet. Mycol*. **34**: 163-169.

ABSTRACTS

National

El-Rady, J., and G. Shearer, Jr. Sequence and expression analysis of the calmodulin gene from *Histoplasma capsulatum*. American Society for Microbiology, 96th General Meeting, May 1996, New Orleans, LA.

El-Rady, J., and G. Shearer, Jr. Isolation and characterization of the calmodulin gene from *Histoplasma capsulatum*. American Society for Microbiology, 93rd General Meeting, May 1993, Atlanta, GA.

Regional

El-Rady, J., and G. Shearer, Jr. Isolation and characterization of the calmodulin gene from *Histoplasma capsulatum*. Mississippi Academy of Sciences, Annual Meeting, February 1993, Jackson, MS.

PROFESSIONAL MEMBERSHIP

American Society for Microbiology (ASM)

American Association for the Advancement of Science (AAAS)

INVITED TEXTBOOK REVIEWER/ACCURACY CHECKER

Noyd, R. K., Krueger, J. A., and Hill, K. M. 2012. *Biology: Organisms and Adaptations*. Cengage Learning, Boston, MA

Fromherz, S., and Bowerman, B. *Integrated Genetics* (**In preparation**) John Wiley & Sons, Hoboken, NJ

Brooker, R.J., Widmaier, E. P., Graham, L. E., and Stiling, P. D. 2008. *Biology*, 1st edition. McGraw-Hill, Dubuque, Iowa.

Raven, P., Johnson, G., Losos, J., Mason, K., and Singer, S. *Biology*, 8th edition. McGraw-Hill, Dubuque, Iowa.

Griffiths, A. J. F., Wessler, S. R., Lewontin, R. C., and Carroll, S. B. 2007. *Introduction to Genetic Analysis*, 9th edition. WH Freeman, New York, NY

Hyde, D. 2007. *Introduction to Genetics*. McGraw-Hill, Dubuque, Iowa.

Klug, W. S., Cummings, M. R, and Spencer, C. A. 2006. *Concepts of Genetics*, 8th edition. Prentice Hall Inc., Upper Saddle River, New Jersey.

Starr, C. A., Evers, C., and Starr, L. 2006. Biology Today and Tomorrow with Physiology, 2nd edition. Thomson/Brooks/Cole, Pacific Grove, CA.

Russell, P. J. *iGenetics: A Molecular Approach,* 2nd Edition. Addison Wesley, Boston, MA

Prescott, L. M., Harley, J. P., and Klein, D. A. 2005. *Microbiology*, 6th edition. McGraw-Hill, Dubuque, Iowa.

Campbell, N. A., and Reece, J. B. 2005. *Biology*, 7th edition. Benjamin Cummings, San Fransisco, CA.

Mader, S. 2005. *Human Reproductive Biology*, 3rd edition. McGraw-Hill, Dubuque, Iowa.

Brooker, R. J. 2005. *Genetics: Analysis and Principles*, 2nd edition. McGraw-Hill, Dubuque, Iowa.

Cappuccino, J., and Sherman, N. 2005. *Microbiology: A Laboratory Manual*, 7th edition. Benjamin Cummings, San Fransisco, CA.

Hartwell, L. H., Hood, L., Goldberg, M. L., Reynolds, A. E., Silver, L. M., and Veres, R. C. 2004. *Genetics: From Genes to Genomes*, 2nd edition. McGraw-Hill, Dubuque, Iowa.

Alexander, S. K., Strete, D., and Niles, M. J. 2003. *Laboratory Exercises in Organismal and Molecular Biology*, McGraw-Hill, Dubuque, Iowa.

Pierce, B. A. 2003. *Genetics: A Conceptual Approach*, 1st edition. W. H. Freeman and Company, New York, New York.

Lim, D. 2003. *Microbiology*, 3rd edition. Kendall Hunt Publishing Company, Dubuque, Iowa.

Klug, W. S., and Cummings, M. R. 2003. *Genetics: A Molecular Perspective*. Prentice Hall Inc., Upper Saddle River, New Jersey.

Benson, H. 2002. *Microbiological Applications: Laboratory Manual in General Microbiology*, 8th edition. McGraw-Hill, Dubuque, Iowa.

Klug, W. S., and Cummings, M. R. 2000. *Concepts of Genetics*, 6th edition. Prentice Hall Inc., Upper Saddle River, New Jersey.

FACULTY ADVISOR

Pre-American Medical Student Association – USF Branch 2000-2009

Lebanese Student Association, 2003-Present

PROFESSIONAL DEVELOPMENT

Introductory Biology Symposium. Offered by McGraw-Hill Publishers, Dubuque, Iowa, November 10-13, 2011

Increments and Transformations: Using Technology to Enhance Teaching and Learning. Institute offered by the USF Center for 21st Century Teaching Excellence, Summer 2008.

General Education Assessment Summer Institute. USF, June 20-22, 2007

Strategies for Success Science Workshop. Offered by Benjamin Cummings Science Publishers, Valencia Community College, Orlando, FL, March, 2007

Macromedia Flash Basics and Quiz Creation. Offered by the USF Center for 21st Century Teaching Excellence and the Media Innovation Team (MIT), February 13, 2004.

Increments and Transformations: Using Technology to Enhance Teaching and Learning. An Institute offered by the USF Center for 21st Century Teaching Excellence. The institute activities span the period from July 2003 – June 2004

Genetics Symposium. Offered by McGraw-Hill Publishers, Chicago, IL, April 1-4, 2004.

Strategies for Success Science Workshop. Offered by Benjamin Cummings Science, University of Tampa, Tampa, FL, March 1, 2003.

Preparing Tomorrow's Teachers To Use Technology. PT3 TECH Initiative. Offered by the USF College of Education, Fall 2002.

Improving Teaching and Learning through Web-enhanced or Web-delivered Courses: An Intensive Workshop on Blackboard. Workshop offered by the USF Center for Teaching Enhancement, May 6-10, 2002.

Involving Students Using Active Learning Strategies in University Classes. Workshop offered by the USF Center for Teaching Enhancement, July 23-August 3, 2001.

Strategies for Success Workshop. Offered by Benjamin Cummings Science, Valencia Community College, Orlando, FL, April 29, 2000.

Enhancing Teaching and Learning with PowerPoint. Workshop offered by the USF Center for Teaching Enhancement, May 17-20, 1999.

Improving Teaching and Learning through Web-enhanced or Web-delivered Courses: An Intensive Workshop on WebCT. Workshop offered by the USF Center for Teaching Enhancement, May 3-7, 1999.

Transforming Today's Teaching Assistants into Tomorrow's Faculty: A Workshop for Faculty Working with TAs. Workshop offered by the USF Center for Teaching Enhancement, May 4-8, 1998.

HONORS THESIS SUPERVISION

Daniel Axelrod (2008); Danay Marante (2008); Daniel Nguyen (2006); Steve Winslow (2004)

GRANTS

Innovative Teaching Opportunities (iTOPP) grant $ 1,311 (Personal) – Summer 2011

Florida PROMiSE (http://flpromise.org/) grant One of two college faculty tasked with presenting *Scientific Theories* to middle and high school teachers – Summers 2009 & 2010

Curriculum Vitae
Kelly M. Leach, Ph.D.

I. Mailing Address:

Department of Cell Biology, Microbiology and Molecular Biology
University of South Florida
4202 E. Fowler Avenue, ISA 2015
Tampa, FL 33620-5150
Office: (813) 974-4809 Mobile: (352) 316-2785
Email: kmleach@usf.edu

II. Education:

B.S., Microbiology and Cell Science, College of Agriculture, University of Florida (1998)

Ph.D., Biochemistry and Molecular Biology, College of Medicine, University of Florida (2003)
Dissertation: Transcription and transcriptional control in the human β-globin gene locus.

III. Professional Experience:

Teaching:

Summary: Classes include Biology I (BSC 2010), General Genetics (PCB 3063), Cell Biology (PCB 3023), Cell Metabolism (MCB 3410), Microbiology and Human Health (MCB 1000)

Visiting Instructor, Department of Cell Biology, Microbiology, and Molecular Biology, University of South Florida (Tampa campus) (2011 - present)

Adjunct Faculty, Lecturer for Microbiology and Human Health (MCB1000), Department of Life Sciences, Hillsborough Community College (Spring, 2010 and Spring, 2011)

Assistant Research Mentor for undergraduate, graduate, and high school students, Department of Molecular Microbiology and Immunology, Bloomberg School of Public Health, Johns Hopkins University (2004 – 2009, non-continuous)

Assistant Research Mentor for graduate and undergraduate students, Department of Biochemistry and Molecular Biology, College of Medicine, University of Florida (2000-2003, non-continuous)

Teaching Assistant, Introduction to Biochemistry and Molecular Biology, College of Medicine, University of Florida (2000-2002, non-continuous)

Research:

Research Associate, Advanced Biosensors Laboratory, Center for Biological Defense, Department of Cell Biology, Microbiology and Molecular Biology, University of South Florida (2009 – 2011 - full time, and Summer, 2012 - part time)

Achievements: Developed a novel method for identifying human pathogens in complex sample types. Performed systematic analyses and made significant improvements on existing detection/identification platforms. Techniques included immunoassays, proteomic analyses, and molecular methods.

Postdoctoral Fellow, Department of Molecular Microbiology and Immunology, Bloomberg School of Public Health, Johns Hopkins University (2003-2009)

Achievements: Helped define roles of target mammalian proteins in governing cell proliferation and death using established assays. Achieved efficient RNAi mediated knockdown of target proteins in cultured primary neurons and cell lines.

Doctoral Candidate/Graduate Research Fellow, Department of Biochemistry and Molecular Biology, College of Medicine, University of Florida (1998-2003)

Achievements: Identified novel mechanisms that modulate chromatin structure and transcription in the human beta-globin locus. Discovered intergenic transcripts in regulatory regions, and characterized the roles of regulatory elements and proteins through analysis of DNA binding, transcription, and DNA structure.

Research Technician, Department of Biochemistry and Molecular Biology, College of Medicine, University of Florida (May, 1998 – August, 1998)

Responsibilities: Assistant to graduate student for PCR and molecular cloning.

Laboratory Technician - Institute of Food and Agricultural Sciences, College of Agriculture, University of Florida (1997-1998)

Responsibilities: Ocean water quality testing for determining microbial pathogen loads prior to commercial shellfish collection, general laboratory upkeep, and bacterial strain maintenance. Testing was conducted in accordance with Good Laboratory Practices.

Miscellaneous:

Free-lance reviewer/editor for biological science textbooks and supplemental materials. Pearson. (2012 - present)

IV. Service Activities:

Faculty advisor for student led organizations, including “Doctors Without Borders” and “Health Occupations Students of America” (Fall, 2011 – present)

Honors thesis advisor and reader (multiple)

Participant in on-campus activities

- The Scholar’s showcase
- House Calls
- Stampede of Success

Faculty fellow (2012/13 academic year)

Member faculty learning community (2012/13 academic year)
Occasional volunteer with Hands on Tampa Bay

V. Honors and Awards:

Academic Scholarship, Florida Scholars Program, State of Florida (1994-1998)

Academic Scholarship, Challenger Award Program, State of Florida (1994-1998)

Academic Scholarship, Ester King Endowment Fund, Union County, Florida (1994-1998)

Pre-Doctoral Research Fellowship, University of Florida Alumni Association, College of Medicine, University of Florida, 2000-2003

Boyce Award, Second Place in Oral Presentation, Department of Biochemistry and Molecular Biology, College of Medicine, University of Florida, 2001

Boyce Award, First Place in Oral Presentation, Department of Biochemistry and Molecular Biology, College of Medicine, University of Florida, 2002

Medical Guild Award, Third Place in Oral Presentation, College of Medicine, University of Florida, 2002

Postdoctoral Research Fellowship (F32), Lab Research Training in Pediatric Oncology-Hematology, Johns Hopkins University, 2007-2008

VI. Professional Societies:

American Society for Microbiology
International Society for Infectious Diseases

VII. Patents:

Stroot JM, Stroot PG, **Leach KM**, Lim DV. Capture Antibody Targeted Fluorescence In Situ Hybridization. *(USF application for provisional patent submitted 12/2010, full application is in progress)*

VIII. Publications:

Leach KM, Nightingale K, Igarashi K, Levings PP, Engel JD, Bungert J. Reconstitution of human beta-globin locus control region hypersensitive sites in the absence of chromatin assembly. 2001. *Mol Cell Biol*. 21:2629-2640

Bain PJ, LeBlanc-Chaffin R, Chen H, Palii SS, **Leach KM**, Kilberg MS. The mechanism for transcriptional activation of the human ATA2 transporter gene by amino acid depravation is different than that for asparagine synthetase. 2002. *J Nutr*. 132:3023-3029

Leach KM, Vieira KF, Kang SH, Aslanian A, Teichmann M, Roeder RG, Bungert J. Characterization of the human beta-globin downstream promoter region. 2003. *Nucleic Acids Res*. 31:1292-1301

Dame C, Sola MC, Lim KC, **Leach KM**, Fandrey J, Ma Y Knopfle G, Engel JD, Bungert J. Hepatic erythropoietin gene regulation by GATA-4. 2004. *J Biol Chem*. 279:2955-2961

Cheng WC, **Leach KM**, Hardwick, JM. Mitochondrial fission and yeast programmed cell death. 2008. *Biochim Biophy Acta.* 1783:1272-1279

Leach KM, Stroot JM, Lim DV. Same-day detection of *E. coli* O157:H7 from spinach by using electrochemiluminescent and cytometric bead array biosensors. 2010. *Appl Environ Micro*. 76:8044-8052

Stroot JM, **Leach KM**, Stroot P, Lim DV. Capture Antibody Targeted Fluorescence In Situ Hybridization (CAT-FISH): Dual labeling allows for increased specificity in complex samples. 2012. *J Microbiol Methods*. 88:275-84

IX. Meeting Abstracts:

Leach KM, Levings PP, Igarashi K, Nightingale K, Bungert J. Evidence for a two step mechanism for nuclease hypersensitive site formation in the human beta-globin locus control region. 12th Annual Conference on Hemoglobin Switching. Orcas Island, Washington (2000)

Leach KM, Vieira K, Kang S, Teichmann M, Bungert J. Analysis of DNA binding proteins interacting with human beta-globin downstream promoter elements. FASEB Summer Research Conference. Snow Mass, Colorado (2002)

Dame C, Sola M, **Leach KM**, Lim K-C, Fandrey J, Knopfle G, Engel JD, and Bungert J GATA-3/4 in the tissue-specific regulation of the erythropoietin gene. GATA-Meeting, Montreal, Canada (2003)

Leach KM, Kerr D, Yin D, Hardwick JM. SMN in the life and death of motor neurons. 15th International Symposium on ALS/MND. Philadelphia, Pennsylvania (2004)

Cheng WC, **Leach KM**, Dunham MJ, Park K, Hardwick JM. Loss of the yeast mitochondrial fission protein *Fis1* drives selection for specific mutations that alter TOR signalling. Cold Spring Harbour Cell Death Meeting 7. Cold Spring Harbour, New York (2007)

Teng XC, Cheng WC, **Leach KM**, Hardwick JM. Searching for tumor-suppressor-like genes in yeast. International Cell Death Symposia, Targeting Cell Death Pathways for Human Diseases. Shanghai, China (2008)

Teng XC, Cheng WC, **Leach KM**, Hardwick JM. Evolution of cancer-like mutations in yeast. Keystone Symposia. Cell Death Pathways. Keystone, Colorado (2009)
Teng XC, Cheng WC, **Leach KM**, Hardwick JM. Evolution of cancer-like mutations that alter

nutrient sensing in yeast. Cold Spring Harbor Symposia. Cell Death. Cold Spring Harbor, New York (2009)

Leach KM, Magaña S, Schlemmer SM, Lim DV. Sensitive and specific detection of *E. coli* O157:H7 in complex mixtures of microorganisms. ASM Southeastern Branch Meeting. Savannah, Georgia (2009)

Leach KM, Stroot JM, Lim DV. Comparison of electrochemiluminescence, cytometric bead array, and immunomagnetic separation for rapid, sensitive, and specific detection of *E. coli* O157:H7. American Society for Microbiology 110th General Meeting. San Diego, California (2010)

Schlemmer SM**, Leach KM,** Magaña S, Lim DV. Optimizing *E. coli* O157:H7 detection on lateral flow immunoassays using concentration and immunomagnetic separation. American Society for Microbiology 110th General Meeting. San Diego, California (2010)

X. Technical skills:

Cell culture (primary cells and cell lines)
Mammalian cell transfection/transduction
Production of stably transfected/transduced cell lines
Production of recombinant retroviruses and lentiviruses
Cell cycle and cell death analyses
Sequence Analysis
Immunofluorescence assays
Fluorescence microscopy
Polymerase chain reaction (PCR)
Recombinant DNA technology (cloning and analysis)
Electrophoresis (agarose and polyacrylamide)
Southern blotting
Immunoblotting
Enzyme linked immunosorbent assays
Immunomagnetic separation
Cytometric bead array
Fluorescence in situ hybridization
RNA purification
Reverse transcription-PCR
Isotope handling (P32, H3, S35)
Small rodent handling
Bacterial transformation
Electrophoretic mobility shift assay (EMSA)
In vitro transcription/primer extension
In vitro chromatin assembly
In vitro chromatin structure analysis
Purification and analysis of YAC DNA
General microbiology techniques

NAME: Meera Nanjundan, Ph.D.

