Attachment 6
Letter of Application and CV for Dr. W. Kent Fuchs

W. Kent Fuchs
36 Reach Run
Ithaca, NY 14850

October 9, 2014

President Search Committee
University of Florida

Dear Search Committee Members:

With great enthusiasm I submit my application as a candidate for University of Florida President. As an applicant for a position as critical as president of one of the most complex research universities in the nation, it is important to identify accomplishments in my career and demonstrate the skills and experience necessary to be successful. I must also point out that key to all this success are the leaders and teams I recruited, built, and enabled.

My 20 years of leadership experience has been with three peer AAU land-grant universities—University of Illinois Urbana-Champaign, Purdue University, and Cornell University. I currently serve as Provost of Cornell, which is ranked as one of the world's top 15 universities, both public and private.

Why the University of Florida

My enthusiasm for the University of Florida presidency arises from the extraordinary opportunities available at this to time to advance one of the nation's premier land-grant public research universities. University of Florida stakeholders, both internal and external, are aligned to support the institution as it seeks to realize its full top-10 potential for the benefit of Florida, the nation, and the world. Working with the Board of Trustees to lead that effort, and working with the Board of Governors and other stakeholders for the next ten years would be an honor and responsibility I would embrace. It would be a great privilege to be a member of the University of Florida's exceptional community of faculty, staff, students, and alumni.

Academic Stature

My record is one of significantly enhancing the stature of the universities I have served. Recent examples include the following—

- Cornell Tech—Cornell's new campus on Roosevelt Island in New York City and its partnership with the Technion is frequently described as one of the most transformational events in Cornell's history. I formed and led the team which was responsible for Cornell's success in the international competition, and I

continue to be responsible for all aspects of the campus, its programs, and its physical development. The city provided 12 acres of land and $100 million, and we have so far raised another $650 million in philanthropy. I forged and continue to oversee the partnership with the Technion and its focus on interdisciplinary entrepreneurial education and research impacting the economy of New York City.

- Faculty Renewal—This $100 million program has enabled Cornell to hire numerous new faculty in advance of a significant number of future retirements, particularly in the Arts and Humanities.
- Engaged Cornell—This $150 million initiative is changing our educational environment by integrating scholarship and curriculum with experiential learning, public service, and internationalization.

Leadership, Vision, and Strategic Planning

I have been privileged to provide leadership in the following areas—

- Creating and implementing a university-wide Strategic Plan http://www.cornell.edu/strategicplan/
- Establishing strategic metrics and measuring progress toward enhancing academic stature http://irp.dpb.cornell.edu/strategic-metrics
- Establishing national leadership in enhancing diversity. Cornell's Toward New Destinations diversity program has become a model for distributed accountability and has been featured in the national press http://diversity.cornell.edu/toward-new-destinations

Fiscal Management and Governance

As Provost, I serve as both Chief Operating Officer and Chief Academic Officer for all campuses and programs, excluding the Weill Cornell Medical College. My responsibilities include—

- Oversight of a $2.2 billion operating budget and $220 million capital budget.
- 22 senior direct reports with a total of 6,600 full-time employees reporting through the provost's office, including 1,600 tenured or tenure-track faculty.
- The Senior Vice-Provost for Research reports into the Provost, with oversight responsibility for Cornell's research enterprise, including research compliance.
- The Deans of Cornell's contract colleges also report into the Provost, along with their responsibilities for agriculture, veterinary medicine, animal hospital, and Extension offices in every New York State county, including New York City.

I served as Chief Operating Officer during Cornell's greatest ever financial downturn. We have used this opportunity to strengthen the university, including the following initiatives—

- Reimagining Cornell—With my oversight and the collaborative work of the senior leadership, faculty, and staff across the university, we eliminated a $120 million recurring deficit, reduced administrative costs by $70 million, and enhanced academic stature by restructuring numerous programs.
- Budget Model—The team I formed created a coherent budget model that combines the advantages of distributed RCM (Responsibility Centered Management) with a centrally-allocated budget.

I am experienced and committed to leading an institution that benefits from shared faculty, staff, and student governance combined with accountable leadership and responsible governing boards. At Cornell I have had the privilege of working effectively with a 64-member Board of Trustees, including organizing and leading their strategic planning retreats. I am also an invited attendee for Weill Cornell Medical College Board of Overseers meetings and, in partnership with the Dean and Provost for Medical Affairs, have created prominent shared research and education programs.

Resource Development and Leveraging

I have had the privilege of working with and leading individuals and teams that have been extraordinarily successful in fundraising. Cornell was fourth in the nation last year among all universities, both private and public, in philanthropic gifts and commitments. In my years as an academic leader, I have personally raised $1 billion in gifts, including individual gifts of $130 million, $80 million, and $50 million.

In developing Cornell Tech and our partnership with the Technion, we have created alliances with corporations, third-party developers, and government agencies, all of which have provided resources and opportunities for the university not achievable otherwise.

Personal Qualities and Academic Distinction

Those with whom I work describe me as—

- Patient and persistent in accomplishing goals for the programs I lead.
- Collaborative and committed to shared governance.
- Wise and fearless when a decision needs to be made that is in the best interest of the university.
- Apolitical in decision making and in working with others.

- Open to criticism and welcoming perspectives different from my own.
- Trusted and respected by all.

This weekend I will be inducted into the American Academy of Arts and Sciences. I am fortunate to be an honorary Fellow of all the technical societies in my area of scholarship (IEEE, ACM, AAAS), to have received distinguished alumni awards from the universities where I have studied (Duke and University of Illinois), and to have been appointed as a Distinguished Professor while at Purdue.