PRESENT TITLE AND AFFILIATION

Primary Appointments (January 2008- present)

Assistant Professor (tenure-track)
Department of Cell Biology, Microbiology, and Molecular Biology (CMMB)
University of South Florida
4202 East Fowler Ave, ISA 2015
Tampa, Florida, 33620
Ph: 813-974-8133

MEMBER

1. Moffitt Cancer Center
Member of Ph.D Cancer Biology Program, 2008-present

2. Florida Center for Excellence for Biomolecular Identification & Targeted Therapeutics
BITT Member, 2008-present

OFFICE ADDRESS

4202 East Fowler Avenue
Mail Stop: ISA2015
Office Location: BSF 165
Lab Location: BSF 154/152
Tampa, FL 33620
(813) 974-8133, *office*
(813) 974-1614, *fax*
mnanjund@usf.edu

EDUCATION

Degree-Granting Education

1. Queen's University, Kingston, Ontario, CANADA, B.Sc (Honours), 1996, Biochemistry
2. University of Western Ontario, London, Ontario, CANADA, Ph.D., 2001, Biochemistry; ***Mentor: Dr. Fred Possmayer***

Postgraduate Training

1. Postdoctoral Fellowship, The Scripps Research Institute, La Jolla, California, ***Mentor: Dr. Peter Sims and Dr. Therese Wiedmer***, 05/2001-07/2003
2. Postdoctoral Fellowship, UT M. D. Anderson Cancer Center, Houston, Texas, ***Mentor: Dr. Gordon Mills***, 08/2003-04/2007

Faculty Positions

1. Research Assistant Professor (Non-tenure), UT M.D. Anderson Cancer Center, Houston, Texas, ***Supervisor: Dr. Gordon Mills****,* 05/2007-12/2007

RESEARCH PUBLICATIONS

1. **Nanjundan M** and Possmayer F. Characterization of Pulmonary NEM-Insensitive Phosphatidate Phosphohydrolase. *Experimental Lung Research*. 26: 361–381, 2000.

2. **Nanjundan M** and Possmayer F. Molecular Cloning and Expression of Pulmonary Lipid Phosphate Phosphohydrolases. *American Journal of Physiology*. 281:L1484-L1493, 2001.

3. **Nanjundan M** and Possmayer F. Pulmonary Lipid Phosphate Phosphohydrolase in Plasma Membrane Signaling Platforms. *Biochemical Journal*. 358: 637-646, 2001.

4. Sun J, **Nanjundan M**, Pike LJ, Wiedmer T, Sims PJ. Plasma Membrane Phospholipid Scramblase 1 is Enriched in Lipid Rafts and Interacts with the Epidermal Growth Factor Receptor. *Biochemistry*. 41: 6338-6345, 2002.

5. **Nanjundan M**, Sun J, Zhao J, Zhou Q, Sims PJ, Wiedmer T. Plasma Membrane Phospholipid Scramblase 1 Promotes EGFdependent Activation of c-Src and Signaling Through Growth Factor Receptors. *Journal of Biological Chemistry*. 278:37413-37418, 2003.

6. Wiedmer T, Zhao J, **Nanjundan M,** Sims PJ. Palmitoylation of Phospholipid Scramblase 1 (PLSCR1) Controls its Distribution between Nucleus and Plasma Membrane. *Biochemistry*, Volume 42, 1227-1233, 2003.

7. **Nanjundan M** and Possmayer F. Pulmonary Phosphatidic Acid Phosphatase and Lipid Phosphate Phosphohydrolase (PAP/LPP). *Am J Physiol Lung Cell Mol Physiol.* 284: L1-L23, 2003.

8. Hennessy BT, **Nanjundan M**, Cheng KW, Nolden L, Mills GB. Identification of Remodeling and Spacing Factor 1 (rsf-1, HBXAP) at Chromosome 11q13 as a Putative Oncogene in Ovarian Cancer. *Eur J Hum Genet*. 14: 380-383, 2006.

9. **Nanjundan M**, Zhang F, Smith-McCune K, Schmandt R, and Mills GB. Identification of a Novel Splice Variant of AML1B in Ovarian Cancers Conferring Loss of Wild Type Tumor Suppressive Functions**,** *Oncogene,* 2007

10. **Nanjundan M**, Nakayama Y, Cheng KW, Kuo W, Lahad J, Smith-McCune K, Lu KH, Fishman D, Gray JW, Mills GB. Amplification of MDS1/EVI1 and EVI1, located in the 3q26.2 Amplicon, is Associated with Favorable Patient Prognosis in Ovarian Cancer. *Cancer Research,* 2007.

11. **Nanjundan M**, Lahad J, Kuo W, Smith-McCune K, Gray JW, and Mills GB. Overexpression of SnoN/SkiL, Amplified at the 3q26.2 Locus in Ovarian Cancers: Role in Ovarian Pathogenesis, *Molecular Oncology,* 2008.

12. Hennessy BT, Murph M, **Nanjundan M**, Auersperg N, Almeida J, Coombes K, Liu J, Lu Y, Gray JW, and Mills GB. Ovarian cancer: Linking Genomics to New Target Discovery and Molecular Markers: The Way Ahead. In *Hormonal Carcinogenesis*. Springer Verlag, 2008.

13. Byers LA, Sen B, Saigal B, Diao L, Wang J, **Nanjundan M**, Cascone T, Mills GB, Heymach JV, and Johnson FM. Reciprocal regulation of c-Src and STAT3 in non-small cell lung cancer, *Clinical Cancer Research,* 2009.

14. Smith DM, Haller E, Mills GB, and **Nanjundan M**. Arsenic trioxide alters expression of TGFβ signaling mediators and induces autophagy/apoptosis in ovarian cells. *Cell Death & Differentiation,* 2010

15. **Nanjundan M*,** Byers LA*, Carey M, Siwak D, Nikolinakos P, Wistuba I, Wang J, Coombes K, Mills GB, Minna J, and Heymach JV. Reverse phase protein array identifies a proteomic signature for non-small cell lung cancer. *Journal of Thoracic Oncology*, 2010. (*co-first authors)

16. Raffoul F, Campla C, **Nanjundan M**. SnoN/SkiL, a TGFβ signaling mediator: A participant in autophagy induced by arsenic trioxide. *Autophagy*. 2010.

17. Cai D, Shames DS, Raso MG, Xie Y, Kim YH, Plllack JR, Girard L, Sullivan JP, Gao B, Peyton M, **Nanjundan M**, Heymach J, Mills G, Gazdar AF, Wistuba I, Kodadek TJ, Minna JD. Steroid Receptor Co-Activator 3 (SRC-3) Expression in Lung Cancer and its Role in Regulating Cancer Cell Survival and Proliferation. *Cancer Research*. 2010.

18. Tsvetkov L*, **Nanjundan M***, Domino M, Daniel KG. The Ubiquitin proteasome system and assays to determine responses to inhibitors, *Expert Opinion in Drug Discovery,* 2010 (*co-first authors)

19. Bauckman K, Campla C, and **Nanjundan M**. Dysregulated TGFβ Signaling in Ovarian Cancer Development. In *Ovarian Cancer*. 2012.

20. Klionsky D, **et al** (*Autophagy International Consortium including* **Nanjundan M**). Guidelines for the use and interpretation of assays for monitoring autophagy. *Autophagy* 2012.

21. Kodigepalli KM, Dutta PS, Bauckman KA, and **Nanjundan M**. SnoN/SkiL expression is modulated by arsenic trioxide induced activation of the EGFR/Src/PI3K pathway in ovarian cancer cells. *FEBS Letters,* 2012.

22. Dutta PS, Bui T, Bauckman K, Keyomarsi K, Mills GB, and **Nanjundan M**. EVI1 splice variants modulate TGFβ signaling in ovarian cancer cells. *Molecular Oncology*, 2013.

23. Price DT, **Nanjundan M**, Celestin M, and Bhansali S. Design of multi-electrode bioimpedance system and comparison of equivalent circuit and mathematical modeling techniques. *Under Review*, 2013.

24. Bauckman KA, Haller E, Flores I, and **Nanjundan M**. Iron modulates cellular functions and heme oxygenase-1 expression via autophagy in a RAS-dependent manner in multiple ovarian cell lines. *Under Review,* 2013.

25. Kodigepalli KM and **Nanjundan M**. Phospholipid scramblase 1, an interferon-regulated gene located at 3q23, is regulated by SnoN/SkiL in ovarian cancer cells. *Under Review, 2013.*

e. Abstracts

1. **Nanjundan M** and Possmayer F. Characterization of Pulmonary Lipid Phosphate Phosphohydrolase. *American Journal of Respiratory and Critical Care Medicine*, Volume 157, Number 8, March 1998.

2. **Nanjundan M** and Possmayer F. Novel Isoforms of Pulmonary Lipid Phosphate Phosphohydrolases. *American Journal of Respiratory and Critical Care Medicine*, Volume 161, Number 3, March 2000.

3. **Nanjundan M** and Possmayer F**.** Pulmonary Lipid Phosphate Phosphohydrolase in Plasma Membrane Signaling Platforms, *Biophysical Journal*, *212,* February 2001.

4. **Nanjundan M**, Sun J, Sims PJ, and Wiedmer T. Plasma Membrane Phospholipid Scramblase 1 Promotes EGF-dependent Activation of c-Src and Signaling Through Growth Factor Receptors. *FASEB Experimental Cell Biology Meeting, 2003.*

5. **Nanjundan M**, Nakayama Y, Cheng KW, Kuo W, Lahad J, Smith-McCune K, Lu KH, Schmandt R, Fishman D, Gray JW, Mills GB. MDS1-EVI1 and EVI1 in the 3q26.2 amplicon contribute to the pathophysiology of epithelial ovarian cancer. Trainee Recognition Day 2005, MD Anderson Cancer Center, Houston, Texas, USA, 2005

6. **Nanjundan M**, Nakayama Y, Cheng KW, Kuo W, Lahad J, Smith-McCune K, Lu KH, Schmandt R, Fishman D, Gray JW, Mills GB. Aberrant Splicing of MDS1/EVI1 and EVI1 in the 3q26.2 amplicon in Ovarian Cancers, Retarget EVI1 Activity. *TGF*β *in Cancer and Other Diseases*, San Diego, CA, 2006.

7. Minna J.D., Girard L, Sato M., Peyton M., Lee W., Shames D., Honorio S., Xie Y., Xie X-J., Lam D., Lockwood W., Lam W., Wang Y., Lam S., Kim E., Pollack E., Greer R., Frink R., Sullivan J., Gao B., Spinola M., Wistuba I., Coombes K., Heymach J., **Nanjundan M.,** Mao L., Amos C., Fang B., Roth J., Pertsemlidis A., Nirodi C., Story M., Garner H., White M., Brabander J-D., Harran P., Wang X., Jeong Y., Mangelsdorf D., DiMaio J-M, Schiller J., Shay, J., and Gazdar AF. *Molecular pathogenesis of lung cancer with translation to the clinic: M10-01. Journal of Thoracic Oncology, Volume 2, Issue 8, August 2007*

8. Byers LA., **Nanjundan M**, Girard L, Coombes K, Xie Y, Peyton M, Ma Y, Zachariah S,, Nikolinakos T, Cigarroa R, Mills G, Roth J, Minna J, and Heymach J. *Reverse phase protein array (RPPA) profiling of non-small cell lung cancer lines identified tumor signatures for sensitivity and resistance to chemotherapy and targeted agents.* Proceedings of the 98th Annual meeting of the American Association for Cancer Research, 2007.

9. Byers LA., **Nanjundan M**, Girard L, Coombes K, Xie Y, Peyton M, Zachariah S, Weber S, Siwak D, Nikolinakos T, Wistuba W, Roth J, Mills G, Minna J, and Heymach J. *Reverse phase protein array (RPPA) profiling of response to taxanes and epidermal growth factor receptor (EGFR) inhibitors identifies an inverse correlation between markers of sensitivity to docetaxel and erlotinib in non-small lung cancer lines.* Proceedings of the 99th Annual meeting of the American Association for Cancer Research, 2008.

10. Byers LA., Banibrata S, Saigal B, **Nanjundan M**, Mills G, Heymach J, and Johnson F. *Sustained Src inhibition leads to STAT3 activation in non-small cell lung cancer (NSCLC).* Proceedings of the 100th Annual meeting of the American Association for Cancer Research, 2009.

11. Bauckman K, Flores I, **Nanjundan M**. *Role of Autophagic Mediators in the Transition from Endometriosis to Endometriosis-Associated Ovarian Cancers*. AACR, 2011.

12. **Nanjundan M**, Bauckman K, Kodigepalli K. *Role of SnoN/SkiL, a TGFβ signaling mediator, in the Autophagic Pathway: Implications in the Development of Endometrioisis-Associated Ovarian Cancers*, Keystone Symposia Autophagy, 2011.

13. Campla CK, Karim S, **Nanjundan M**. *The Role of TGFβ signaling mediators, EVI1 and SnoN/SkiL, located at the 3q26.2 locus, in ovarian cancer progression*. NCUR, 2011.

14. **Nanjundan M**, Bauckman K, Dutta P, Kodigepalli K. *Role of SnoN/SkiL, a TGFβ signaling mediator, in the Autophagic Pathway: Implications in the Development of Ovarian Cancers and in Chemoresponsiveness*, Keystone Symposia Cell Death Pathways, 2012.

15. Bauckman K, Flores I, **Nanjundan M**. *Role of Autophagy in the Transition from Endometriosis to Endometriosis-Associated Ovarian Cancers*. Ovarian Cancer Symposium, Pittsburgh, PA, 2012.

16. Kodigepalli KM, Boland A, **Nanjundan M**. *Role of interferons and defective palmitoylation in nuclear trafficking of PLSCR1, a gene located at 3q23 aberrantly expressed in epithelial cancer.* Regulation of Protein Trafficking and Function by Palmitoylation, St. Anne's College, Oxford, UK, 2012.

TEACHING

Within Previous Institutions

1. Biology 280A, Undergraduate Teaching Assistant, The University of Western Ontario, CANADA, 09/1997 – 12/1997

2. Mentorship, Biomedical Engineering Internship Program, Department of Molecular Therapeutics, MD Anderson Cancer Center, Houston, Texas, USA, June-July 2005

3. Continuing Medical Education (CME): 08/2006: Advances in Oncology Institutional GRAND ROUNDS

presentation: Splicing Fidelity of RNA: It is Defective in Cancer, MD Anderson Cancer Center.

Within Current Institution

1. Genetic Engineering (BSC5931) (08/ 2008 – 12/2008 & 01/2010 – 05/2010, 01/2011 – 05/2011, 01/2012- present)
2. Cell Biology (PCB3023) (01/2009 – 05/2009, 09/2010 – 12/2010, 09/2011-present)
3. Undergraduate Research (BSC/IDH 4910) (01/ 2008 – present)
4. Directed Graduate Research (01/2009- present)
5. Molecular Biology of the Cell (BSC4933) (08/2009 – 12/2009)
6. Molecular Oncology (BSC6932) (08/2009 – present)

SERVICE & COMMITTEE MEMBER

1. CMMB, Ad Hoc Member for Faculty Search Committee, 2008
2. CMMB, Member for Visiting Faculty Search Committee, 2008
3. CMMB, Graduate Administration & Policy Committee, 2008-2010, 2012-present
4. Chairman of Diabetes Faculty Search Committee, 2009-2010
5. CMMB, Faculty Search Committee (Gene regulation), November 2010- April 2011
6. CMMB, Faculty Search Committee (Computational), November 2010- April 2011
7. CMMB, Undergraduate Program Committee, 2010 – 2012
8. CMMB, Faculty Advisory Committee, January 2012-present
9. Judge at University of South Florida Undergraduate Research Day Symposium, 2011
10. Judge at Young Innovator's Competition, USF, 2013

GRANT REVIEWER

1. Austrian Science Foundation (FWF), grant review, 2008
2. Florida Center for Excellence for Biomolecular Identification & Targeted Therapeutics (BITT) (grant panel) 2008-present
3. University of South Florida, International Travel Grants, 2009
4. FWO, grant review, 2013

MANUSCRIPT REVIEWER

1. Oncogene
2. Molecular Medicine
3. Biochemistry Journal
4. NCUR, National Conference Proceedings for Undergraduate Research
5. Clinical Cancer Research
6. Cell Biology and Toxicology
7. FEBS Letters

MEMBER

1. American Association for Cancer research, 2009-present
2. National Academy of Inventors, USF Chapter, 2012-present

RESEARCH STUDENTS

Within Current Institution – Ph.D/M.Sc Graduate Students (as Primary Mentor)
Kyle Bauckman – 01/2010- present (Moffitt Ph.D Cancer Biology Program)
Karthik Madhav Kodigepalli – 01/ 2010 – present
Punashi Dutta – 09/2010 – present
Timothy Padawer – 09/2010 – present
Kristine Griffet, 2008 – 2011 (Graduated with Ph.D in 2011)

Within Current Institution – Ph.D Graduate Students (as Committee Member)
Peguy Gaboton, 2008 - 2010
Dorielle Price 2010 – 2011 (Graduated with Ph.D, Engineering in 2012)
Rachel Raynes, 2008 - present
Neil Copes, 2009 - present
John Duncan, 2011 – present
Clare Edwards, 2011- present
Hamed Mirzaei, 2008 - present
Sal Syed, 2008 - present
Lillian Doefler, 2010 – present
Chase Powell, 2010-present
Frank Alexander, 2011-present
Brook NiponSixt, 2011-present
Whitney Danse, 2012- present

Within Current Institution – Undergraduate Research Students
Dawn Smith – 01/2008- 09/2010
Anne Wilson – 05/ 2008 – 04/2009
Saqib Ahmed – 05/2008 – 05/2009
Deena Whaba – 08/2008 – 05/2009
Asif Shafiq – 05/2009 – 05/2010
Shetal Patel – 05/2009 – 05/2010
Fadi Raffoul – 05/2009 – 09/2010
Saya Karim – 05/2010 – 12/2010
Anthony Mikel – 01/2010 – 12/2010
Christie Campla – 05/ 2009 – 12/2011
Anila Rao – 11/2010- present
Cheryl Pravetz – 11/2010 – 05/2012
Annemarie Boland – 05/2011 – 05/2012
Mercedez Cruz – 09/2011- 05/2012
Joseph June – 01/2012 – 05/2012
Alexsky Garmasov – 01/2012 – present
Hussain Basawarala – 05/2012 – present
Shivani Kotwal – 05/2012 – present
Stephanie Rockfield – 05/2012 – present

PRESENTATIONS AT NATIONAL OR INTERNATIONAL CONFERENCES

Poster Presentations

1. American Thoracic Society (ATS) 94th International Conference, May 1998, Chicago, Illinois, USA.
2. FASEB Summer Conference, Phospholipase D, August 1999, Saxton's River, Vermont, USA.
3. American Thoracic Society (ATS) 96th International Conference**,** May 2000, Toronto, CANADA.
4. FASEB Summer Conference, Lung Surfactant: Cellular and Molecular Biology, July 2000, Saxton's River, Vermont, USA.
5. Great Lakes GPCR Retreat, October 2000, London, Ontario, CANADA.
6. Biophysical Conference, February 2001, Boston, Massachusetts, USA.
7. Experimental Biology Annual Meeting, April 2003, San Diego, CA, USA.
8. AACR Special Conference: TGFβ in Cancer and Other Diseases, February 2006, San Diego, CA, USA.
9. Gordon Research Conference, Biology of Post-transcriptional gene regulation, Maine, 2008.
10. FASEB Research Conference, TGFβ Signaling in Development & Disease, Carefree, Arizona, 2009.
11. Keystone Symposia, Autophagy, Whistler, British Columbia, CANADA, 2011
12. AACR Annual Meeting, Orlando, Florida, 2011
13. Keystone Symposia, Cell Death Pathways, Banff, Alberta, CANADA, 2012
14. Ovarian Cancer Symposium, University of Pittsburgh, Pennsylvania, 2012
15. Regulation of Protein Trafficking and Function by Palmitoylation, St. Anne's College, Oxford, UK, 2012.

Invited Oral Presentations

1. FASEB Summer Conference, Phospholipase D, August 1999, Saxton's River, Vermont, USA.
2. Experimental Biology Annual Meeting, April 2003, San Diego, CA, USA.
3. Alternative Splicing: Beyond Genes to Proteins, Cambridge Healthtech Institute, June 21-22, 2007, San Francisco, CA, USA.
4. University of South Florida, College of Medicine, Department of Pathology & Cell Biology, Tampa, Florida, April 2011
5. MD Anderson Cancer Center, Department of Systems Biology, Houston, Texas, Aprl 2011
6. Banyan Biomarkers – Center for Innovative Research, Alachua, Florida, June 2011
7. Keystone Symposia on Cell Death Pathways, Banff, Alberta, March 2012

HONORS AND AWARDS

Special University Scholarship (SUS), 1996 - 2000
Ontario Graduate Scholarship in Science & Technology (OGSST), 1999
Bristol-Myers Squibb Translational Research Award, 2005

RESEARCH SUPPORT

Grants and Contracts (Past Funding)

1. AstraZeneca Postdoctoral Lung Cancer Fellowship
   Role: Principal Investigator, *2005*

2. Lung SPORE (PO50 CA070907) Career Development Investigator Award
   Role: Principal Investigator, *2006*
3. USF New Researcher grant
   Title: Regulation of EVI1 Splicing in Lung Cancer Pathophysiology
   Role: Principal Investigator, *2008-2010*
4. USF Matching International Travel Grant
   Role: Principal Investigator, *2010*

Grants and Contracts (Funded/Active)

RO1 CA123219-01 Mills, Gordon B/Nanjundan, M (MPI)
Agency: NIH/NCI
Funding Period: 04/2008-03/2013
Title: Role of Aberrant Splicing of EVI1 in Ovarian Cancer Pathophysiology
Role: Co-Principal Investigator
The goal of this grant is the functional role of the identified splice forms of EVI1 in ovarian cancer. These studies will (1) determine whether overexpression of aberrantly splice forms of EVI1 contributes to the ovarian cancer initiation, progression, and drug responsiveness; (2) determine whether EVI1 and its splice variants mediate difference cellular effects through regulating the PI3K and TGFβ signaling pathways; and (3) test the hypothesis that splice variants of EVI1 predicts patient outcomes.

Marsha Rivkin Ovarian Cancer Pilot Project Nanjundan, Meera (PI)
Agency: Marsha Rivkin Center for Ovarian Cancer Research
Funding Period: 04/2012-03/2013
Title: Role of Autophagy in the Transition from Endometriosis to Endometriosis-Associated Ovarian Cancers
Role: Principal Investigator
The goal of this grant is to investigate whether endometriosis, an inflammatory gynecological disease, is a “precursor lesion” leading to the development of endometrioid/clear cell ovarian cancers. We will investigate whether “autophagy”, a survival mechanism could be activated in response to iron (a product of heme elevated in endometriotic cysts) and alters cellular survival of endometriotic cells and endometrioid/clear cell ovarian carcinoma cells.

Braverman/Rudnick Family Grant in Ovarian Cancer Research Nanjundan, Meera (PI)
Agency: Women’s Cancer Foundation
Funding Period: 04/2013-03/2014
Title: Role of Autophagy in Endometriosis-Associated Ovarian Cancers
Role: Principal Investigator
The role of autophagy in the development of endometriosis-associated ovarian carcinomas is unknown; however, the links between this survival mechanism and oxidative stress suggests its possible involvement in endometriosis transformation. We propose that persistent exposure to reactive oxygen species (induced by iron elevated in endometriotic cysts) alters autophagic flux thereby regulating the transition from endometriosis to ovarian cancer. In Aim 1, we will test the hypothesis that autophagy is altered from endometriotic (typical and atypical) lesions, to borderline,

and to ovarian clear cell/endometrioid carcinoma tissues. In Aim 2, we will test the hypothesis that autophagy modulates development/transformation of endometriotic lesions using in vivo mouse models. In Aim 3, we will test the hypothesis that modulation of survival in endometriotic cells and endometrioid/clear cell ovarian cancer cells via iron-induced autophagy is dependent on the presence of activated PIK3CA/K-RAS. If the aims are successful, we will (1) improve our understanding of this transition and (2) identify new targets to diminish the burden of these ovarian cancers.

Grants (Pending)

R21HD075225-01A1 Nanjundan, M (PI)
Agency: National Institute of Child & Health Development
Funding Period: 07/2013-06/2015
Title: Role of Autophagy in the Pathogenesis of Endometriosis
Role: Principal Investigator
Overall Impact Score: 25; Percentile: 15%

R21CA178468-01 Nanjundan, M (PI)
Agency: National Cancer Institute
Funding Period: 07/2013-06/2015
Title: Role of Autophagy in the Transition from Endometriosis to Ovarian Cancer
Role: Principal Investigator
To be Reviewed

R03 Nanjundan, M (PI)
Agency: National Cancer Institute
Funding Period: 07/2013-06/2015
Title: Role and Regulation of Stress-Inducible SnoN/SkiL, Located at 3q26.2, to Chemoresponsiveness
Role: Principal Investigator
To be Reviewed

CURRICULUM VITAE

Patrick Christopher Bradshaw

Department of Cell Biology, Microbiology, and Molecular Biology
University of South Florida
4202 E. Fowler Ave. ISA 2015
Tampa, FL 33620

Phone:813-974-6180
Fax: 813-974-1614

EDUCATION

B.S. in Bioengineering, University of Illinois-Urbana,1995
Ph.D. in Biochemistry, The Ohio State University, 2001

ACADEMIC APPOINTMENTS

Assistant professor – University of South Florida 2008-present
Postdoc – University of Wisconsin-Madison 2005-2007
Postdoc – Virginia Tech University 2003 – 2005
Postdoc – University of Missouri-Columbia 2000-2003

CURRENT AND PENDING GRANT SUPPORT

Agency: NIH
Status: PENDING R03
Role in Project: PI
Title: A *C. elegans* RNAi screen to identify genes causing aging-related loss of muscle

Agency: NIH
Status: PENDING R03
Role in Project: PI
Title: High throughput measurement of lifespan in *C. elegans* using redox viability dyes

Agency: NIH
Status: PENDING R15
Role in Project: PI
Title: Nrf2 activators for the treatment of Alzheimer's disease

Agency: NIH
Status: PENDING R03
Role in Project: PI
Title: Metabolic mechanisms of amino acid-mediated lifespan extension in *C. elegans*

PREVIOUS GRANT SUPPORT

Agency: University of South Florida BiTT Center
Status: Complete
Funding period: 5/2009 – 8/2011
Role in Project: PI
Title: Metabolomics and mitochondrial proteomics of Alzheimer's mice brain.

HONORS

NIH postdoctoral training fellowship in Medical Informatics 2001-2003
NIH postdoctoral training fellowship in Aging Research 2005-2007

President of the Ohio State biochemistry graduate student association, 1998-2000
Recipient of the Ohio State University Graduate Fellowship, 1995
Graduated with a B. S. with distinction for conducting undergraduate research, 1995, thesis entitled "Computational studies of ion-water flux coupling in the airway epithelium".

PROFESSIONAL MEMBERSHIPS
Biophysical Society Member 1999-2000
American Medical Informatics Association Member 2002-2003

EDITORIAL DUTIES
Assistant editor - Journal of Alzheimer's Disease 2010-2012

PUBLICATIONS

Edwards, C., Copes, N., Canfield, J., Brito, A., and Bradshaw, P.C. (2013) Malate and fumarate extend lifespan in Caenorhabditis elegans. PLoS ONE (in press).

Dragicevic, N., Delic, V., Cao, C., Copes, N., Lin, X., Mamcarz, M., Wang, L., Arendash, G.W., and Bradshaw, P.C. (2012) Caffeine increases mitochondrial function and blocks melatonin signaling to mitochondria in Alzheimer's mice and cells. Neuropharmacol. 63(8) 1368-79.

Dragicevic, N., Smith, A., Lin, X., Yuan, F., Copes, N., Delic, V., Tan, J., Cao, C., Shytle, R.D., and Bradshaw, P.C. (2011) Green tea epigallocatechin-3-gallate (EGCG) and other flavonoids reduce Alzheimer's amyloid-induced mitochondrial dysfunction. J. Alzheimer's Dis. 26(3):507-21.

Dragicevic, N., Bradshaw, P.C., Mamcarz, M., Lin, X., Cao, C., and Arendash, G.W. (2011) Long-term electromagnetic field (EMF) treatment enhances brain mitochondrial function of both Alzheimer's transgenic mice and normal mice: A mechanism for EMF-induced cognitive benefit? Neurosci. 185:135-49.

Zhu, Y., Hou H, Rezai-Zadeh, K., Giunta, B., Ruscin, A., Gemma, C., Jin, J., Dragicevic, N., Bradshaw, P., Rasool, S., Glabe C.G., Ehrhart J., Bickford P., Mori T., Obregon D., Town T., and Tan J. (2011) CD45 deficiency drives amyloid-{beta} peptide oligomers and neuronal loss in Alzheimer's disease mice. J Neurosci. 31(4):1355-1365.

Dragicevic, N., Copes, N., O'Neal-Moffitt, G, Jin, J., Buzzeo, R., Mamcarz, M., Tan, J., Cao, C., Olcese, J.M. Arendash, G.W. and Bradshaw, P.C. (2011) Melatonin treatment restores mitochondrial function in Alzheimer's mice: A mitochondrial protective role of melatonin membrane receptor signaling. J. Pineal. Res. 51:75-86.

Dragicevic N., Mamcarz, M., Zhu, Y., Buzzeo, R., Tan, J., Arendash, G. A., and Bradshaw, P.C. (2010) Mitochondrial amyloid-β Levels are associated with the extent of mitochondrial dysfunction in different brain regions and the degree of cognitive impairment in Alzheimer's transgenic mice. J. Alzheimers Dis. 20 Suppl 2, S535-50.

Kujoth, G.C., Bradshaw, P.C., Haroon, S., and Prolla, T.A. (2007) The role of mitochondrial DNA mutations in mammalian aging. *PLOS Genet.* 3(2):e24.

Bradshaw, P.C., and Pfeiffer, D.R. (2006) Release of Ca^{2+} and Mg^{2+} from yeast mitochondria is stimulated by increased ionic strength. *BMC Biochem.* 7:4.

Bradshaw, P.C., and Pfeiffer, D.R. (2006) Loss of NAD(H) from swollen yeast mitochondria. *BMC Biochem.* 7:3.

Bradshaw, P.C., and Samuels, D.C. (2005) A computational model of mitochondrial deoxynucleotide metabolism and DNA replication. *Am. J. Physiol.Cell Physiol.* 288, C989-C1003.

Bradshaw, P.C., Li, J., and Samuels, D.C. (2005) A computational model of mitochondrial AZT metabolism. *Biochem. J.* 392, 363-373.

Bradshaw P.C., Rathi A., Samuels D.C. (2005) Mitochondrial-encoded membrane protein transcripts are pyrimidine-rich while soluble protein transcripts and ribosomal RNA are purine-rich. *BMC Genomics.* Sep 26; 6:136.

Jung, D.W., Bradshaw, P.C., Litsky, M., and Pfeiffer, DR (2004) Ca^{2+} transport in mitochondria from yeast expressing recombinant aequorin. *Anal. Biochem*. 324, 258-268.

Bradshaw, P.C., Jung, D.W., and Pfeiffer D.R. (2001) Free fatty acids stimulate a vigorous Ca^{2+}: 2 H^{+} exchange in yeast mitochondria. *J. Biol. Chem.* 276, 40502-40509.

Mannella C.A., Pfeiffer D.R., Bradshaw P.C., Moraru I.I., Slepchenko B., Loew L.M., Hsieh, C.E., Buttle K., Marko M. (2001) Topology of the mitochondrial inner membrane: dynamics and bioenergetic implications. *IUBMB Life* 52, 93-100.

Jung, D.W., Bradshaw, P.C., and Pfeiffer, D.R. (1997) Properties of a cyclosporin- insensitive permeability transition pore in yeast mitochondria. *J. Biol. Chem*. 272, 21104-21112.

PATENTS

Bickford, P., Bradshaw, P., Delic, V., Copes, N., Edwards, C. (submitted March 2012) Mitochondrial uncoupling as a mechanism of NT-020 mediated protection.

Murphy A.N., Jung D.W., Bradshaw, P.C., Sander, T.G., and Pfeiffer D.R. Methods for identifying mitochondrial divalent ion transporters. U.S. patent # 660088.430P1. June, 2000.

INVITED ORAL PRESENTATIONS

Phan, A., Noble, K., Philips, O., Medrano, S., Delic, V., and Bradshaw, P.C. Effects of NT-020 on oxygen consumption, ATP levels, and ROS production in N2a neuroblastoma cells, transformed murine embryonic fibroblasts, mesenchymal stem cells. University of South Florida 10th Annual Undergraduate Research Symposium. April 2012.

University of South Florida, Department of Chemistry Drug Discovery Seminar Series. Using mitochondrial function assays to identify compounds for the treatment of Alzheimer's disease. March 2010.

University of South Florida Undergraduate Research Board. Mitochondria, aging, and Alzheimer's disease. March 2010.

University of South Florida Byrd Alzheimer's Institute. Role of mitochondria in mouse models of Alzheimer's disease. July 2009.

University of Florida Institute on Aging, Department of Aging and Geriatric Research. Mitochondrial DNA mutations and aging. May 2008.

Fifteenth Annual Summer Training Course in Experimental Aging, San Antonio, TX. The role of autophagy and beclin 1 in aging and oxidative damage prevention. June 2007.

POSTER PRESENTATIONS

Edwards, C., Copes, N., Canfield, J., Brito, A., and Bradshaw, P.C. Malate and fumarate extend lifespan in *C. elegans*. Miami 2013 Winter Symposium: The molecular basis of nutrition and metabolism. Miami, FL, Feb. 2013.

Edwards, C., Copes, N., Martinez, O., and Bradshaw, P.C. The effect of malate and other mitochondrial metabolites on the lifespan of *C. elegans*. Keystone Symposium on Mitochondrial Dynamics and Function. Banff, Alberta, Canada, March 2012.

Clare Edwards, Vedad Delic, Neil Copes, Oluwakemi Phillips, Tam-Anh Phan, Stacy Medrano, Kenyaria Noble, Paula Bickford, and Patrick Bradshaw. Does increased mitochondrial uncoupling play a role in the anti-aging properties of neutraceuticals? American Society for Neural Therapy and Repair. Clearwater, FL, April 2012.

Copes, N. and Bradshaw, P.C. Identification of genes that contribute to the development of sarcopenia through whole genome RNAi screening in *C. elegans*. International Conference on Sarcopenia Research, Orlando, FL, December 2012.

Noble, K., Phan, A., Zivkovic, S., Delic, V., and Bradshaw, P.C. Protective effects of AICAR and rapamycin on mitochondrial dysfunction in mouse embryonic fibroblasts modeling premature aging. Annual Biomedical Research Conference for Minority Students, San Jose, CA, Nov. 2012.

Phillips, O., Phan, A., Noble, K., Medrano, S., Zivkovic, S., Delic, V. and Bradshaw, P.C. Restoration of mitochondrial function in Alzheimer's neuroblastoma cells and mitochondrial DNA mutator cells by natural therapeutics and protein kinase modulation. USF Health 2012 Neuroscience Research Day, June 1, 2012 Tampa General Hospital, Tampa, FL.

Noble, K., Medrano, S., Phillips, O., Phan, A., Delic, V., and Bradshaw, P.C. Effects of caffeine and melatonin on ATP and reactive oxygen species production in mouse neuroblastoma cells modeling Alzheimer's disease and mouse embryonic fibroblasts from premature aging mitochondrial DNA mutator mice. USF College of Arts and Science Oktoberfest 2012.

Copes, N., Dragicevic, N., Cao, C., Mamcarz, M., Arendash, G., and Bradshaw, P.C. Caffeine increases mitochondrial function and blocks melatonin signaling to mitochondria in Alzheimer's mice. FASEB Summer Research Conference. Mitochondrial Assembly and Dynamics in Health, Disease, and Aging. Steamboat Springs, CO. July 2011.

Dragicevic, N., Arendash, G., and Bradshaw, P.C. Brain region-specific mitochondrial dysfunction in Alzheimer's disease mice. USF Health Neuroscience Research Day, Tampa General Hospital, June 2009.

Buzzeo, R. and Bradshaw, P.C. Use of Drosophila S2 cells in a highput RNAi screen to identify the mitochondrial calcium uniporter. University of South Florida FCoe-BiTT Center Conference on Drug Design, Discovery, and Delivery. Tampa, FL Oct. 2009.