I conclude with brief personal remarks. Linda and I are particularly excited about the possibility of returning to Florida. Linda taught at the King's Academy in West Palm Beach before we met in seminary. I graduated from Miami Killian Senior High School and my two younger brothers and stepmother reside in South Florida. Linda and I understand the honor and great responsibilities that come with the presidency of the University of Florida. We look forward with eager anticipation to joining the Gator Nation and being both its leader and its greatest fans.

Sincerely yours,

W. Kent Fuchs

W. Kent Fuchs

W. KENT FUCHS

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Contact

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Faculty web site: www.csl.cornell.edu/~fuchs

Professional Experience

Provost and Professor, Cornell University, Jan. 2009-present.

Joseph Silbert Dean and Professor, College of Engineering, Cornell University, July 2002- Dec. 2008.

School Head and Distinguished Professor, School of Electrical and Computer Engineering, Purdue University, July 1996-June 2002.

Professor, Department of Electrical and Computer Engineering; Research Professor, Department of Computer Science and Coordinated Science Lab., University of Illinois, 1993-1996.

Associate Professor, Department of Electrical and Computer Engineering; Research Associate Professor, Department of Computer Science and Coordinated Science Lab., University of Illinois, 1989-1993.

Assistant Professor, Department of Electrical and Computer Engineering; Research Assistant Professor, Department of Computer Science and Coordinated Science Lab., University of Illinois, 1985-1989.

Education

Degree	Date	School
Ph.D.	1985	University of Illinois
M.Div.	1984	Trinity Evangelical Divinity School (seminary)
M.S.	1982	University of Illinois
B.S.E.	1977	Duke University

Honors and Awards

- Fellow, American Academy of Arts and Sciences
- Fellow, American Association for the Advancement of Science (AAAS)
- Fellow, Association for Computing Machinery (ACM)
- Fellow, Institute of Electrical and Electronics Engineers (IEEE)
- Distinguished Professor (Michael J. and Katherine R. Birck Distinguished Professor), Purdue University
- Distinguished Alumnus Award, Duke University, Pratt School of Engineering
- Distinguished Alumni Award, University of Illinois, Electrical & Computer Engineering Department
- Alumni Award for Distinguished Service, University of Illinois, College of Engineering
- University Scholar (Faculty), University of Illinois
- Fellow (Faculty), Center for Advanced Studies, University of Illinois
- Senior Faculty Award for Excellence in Research (Xerox Award), University of Illinois
- Junior Faculty Award for Excellence in Research (Xerox Award), University of Illinois
- Incentives for Excellence Faculty Award (National Digital Equipment Corporation Award)
- W. C. Carter Best Paper Award to N. Neves (co-author and Ph.D. student), 28th *IEEE Fault-Tolerant Computing Symposium*
- Best Paper Award, *IEEE VLSI Test Symposium*
- Best Paper Award, 23rd *ACM/IEEE Design Automation Conference*, simulation and test category
- Tau Beta Pi (engineering honor society)
- Eta Kappa Nu (electrical engineering honor society)
- Sphinx Head (Cornell honorary society)

Accomplishments and Responsibilities as an Academic Leader

CORNELL UNIVERSITY – Provost (January 2009-present)

- Chief Academic Officer for the university
- Chief Operating Officer for the university (excluding Weill Cornell Medical College)

Leadership Responsibilities as Provost

- Chief Academic Officer
  - Oversight of 14 academic colleges and schools
    - 1,600 faculty (tenured and tenure-track)
    - 21,000 students (14,000 undergraduate and 7,000 graduate and professional students)
- Chief Operating Officer
  - Oversight of $2.2B in annual expenditures and 9,500 employees (6,600 report through the provost office)
- Responsible for research enterprise (Senior Vice-Provost Research reports to the Provost)
  - Oversight of $500M in annual sponsored and organized research.
- Intensively engaged in Cornell's $6B fund-raising campaign
  - Personally responsible for raising $1B in philanthropic gifts as provost, dean, and school head.
- 22 Direct Reports – responsible for appointment and mentoring

  - 14 academic deans (overseeing colleges and schools)
  - 2 vice presidents (overseeing university budget and planning and also development of Cornell NYC Tech campus)
  - 5 vice provosts (overseeing museum, Cornell Press, sponsored programs and research, undergraduate education, admissions and financial aid, etc.)
  - 1 university librarian
- Responsible for university's core mission in education, scholarship, and societal impact.
- Responsible for developing and implementing university's strategic plan.
- Responsible for developing and implementing the university's international strategy.
- Responsible for Cornell's contract colleges, including Extension offices in every county of New York State, College of Veterinary Medicine and its hospital, and the College of Agriculture and Life Sciences.
- Responsible for developing and implementing the university's on-line education strategy.
- External Higher Ed leadership responsibilities
  - Board of Trustees, Ithaca College, 2010-present http://www.ithaca.edu/trustees/.
  - Chair-Elect, Engineering Section of the AAAS, 2014-present.
  - Member of Ivy+ Provosts and AAU Provosts.
  - Member of several international university accreditation, external review, and advisory boards.