Dragicevic, N., and Bradshaw, P.C. Autophagy modulates mitochondrial function in murine fibroblasts. Molecular Genetics of Aging, Cold Spring Harbor, NY, Sept. 2008.

Bradshaw, P.C., Kujoth, G.C., Weindruch, R, and Prolla, T.A. Stress sensitivity of mitochondrial DNA polymerase exonuclease-deficient cells in culture. American Aging Association meeting, Boston, MA, June 2006

Bradshaw, P.C., Springer, G.K., and Young, S.L. Endomebase: a gene and protein expression database for the endometrium. American Medical Informatics Assoc. Symposium, San Antonio, TX, Nov. 2002.

Bradshaw, P.C., Jung, D.W., Litsky, M., Pfeiffer, D.R. Targeted aequorin for the study of mitochondrial Ca^{2+} transport in yeast. Biophys. Soc. Meeting, New Orleans, LA, Feb 2000.

Bradshaw, P.C., Jung, D.W., Pfeiffer, D.R. Characterization of a permeability transition pore in yeast mitochondria. Frontiers of Mitochondrial Research, Albany, NY, Sept. 1998.

AD-HOC REVIEWER

Neuroscience
Mitochondrion
Journal of Alzheimer's Disease
Free Radical Biology and Medicine
The International Journal of Neuroscience
Neurochemistry International
PLoS ONE
Biochemical Journal
Biochimica Biophysica Acta

UNIVERSITY AND COLLEGE COMMITTEES

School of Natural Sciences and Mathematics Core Facilities Committee
College of Arts and Sciences Grievance Committee

GRADUATE STUDENTS AND POSTDOCS

Natasa Dragicevic, M.D. – postdoc	2009-2010
Robert Buzzeo- M.S. student	2009-2010
Neil Copes – Ph.D. student	2009-present
John Duncan M.S. student	2010-2012
Vedad Delic – Ph.D. student	2011-present

Clare Edwards – Ph.D student 2011-present
Oluwakemi Phillips – M.S. student 2011-2012

FORMER UNDERGRADUATE RESEARCHERS
Monica Gutierrez is currently a Ph.D. student at Duke University
Chase Powell is currently a Ph.D. student at USF.
Jamie Mendez is currently a M.S. student at USF.
Clare Edwards is currently a Ph.D. student at USF.
Eva Chase (deceased) was a Ph.D. student at USF.
Judy Delgado is currently a dental student at Nova Southeastern University.
Jonathan Duane is currently applying for anesthesiology assistant school.
Michael Epp is currently a medical student at the University of South Florida.
Xizheng Xu is currently a medical student at the University of Missouri-Columbia.
Jane Thai is currently awaiting admission into pharmacy school.
Stacy Medrano has applied to medical school and is awaiting admission.

CURRENT UNDERGRADUATE RESEARCHERS
Samuel Lee
Mariam Saifee
Iosef Barjuca
Andres Brito
Daniel Nelson
Lindsay Cash
Nevin Vijay
John Canfield
Tam Anh-Phan
Yumeng Zhang
Kenyaria Noble
Sandra Zivkovic
Charles Claybaker
Phucien Ta

CURRICULUM VITAE

PETER ANTHONY VANDENBERGH

HOME ADDRESS: 1803 S. Waterbird Pt.
Crystal River, Florida 34429
352-563-6590

EDUCATION:

Institution	Major	Degree
Wayne State University	Biology	B.S.
Wayne State University	Biology	M.S.
Wayne State University	Immunology-Medical Microbiology	Ph.D.
University of Michigan	Microbiology	Post Doctoral

PROFESSIONAL SOCIETY:

American Society for Microbiology

EMPLOYMENT

August 2011 to present	Instructor University of South Florida Department of Cell Biology, Microbiology and Molecular Biology 4202 East Fowler Ave Tampa, Fl. 33620
August, 2006 – 2011	Visiting Instructor University of South Florida Department of Cell Biology, Microbiology, and Molecular Biology 4202 East Fowler Ave Tampa, Fl. 33620
July, 1994 - 2006	Vice President Science (Owner) Osprey Biotechnics Sarasota, Fl.

January, 1990 - 1994	Director of Research and Development, Quest International Bioproducts Group Sarasota, Fl.
January, 1984 - 1989	Director of Research, Microlife Technics. Sarasota, Fl.
August, 1981 - 1983	Microbial Geneticist, Microlife Genetics. Sarasota, Fl.
May, 1979 - 1981	Postdoctoral Scholar, University of Michigan, Research: 1) Isolation and characterization of plasmids 2) Genetic studies of plasmid associated properties 3) Molecular cloning of genetic properties Advisor: Ronald H. Olsen, Ph.D.
August, 1975 - 1979	Graduate Research Assistant, Wayne State University, Research: 1) Characterization and Purification of Rhodanese (thiosulfate: cyanide sulfurtransferase) Advisor: Richard S. Berk, Ph.D.

TEACHING EXPERIENCE:

1) University of South Florida, Visiting Instructor.
   Courses taught:
   BSC 2010 Biology I-Cellular Processes
   MCB 3020C General Microbiology
   MCB 4115C Determinative Bacteriology

MCB 4313 Industrial Microbiology and Biotechnology
MCB 4503 Virology
BSC 5933 Virology (Graduate section)

2) Course Coordinator for Molecular Microbiology, New College, University of South Florida.

3) University of Michigan Medical School
Micro 620, Medical Microbiology for Medical Students

4) Wayne State University School of Medicine
Medical Microbiology for Medical Students

5) Schoolcraft College
Instructor of Microbiology

PUBLICATIONS

Papers:

1. Vandenbergh, P.A., R.E. Bawdon and R.S. Berk. 1979. Rapid Test for Determining the Intracellular Rhodanese Activity of Various Bacteria. Int. J. of Sys. Bact. 29:339-344.

2. Vandenbergh, P.A. and R.S. Berk. 1980. The Purification and Characterization of Rhodanese (thiosulfate: cyanide sulfurtransferase) from *Acinetobacter calcoaceticus*. Can. J. of Microbiol. 26:281-286.

3. Vandenbergh, P.A., R.H. Olsen and J.F. Colaruotolo. 1981. Isolation and Genetic Characterization of Bacteria that Degrade Chloroaromatic Compounds. Appl. Environ. Microbiol. 42:737-739.

4. Vandenbergh, P.A., S.A. Syed, C.F. Gonzalez, W.J. Loesche and R.H. Olsen. 1982. Plasmid Content of Some Oral Microorganisms Isolated from Subgingival Plaque. J. of Dent. Res. 61:497-501.

5. Vandenbergh, P.A., C.F. Gonzalez, A.M. Wright and B.S. Kunka. 1983. Iron Chelating Compounds Produced by Soil Pseudomonads and Correlation with Inhibition of Fungal Growth. Appl. Environ. Microbiol. 46:128-132.

6. Vandenbergh, P.A. and A.M. Wright. 1983. Plasmid Involvement in Acyclic Isoprenoid Metabolism by *Pseudomonas putida*. Appl. Environ. Microbiol. 45:1953-1955.

7. Vandenbergh, P.A., A.M. Wright and Anne K. Vidaver. 1985. Partial Purification and Characterization of a Polysaccharide Depolymerase Associated with Phage-Infected *Erwinia amylovora*. Appl. Environ. Microbiol. 49:994-996.

8. Vandenbergh, P.A. and R.L. Cole. 1986. Cloning and Expression in Escherichia coli of the Polysaccharide Depolymerase Associated with Phage-Infected *Erwinia amylovora*. Appl. Environ. Microbiol. 51:862-864.

9. Vandenbergh, P.A. and R.L. Cole. 1986. Plasmid Involvement in Linalool Metabolism by *Pseudomonas fluorescens*. Appl. Environ. Microbiol. 52:939-940.

10. Vandenbergh, P.A. and R.L. Cole. 1986. Tn 1721 - Induced Mutation in an Isoprenol Degrading Plasmid from *Pseudomonas putida*. J. Indust. Microbiol. 1:271-274.

11. Vandenbergh, P.A. and B.S. Kunka. 1988. Metabolism of volatile chlorinated Aliphatic Hydrocarbons by Pseudomonas *fluorescens*. Appl. Environ. Microbiol. 54:2578-2579.

12. Pucci, M.J., E.R. Vedamuthu, B.S. Kunka and P.A. Vandenbergh. 1988. The inhibition of *Listeria monocytogenes* by using bacteriocin PA-1 produced by *Pediococcus acidilactici* PAC1.0. Appl. Environ. Microbiol. 54:2349-2353.

13. Marugg, J.D., A.M. Ledeboer, M.A. Toonen, L.C. Zoetmulde B.S.Kunka, S.A. Walker, M.J. Pucci, C.F. Gonzalez and P.A. Vandenbergh. 1992. Cloning, Expression and Nucleotide Sequence of Genes Involved in Production of Pediocin PA-1 a Bacteriocin from *Pediococcus acidilactici* PAC 1.0. Appl. Environ. Microbiol. 58:2360-2367.

14. Vandenbergh, P.A. 1993. Lactic Acid Bacteria, their products and interference with microbial growth. FEMS Microbiol. Rev. 12:221-237.

15. Moineau,S.,S.A.Walker,E.R.Vedamuthu and P.A. Vandenbergh 1995. Cloning and sequencing of LlaII restriction/modification genes from *Lactococcus lactis* and it's relatedness to *Streptococcus pneumoniae* DpnII system. 1995. Appl. Environ. Microbiol. 61: 2193-2202.

16. Moineau,S.,S.A.Walker, B.J. Holler, E.R. Vedamuthu and P.A. Vandenbergh. 1995 Expression of phage resistance mechanism from *Lactococcus lactis* into *Streptococcus thermophilus*. Appl. Environ. Microbiol.61: 2461-2466

17. Moineau,S.,M. Borkaev, B.J. Holler, S.A. Walker,J.K. Kondo, E.R. Vedamuthu and P.A. Vandenbergh. 1997. Isolation and characterization of Lactococcal bacteriophages from cultured buttermilk plants in the United States. Journal of Dairy Science.79: 2104-2111

18. Emond, E.,B.J. Holler, I. Boucher, P.A. Vandenbergh, E.R. Vedamuthu, J.K.Kondo, and S. Moineau. 1997. Phenotypic and genetic characterization of the bacteriophage abortive infection mechanism AbiE from *Lactococcus lactis*. Appl. Environ. Microbiol. 63: 1274-1283.

Chapters:

1. Microbial Biodegradation. McGraw-Hill Encyclopedia of Science and Technology 7th edition. 1991. New York, NY.

2. Degradative Bacteria. Microbial Ecology: Principles, Methods and Applications to Environmental Biotechnology. 1991. McGraw-Hill. New York, NY. pp. 799-804.

3. Growth of a Bacterial Isolate on the Branched Hydrocarbon Linalool. The Ohio Science Workbook: Biotechnology. 1993. The Ohio Academy of Science, Columbus, OH. pp. 142-144.

PATENTS

U.S. Patents

Patent Number

1. 4,477,570
2. 4,493,895 — Microbiol Degradation of Obnoxious organic wastes into Innocuous Materials. (1984,1985) (J.F. Coaruotolo, R.H. Olsen & P.A. Vandenbergh)

3. 4,452,894 — Utilization of Chloroaromatic Compounds by Bacteria. (1984) (R.H.Olsen & P.A.Vandenbergh)

4. 4,479,936 — Improved Method for Protecting the Growth of Plants. (1984) (P.A. Vandenbergh & C.F. Gonzalez)

5. 4,593,003 — Bacterial Method for Compositions for Isoprenoid Degradation. (1986) (P.A. Vandenbergh)

6. 4,678,750
7. 4,783,406 — Methods and Compositions for Use in the Treatment of Fireblight. (1987) (1988) (P.A. Vandenbergh & A.K. Vidaver)

8. 4,822,740 — Cloned Phage Depolymerase. (1989) (P.A. Vandenbergh)

9. 4,956,177 — Lactobacillus for Inhibition of Mold. (1990) (S.W. King, G.G. Fowler & P.A. Vandenbergh)

10. 4,800,158
11. 4,870,012 — Bacterial Method and Compositions for Linalool Degradation. (1989) (1989) (P.A. Vandenbergh)

12. 4,910,143 — Bacterial Method and Compositions for Degrading Hydrocarbons. (1990) (P.A. Vandenbergh)

13. 4,877,615 — Process for Producing a Novel Antifungal

14. 4,906,611
15. 5,965,414
16. 6,277,374

Product. (1989) (1990) (P.A. Vandenbergh & B.S. Kunka)

17. 4,929,445

Method for Inhibiting *Listeria monocytogenes* Using a Bacteriocin. (1990) (P.A. Vandenbergh, M.J. Pucci, B.S. Kunka & E.R. Vedamuthu)

18. 4,942,032

Purification and Characterization of Antifungal Compounds from Lactic Acid Bacteria. (1990) (P.A. Vandenbergh & B.S. Kunka)

19. 4,853,334

Method for the Degradation of Volatile Chlorinated Aliphatic Hydrocarbons using *Pseudomonas fluorescens*. (1989) (Vandenbergh & Kunka)

20. 5,702,923
21. 5,817,362
22. 5,877,272

Method for Inhibiting Bacteria Using a Novel Lactococcal Bacteriocin.(1997),(1998),(1999) P.A.Vandenbergh,S.A.Walker,B.S.Kunka).

23. 5,817,357

Food Composition incorperating a novel lactococcal bacteriocin.(1998) (P.A.Vandenbergh,S.A.Walker, B.S. Kunka)

24. 5,175,252
25. 5,260,212

Cloned Gene Encoding for Bacteriocin from *Pediococcus acidilactici*. (1992) (1993) (J.D. Marugg, A.M. Ledeboer, P.A. Vandenbergh & J.T. Henderson)

26. 5,348,881

Construction of a multiple bacteriocin producing *Lactococcus lactis*. (1994) (E.R. Vedamuthu & P.A. Vandenbergh)

27. 5,861,376

Synthetically Derived Peptide.(1999)(J.T. Henderson & P.A. Vandenbergh)

28. 5,814,499
29. 5,824,523
30. 5,928,688
31. 5,925,388
32. 5,972,673

DNA Encoding phage abortive infection protein from *Lactococcus lactis* and method of use thereof.(1998) (1998) (1999) (1999) (Moineau & Vandenbergh)

33. 5,980,747 Storage stable pseudomonas compositions and method of use thereof. (1999) (Vandenbergh & Kunka)

34. 6,068,774 6,344,141 Biological control of agricultural waste odor. (2000, 2002)(Vandenbergh & Trivedi)

35. 6,762,047 B2 Bacterial parts washer composition and method of use (2004) (Vandenbergh)

36. 7,341,863 B2 Method for the degradation of MTBE and TBA (2008) (Vandenbergh)

37. 8,187,862 B2 Bioremediation Methods (2012) (Saul, Torres and Vandenbergh)

ABSTRACTS

1. Vandenbergh, P.A. and R.S. Berk. 1979. The Purification and Characterization of Rhodanese (thiosulfate: cyanide sulfurtransferase) from *Acinetobacter calcoaceticus*. 79th Annual Meeting, American Society for Microbiology.

2. Vandenbergh, P.A., C.F. Gonzalez, S.A. Syed, W.J. Loesche and R.H. Olsen. 1980. Novel Plasmids from Oral Bacteria Associated with Periodontal Disease. 8Oth Annual Meeting, American Society for Microbiology.

3. Vandenbergh, P.A. 1990. The Role of Bacteriocin in the Ex- tension of the Shelf Life of Food. Suncoast Biotech. Conference.

4. Vandenbergh, P.A. 1991. Pediocin PA-1 Produced by *Pediococcus acidilactici*. Society of Industrial Microbiology.

5. Moineau, S.M., M. Borkaev, S. Walker, E. Vedamuthu and P.A. Vandenbergh 1994. Novel starter rotation system based on phage species sensitivity. Journal Of Dairy Science 77:18

6. Emond, E.,B. Holler, P.A. Vandenbergh, E. Vedamuthu, J. Kondo and S. Moineau. 1996. A Novel Phage Abortive Infection Mechanism in *Lactoccus lactis*. FEMS Microbiol Rev.

PROCEEDINGS OF SYMPOSIA

1. Lactic Acid Bacteria Research in Canada, 1993. Canadian Agri-Food Research Council CARC. Secretariat, Ottawa, Ontario
Pg. 135-146 Pediocin PA-1

INVITED PRESENTATIONS

1983 University of Florida, Agricultural Research Center, Bradenton, FL. "Genetic Engineering of Degradative Bacteria."

1984 Application of Biotechnology to the Food Industry. IFT Conference, Paramus, NJ. "Biotechnology as Applied to Food Processing."

1986 10th Annual Mid-Atlantic Extrachromosomal Elements Meeting, Virginia Beach, VA. "The Use of Gram negative Bacteria and Their Plasmids in Waste Water Treatment.

1990 Suncoast Biotech Conference, Tampa, FL. "The Role of Bacteriocin in the Extension of the Shelf Life of Food."

1990 Michigan Biotechnology Institute, Lansing, MI. "The Role of Bacteriocins in the Extension of the Shelf Life of Foods."

1991 Society of Industrial Microbiology Annual Meeting, Philadelphia, PA. "Pediocin PA-1 Produced by Pediococcus acidilactici."

1993 Natural Antimicrobials Conference, Sharnbrook, Bedford, England. "Practical Aspects of Bacteriocin Production."

1993 Lactic Acid Bacteria Research in Canada, Edmonton, Alberta, Canada. "Pediocin PA-1."

1993 Lactic Acid Bacteria, Genetics, Metabolism and Applications, 4th Symposium. Noordwijkerhout, The Netherlands. "Lactic Acid Bacteria, Their Metabolic Products and Interference with Microbial Growth."

1994 Lactic acid Bacteria and their Metabolic Products.Ciba Vision. Duluth, Georgia

PROFESSIONAL ACTIVITIES

1986	Ad hoc reviewer, Appl. Environ. Microbiol.
1987 - 1989	Ad hoc reviewer, Plasmid.
1987 - 1989	Ad hoc reviewer, Center for Innovative Technology Institute of Biotechnology, Virginia Commonwealth University.
1988 - 1992	Ad hoc reviewer, Florida High Technology and Industry Council. (Biotechnology Sub-Committee).
1999-	Ad hoc Reviewer,Journal of Dairy Science.

REFERENCES

Available on request

Curriculum Vitae

SAMEER VARMA, PhD

Phone: 813-974-9288
E-mail: svarma@usf.edu
Lab website: http://labs.cas.usf.edu/cbb/

WORK EXPERIENCE

Assistant Professor
Department of Cell, Micro and Molecular Biology
University of South Florida, Tampa, FL

Research Assistant Professor, 2009 – 2011
Department of Chemistry
Illinois Institute of Technology, Chicago, IL

Post-Doctoral Fellow, 2005 – 2009
Sandia National Laboratories, Albuquerque, NM

EDUCATION

PhD Biophysics, 2005
University of Illinois at Urbana-Champaign

Integrated M. Sc. Physics, 1999
Indian Institute of Technology

HONORS / AWARDS

- R&D 100 award for developing novel water desalination membrane, 2011
- Fellow, Institute for Pure & Applied Math, University of California Los Angeles, Spring 2011
- AAAS Donald J. Nash Memorial award, 2008
- Sandia Science & Technology achievement award, 2007
- New and Notable research, American Biophysical Society, 2007
- University of Illinois graduate fellowship, 1999

RESEARCH FUNDING

- Co-PI on DoE/LDRD grant ($100,000) to determine the molecular mechanisms underlying potassium channel block, 2007-2008.
  Collaborator: Dr. Susan Rempe (Sandia Natl. Labs.), External Advisor: Prof. D. Minor (UCSF)
- PI on computer time grant funded by NSF XSEDE, 2012.

TEACHING

- Computational Biology, University of South Florida, 2012
  Student Rating: 4.8/5.0
- Molecular Biology of the Cell, University of South Florida, 2012
  Student Rating: 4.7/5.0

- Physical Chemistry II, Illinois Institute of Technology, 2010
  Student Rating: 4.4/5.0

INVITED LECTURES

- Fritz Haber Institute, Max Planck Society, Berlin, Germany, 2012
- Department of Computer Science, Technische Universität Berlin, Germany 2012
- Workshop on Chemical Compound Design, Lake Arrowhead, 2012
- Workshop on Computational Methods in Drug Design, University of California Los Angeles, 2011
- Department of Medicine, University of Illinois, Chicago, 2010
- NIH Roadmap for Medical Research Annual Meeting, Asilomar, 2010
- Biology Division, Illinois Institute of Technology, Chicago, 2010
- Rib-X Pharmaceuticals, New Haven, 2008
- World Association of Theoretical and Computational Chemists, Sydney, 2008
- Center for Cellular and Molecular Biology, Hyderabad, India, 2008
- Center for Biophysics, Rush Medical University, Chicago, 2007
- Computational Methods Workshop, Annual Biophysical Society Meeting, Baltimore, 2007
- NIH Roadmap for Medical Research Annual Meeting, Bethesda, 2006
- Department of Medicine, University of Texas Medical Branch at Galveston, 2006
- Dept. of Computer Science, University of Illinois, Urbana-Champaign, 2005

EXTERNAL COLLABORATORS

- Joseph Orgel, Illinois Institute of Technology, Chicago
- Matteo Porotto, Cornell University, New York
- David Bostick, University of Pennsylvania
- Anatole von Lilienfeld, Argonne National Laboratories, Chicago
- Lawrence Pratt, Tulane University
- Susan Rempe, Sandia National Laboratories, Albuquerque
- Jay Schieber, Illinois Institute of Technology, Chicago
- H. Larry Scott, Illinois Institute of Technology, Chicago
- Alexander Tkatchenko, Fritz Haber Institute, Max Plank Society, Berlin

PUBLICATIONS (450+ citations)

Accepted/Submitted

1. M. Rossi, A. Tkatchenko, SB Rempe and **S. Varma***, Role of methyl-induced polarization in ion binding. *Submitted.*
2. R.E. Leighty and **S. Varma***, Quantitative characterization of intrinsic molecular motion using support vector machines. J Chem. Theory and Comput. Published Online, 2012.

3. **S. Varma***, M. Teng & H. Larry Scott, Non-intercalating contact points create asymmetry between bilayer leaflets. Langmuir 28: 2842-2848, 2012.
4. **S. Varma,** D.M. Rogers, L.R. Pratt & S.B. Rempe, Perspectives on: Ion selectivity Design principles for K+ selectivity in membrane transport. J Gen. Physiol. 137: 479-488, 2011. *Invited Review*
5. **S. Varma*** & S.B. Rempe, Multi-body effects in ion binding and selectivity. Biophys. J, 99: 3394-3401, 2010.
6. D. Asthagiri, P.D. Dixit, S. Merchant, M.E. Paulaitis, L.R. Pratt, S.B. Rempe & **S. Varma***, Ion selectivity from local configuration of ligands in solutions and ion channels. Chem. Phys. Letts. 485: 1-7, 2010. *Cover Article*
7. **S. Varma*** & S.B. Rempe, Structural transitions in ion coordination driven by changes in competition for ligand binding. J Amer. Chem. Soc. 130, 15405-15419, 2008.
8. D. Sabo, **S. Varma,** M. Martin & S.B. Rempe, Studies of the thermodynamic properties of hydrogen gas in bulk water. J Phys. Chem. B.112, 867-876, 2008.
9. **S. Varma**, D. Sabo & S.B. Rempe, K^+/Na^+ selectivity in K-channels and Valinomycin: Over-coordination Vs Cavity-size constraints. J Mol. Biol. 376, 13-22, 2008.
10. T. Whitfield, **S. Varma**, E. Harder, G. Lamoureux, S.B. Rempe & B. Roux, Theoretical Study of Aqueous solvation of K^+: Comparison of *ab initio*, polarizable and fixed charge models. J Chem. Theo. & Comput. 3, 2068-2082, 2007.
11. **S. Varma** & S.B. Rempe, Tuning ion coordination architectures to enable selective partitioning. Biophys J. 93, 1093-1099, 2007. *Published as a New and Notable article with perspective written by Peter C. Jordan.*
12. **S. Varma** & E. Jakobsson, The $cPLA_2$ C2α Domain in Solution: Structure and Dynamics of its Ca^{2+}-activated and Cation-free States. Biophys. J., 92, 966-976, 2007.
13. **S. Varma** & S.B. Rempe, Coordination numbers of alkali metal ions in aqueous solutions. Biophys. Chem., 124, 192-199, 2006.
14. **S. Varma**, S. W. Chiu & E. Jakobsson, The influence of amino acid protonation states on molecular dynamics simulations of a bacterial porin OmpF. Biophys. J., 90, 112-123, 2006.
15. N.J. Malmberg, **S. Varma**, E. Jakobsson and J.J. Falke, Ca^{2+} Activation of the $cPLA_2$ C2 Domain: Ordered Binding of Two Ca^{2+} Ions with Positive Cooperativity. Biochemistry, 43, 16320-16328, 2004.
16. S. Natarajan, **S. Varma**, Y. Tang, S. Parker, J. Mashl & E. Jakobsson, Toward an Integrated Computational Environment for Multiscale Computational Design of Nanoscale Ion Channel Semiconductors, ICCN, 1, 147-150, 2004.
17. **S. Varma** & E. Jakobsson, Ionization states of residues in OmpF and Mutants: Effects of Dielectric Constant & Interactions between Residues. Biophys. J., 86, 690-704, 2004.
18. T. van der Straaten., **S. Varma**, C-W Chiu, Y. Tang, N.R. Aluru, R. Eisenberg, U. Ravaioli & E. Jakobsson, Combining Computational Chemistry and Computational Electronics to Understand Protein Ion Channels. ICCN, 2, 60-63, 2002.

Sandy Westerheide

University of South Florida
Department of Cell Biology,
Microbiology and Molecular Biology
4202 East Fowler Ave, ISA 2015
Tampa, FL 33620

Telephone: 813-974-7269
Fax: 813-974-5538
Email: swesterheide@usf.edu

EDUCATION

Emory University, Atlanta, GA
Ph.D., Program in Genetics and Molecular Biology, 1992-1998
Graduate research with Dr. Jeremy Boss
Project: Transcriptional activation of Class II MHC genes

Rice University, Houston, TX
Bachelor of Arts, Biology, 1988-1992
Undergraduate research with Dr. Michael Stern, 1991-1992
Project: Restriction fragment length polymorphism mapping of the Drosophila inebriated gene

POSITIONS AND EMPLOYMENT

University of South Florida
Assistant Professor, Department of Cell Biology, Microbiology and Molecular Biology, 2010-present

Northwestern University, Evanston, IL
Postdoctoral fellow with Dr. Richard Morimoto, 2002–2009
Project: Mechanisms of regulation of the heat shock transcription factor HSF1

University of North Carolina, Chapel Hill, NC
Postdoctoral fellow with Dr. Albert Baldwin, 1998-2002
Project: Mechanisms of regulation of the transcription factors NF-□B and Bcl-3

AWARDS

- National Institute of Health Postdoctoral Training Grant, Northwestern University, 2002-2004
- American Cancer Society Postdoctoral Fellowship, 1999-2002
- National Institute of Health Postdoctoral Fellowship, 1999 (declined)
- National Institute of Health Postdoctoral Training Grant, University of North Carolina, 1998-1999
- National Institute of Health Predoctoral Training Grant, Emory University, 1993-1995
- National Merit Scholarship, 1988-1992

PUBLICATIONS

Joseph Foley, Shannon E. Hill, Tatiana Miti, Mentor Mulaj, Marissa Ciesla, Rhonda Robeel, Christopher Persichilli, Rachel Raynes, **Sandy D. Westerheide** and Martin Muschol. Structural Fingerprints of Intermediates Formed During Oligomeric *vs.* Oligomer-free Lysozyme Fibril Growth. *Journal of Molecular Biology*. ***Submitted.***

Rachel Raynes, Kathleen M. Pombier, Kevin Nguyen, Jessica Brunquell, Jamie E. Mendez, and **Sandy D. Westerheide**. The SIRT1 modulators AROS and DBC1 regulate HSF1 activity and the heat shock response. *PLOS ONE.* ***2013.*** 8(1):e54364.

Rachel Raynes, Bruce Leckey, Kevin Nguyen and **Sandy D. Westerheide**. Heat Shock and Caloric Restriction have a Synergistic Effect on the Heat Shock Response in *C. elegans. J Biol Chem*. **2012**. 287(34):29045

Sandy D. Westerheide, Rachel Raynes, Chase Powell, Bin Xue, and Vladimir N. Uversky Characterization of HSF as an intrinsically disordered transcription factor family. *Current Protein and Peptide Science.* ***2012.*** 13(1):86. Review.

Sandy D. Westerheide, Julius Anckar, Stanley Stevens, Lea Sistonen and Richard I. Morimoto. Stress-Inducible Regulation of Heat Shock Factor 1 by the Deacetylase SIRT1. *Science,* **2009***.* 323(5917):1063

- Highlighted in Perspectives section of *Science,* 2009. 323(5917):1021
- Featured in Wired Magazine, February 19, 2009
- Selected by *Faculty of 1000* as a Must Read, F1000 Factor 6.6
- Article in Science News, March 14, 2009

Richard I. Morimoto and **Sandy D. Westerheide**. The heat shock response and the stress of misfolded proteins in the *Handbook of Cell Signaling*. Ralph Bradshaw and Edward Dennis, editors. (Elsevier, Inc., San Diego, California). **2009.**

Amy Trott, James D. West, Lada Klaic, **Sandy D. Westerheide**, Richard B. Silverman, Richard I. Morimoto and Kevin A. Morano. Simultaneous activation of heat shock and oxidative stress pathways by celastrol. *Mol Biol Cell*, **2008**. 19(3):1104

Sandy D. Westerheide, Tiara L. Kawahara, Kai Orton and Richard I. Morimoto. Triptolide, an inhibitor of the human heat shock response that enhances stress-induced cell death. *J Biol Chem*, **2006.** 281(30):21575

Sandy D. Westerheide and Richard I. Morimoto. Heat shock modulators as therapeutic tools for diseases of protein conformation. *J Biol Chem*, **2005**. 280(39):33097

Sandy D. Westerheide, Joshua D. Bosman, Bessie N. A. Mbadugha, Tiara L. A. Kawahara, Gen Matsumoto, Soojin Kim, Wenxin Gu, John P. Devlin, Richard B. Silverman, and Richard I. Morimoto. Celastrols as inducers of the heat shock response and cytoprotection. *J Biol Chem*, **2004.** 279(53):56053

Marty W. Mayo, Lee V. Madrid, **Sandy D. Westerheide**, David R. Jones, Xiu-Juan Yuan, Albert S. Baldwin, Jr. and Young E. Whang. PTEN blocks TNF-induced NF-□B-dependent

transcription by inhibiting the transactivation potential of the p65 subunit. *J Biol Chem*, **2002**. 277(13):11116

Sandy D. Westerheide, Marty W. Mayo, Vasiliki Anest, Julie L. Hanson and Albert S. Baldwin, Jr. The putative oncoprotein Bcl-3 induces cyclin D1 to stimulate G1 transition. *Mol Cell Biol,* **2001**. 21(24):8428

Sam J. Gobin, M. van Zutphen, **Sandy D. Westerheide**, Jeremy M. Boss, Peter J. van Den Elsen. The MHC-specific enhanceosome and its role in MHC Class I and beta(2)-microglobulin gene transactivation. *J Immunol*, **2001.** 167(9):5175

Brian P. Ashburner, **Sandy D. Westerheide**, Albert S. Baldwin, Jr. The p65 (RelA) subunit of NF-κB interacts with the histone deacetylase (HDAC) corepressors HDAC1 and HDAC2 to negatively regulate gene expression. *Mol Cell Biol*, **2001.** 21(20):7065

Dan Wang , **Sandy D. Westerheide**, Julie L. Hanson, Albert S. Baldwin, Jr. Tumor necrosis factor alpha-induced phosphorylation of RelA/p65 on Ser529 is controlled by casein kinase II. *J Biol Chem*, **2000.** 275(42):32592-7.

Sandy D. Westerheide and Jeremy M. Boss. Site-specific crosslinking mapping of RFX and X2BP transcription factor subunits of the Major Histocompatibility Complex Class II transcriptional enhancer. *Nucleic Acids Research*, **1999.** 27(7):1635

Sandy D. Westerheide, Pascale Louis-Plence, Dongsheng Ping, Xiao Fe He, and Jeremy M. Boss. HLA-DMA and HLA-DMB gene expression functions through the conserved S-X-Y region. *Journal of Immunology*, **1997.** 158:4812

James L. Riley, **Sandy D. Westerheide**, Jennifer A. Price, Jeffrey A. Brown, and Jeremy M. Boss. Activation of Class II MHC genes requires both the X box region and the Class II Transactivator (CIITA). *Immunity*, **1995.** 2:533

Jeffrey A. Brown, Xiao Fe He, **Sandy D. Westerheide**, and Jeremy M. Boss. Characterization of the expressed CIITA allele in the class II MHC transcriptional mutant RJ2.2.5. *Immunogenetics,* **1995**. 43:88

Gino Van Heeke, **Sandy J. Denslow**, Jill R. Watkins, KJ Wilson, and FW Wagner. Cloning and nucleotide sequence of the Vibrio proteolyticus aminopeptidase gene. *Biochim Biophys Acta,* **1992**. 1131:337

GRANTS

Funded

Southern California Water Board (Co-PI, Share: 14%)
07/01/2011 – 06/30/2013
Title: Evaluating bioanalytical methods as screening tools for monitoring of CECs in California recycled water applications.