Major University Accomplishments while Serving as Provost (Jan. 2009-present)

Accomplishments as Chief Academic Officer

- Cornell NYC Tech Campus
  - Led the team and strategy that resulted in the winning proposal, December 2011, in partnership with Technion and NYC, to create a new graduate applied sciences campus on Roosevelt Island (Manhattan) in New York City.
    - New York City donated $100M and 12 acres of land for the campus. Since Fall 2011, responsible with the President and Dean for raising an additional $650M in gifts for the new campus.
    - Cornell NYC Tech currently is located in Google's Manhattan facility and has 15 faculty, 75 employees, and 105 graduate and professional students.
    - Cornell NYC Tech will grow to 250 full-time faculty, 2,500 graduate and professional students, and 2 million square feet of facilities.
  - Responsible for all aspects of the new campus, including development and implementation of the academic programs, recruitment of the faculty and staff, and development of the physical campus.
- Developed Cornell's Strategic Plan for achieving academic preeminence as one of the world's top 10 universities http://www.cornell.edu/strategicplan/ . The plan focuses on a) assessment, b) one Cornell, and c) excellence.
- Established strategic metrics http://irp.dpb.cornell.edu/strategic-metrics for assessing Cornell's comparative academic stature.
- Led the university-wide reimagining initiative that enhanced Cornell's academic stature through mergers and realignment of numerous academic departments, centers, and libraries.
- Developed and implemented Cornell's successful $100M Faculty Renewal Initiative.
- Developed and implemented the campus-wide diversity accountability initiative (*Toward New Destinations*).

- Responsible for Cornell's highly successful comprehensive 10-year reaccreditation review.
- Launched the $150M Engaged Cornell initiative. The initiative enhances and integrates academic programs with public service, service learning, experiential learning, and internationalization.

Accomplishments as Chief Operating Officer

- Responsible for the transformation of Cornell's administrative organization to reduce annual administrative expenses by $70M and enhance support services for faculty, students, and staff. The successful effort has achieved national visibility and impact http://asp.dpb.cornell.edu/ .
- Responsible for transforming Cornell's budget model with costs and resources allocated based on consistent and transparent metrics.

CORNELL UNIVERSITY – Joseph Silbert Dean, College of Engineering (July 2002-December 2008)

Leadership Responsibilities as Dean of College

- National and International Leadership Responsibilities
  - Executive Board and Director, ASEE Engineering Deans Council, 2007-2008
  - Chair, ASEE Engineering Deans Council (EDC) Public Policy Committee (2007-2008), Vice Chair (2005-2007), member (2004-2005)
  - Board of Trustees, Museum of the Earth and Paleontological Research Institution, 2006-2008
  - National Joint Council on Technology Transfer – Academic Deans and Industry Leaders, 2006-2008
  - Big 10+ Engineering Deans Council, 2002-2008
  - Member, Task Force on Engineering Education, 2005-2006
  - NASA Aeronautics Advisory Council of Deans, 2004-2005
  - Member of numerous international university review and advisory boards
- Academic leader for
  - 4,300 students (2,900 undergraduate and 1,400 graduate and professional students)
  - 610 faculty and staff (240 faculty and 370 staff)
  - 12 academic departments and schools (three shared with other units)
  - 13 undergraduate majors and 15 undergraduate minors
  - 30 graduate degree programs (with the Graduate School)
- Oversight of $240M in annual expenditures, including $108M in externally funded research.
- Responsible for strategic planning.
- Development and fundraising (alumni, foundation, and corporate relations).
- Faculty recruiting, mentoring, promotion, and retention.
- Teaching and learning excellence.
- Responsible for providing an environment that inspires and educates a large diverse student body.
- Responsible for ABET accreditation.
- Creation of strategic alliances for excellence in interdisciplinary research and education.
- Undergraduate admissions and career services (the College of Engineering is responsible for its own admissions and career services).
- Cornell University Campus-Wide Responsibilities
  - President and Provost Academic Councils
  - Life Sciences Deans Council

- Executive Policy Review Council
- Communications Review Executive Leadership Team
- VP for Alumni Affairs and Development Deans Advisory Committee
- University Alumni Administrative Board
- Advisory Board for Cornell Center for Technology, Enterprise, and Commercialization (CCTEC)
- Student Mental Health Council
- University Diversity Programs Committee
- Administrative Computing Advisory Council
- IT Futures Advisory Council
- Dean Search Committees (Johnson Graduate School of Management and College of Architecture, Art, and Planning)

College Accomplishments while Serving as Dean

- Three professional master's programs implemented
  - Engineering Management
  - Biomedical Engineering
  - Systems Engineering (established a distance-based M.Eng. degree program)
- Two engineering undergraduate majors implemented
  - Environmental Engineering
  - Information Science, Systems, and Technology
- Established a new Department of Biomedical Engineering with new faculty and staff positions.
- Committed the college to national leadership in faculty, undergraduate, and graduate student diversity.
- Established college leadership in four university research initiatives: sustainable energy systems, biomedical engineering, nanoscience, and information science (in collaboration with FCIS).
- Led the development of a strategic plan that established ten-year college goals and objectives. The plan has guided significant changes in organization and focus across the college.
- Established a *Teaching Excellence Institute* for enhancement of faculty teaching.
- Established significant experiential learning opportunities for all undergraduate students.
- Established a Financial Engineering M.Eng. program in Manhattan, New York City.
- Established a co-terminal degree program in France, and established research and educational partnerships in China and India.
- Led the College of Engineering fund-raising campaign. Exceeded all other colleges and schools in amount raised (excluding Weill Cornell Medical College).
- Completed a $750M facilities Master Plan for the college.
- Implemented significant recurring savings for funding new initiatives through resource allocation.
- Established within the college an environment of enthusiasm for the present and excitement about the future. Faculty, students, staff, and alumni were proud of what they accomplished.

PURDUE UNIVERSITY – Head, School of Electrical and Computer Engineering (1996-2002)

Leadership Responsibilities as Head of School

- National and International Leadership Responsibilities
  - Board of Governors, Electrical and Computer Engineering Department Heads Association (ECEDHA), 2000-2002
  - Member/Chair, Electrical and Computer Engineering Department Heads Association (ECEDHA/NEEDHA) Awards Committee, 2000-2002
  - Member of numerous international university review and advisory boards
- Academic Leader for
  - 70 faculty and 70 staff, including all recruiting, mentoring, retention and promotion
  - Approximately 1,900 students (first year undergraduates through Ph.D.)
- Responsible for leading and enabling faculty to excel in teaching, research, and service.
- Member and Chair of numerous strategic, administrative, promotions, curriculum, and faculty committees (> 50 in 6 years), including provost search committee, VP for IT (CIO) search committee and advisory board committees.

School Accomplishments while Serving as Head

- The School of Electrical and Computer Engineering (ECE) led the university by doubling its research productivity per faculty, tripling the schools' endowment, and adding eight endowed professorships, while serving as Head.
- ECE grew to 12% of the entire university's external research expenditures (with full indirect cost).
- ECE led in raising $60M for a nanotechnology research facility. ECE established goals for the campaign for a growth of 30 faculty (from 70 to 100) and an additional $100M for new facilities and endowment.
- Led the development of a strategic plan for the school and the development of a facilities master plan.
- Led in increasing the diversity of the school, both in faculty and students, and in creating a climate that was supportive and enabled excellence.

Accomplishments as a Professor

See personal web site for complete information: www.csl.cornell.edu/~fuchs

Graduate Students – primary research and thesis advisor

See personal web site for complete information: www.csl.cornell.edu/~fuchs

Ph.D. Degrees Completed: 22 Theses (graduated 22 Ph.D. students)
M.S. Degrees Completed: 35 Theses (graduated 35 M.S. students)

Research Impact

Rapid Recovery from Computer System Failures

Dr. Fuchs is an international expert in the area of reliable computing. He and his students introduced compile-time code analysis, experimental profiling, hazard removal, and run-time

memory management for checkpoint implementation. He demonstrated a break-through in the performance of checkpointing, the space required for checkpoints, and the time required for recovery. His results were the first to exploit memory and register usage in deriving checkpoint content, placement, and time. He developed high-speed checkpointing for error recovery implemented in multiprocessors with cache coherence protocols, distributed shared memory, and relaxed memory consistency. Dr. Fuchs provided the first experimental evaluation on commercial multiprocessor systems of the infamous domino effect in rollback propagation. He demonstrated that process scheduling and checkpoint space reclamation can dramatically reduce rollback propagation and eliminate unneeded checkpoints. His results impact how rapid error recovery is implemented in commercial computer systems (1) at the individual processor level with compiler-based code analysis and hazard removal for instruction-level parallelism, (2) at the memory level in parallel processor systems with relaxed consistency and multiprocessor cache coherence, and (3) at the disk level with reliable page and disk management.

Failure Repair

Dr. Fuchs and his students published the fundamental description and analysis of the memory and processor array repair problem. Dr. Fuchs and his students later published the definitive solution to the memory repair problem. His results maximize manufacturing yield of memories, with an order of magnitude reduction in the time required to find a repair solution.

Fault Diagnosis and Fault Location

Dr. Fuchs is a prominent expert on integrated circuit fault diagnosis and location. He developed methods of fault location in large sequential circuits that provide up to two orders of magnitude reduction in the time and storage space required for fault dictionaries and diagnostic simulation. His results had an important impact on the time to failure analysis in industry and are a critical element in the diagnosis process for large integrated circuits manufactured by Intel, including the x86 microprocessor.

Failure Detection

Dr. Fuchs was one of the first researchers to develop and implement concurrent error detection for VLSI. He derived methods of on-line error detection for multiple errors with reduced check requirements and minimal performance impact. His results have been applied to microcontrollers, logic arrays, and multiprocessor interconnection networks. The results have influenced the design of commercial microprocessors.

Leadership as Professor

- Chair and Vice Chair, *IEEE Technical Committee on Fault-Tolerant Computing*, 1998-2000
- IEEE Computer Society Fellows Committee, 1997, 2003-2006
- IEEE Fellows Committee, 1998-2002
- Member, *IEEE Transactions on Dependable and Secure Computing*, Editor-in-Chief Search Committee, 2007
- Member, *IEEE Transactions on Dependable and Secure Computing*, Editor-in-Chief Search Committee, 2003
- Chair, *IEEE Transactions on Parallel and Distributed Systems*, Editor-in-Chief Search Committee, 2001

- Chair, *IEEE Transactions on Computers,* Editor-in-Chief Search Committee, 1998
- Numerous National Science Foundation panels
- Member, IFIP 10.4 Dependable Computing Working Group

Recognition for Teaching and Advising (University of Illinois)

- Included in the all campus "Incomplete List of Teachers Ranked as Excellent by Their Students."
- Named to the Engineering College Advisors List. The Advisors List was composed of the top 10% of the faculty selected as excellent undergraduate advisors by their students.