In Review

University of South Florida Internal Award
Submitted Feb 5, 2013
Title: Investigation of the requirement of HSF1 in the development and chemoresistance of ovarian cancer

NIH/National Institute of Aging
(Co-investigator)
RO1
07/01/2013 – 06/30/ 2018
Title: HDAC6 as a therapeutic target for Alzheimer's Disease

NIH/National Institute of General Medicine
(PI, Multi-PI 3 yr proposal)
RO1
07/01/2013 – 06/30/ 2016
Title: A high-throughput assay for small molecule proteostasis regulators in *C. elegans.*

NIH/National Cancer Institute (PI)
R15/AREA
07/01/2013 – 06/30/ 2016
Title: Investigation of the requirement of HSF1 in the development and chemoresistance of ovarian cancer

NSF Preproposal
Submitted Jan 18, 2013
Title: Network analysis of the heat shock response in *C. elegans*
01/01/2014- 12/31/2016

CONFERENCE PRESENTATIONS AND LECTURES

The regulation of HSF1 and the Heat Shock Response by SIRT1. Molecular Oncology Research-in-Progress Seminars. (Invited by Dr. Ed Seto and Dr. Jack Pledger, Moffitt) **2012**

Regulation of heat shock transcription factor HSF1 by SIRT1. Biology Department, University of Florida, seminar series. (Invited by Keith Choe) **2012**

Regulation of heat shock transcription factor HSF1 by SIRT1. Integrative Biology Departmental Seminar Series. (Invited by Christina Richards) **2012**

The heat shock transcription factor HSF1: Regulating the Regulator. University of Tampa Biology Department seminar series. (Invited by Daniel Huber) **2011**

Heat Shock Transcription Factor HSF1: Regulating the Regulator. USF Department of Molecular Medicine Seminar Series. (Invited by Andreas Seyfang) **2010**

Heat Shock Transcription Factor HSF1: Regulating the Regulator. Neuroscience Department. University of Florida, Gainesville, FL. (Invited by David Borchelt) **2009**

SIRT1 regulates the activity of human HSF1. *Jacques-Monod Conference: New Ideas for an Old Family: HSFs at Crossroads between Stress, Epigenetics, and Development.* Roscoff, France. Oral presentation. (Invited by Lea Sistonen) **2008**

SIRT1 regulates the activity of human HSF1. *Biochemistry, Molecular Biology and Cellular Biology Department Retreat*, Northwestern University. **2008**

SIRT1 regulates the activity of human HSF1*. Midwest Stress Response and Chaperone Meeting*. Evanston, IL. **2008**

Regulation of the mammalian heat shock transcription factor HSF1 by small molecule modulators and post-translational modification. *The University of Florida Department of Physiological Sciences Fall Seminar Series*. (Invited by Nancy Denslow) **2006**

The role of acetylation on the hsp70 promoter. *Gordon Research Conference: Stress Proteins in Growth, Development and Disease*. Newport, RI. **2005**

Small molecule modulators of the heat shock response. *Midwest Stress Response and Chaperone Meeting*. Evanston, IL. **2005**

Small molecule modulators of the heat shock response. *First International Congress on Stress Responses in Biology*. Quebec City, Canada. (Invited by Peter Csermely) **2003**

Heat shock response inducers as therapeutic tools. *Gordon Research Conference: Stress Proteins in Growth, Development and Disease*. Oxford, England. **2003**

Small molecule modulators of the heat shock response. *Biochemistry, Molecular Biology and Cellular Biology Department Retreat*, Northwestern University. **2003**

POSTER PRESENTATIONS

Rachel Raynes, Kathleen M. Pombier, Kevin Nguyen, Jessica Brunquell, Jamie E. Mendez and **Sandy D. Westerheide**. The SIRT1 modulators AROS and DBC1 regulate HSF1 activity and the heat shock response. Midwest Stress Meeting **2013.**

Chase Powell and **Sandy D. Westerheide**. HSF1 is Vital for Ovarian Cancer Epithelial-Mesenchymal Transition. Midwest Stress Meeting **2013.**

Jamie Mendez, Beatriz Beach and **Sandy D. Westerheide**. Uncovering Novel *S. cerevisiae* HSF1 Interacting Partners via a Genome-Wide Yeast Two- Hybrid Screen. Midwest Stress Meeting **2013.**

Rachel Raynes, Kathleen M. Pombier, Kevin Nguyen, Jessica Brunquell, Jamie E. Mendez, and **Sandy D. Westerheide**. The SIRT1 modulators AROS and DBC1 regulate HSF1 activity and the heat shock response. American Society of Cell Biology, San Fransciso, CA. **2012**

Developing bioanalytical techniques to address water quality. Nancy D. Denslow, Paul Anderson, Jörg Drewes, Adam Olivieri, Daniel Schlenk, Geoffrey Scott, Shane Snyder, **Sandy Westerheide** and Keith Maruya. SETAC Meeting. **2012**

Evaluating the Roles of DBC1 and AROS in the Heat Shock Response and Construction of a Stable SIRT1 Knockdown Cell Line. Kathleen Pombier, Rachel Raynes, Kevin Nguyen, and **Sandy Westerheide**. USF Undergraduate Symposium. **2012**

- Won Excellance in Undergraduate Research Award

Uncovering Novel *S. cerevisiae* HSF1 Interacting Partners via a Genome-Wide Yeast-Two Hybrid Screen. Jamie Mendez, Beatriz Beach, Kristina Schmidt and **Sandy Westerheide** Research One Symposium. **2012**

Developing in vitro bioassays for screening of chemical contaminants in California's recycled water. Keith Maruya, Shane Snyder, Nancy Denslow, Dan Schlenk and **Sandy Westerheide, S**. 243rd American Chemical Society National Meeting, San Diego, CA. **2012**

Heat Shock and Caloric Restriction have a Synergistic Effect on the Heat Shock Response in a *sir2.1*-dependent Manner in *C. elegans.* Midwest Stress Meeting, Evanston, IL. Rachel Raynes, Bruce Leckey, Kevin Nguyen, and **Sandy Westerheide**. **2012**

SIRT1 Regulation of the Heat Shock Response in an HSF1-Dependent Manner. Rachel Raynes, Kevin Nguyen, and **Sandy Westerheide**. Gordon Research Conference: Stress Proteins in Growth, Development and Disease. Barga, Italy. **2011**

Evaluating the Roles of DBC1 and AROS in the Heat Shock Response.Undergraduate Research Symposium, Kathleen Pombier, Rachel Raynes and **Sandy Westerheide**. **2011**

Characterization of the Role of Caloric Restriction and Sir2.1 in the Heat Shock Response. Bruce Leckey, Rachel Raynes and **Sandy Westerheide**. Undergraduate Research Symposium. **2011**

SIRT1 Regulation of the Heat Shock Response in an HSF1-Dependent Manner. Rachel Raynes, Kevin Nguyen and **Sandy Westerheide**. *American Society for Cell Biology*. Philadelphia, PA. **2010**

SIRT1 regulates the heat shock transcription factor HSF1. *Gordon Research Conference: Stress Proteins in Growth, Development and Disease*. Oxford, England. **2007**

Triptolide as an inhibitor of the human heat shock response. *Midwest Stress Response and Chaperone Meeting.* Evanston, IL. **2005**

Induction of the heat shock response by celastrol. *Huntington's Disease Society of America Eighth Annual Scientific Meeting*. Cincinnati, OH. **2004**

Celastrols as inducers of the human heat shock response and cellular cytoprotection. *Cold Srping Harbor Meeting: Molecular Chaperones and the Heat Shock Response*. Cold Spring Harbor, NY. **2004**

Celastrols as inducers of the human heat shock response and cellular cytoprotection. *Midwest Stress Response and Chaperone Meeting*. Evanston, IL. **2004**

Celastrol, an activator of the heat shock response, inhibits NF-κB. *Midwest Stress Response and Chaperone Meeting*. Evanston, IL. **2003**

Bcl-3 regulates apoptosis. *Keystone Meeting: NF-κB: Bench to Bedside*. Keystone, Colorado. **2002**

The Bcl-3 proto-oncoprotein regulates cell cycle transition and cell survival in breast epithelial cells. *International NF-κB Symposium*, Ghent, Belgium. **2001**

Bcl-3 regulates the cyclin D1 promoter. *Keystone Meeting. NF-κB*: *Bench to Bedside*. Tahoe, Nevada. **2001**

Anatomy of the Major Histocompatibility Complex (MHC) Class II enhancer. *Keystone Meeting: Transcriptional Mechanisms*. Taos, New Mexico. **1998**

Regulation of the HLA-DM genes. **Sandy Westerheide** and Jeremy Boss. *Cold Spring Harbor Meeting: Mechanisms of Transcription*. Cold Spring Harbor, NY. **1997**

Functional analysis of the Class II Transactivator CIITA. **Sandy Westerheide**, Jim Riley and Jeremy Boss. *9th International Congress of Immunology*. San Francisco, CA. **1995**

Stanley M. Stevens, Jr., Ph.D.
4202 E Fowler Ave, BSF 218 • Tampa, FL 33620-5150
Ph: 813.974.8146 • smstevens@usf.edu

A. Education

UNIVERSITY OF CENTRAL FLORIDA
B.S. in Chemistry, *May 1996*

UNIVERSITY OF FLORIDA
Ph.D. in Chemistry, *August 2001*

B. Positions

Jan 2009 – present	Assistant Professor, Department of Cell Biology, Microbiology and Molecular Biology, University of South Florida, Tampa, FL
Oct 2008 – Dec 2011	Scientific Director, CDDI Proteomics Core, University of South Florida, Tampa, FL
Mar 2007 – Oct 2008	Research Assistant Professor and Associate Director of the Advanced Mass Spectrometry Laboratory, Department of Molecular Biology and Immunology, University of North Texas Health Science Center, Fort Worth, TX
Sep 2004 - Feb 2007	Scientific Director, Proteomics Core, University of Florida, Gainesville, FL
Sep 2003 - Feb 2007	Assistant Scientist, Proteomics Core, University of Florida, Gainesville, FL
Sep 2001 - Aug 2003	Postdoctoral Research Associate, Center for Drug Discovery and Department of Pharmaceutics, College of Pharmacy, University of Florida, Gainesville, FL; Postdoctoral Research Associate, Department of Botany, University of Florida, Gainesville, FL (joint appointment)

Professional Societies

Member, Research Society on Alcoholism

Member, American Society for Mass Spectrometry

C. Selected publications

Patents

- U.S. Patent # 7,476,656. "Fluorescent affinity tag to enhance phosphoprotein detection and characterization".
- USF internal application #12B114. "SILAC-based Proteomic Analysis for Detection of Biomarkers of Alzheimer's Disease".

Book chapters (senior author role for Stevens underlined)

- Prokai, L.; **Stevens Jr., S. M.**; Simonsick Jr., W. J.; "Gel Permeation Chromatography Coupled to Mass Spectrometry for Oligomer Analysis"; in Multiple Detection in Size-Exclusion Chromatography; Striegel, André, Ed; American Chemical Society: Washington, DC (2004).

- Liu, B.; Barber, D. S.; **Stevens Jr., S. M.**; "Stable Isotope Labeling with Amino Acids in Cell Culture (SILAC)-based Proteomic Analysis of Ethanol-Induced Protein Expression Profiles in Microglia"; in Psychiatric Disorder: Methods and Protocols; Kobaissy, Firas, Ed; Humana Press Inc.: Totowa, NJ (2012).

- Maldonado-Devincci, A. M.; **Stevens Jr., S. M.**; Kirstein, C. L.; "Investigation of Age-Specific Behavioral and Proteomic Changes in an Animal Model of Chronic Ethanol Exposure"; in Psychiatric Disorder: Methods and Protocols; Kobaissy, Firas, Ed; Humana Press Inc.: Totowa, NJ (2012).

Peer-reviewed journal articles (senior author role for Stevens underlined)

1. **Stevens, S. M., Jr.**; Dunbar, R. C.; Price, W. D.; Sena, M.; Watson, C. H.; Nichols, L. S.; Riveros, J. M.; Richardson, D. E.; Eyler, J. R.; "Blackbody Infrared Radiative Dissociation of Partially Solvated Tris(2,2'-bipyridine)ruthenium(II) Complex Ions" *J. Phys. Chem. A*., 106, 9686-9694 (2002).

2. **Stevens, S. M., Jr.**; Kem, W. R.; Prokai, L.; "Investigation of Cytolysin Variants by Peptide Mapping: Enhanced Protein Characterization Using Complementary Ionization and Mass Spectrometric Techniques," *Rapid Commun. Mass Spectrom.*, 16, 2094-2101 (2002).

3. Prokai-Tatrai, K.; Nguyen, V.; Zharikova, A. D.; Braddy, A. C.; **Stevens, S. M.**; Prokai, L.; "Prodrugs to Enhance Central Nervous System Effects of the TRH-like Peptide pGlu-Glu-Pro-NH_2," *Bioorg. & Med. Chem. Lett.,* 13, 1011-1014 (2003).

4. **Stevens, S. M., Jr.**; Zharikova, A. D.; Prokai, L.; "Proteomic Analysis of the Synaptic Plasma Membrane Fraction Isolated from Rat Forebrain," *Mol. Brain. Res.,* 117*,* 116-128 (2003).

5. Yang, S-H.; Liu, R.; Perez, E. J.; Wen, Y.; **Stevens Jr., S. M.**; Valencia, T.; Brun-Zindernagel, A.-M.; Prokai, L.; Will, Y.; Dykens, J.; Koulen, P.; Simpkins, J. W.; "Mitochondrial Localization of Estrogen Receptor Beta"; *Proc. Natl. Acad. Sci. USA*, 101, 4130-4135 (2004).

6. **Stevens Jr., S.**; Dunbar, R. C.; Price, W. D.; Sena, M.; Watson, C. H.; Nichols, L. S.; Riveros, J. M.; Richardson, D. E.; Eyler, J. R; "Blackbody Infrared Radiative Dissociation of Partially Solvated Mixed Ligand Ru(II) Complex Ions"; *J. of Phys. Chem. A.*, 108, 9892-9900 (2004).

7. Prokai, L.; Prokai-Tatrai, K.; Zharikova, A. D.; Nguyen, V., and **Stevens Jr., S. M.**; "Centrally-Acting and Metabolically Stable Thyrotropin-Releasing Hormone Analogues upon Replacement of Histidine with Substituted Pyridinium"; *J. Med. Chem.,* 47, 6025-6033 (2004).

8. Prokai, L.; Zharikova, A. D.; **Stevens Jr., S. M.**; "The Effect of Chronic Morphine Exposure on the Synaptic Plasma-Membrane Subproteome of Rats: A Quantitative Protein Profiling Study Based on Isotope-Coded Affinity Tags and Liquid Chromatography-Mass Spectrometry"; *J. Mass Spectrom*., 40, 169-175 (2005).

9. **Stevens Jr., S. M.**; Prokai-Tatrai, K.; Prokai, L.; "Rapid Screening of Combinatorial Libraries by Mass Spectrometry: A Novel Approach for Monitoring Substrate Specificity"; *Anal. Chem.*, 77, 698-701 (2005).

10. Bajpai, L.; Varshney, M.; Seubert, C. N.; **Stevens Jr., S. M.**; Johnson, J. V.; Yost, R. A.; Dennis, D. M.; "Mass Spectral Fragmentation of the Intravenous Anesthetic Propofol and Structurally Related Phenols"; *J. Am. Soc. Mass Spectrom.*, 16, 814-824 (2005).

11. **Stevens Jr., S. M.**; Chung, A. Y.; Chow, M. C.; McClung, S. H.; Strachan, C. N.; Harmon, A. C.; Denslow, N. D.; Prokai, L.; "Enhancement of Phosphoprotein Analysis Using a Fluorescent Affinity Tag and Mass Spectrometry"; *Rapid Commun. Mass Spectrom.*, 19, 2157-2162 (2005).

12. Lentz, M. R.; **Stevens Jr., S. M.**; Raynes, J.; Elkhoury, N.; "A Phosphorylation Map of the Bovine Papillomavirus E1 Helicase"; *Virology*, 3:13 (2006).

13. Fuller, B. F.; **Stevens Jr., S. M.**; Sehnke, P. C.; Ferl, R. J.; "Proteomic analysis of the 14-3-3 family in Arabidopsis"; *Proteomics*, 6, 3050-3059 (2006).

14. Kirkland, P. A.; Busby, J. C.; **Stevens Jr., S. M.**; Maupin-Furlow, J. A.; "Trizol-based Method for Sample Preparation and Isoelectric Focusing of Halophilic Proteins"; *Anal. Biochem.*, 351, 254-259 (2006).

15. Humbard, M. A.; **Stevens Jr., S. M.**; Maupin-Furlow, J. A.; "Posttranslational Modification of the 20S Proteasomal Proteins of the Archaeon *Haloferax volcanii*"; *J. Bacteriol.*, 188, 7521-7530 (2006).

16. Kempler, K.; Tóth, J.; Yamashita, R.; **Stevens Jr., S. M.**; Cardasis, H.; Robinson, K.; Mapel, G.; Sellers, J.; Battelle, B. A.; "Loop 2 of Limulus myosin III is phosphorylated by protein kinase A and autophosphorylation"; *Biochemistry*, 46, 4280-4293 (2007).

17. Perera O.; Green T. B.; **Stevens Jr., S. M.**; White S.; Becnel, J. J.; "Proteins Associated with Culex nigripalpus Nucleopolyhedrovirus (CuniNPV) Occluded Virions"; *J. Virol.*, 81, 4585-4590 (2007).

18. Rauniyar, N.; **Stevens Jr., S. M.**; Prokai, L.; "Fourier-transform Ion-Cyclotron Resonance Mass Spectrometry of Covalent Adducts of Proteins and 4-Hydroxy-2-Nonenal, a Reactive End-Product of Lipid Peroxidation"; *Anal. Bioanal. Chem.*, 389, 1421-1428 (2007).

19. Barber, D. S.; **Stevens, S.**; LoPachin, R. M.; "Proteomic Analysis of Rat Striatal Synaptosomes During Acrylamide Intoxication at a Low Dose-Rate"; *Toxicol. Sci.*, 100, 156-167 (2007).

20. Cardasis, H. L.; **Stevens Jr., S. M.**; McClung, S. H.; Kempler, K.; Powell, D. H.; Eyler, J. R.; Battelle, B. A.; "The Actin-Binding Interface of a Myosin III Is Phosphorylated *in vivo* in Response to Signals from a Circadian Clock"; *Biochemistry*, 46, 13907-13919 (2007).

21. Prokai, L.; Yan, L-J; Vera-Serrano, J. L.; **Stevens Jr., S. M.**; Forster, M. J.; "Mass Spectrometry-Based Identification of Mitochondrial Proteins Susceptible to Age-Related Oxidative Carbonylation in the Rat Brain"; *J. Mass Spectrom.*, 42, 1583-1589 (2007).

22. **Stevens Jr., S. M.**; Rauniyar, N.; Prokai, L; "Rapid Characterization of Covalent Modifications to Rat Brain Mitochondrial Proteins after *ex vivo* Exposure to 4-Hydroxy-2-Nonenal by Liquid Chromatography–Tandem Mass Spectrometry Using Data Dependent and Neutral Loss-Driven MS^3 Acquisition"; *J. Mass Spectrom.*, 42, 1599-1605 (2007).

23. Bhutia, S. K.; Mallick, S. K.; **Stevens, S. M.**; Prokai, L.; Vishwanatha, J. K.; Maiti, T. K.; "Induction of mitochondria-dependent apoptosis by Abrus agglutinin derived peptides in human cervical cancer cell"; *Toxicol. In Vitro*, 22, 344-351 (2008).

24. Wasdo, S. C.; Barber, D. S.; Denslow, N. D.; Powers, K. W.; Palazuelos, M.; **Stevens Jr., S. M.**; Moudgil, B. M.; Roberts, S. M.; "Differential Binding of Serum Proteins to Nanoparticles"; *Int. J. Nanotechnol.*, 5, 92-115 (2008).

25. **Stevens Jr., S. M.**; Duncan, R. S.; Koulen, P.; Prokai, L.; "Proteomic Analysis of Mouse Brain Microsomes: Identification and Bioinformatic Characterization of Endoplasmic Reticulum Proteins in the Mammalian CNS"; *J. Proteome Res.*, 7, 1046-1054 (2008).