Courses Taught University of Illinois (1985-1996)

- Introduction to Computer Engineering, ECE290
- Computer Engineering II, ECE291
- Microcomputer/Microprogramming Laboratory, ECE311
- VLSI System Design, ECE325/CS335
- Design of Fault-Tolerant Digital Systems, ECE442/CS436
- Wafer Scale Integration Systems, EE497
- Fault Diagnosis of VLSI and Computer Systems, ECE497

Courses Taught Purdue University (1996-2002)

- Digital Logic Design, ECE270/ECE495M
- ECE Graduate Seminar (organizer and professor in charge), ECE694
- Advanced ECE Projects, ECE696

Patents

- "Progressive retry method and apparatus having reusable software modules for software failure recovery in multi-process message-passing applications," W. Kent Fuchs, Yennun Huang, Chandra M. Kintala, and Yi-Min Wang; U.S. Patent Number 5,440,726; August 8, 1995.
- "Input sequence reordering method for software failure recovery," W. Kent Fuchs, Yennun Huang, and Yi-Min Wang; U.S. Patent Number 5,530,802; June 25, 1996.
- "Progressive retry method and apparatus for software failure recovery in multi-process message-passing applications," W. Kent Fuchs, Yennun Huang, and Yi-Min Wang; U.S. Patent Number 5,590,277; December 31, 1996.

Editorial Positions

- Editor (Member of Editorial Board), *Journal of Electronic Testing: Theory and Applications (JETTA),* 1998-2003.
- Co-Editor, "Dependable Computing for Critical Applications 5," *Dependable Computing and Fault-Tolerant Systems,* IEEE Computer Society, Vol. 10, 1998.
- Member of Editorial Committee, *Journal of Systems Architecture*, Special Issue on Dependable Parallel Computer Systems, Vol. 43, No. 10, September 1997.
- Editor (Member of Editorial Board), *IEEE Transactions on Computers*, 1992-1996.
- Editor (Member of Editorial Board), *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 1993-1996.
- Guest Editor, *IEEE Transactions on Computers*, Special Issue on Fault-Tolerant Computing, May 1992.
- Guest Editor, *IEEE Computer*, Special Issue on Wafer Scale Integration Architectures, April 1992.

Conference Chair and Executive/Organizing Committees

- Chairman, Technical Program Committee, IEEE *International Workshop on Hardware Fault Tolerance in Multiprocessor Architectures*, 1989.
- Organizing Committee, *19th Annual IEEE International Fault-Tolerant Computing Symposium*, 1989.
- Steering Committee, *IEEE International Workshop on VLSI Defect and Fault Tolerance*, 1989.
- Executive Committee, *IEEE International Conference on Computer-Aided Design*, 1991-1994.
- Vice General Chair, *IFIP Conference on Dependable Computing for Critical Applications*, 1995.
- Chairman, Technical Program Committee, *IEEE Symposium on Reliable and Distributed Systems,* 1996.
- Co-Chairman, Technical Program Committee, *IEEE International Fault-Tolerant Computing Symposium*, 1997.
- General Co-Chairman, *IEEE Pacific Rim Fault-Tolerant Computing Symposium,* 1997.
- Organizer, Technical Program, *IFIP 10.4 Workshop on Dependable Computing Benchmarks*, 1999.
- Distinguished Chair, *IEEE International Symposium on Network Computing and Applications*, 2004.
- Co-Organizer, Technical Program, *IFIP 10.4 Workshop on Dependable Nomadic Computing*, 2005.
- Steering Committee, *IEEE Conference on Dependable Systems and Networks*, 1999-2007.

Invited Talks (Seminars, Presentations, Keynote Talks, and Workshop Papers)

Note: *Does not include presentations of papers authored by W. K. Fuchs appearing in published conference proceedings.*

W. K. Fuchs, "Concurrent Error Detection in VLSI Systems," *SRC Workshop on VLSI CAD*, University of California, Berkeley, CA, January 1985.

W. K. Fuchs, "Techniques for Concurrent Error Detection in VLSI," Westinghouse Defense Systems Division, Baltimore, MD, April 1985.

W. K. Fuchs, "Research in Reliable VLSI Systems," *IFIP Working Group on Fault-Tolerant Computing*, UCLA, CA, January 1986.

W. K. Fuchs, "Highly Reliable VLSI Systems," Digital Equipment Corporation, Hudson, MA, January 1987.

W. K. Fuchs, "Animation in Computer-Aided Instruction of Logic Design," *Engineering Education and the Engineering Workstation*, IEEE Headquarters, NY, February 1987.

W. K. Fuchs, "Computer-Aided Design Approaches to Concurrent Error Detection," *10th Annual IEEE Design for Testability Workshop*, Vail, CO, April 1987.

W. K. Fuchs, "Parallel Recovery in Persistent Object Store Environments," Texas Instruments, Computer Science Lab., Database Architecture Branch, Dallas, TX, August 1987.

W. K. Fuchs "Applicative Environments for Reliable Multiprocessor Systems," *AT&T and Princeton Workshop on Concurrent Computation*, October 1987.

W. K. Fuchs, "Reliable VLSI System Design with GaAs Technology," General Motors-Allison, Advanced Control Systems Division, October 1987.

W. K. Fuchs, "Cache-based Checkpointing and Recovery in Highly Parallel Multiprocessor System Architectures," *IEEE Workshop on Fault Tolerance in Parallel and Distributed Systems*," San Diego, CA, December 1987.

W. K. Fuchs, "Design of Reliable Large-Area Chip Parallel Architectures," Distinguished Lecturer Series, Air Force Institute of Technology, Wright Patterson Air Force Base, Dayton, OH, February 1988.

W. K. Fuchs, W. Page, J. H. Patel, P. Tobin, "Illinois Logic Animation Software Tools," *AT&T Unix System V Conference*, Atlanta, GA, March 1988.

W. K. Fuchs, "Recovery and Reconfiguration in Parallel Architectures," NASA Langley Research Center, March 1988.

W. K. Fuchs, "Design for Diagnosis and Reconfiguration in Large-Area VLSI Parallel Architectures," *IEEE CANDE Workshop*, Santa Rosa, CA, April 1988.