26. Zhang, J.; Planey, S. L.; Ceballos, C.; **Stevens Jr., S. M.**; Keay, S. K.; Zacharias, D. A.; "Identification of CKAP4/p63 as a Major Substrate of the Palmitoyl Acyl Transferase DHHC2, a Putative Tumor Suppressor, Using a Novel Proteomic Method"; *Mol. Cell. Proteomics*, 7, 1378-1388 (2008).

27. Prokai, L; Frycak, P.; **Stevens Jr., S. M.**; Nguyen, V.; "Measurement of Acetylcholine in Rat Brain Microdialysates by LC–Isotope Dilution Tandem MS"; *Chromatographia*, 68, S101-S105 (2008).

28. **Stevens Jr., S. M.**; Prokai-Tatrai, K.; Prokai, L.; "Factors that Contribute to the Misidentification of Tyrosine Nitration by Shotgun Proteomics"; *Mol. Cell. Proteomics*, 7, 2442-2451 (2008).

29. Rauniyar, N.; **Stevens Jr., S. M.**; Prokai-Tatrai, K.; Prokai, L.; "Characterization of 4-Hydroxy-2-Nonenal-Modified Peptides by Liquid Chromatography Tandem Mass Spectrometry Using Data-Dependent Acquisition: Neutral Loss-Driven MS^3 versus Neutral Loss-Driven Electron Capture Dissociation"; *Anal. Chem.*, 81, 782-789 (2009).

30. Westerheide, S. D.; Anckar, J.; **Stevens Jr., S. M.**; Sistonen, L.; Morimoto, R. I.; "Stress-Inducible Regulation of Heat Shock Factor 1 by the Deacetylase SIRT1"; *Science*, 323, 1063-1066 (2009).

31. Liu, P.; Marzahn, M. R.; Robbins, A. H.; Gutiérrez-de-Terán, H.; Rodríguez, D.; McClung, S. H.; **Stevens Jr., S. M.**; Yowell, C. A.; Dame, J. B.; McKenna, R.; Dunn, B. M.; "Recombinant plasmepsin 1 from the human malaria parasite plasmodium falciparum: enzymatic characterization, active site inhibitor design, and structural analysis"; *Biochemistry*, 48, 4086-4099 (2009).

32. Prokai, L.; **Stevens, S. M.**; Rauniyar, N.; Nguyen, V.; "Rapid Label-Free Identification of Estrogen-Induced Differential Protein Expression In Vivo from Mouse Brain and Uterine Tissue"; *J. Proteome Res.*, 8, 3862-3871 (2009).

33. **Stevens Jr., S. M.**; Wolverton, S.; Venables, B.; Barker, A.; Seeley, K. W.; Adhikari, P.; "Evaluation of microwave-assisted enzymatic digestion and tandem mass spectrometry for the identification of protein residues from an inorganic solid matrix: implications in archaeological research"; *Anal. Bioanal. Chem.*, 396, 1491-1499 (2010).

34. Guingab-Cagmat, J. D.; **Stevens Jr., S. M.**; Ratliff, M. V.; Zhang, Z.; Gold, M. S.; Wang, K. W.; Kobeissy, F. H.; "Identification of Tyrosine Nitration in UCHL1 and GAPDH"; *Electrophoresis*, 32, 1692–1705 (2011).

35. Dalal, J.S.; **Stevens, Jr., S. M.**; Alvarez, S.; Munoz, N.; Kempler, K.E.; Dose, A.C.; Burnside, B.; Battelle, B-A. "Mouse Class III myosins: Kinase activity and phosphorylation sites"; *J. Neurochem.*, 119, 772-784 (2011).

36. Barker, A.; Venables, B.; **Stevens Jr., S. M.**; Seeley, K. W.; Wang, P.; Wolverton, S.; "An optimized approach for protein-residue extraction from experimental cooking pottery"; *J. Archaeol. Method Th.*, 19, 407-439 (2012).

37. Rivera, F. E.; Miller, H. K.; Kolar, S. L.; **Stevens, Jr., S. M.**; Shaw, L. N.; "The Impact of CodY on Virulence Determinant Production in Community-Associated Methicillin Resistant Staphylococcus aureus"; *Proteomics*, 12, 263-268 (2012).

38. Bell-Temin, H.; Barber, D. S.; Liu, B.; **Stevens, Jr., S. M.**; "Proteomic Analysis of Rat Microglia Establishes a High-Confidence Reference Dataset of Over 3,000 Proteins"; *Proteomics*, 12, 246-250 (2012).

39. Seeley, K. W.; **Stevens, Jr., S. M.**; "Investigation of local primary structure effects on peroxynitrite-mediated tyrosine nitration using targeted mass spectrometry"; *J. Proteomics*, 75, 1691-1700 (2012).

40. Chaput, D.; Kirouac, L. H.; Bell-Temin, H.; **Stevens, Jr., S. M. (shared last author)**; Padmanabhan, J.; "SILAC-based proteomic analysis to investigate the impact of amyloid precursor protein expression in neuronal-like B103 cells"; Neuroproteomics Special Issue, *Electrophoresis*, 33, 3728-3737 (2012).

41. Xu, G.; **Stevens, Jr., S. M.**; Kobiessy, F.; Brown, H.; McClung, S.; Gold, M. S.; Borchelt, D. R.; "Identification of proteins sensitive to thermal denaturation in human neuroblastoma and glioma cell lines"; *PLoS One*, in press (2012).

42. Kolar, S. L.; Rivera, F. E.; Mootz, J. M.; Davenport, J. E.; **Stevens, Jr., S. M.**; Horswill, A. R.; Shaw, L. N.; "Extracellular Proteases are Key Mediators of S. aureus Virulence via the Global Modulation of Virulence Determinant Stability"; *Microbiology Open*, in press (2012).

43. Xu, G.; **Stevens, Jr., S. M.**; McClung, S.; Borchelt, D. R. "Altered protein homeostasis in the brains of mice with Alzheimer amyloidosis"; *Brain*, submitted (2012).

44. Xu, G.; **Stevens, Jr., S. M.**; Moore, B. D.; McClung, S.; Borchelt, D. R. "Secondary misfolding of soluble cytosolic proteins in a transgenic mouse model of Alzheimer-amyloidosis"; *Hum. Mol. Genet*. submitted (2012).

45. Yin, H.; Hu, M.; Liang, X.; Ajmo, J. M.; Li, X.; **Stevens, Jr., S. M.**; You, M.; "Genetic Ablation of Hepatic SIRT1 Disrupts Hepatic Lipin-1 Signaling and Results in Aggravated Alcoholic Steatohepatitis in Mice"; *Gastroenterology*, submitted (2012).

46. Bell-Temin, H.; Zhang, P.; You, M.; Liu, B.; **Stevens, Jr., S. M.**; "Quantitative proteomic characterization of ethanol-responsive pathways in rat microglial cells"; *J. Proteome Res.*, submitted (2012).

47. Morgan, J. K.; Vendura, K. W.; **Stevens, Jr., S. M.**; Riordan, J. T.; "Contribution of RcsB to the locus of enterocyte effacement (LEE) expression and adherence phenotype of virulent 2006 U.S. spinach outbreak Escherichia coli O157:H7 strain TW14359"; *Mol. Microbiology*, submitted (2013).

Presentations (past 5 years)

Poster:

1. Rauniyar, N.; Prokai-Tatrai, K.; **Stevens Jr., S. M.**; Prokai, L.; "Covalent Modification of Proteins by Lipid Peroxidation Products: Characterization by Electrospray Ionization and Ion Trap / FT-ICR Mass Spectrometry"; 55th ASMS Conference on Mass Spectrometry and Allied Topics; Indianapolis, 2007.

2. Prokai, L., **Stevens Jr., S. M.**, Nguyen, V.; "Application of Analytical Separation Methods Combined with *in vivo* Cerebral Microdialysis Sampling and Mass Spectrometric Detection to Study Mammalian Neurochemistry in Animal Models"; 7th Balaton Symposium on High-Performance Separation Methods; Siofok, Hungary, 2007.

3. **Stevens Jr., S. M.**; Prokai-Tatrai, K.; Prokai, L.; "Improved Validation Protocol for Identification of Peptide Modifications Using MS/MS Spectra Based on Detailed Investigation of In Vivo Tyrosine Nitration"; 56th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2008.

4. Rauniyar, N.; **Stevens Jr., S. M.**; Prokai, L.; "An improved method for the identification of 4-hydroxy-2-nonenal (HNE) Schiff base adducts using data-dependent and neutral loss-driven MS3 acquisition"; 56th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2008.

5. **Stevens Jr., S. M.**; Rauniyar, N.; Nguyen, V.; Prokai, L.; "A Method for Rapid Differential Protein Expression Profiling from Tissue Using 'Shotgun-based' LC-MS/MS and Spectral Counting"; 56th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2008.

6. Talamantes, T.; **Stevens Jr., S. M.**; Rauniyar, N.; Prokai, L.; "Survey of Estrogen-Induced Differential Protein Expression in Zebrafish Embryos using 2D-LC-MS/MS and Label-Free Relative Quantitation"; 56th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2008.

7. Barker, A.; Wolverton, S.; Venables, B.; **Stevens Jr., S. M.**; "Extraction and identification of proteins from a pottery matrix using microwave-assisted enzymatic digestion and tandem mass spectrometry"; 57th ASMS Conference on Mass Spectrometry and Allied Topics; Philadelphia, 2009.

8. **Stevens Jr.**, S.M.; Buzzeo, R.; Bradshaw, P.C.; "Quantitative Proteomic Analysis of HepG2 Cells after Ethanol Exposure"; 57th ASMS Conference on Mass Spectrometry and Allied Topics; Philadelphia, 2009.

9. Edson, A.; Barber, D.; Liu, B.; Zhang, P.; **Stevens Jr., S. M.**; "Stable isotope labeling with amino acids in cell culture (SILAC)-based proteomic analysis to investigate ethanol-induced protein expression profiles in microglia"; 58th ASMS Conference on Mass Spectrometry and Allied Topics; Salt Lake City, 2010.

10. Seeley, K.; **Stevens Jr., S. M.**; "Detection and quantitation of *in vitro* tyrosine nitration via selective reaction monitoring mass spectrometry"; 58th ASMS Conference on Mass Spectrometry and Allied Topics; Salt Lake City, 2010.

11. Seeley, K.; **Stevens Jr., S. M.**; "Mass spectrometric method development to analyze sequence and structural influences on tyrosine nitration site selectivity"; 59th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2011.

12. Bell-Temin, H.; Liu, B.; Barber, D. S.; Zhang, P.; **Stevens Jr., S. M.**; "Comprehensive Proteomic Analysis of a Model Rat Microglial Cell Line Using Multidimensional Chromatography and Tandem Mass Spectrometry"; 59th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2011.

13. Guingab, J.; Kobaissy, F.; **Stevens Jr., S. M.**; Anagli, J.; Wang, K.; "Brain Nitrosative Stress in Second Hand Smoke Rat Model"; 59th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2011.

14. Padmanabhan, J.; Chaput, D.; Kirouac, L. H.; Bell-Temin, H.; **Stevens Jr., S. M.**; "SILAC-based proteomic approach to determine the impact of amyloid precursor protein expression in neuronal-like B103 cells"; 42nd Society for Neuroscience Meeting 2012; New Orleans, 2012.

15. Bechard, A.; Muehlmann, A.; Trujillo, J.; **Stevens Jr., S. M.**; Lewis, M. H.; "Identification of proteins involved in the development of repetitive behavior using proteomic profiling"; 42nd Society for Neuroscience 2012 Meeting; New Orleans, 2012.

Oral:

16. **Stevens Jr., S. M.**; Prokai, L.; "Multidimensional Separation Methods for Mass Spectrometry-Based Protein Expression and Modification Profiling from Tissue"; 7th Balaton Symposium on High-Performance Separation Methods; Siofok, Hungary, 2007.

17. **Stevens Jr., S. M.**; "Investigation of Oxidative Protein Modifications by Mass Spectrometry-based Proteomics"; USF Bioinformatics Mini-Symposium; Tampa, 2011.

18. **Stevens Jr., S. M.**; Seeley, K. W.; Barker, A.; Venables, B.; Wolverton, S. M.; "Development of Mass Spectrometry-based Methods for Protein Residue Analysis"; Society for American Archaeology Meeting; Sacramento, 2011.

19. **Stevens Jr., S. M.**; "Identification of Novel Alcohol-induced Pathway Alterations by SILAC and iTRAQ-based Quantitative Proteomics"; NuSep Users Meeting; 59th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, 2011.

20. **Stevens Jr., S. M.**; "New Insights into the Selectivity and Functional Impact of Oxidative Stress-Induced Protein Modifications"; Banyan Biomarkers; Alachua, 2011.

21. **Stevens Jr., S. M.**; "Identification of Ethanol-Induced Pathway Alterations in Microglial Cells using Mass Spectrometry-Based Proteomics"; Virginia Commonwealth University; Richmond, 2012.

D. Research Support

Current:

2R01MH080055-03 (Lewis)
NIH/NIMH ($218,905 TC to USF)
09/01/12 - 08/31/15
Title: Development of persistent repetitive behavior in animals
As co-investigator role, our group will perform quantitative proteomic analysis to identify novel biomarkers and pathways associated with repetitive behavior in the R01 renewal submitted by Dr. Mark Lewis at the University of Florida.
Role: Co-investigator

Archaeology Program (Wolverton)
NSF ($46,850 TC to USF)
07/01/11 - 06/30/13
Title: Expanding application of proteomics-based research in archaeological residue analysis
The goal of this research project is to implement previously developed analytical methods to identify unknown proteins from archaeological cooking pottery.
Role: PI (collaborative project)

Pending:

1R01AA022457-01 (Stevens, Contact PI)
NIH/NIAAA
Start Date: 07/01/12
Title: Molecular mechanisms of ethanol-induced microglial activation
The goal of this project is to define the role of the protein p53 in ethanol-mediated microglial activation, either directly or indirectly due to ethanol-induced damage of surrounding neurons.
Role: PI (multi-PI with Dr. You at USF and Dr. Bin Liu, University of Florida)

1R21AA022185-01 (Stevens)
NIH/NIAAA
Start Date: 04/01/13
Title: Impact of ethanol-induced protein nitration on the histone modification code

The goal of this project is to determine the impact of ethanol-induced nitration on histone function which includes direct modification of histone isoforms and enzymes involved in modulating known histone modifications.
Role: PI, **impact/priority score: 24 (1st submission)**

1R21AA021247-A01 (Stevens)
NIH/NIAAA
Start Date: 09/01/12
Title: Role of PHPT1 in oxidative stress-induced epigenetic modifications by ethanol
The goal of this project is to determine the impact of ethanol-induced oxidative stress on hepatocellular PHPT1 activity and determine the link to increase in histone H3 acetylation at lysine 9.
Role: PI, **impact/priority score: 20 (2nd submission)**

1R21AA021245-A01 (Liu, Contact PI)
NIH/NIAAA
Start Date: 09/01/12
Title: Role of microglia in ethanol-induced oxidative stress
In this multi-PI project, our group will implement a novel SILAC approach to perform global-scale analysis of ethanol-induced differential protein expression and changes in oxidative modifications in neuronal and microglial cells alone and in co-culture.
Role: PI (multi-PI with Dr. Bin Liu, University of Florida), **impact/priority score: 23 (2nd submission)**

Completed:

UNTHSC-UNT Joint Institutional Seed Research Program (Stevens Jr.)
Intramural ($10,000)
Start date: 02/15/2008
End date: 12/31/2008
Title: Development and Application of Proteomics-based Methods in Archaeological Research
The goal of this research project was to develop novel analytical methods for the identification of unknown proteins from archaeological cooking pottery.
Role: PI

Archaeometry Program (Wolverton)
NSF ($34,746 TC to USF)
Start date: 07/01/2008
End date: 07/01/2010
Title: Development and Application of Proteomics-based Methods in Archaeological Residue Analysis
The goal of this research project is to develop novel proteomic methods for the identification of unknown proteins in archaeological pottery fragments from the American Southwest.
Role: PI (collaborative project)

E. Teaching Experience

2008-present Assistant Professor, Dept. of CMMB, USF, Tampa FL

- Cell Metabolism (MCB 3401), undergraduate course
- Cell Biology (PCB 3023), undergraduate course
- Proteomics (BSC 6932), graduate course
- Lecturer (2 lectures), Methods in Molecular Biology (BCH 6135), graduate course
- Lecturer (1 lecture), Structural Biology (GMS 7930), graduate course
- Lecturer (1 lecture), Bioinformatics (GMS 7930), graduate course

2007-present Lecturer, Dept. Molecular Biology and Immunology, UNT HSC, Fort Worth, TX
- Biochemistry (BMSC 5301), 6 lectures, post- baccalaureate/graduate course
- Molecular & Cell Biochemistry of Cancer (BIOC 6050), 2 lectures

Lecturer, Dept. Chemistry & Biochemistry, University of Texas, Arlington, TX

- Analytical Mass Spectrometry (CHEM 5304), 1 lecture, graduate course, 14 students

2003-2007 Coordinator and Lecturer, ICBR, University of Florida, Gainesville, FL
- Proteomics Workshops
- IDP lab
- Summer B Lab Molecular Cloning and Protein Chemistry for graduate students (GMS 6004, ALS 5905, PHA 6522L, VME 6934, section 5261)

Graduate students advised:

- Frances Rivera, Dept. of CMMB, USF (M.S. graduated 2010, Co-mentor)
- Kent Seeley, Dept. of CMMB, USF (Ph.D. student, 2008-present)
- Harris Temin, Dept. of CMMB, USF (Ph.D. student, 2010-present)
- Dale Chaput, Dept. of CMMB, USF (Ph.D. student, 2010-present, Co-mentor with Dr. Jaya Padmanabhan)
- Alison Fertig, Dept. of CMMB, USF (Ph.D. student, 2012-present)

Undergraduate students advised:

- Danielle Dantuma (summer 2009 and fall 2009)
- Sandra Duque (spring 2010-fall 2010)
- Robert Zagorsky (spring 2010 and summer 2010)
- Kristen Vitale (summer 2010)
- Stephanie Lopez (fall 2010)
- Emma Kathleen Carter (spring 2011)
- Matthew Turtzo (spring 2011)
- Alex Fernandez (spring 2011 and fall 2011)
- James Conn (summer 2012 and fall 2012)

Graduate committee member for:

- Alexander Barrett, Dept. of CMMB, USF (M.S. student, 2011-present)
- Vedad Delic, Dept. of CMMB, USF (Ph.D. student, 2011-present)
- Matthew Battistini, Dept. of Chemistry, USF (Ph.D. student, 2011-present)
- Daniel Dempsey, Dept. of Chemistry, USF (Ph.D. student, 2010-present)
- Christina Krute, Dept. of CMMB, USF (Ph.D. student, 2010-present)
- Jason Morgan, Dept. of CMMB, USF (Ph.D. student, 2010-present)
- Jennifer Sedillo, Dept. of Global Health, USF (Ph.D. student, 2010-present)
- Avishek Mitra, Dept. of CMMB, USF (Ph.D. student, 2010-present)
- Salahuddin Syed, Dept. of CMMB, USF (Ph.D. student, 2010-present)
- Jessica Kennedy, Dept. of CMMB, USF (Ph.D. student, 2009-present)
- Neil Copes, Dept. of CMMB, USF (Ph.D. student, 2009-present)
- Wade Borcherds, Dept. of CMMB, USF (Ph.D. student, 2009-present)
- Antoniette Maldonado-Devincci, Dept. of Psychology, USF (Ph.D., graduated 2011)
- Tiffany Robinson, Dept. of CMMB, USF (M.S. student, graduated 2011)
- Anni Pine, Dept. of CMMB, USF (M.S. student, graduated 2011)
- Stacey Kolar, Dept. of CMMB, USF (Ph.D. student, graduated 2012)

- Shikha Mahajan, Dept. of Chemistry, USF (Ph.D. student, graduated 2012)

F. Service

University and Departmental (USF CMMB) service:

- Director of CDDI Proteomics Facility (Fall 2008-Fall 2011)
- Hiring committee, microRNA position (Spring 2009)
- Hiring committee, Tissue Culture Facility technician (Summer 2009)
- Graduate committee (2009-2010)
- Faculty advisory committee (2009-2012)
- University core facility committee (2012)
- Undergraduate research committee (2012)

Ad hoc reviewer for following journals:

- Electrophoresis
- PLoS One
- Journal of the American Society for Mass Spectrometry
- Clinical Proteomics
- Archaea
- Journal of Proteome Research
- Expert Review of Proteomics
- Journal of Chromatography A
- Molecular Cellular Proteomics

Guest editor for following journals:

- Electrophoresis (Neuroproteomics special issue 2012)

Grant reviewer:

- NIH NCRR, Shared Instrumentation Grant Program, Special Emphasis Panel/Scientific Review Group 2010/01 ZRG1 BCMB-D (30) I, (11/11/2009-11/12/2009)
- NSF Archaeology Program, 3 grants reviewed (2009-2010)

Other:

- BRIDGES program for pre-pharmacy students, mentor (2009 and 2010)
- Since 2011, raised $4,816 for Leukemia & Lymphoma Society through the Team in Training program.

VALERIE A. CARSON

Department of Cell Biology, Microbiology and Molecular Biology
University of South Florida
4202 East Fowler Ave, ISA 2015
Tampa, FL 33620

Office: (813) 974-6645
Cell: (813) 267-5260
E-mail: vcarson@usf.edu

EDUCATION

Master's degree in Biology from the University of South Florida. Thesis: Cloning and analysis of putative collagenases of the U32 family in *Streptococcus mutans* and *Streptococcus agalactiae* (Group B streptococcus). 08/06.

Bachelor of Science in Microbiology, along with a minor in Chemistry, from the University of Florida, 12/99.

WORK EXPERIENCE

INSTRUCTOR at the University of South Florida. Responsibilities include supervising and teaching Microbiology Lab, MCB 3020L; Determinative Bacteriology Lab , MCB 4115L; Genetics lab , PCB 3063L; and Cell Biology Lab, PCB 3023L courses. Also, developed the course BSC 4933, Microbiology for Health Sciences &the lab. Oversee the general duties that keep the laboratories functioning, such as ordering supplies, weekly meetings, and management and evaluation of Teaching Assistants. Involved in updating and improving lab courses by adding writing assignments, updating and revamping current lab manuals, and preparing lab handouts to assist the students as they perform the lab experiments. Perform Prep duties for the labs, which includes: preparing all plate & broth media, preparing and maintaining all bacterial/ fungi/phage cultures, setting up all supplies before the week starts and putting away any supplies not needed for the following week, unpacking and restocking new materials as they come in, checking throughout the week that all experiments are working correctly and if new cultures/reagents need to be prepared. Involved in the setting up and maintenance of all sections of courses through BlackBoard, which includes: setting up of the Gradebook, posting announcements, uploading course documents, setting up of 'All' sections for combined lab/lecture courses, and Supervision and creation of SafeAssignments. Oversee the hiring & supervision of Work-Study Undergraduate students who assist in media preparation for the labs. Assist in high school/middle school student science projects by aiding them in choosing a project, assisting them during the experiment, allowing them to use our facilities and helping them interpret the results. Faculty Advisor the Microbiology Club at USF. 8/06 – present.

ADJUNCT PROFESSOR at Hillsborough Community College. Instruct Biological Foundations BSC 1005, & Microbiology and Human Diseases MCB 1000, lecture and lab courses. Lectures are given as PowerPoint presentations. All class material, such as lectures, announcements, study guides and grades are maintained and available to students through BlackBoard. 8/07 – 8/12.

ADJUNCT PROFESSOR at Polk Community College. Instructed Survey of Biology, BSC 1005, lecture and lab course. Lectures were given as PowerPoint presentations. All class material, such as lectures, announcements, and grades, were maintained and available to students through a webpage devoted to the class. 6/06 – 8/06.

TEACHING ASSISTANT/LAB SUPERVISOR at the University of South Florida, Department of Biology – Instruct Microbiology Lab, MCB 3020L and Determinative Bacteriology, MCB 4115L. Prepare all cultures, media, and supplies needed for the experiments performed in the courses. Also, oversaw the general duties of the labs. 08/00 – 08/06.

LECTURE ASSISTANT at the University of South Florida, Department of Biology – Duties included grading all exams, extra credit and pop quizzes for the lecture course, MCB 3020L, inputting all scores into Excel and computing the grades for the course. Also, maintained an interactive website for the students to communicate with other students, download class material, view grades and announcements.

LAB ASSISTANT at the Microbiology Laboratory at Shands Hospital at the University of Florida– Duties included a variety of lab and clerical duties, including answering telephones, report/result distribution, specimen collection, specimen processing and specimen testing. 1/00 – 7/00.

RESEARCH EXPERIENCE

Masters Research, Dr. My Lien Dao, University of South Florida, 8/00 - 08/06

- Cloning of bacterial genes into cloning and expression vectors, producing recombinant fusion proteins.
- Induction, expression and isolation of recombinant fusion protein.
- Assessment of the enzymes functions using a variety of assays.
- General molecular biology techniques such as PCR, Agarose gel electrophoresis, SDS-PAGE, Western blotting and Immunoblotting were performed.

RESEARCH and PROFESSIONAL SKILLS

Have performed the following molecular biology techniques and are familiar with their basic concepts:

- Agarose gel electrophoresis
- Genomic DNA isolation
- Mini, Midi, and Maxiprep Plasmid isolation
- PCR (Polymerase chain reaction)
- UV DNA quantification
- Cloning of bacterial genes into various vector systems
- Expression and isolation of recombinant fusion proteins
- SDS-PAGE Analysis
- Western blotting
- Immunoblotting
- ELISA
- Preparation of culture media
- Cultivation and staining of microorganisms
- Experience in Biosafety Level I and II laboratories
- Instructor
- Customer service experience
- General office and computer skills

EXTRACURRICULAR ACTIVITIES AND AWARDS:

The Celebration of Leadership Awards Nomination at University of South Florida
American Society of Microbiology
Microbiology Club at USF
Outstanding Graduate Teaching Assistant of the Year for 2002 from the Department of Biology at the University of South Florida
Alpha Zeta member
Golden Key Honors Society member

REFERENCES

Peter Vandenbergh, Ph.D.
Department of Cell Biology, Microbiology and Molecular Biology,
University of South Florida, Tampa, FL 33620
(813) 974-8475 pevanden@usf.edu

Johnny El-Rady, Ph.D.
Department of Cell Biology, Microbiology and Molecular Biology,
University of South Florida, Tampa, FL 33620
(813) 974-1590 jelrady@usf.edu

Daniel V. Lim, Ph.D.
Advanced Biosensors Laboratory
Department of Cell Biology, Microbiology and Molecular Biology and
Center for Biological Defense
University of South Florida, Tampa, Florida 33612
(813) 974-1618 lim@usf.edu

Valerie J. (Jody) Harwood
Department of Interactive Biology, University of South Florida, Tampa, FL 33620
(813) 974-1524 vharwood@usf.edu

Curriculum Vitae

Younghoon Kee, Ph.D.

Contact information

Present address: 4202 E. Fowler Ave. BSF218
Dept. of Cell Biology, Microbiology, and Molecular Biology (CMMB)
University of South Florida
Office phone: 813) 974-5352
Email: ykee@usf.edu

Education/Training

B.S. Hankuk University of Foreign Studies (HUFS), South Korea
1992-1998 (1994.2-1996.4 Military Service)

M.S. Hankuk University of Foreign Studies (HUFS), South Korea
1999-2001

Ph.D.: University of Texas at Austin, Cell and Molecular Biology
2001-2006

Postdoc: Dana-Farber Cancer Institute/Harvard Medical School (2007-2011)

Assistant Professor: University of South Florida, CMMB department (2011 August – present)

Research Experience

Postdoctoral research — **Laboratory of Dr. Alan D'Andrea, Dana-Farber Cancer Institute, Harvard Medical School**
Jan/2007-present

- Molecular characterization of regulatory mechanisms for Fanconi Anemia and BRCA (FA/BRCA) DNA repair pathway
- Investigation of ubiquitin / proteasome system in DNA damage response signaling pathways and genomic instability syndromes
- Mechanisms of Deubiquitinating enzymes in DNA damage responses and genomic instability syndromes
- Proteomic approach for investigating the ubiquitin system in DNA damage responses

Ph.D. research — **Laboratory of Dr. Jon Huibregtse, Institute for Cell and Molecular Biology, University of Texas at Austin**
05/2002-12/2006

- Biochemical and genetic analysis of Rsp5 E3 ubiquitin ligase and Ubp2 deubiquitinating enzyme using budding yeast cells
- Proteomic analysis of Rsp5/Rup1/Ubp2 interacting proteins

- Functional studies of Deubiquitinating enzymes in yeast
- *In vitro* enzymatic assays of HECT E3 ubiquitin ligases

Master's research 09/1999-07/2001 — **Laboratory of Dr. Heejun Myung, Department of Bioscience and Biotechnology, HUFS, South Korea**

- Yeast two hybrid screen to identify binding proteins for the nonstructural proteins of Hepatitis C virus
- Study mechanism of translational control of HCV NS5B replicase
- Development of high-throughput screening system for HCV NS5B replicase

Undergraduate Research 12/1996-12/1997 — **Laboratory of Dr. Heejun Myung, Department of Bioscience and Biotechnology, HUFS, South Korea**

- Cloning, purification, and biochemical assay of HCV NS5B replicase

Teaching

- 2004~2006: T.A. in Virology laboratory (UT-Austin)
- 2012~: Molecular Biology of Cell, Advanced Cell Biology

Honor and Awards

- A.P. Bradie Endowed Golden Research Award (UT-Austin, 2005)
- Outstanding Teaching Award (School of Biological Sciences, UT-Austin, 2006)
- Sager-Foxhall Travel Award (UT-Austin, for FASEB Ubiquitin meeting, 2006)
- Career Development Fellowship, Leukemia and Lymphoma Society (2008 – 2011)
- Honor Award from Leukemia and Lymphoma Society Naming Program in the field of Blood cancer research (2008)

Poster presentations

- Biochemical and genetic analysis of the Rsp5 ubiquitin ligase and the Ubp2 deubiquitinating enzyme in *S. cerevisiae*. **Kee Y** and Huibregtse JM. 2006 FASEB Ubiquitin and Cellular Regulation Meeting, Vermont
- $SCF^{\beta\text{-trcp}}$ E3 ubiquitin ligase and Polo-like kinase 1 mediate degradation of FANCM in the Fanconi Anemia DNA repair pathway during mitosis. **Kee Y** and D'Andrea AD. 2008 FASEB Ubiquitin and Cellular Regulation Meeting, Vermont
- Proteins in the Fanconi Anemia DNA repair pathway: Structural considerations. **Kee Y** and D'Andrea AD. 2009 SBDR (Structural Cell Biology of DNA Repair Machines) Symposium, Berkeley
- WDR20, a novel WD40-repeat containing protein, regulates the UAF1/USP12 deubiquitinating enzyme complex. **Kee Y** and D'Andrea AD. 2010. The 5th International Conference on SUMO,

Ubiquitin, and Ubls. MD Anderson, Houston

Invited Speech

- Regulated degradation of FANCM in the Fanconi Anemia Pathway during mitosis. 2008 Fanconi Anemia Annual Symposium, Oregon
- A regulatory mechanism for cell-cycle specific activation of the Fanconi Anemia DNA repair signaling pathway. 2009 DNA repair and Mutagenesis Meeting, Boston
- Regulated degradation of FANCM in the Fanconi Anemia Pathway during mitosis. 2009 Cold Spring Harbor Laboratory Ubiquitin Family, New York
- Fanconi Anemia pathway and the DNA damage responses. 2009 NEBS (New England Bioscience Society), Boston
- Targeting DNA repair defects in Acute Myeloid Leukemia. 2009 Leukemia and Lymphoma Society Annual meeting, New York
- Role of Fanconi Anemia pathway in DNA damage response. 2012. University of Texas at San Antonio Research Division, TX

Publications

1. **Kee Y***, D'Andrea AD*. 2012 The molecular pathogenesis and clinical management of Fanconi Anemia. Review. *J. Clinic. Invest.* 122(11)3799-3806. *co-correspondence

2. **Kee Y***, Huang M, Chang S, Moreau L, Park E, Smith PG, D'Andrea AD*. 2012. Inhibition of the Nedd8 conjugation system sensitizes cells to DNA Interstrand crosslinking agents. *Mol. Cancer Res.* *co-correspondence

3. **Kee Y**, D'Andrea AD. 2010. Expanded roles of the Fanconi Anemia pathway in preserving genomic stability. Review. *Genes & Dev*. 24(16):1680-1694

4. **Kee Y***, Yang K*, Cohn MA, Haas W, Gygi SP, D'Andrea AD. 2010. WDR20 regulates activity of the USP12/UAF1 deubiquitinating enzyme complex. *J. Biol. Chem*. 285(15); 11252-11257 *co-first

5. **Kee Y***, Kim JM*, and D'Andrea AD. 2009. Regulated degradation of FANCM in the Fanconi Anemia pathway during mitosis. *Genes & Dev.* 23(5):555-60 *co-first

6. Cohn MA, **Kee Y**, Haas W, Gygi SP, and D'Andrea AD. 2009. UAF1 is a subunit of multiple deubiquitinating enzyme complexes. *J. Biol. Chem.* 284(8):5343-51

7. Kim JM, **Kee Y**, Gurtan AM, and D'Andrea AD. 2008. Cell-cycle dependent chromatin loading of the Fanconi Anemia core complex by FANCM/FAAP24. *Blood*. 111(10):5215-22

8. **Kee Y**, Huibregtse JM. 2007. Regulation of catalytic activities of HECT ubiquitin ligases. Review. *Biochem. Biophys. Res. Commun.* 354(2):329-33

9. Ren J, **Kee Y**, Huibregtse JM, and Piper RC. 2007. Hse1, a component of the yeast Hrs-STAM ubiquitin sorting complex, binds both ubiquitin peptidases and ligases to control sorting efficiency into multivesicular bodies. *Mol. Biol. Cell.* 18(1):324-45

10. **Kee Y**, Munoz W, Lyon N, and Huibregtse JM. 2006. The Ubp2 deubiquitinating enzyme modulates

Rsp5-dependent Lys63-linked polyubiquitin conjugates in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 281(48):36724-31

11. **Kee Y**, Lyon N, and Huibregtse JM. 2005. The Rsp5 ubiquitin ligase is coupled to and antagonized by the Ubp2 deubiquitinating enzyme. *EMBO J*. 24(13):2414-24.

12. Lee S, Lee JH, **Kee YH**, Park MY, Myung H. 2005. Partial reconstitution of hepatitis C virus RNA polymerization by heterologous expression of NS5B polymerase and template RNA in bacterial cell. *Virus Res*. 114(1-2):158-63

13. Shcherbik N, **Kee Y**, Lyon N, Huibregtse JM, Haines DS. 2004. A single PXY motif located within the carboxyl terminus of Spt23p and Mga2p mediates a physical and functional interaction with ubiquitin ligase Rsp5p. *J. Biol. Chem*. 279(51):53892-8

14. Park C, **Kee Y**, Park J, Myung H. 2002. A nonisotopic assay method for hepatitis C virus NS5B polymerase. *J. Virol. Methods*. 101(1-2):211-4.

15. Kim K, Park C, Yeo H, **Kee Y**, Park J, and Myung H. 2000. Implications of exonuclease activity of bacteriophage P2 old protein for lambda exclusion. *J. Microbiol. Biotechnol.* 10:272-74

16. Park C, **Kee Y**, Oh J, Park J and Myung H. 1999. Purification and characterization of recombinant hepatitis C virus replicase. *J. Microbiol. Biotechnol.* 9:881-84