W. K. Fuchs, "New Directions in CAD Tools for Reliable Parallel Architectures," *Workshop on Long-Range Research Problems for CAD*, Microelectronics and Computer Technology Corporation, Austin, TX, May 1988.

W. K. Fuchs, "Fault-Tolerant Parallel Computing," *Technology Research Forum*, Digital Equipment Corporation, Hudson, MA, June 1988.

W. K. Fuchs, "Structure-Based Concurrent Error Detection," *SDIO/IST Workshop on Reliable Electronics*, Washington, DC, July 1988.

W. K. Fuchs, "Reliable Large-Area Chip Parallel Architectures," Digital Equipment Corporation, Hudson, MA, August 1988.

W. K. Fuchs, "Fault Tolerance in VLSI Architectures," General Motors Research, May 1989.

W. K. Fuchs, "Compiler-Assisted Recovery in Parallel Architectures," *Fault-Tolerant Computing Workshop*, AT&T, Naperville, IL, May 1989.

W. K. Fuchs, "Structure-Based Reliable Electronics," *SDIO/IST Workshop on Reliable Electronics*, Washington, DC, June 1989.

W. K. Fuchs, "Trace Driven Evaluation of Fault-Tolerant Parallel Architectures," *IEEE International Workshop on Measurement and Modeling of Computer Dependability*, Los Angeles, CA, April 1990.

W. K. Fuchs, "Fault Tolerance in Hypercube Architectures and Fault Covering in Programmable Logic Arrays," *Fault-Tolerant Computing Symposium,* Newcastle upon Tyne, UK, July 1990.

W. K. Fuchs, "Memory Management for Error Recovery in Parallel Architectures," *IFIP Working Group on Dependable Computing,* Langdale, UK, July 1990.

W. K. Fuchs, "Rapid Recovery in Parallel Architectures," *Workshop on Wafer Scale Integration and Reliable Electronics*, Stanford University, July 1990.

W. K. Fuchs, "Fault Diagnosis for Integrated Circuits," Delco Electronics, Kokomo, IN, September 1990.

P. G. Ryan and W. K. Fuchs, "Partial Detectability Profiles," *SRC Techcon,* San Jose, CA, October 1990.

W. K. Fuchs, "Fault-Tolerant Computing in Parallel Architectures," *ACCA Computer Science Seminar Series*, Argonne National Laboratory, Argonne, IL, October 1990.

W. K. Fuchs, "Recent Advances in Fault-Tolerant Computing with High-Performance Architectures," *Institute for Computing Technology, Academia Sinica*, Beijing, China, April 1991.

W. K. Fuchs, "Rapid Recovery in Parallel Architectures," *Workshop on Wafer Scale Integration and Reliable Electronics*, Washington, D.C., July 1991.

W. K. Fuchs and W.-M. W. Hwu, "Rapid Recovery in Multiprocessor Architectures," *Workshop on Fault-Tolerant Computing*, Washington, D.C., November 1991. *(The talk is contained in a white paper entitled "Rapid Recovery in Distributed Shared Memory Multiprocessors," by W. K. Fuchs and W.-M. W. Hwu distributed at the workshop.)*

W. K. Fuchs, "Checkpointing and Recovery in Multiprocessor Systems," University of Iowa *Faculty Seminar Series*, Iowa City, Iowa, March 1992.

W. K. Fuchs, "Checkpointing and Recovery in Multiprocessor Systems," Texas A&M University, College Station, Texas, April 1992.

W. K. Fuchs, "Optimistic Recovery in Multiprocessor Systems," *IFIP 10.4 Working Group Meeting*, Boston, MA, July 1992.

W. K. Fuchs, "Fault Diagnosis and Recovery," Institute for Computing Technology, Academia Sinica, Beijing, China, October 1992.

W. K. Fuchs, "Message Processing to Reduce Rollback Propagation," *ONR Embedded Systems Workshop*, Austin, TX, January 1993.

W. K. Fuchs, "Fault Diagnosis with Compressed Dictionaries," *IFIP 10.4 Working Group on Dependable Computing,* Austin, TX, June 1994.

W. K. Fuchs, "Fault Diagnosis for Industrial Circuits," *SemaTech Failure Analysis Forum,* Santa Clara, CA, November 1994.

W. K. Fuchs, "Dependability or Quality?," *Panel Session, IEEE International Computer Performance and Dependability Symposium*, Germany, April 1995.

W. K. Fuchs, "Rapid Diagnostic Fault Simulation," Chalmers Institute of Technology, Gotenburg, Sweden, May 1995.

W. K. Fuchs, "Embedded Systems and Dependability," *Panel Session, ARPA Review*, Ft. Lauderdale, FL, July 1995.

W. K. Fuchs, "Failure Analysis and CAD," *Panel Session, International Symposium on Testing and Failure Analysis*, November 1995.

W. K. Fuchs, "Accurate and Rapid Fault Diagnosis," *IFIP 10.4 Working Group on Dependable Computing*, June 1996.

W. K. Fuchs, "Trends and Challenges in Testing," Panel Session, *International Workshop on Computer-Aided Design, Test, and Evaluation for Dependability, July* 1996.

W. K. Fuchs, "Dependable High Performance Networking," *JPL/CalTech Workshop*, January 1997.

W. K. Fuchs, "Diagnostic ATPG For Sequential Circuits, "*IFIP 10.4 Working Group on Dependable Computing,* June 1997.

W. K. Fuchs, "Failure Recovery for Clusters of Workstations," *2nd DARPA Fault-Tolerant Computing Workshop,* September 1997.

W. K. Fuchs, "Logic Diagnosis -- Diversion or Necessity?" *Panel Presentation, International Test Conference*, November 1997.

W. K. Fuchs, "Recovery in Clusters of Computers" *JPL Dependable Computing Workshop*, June 1998.

W. K. Fuchs, "Dependable Mobile Computing," *Embedded Computing DARPA Workshop*, March 1999.

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W. K. Fuchs, "Failure Analysis and Silicon-Debug—Should We Redirect Research?" *Panel Presentation, VLSI Test Symposium,* June 1999.

W. K. Fuchs, "Failure Analysis and Silicon-Debug," *IFIP 10.4 Working Group on Dependable Computing*, June 1999.

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K.-F. Ssu, B. Yao, and W. K. Fuchs, "Controlling Recovery Time with Message Logging," (Fast Abstract) *Fault-Tolerant Computing Symposium*, June 1999.

B. Yao, I. Service, and W. K. Fuchs, "Checkpointing Multi-threaded Windows NT Applications," (Fast Abstract) *International Conference on Dependable Systems and Networks*, July 2001.

R. Zhang and W. K. Fuchs, "Achieving Dependability in 3G Using SyncML," (Fast Abstract) *International Conference on Dependable Systems and Networks*, July 2001.

M. E. Amyeen, I. Pomeranz, and W. K. Fuchs, "On Combinational Redundancy and Identification of Undetectable Faults in Synchronous Sequential Circuits," *IEEE European Test Workshop*, June 2001.

W. K. Fuchs, "The Computer Systems Challenge – Low Cost Dependability," *International Computer Symposium - Computer Systems Workshop*, December 2002 (Invited Keynote talk for workshop).

W. K. Fuchs, "The Future of Engineering," *The National Business Council-Panel Presentation*, October 2003.

W. K. Fuchs, "Leadership in Information Science and Nano Science," Intel Corporation, Hillsboro, Oregon, September 2003.

W. K. Fuchs, "Wireless Computing and Failure Recovery," *IFIP 10.4 Working Group on Dependable Computing*, July 2004.

W. K. Fuchs, "Computer Engineering and the Impact of E.J. McCluskey," Special Workshop Invited Talk and Panel, *IEEE ICCD*, October 2004.

W. K. Fuchs and P. Lepage, "The Future of Science and Engineering Research at Cornell," Tsinghua University and Peking University, Beijing, China, November 2004.

W. K. Fuchs, "Evaluating Faculty," ECE Department Heads Association, New Orleans, LA, March 2005.

W. K. Fuchs, "Leadership in Academia," Annual Conference for Cornell Engineering Alumni Association, April 2005.

W. K. Fuchs, "Interdisciplinary Nanoscience Research Excellence," Panasonic Research, Osaka, Japan, June 2005.

W. K. Fuchs, "Dependable Nomadic Computing: Challenges and Opportunities," *IFIP WG 10.4 Dependable Computing,* July 2005 (introductory talk for workshop)

W. K. Fuchs, "Mastering Complexity: Systems Engineering at Cornell," *15th Annual International INCOSE Symposium,* July 2005 (invited talk and panel).

W. K. Fuchs, "Interdisciplinary Research Excellence," Xerox Research, July 2005.

W. K. Fuchs, "Dependable Computing in the Context of Mobility, Nomadicity, Ubiquity, and Pervasiveness," *IEEE 11th International Symposium Pacific Rim Dependable Computing (PRDC),* December 2005 (invited opening keynote address for conference).

W. K. Fuchs, "Reflections on the Next Nine Years: 1991-2016," Hong Kong University of Science and Technology, July 2007.

W. K. Fuchs, "Excellence in Higher Education," Andalusian School of Economics, Seville, Spain, September 2010.

W. K. Fuchs and R. Seeber, "The Public Interest in Private Universities," Purdue University, June 2011.

W. K. Fuchs, "University Leadership – Moving Up the Ladder," ECEDHA Keynote Panel, Orlando, FL, March 2013.

W. K. Fuchs, "Adapting to a Changing Landscape: Addressing Institutional Barriers," Panel Member, *On-Line Learning and the Future of Residential Education*, A Summit Hosted by MIT and Harvard, March 2013.

W. K. Fuchs, "Wisdom from the Giants," Invited Moderator for Plenary Panel, *IEEE International Test Conference*, November 2014.

Conference Technical Program Committees

- Technical Program Committee, *24th ACM/IEEE Design Automation Conference*, 1987.
- Technical Program Committee, *IEEE International Conference on Wafer Scale Integration*, 1989.
- Technical Program Committee, *IEEE International Fault-Tolerant Computing Symposium*, 1989.
- Technical Program Committee, *IEEE International Conference on Computer-Aided Design*, 1989.
- Technical Program Committee, IEEE *International Workshop on VLSI Defect and Fault Tolerance*, 1989.
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- Technical Program Committee, *IFIP-IEEE International Workshop on Defect and Fault Tolerance in VLSI Systems*, 1990.
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- Technical Program Committee, *IEEE International Workshop on Embedded Fault-Tolerant Systems*, 1996.
- Technical Program Committee, *IEEE International Conference: Innovative Systems in Silicon*, 1996.
- Technical Program Committee, *5th International IFIP Conference on Dependable Computing for Critical Applications*, 1997.
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- Technical Program Committee, *IEEE International Symposium on Software Reliability Engineering*, 1997.
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- Technical Program Committee, *IEEE Symposium on Reliable and Distributed Systems*, 1997.
- Technical Program Committee, *International Performance and Dependability Symposium*, 1998.
- Technical Program Committee, *IEEE International Fault-Tolerant Computing Symposium*, 1998.
- Technical Program Committee, *The 5th International Test Synthesis Workshop*, 1998.
- Technical Program Committee, *IEEE International Workshop on Embedded Fault-Tolerant Systems*, 1998.
- Technical Program Committee, *IEEE International On-Line Testing Workshop*, 1998.
- Technical Program Committee, *1st Euromicro/IEE Workshop on Dependable Computing Systems*, 1998.
- Technical Program Committee, *IEEE High-Assurance Systems Engineering Workshop*, 1998.
- Technical Program Committee, *2nd Euromicro/IEE Workshop on Dependable Computing Systems*, 1999.
- Technical Program Committee (ex-officio member), *IEEE Fault-Tolerant Computing Symposium*, 1999.
- Technical Program Committee, *IEEE International Conference on Distributed Computing Systems*, 1999.
- Technical Program Committee, *17th IEEE VLSI Test Symposium*, 1999.
- Technical Program Committee, *IEEE Pacific Rim International Symposium on Dependable Computing*, 1999.
- Technical Program Committee, *The 5th International On-Line Testing Workshop*, 1999.
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- Technical Program Committee, *IEEE International Symposium on Network Computing and Applications*, 2001.
- Technical Program Committee, *IEEE Symposium on Reliable and Distributed Systems*, 2002.
- Technical Program Committee, *IEEE Workshop on Mobile Distributed Computing*, 2003.

- Technical Program Committee, *IEEE International Symposium on Network Computing and Applications*, 2003.
- Technical Program Committee, *IEEE Conference on Dependable Systems and Networks / Dependable Computing and Communication Symposium* (formerly FTCS), 2003.
- Technical Program Committee, *IEEE International Workshop on Mobile Distributed Computing*, 2004.
- Technical Program Committee, *IEEE International Symposium on Network Computing and Applications*, 2005.
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- Program Committee, *IEEE International Test Conference Technical Forum in Honor of S.M. Reddy*, 2005.
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- Technical Program Committee, *IEEE International Workshop on Mobile Distributed Computing*, 2007.
- Technical Program Committee, *IEEE International Symposium on Network Computing and Applications*, 2007
- Technical Program Committee, *IEEE International Symposium on Reliable Distributed Systems, 2009.*

Conference Session Chair

See personal web site for complete information: www.csl.cornell.edu/~fuchs

Served as Session Chair for 32 conferences.

PUBLICATIONS

Most significant publications marked at end of reference with "**".

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1. W. K. Fuchs and S.-Y. Kuo, "Spare Allocation/Reconfiguration for WSI," in *Wafer-Scale Integration*, Swartzlander (editor), Kluwer Academic Publishers: Boston, 1989.
2. W. K. Fuchs, N. J. Alewine, and W.-M. W. Hwu "Speculative Execution and Compiler-Assisted Multiple Instruction Recovery," in *Foundations of Dependable Computing: System Implementation*, Koob, Lau (editors), Kluwer Academic Publishers: Boston, 1994.
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6. W. K. Fuchs and M.-F. Chang, "Diagnosis and Repair of Large Memories: A Critical Review and Recent Results," in *Defect and Fault Tolerance in VLSI Systems*, I. Koren (editor), Vol. 1, Plenum Press: New York, 1989.

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11. Y. -M. Wang and W. K. Fuchs, "Optimal Message Log Reclamation for Uncoordinated Checkpointing," *Fault-Tolerant Parallel and Distributed Systems*, Pradhan, Avresky (editors), IEEE Computer Society Press: Los Alamitos, 1995.

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14. J. A. Abraham, P. Banerjee, C.-Y. Chen, W. K. Fuchs, S.-Y. Kuo, and A. L. N. Reddy, "Fault Tolerance Techniques for Systolic Arrays," *Computer*, Vol. 20, No. 7, July 1987, pp. 65-75.

15. C. B. Stunkel, B. Janssens, and W. K. Fuchs, "Address Tracing for Parallel Machines," *Computer*, (Special Issue on Experimental Research in Computer Architecture), Vol. 24, No. 1, January 1991, pp. 31-38.

16. W. K. Fuchs and E. E. Swartzlander Jr., "Wafer-Scale Integration: Architectures and Algorithms," *Computer*, Vol. 25, No. 4, April 1992, pp. 6-8.

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18. W. K. Fuchs, K.-L. Wu, and J. A. Abraham, "Comparison and Diagnosis of Large Replicated Files," *IEEE Transactions on Software Engineering*, Vol. SE-13, No. 1, January 1987, pp. 15-22.
19. W. K. Fuchs, C.-Y. R. Chen, and J. A. Abraham, "Concurrent Error Detection in Highly Structured Logic Arrays," *IEEE Journal of Solid-State Circuits*, SC-22, No. 4, August 1987, pp. 583-594.
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28. K.-L. Wu and W. K. Fuchs, "Recoverable Distributed Shared Virtual Memory," *IEEE Transactions on Computers*, Vol. 39, No. 4, April 1990, pp. 460-469. **
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31. T. L. Wernimont, D. K. Hwang, and W. K. Fuchs, "CSP-Based Object-Oriented Description and Simulation of a Reconfigurable Adaptive Beamforming Architecture Using the OODRA Workbench," *Journal of VLSI Signal Processing*, Vol. 2, No. 3, November 1990, pp. 159-172.

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