

**State University System
Education and General
2022-2023 Legislative Budget Request
Form I**

University(s):	Florida Gulf Coast University
Request Title:	University of Distinction
Date Request Approved by University Board of Trustees:	09/15/2020
Recurring Funds Requested:	\$4,000,000
Non-Recurring Funds Requested:	
Total Funds Requested:	\$4,000,000
Please check the request type below:	
Shared Services/System-Wide Request	<input type="checkbox"/>
Unique Request	<input checked="" type="checkbox"/>

- I. Purpose** – 1. Describe the overall purpose of the plan, specific goal(s) and metrics, specific activities that will help achieve the goal(s), and how these goals and initiatives align with strategic priorities and the 2021 University Accountability Plan established by your institution (include whether this is a new or expanded service/program). If expanded, what has been accomplished with the current service/program? 2. Describe any projected impact on academic programs, student enrollments, and student services. University of Distinction proposals should also address the requirements outlined in the separate guidance document.

This Legislative Budget Request to support The Water School at Florida Gulf Coast University is supplemental to the 2020-2021 LBR for \$3,000,000 approved by the Board of Governors of the State University System of Florida. Based on the quality of its core faculty and their focus on teaching and learning, the increasing pace of scholarship and research as reflected in the number of proposals submitted for external funding and associated research expenditures, and its growing leadership and involvement in community engagement, **FGCU believes that The Water School has the core competencies capable of reaching national excellence.**

The Water School addresses environmental and water-related issues in Southwest Florida by combining expertise from different academic disciplines; forging partnerships with local communities and with organizations involved in environmental education/outreach; collaborating with research institutions across the state; and building research capacity in the region. Part of its charge

is to educate and train the next generation of leaders who will be responsible for addressing the region's environmental issues, especially those related to water. Core academic programs include undergraduate degrees in Marine Science, Environmental Geology, and Environmental Studies, and graduate (Master's) degrees in Environmental Science and Environmental Studies. In addition to the core faculty supporting these STEM programs, affiliate faculty have been appointed from across the university, representing four colleges and thirteen other departments, and the first joint-hire was just completed in collaboration with FGCU's Department of Psychology. An Investment in The Water School at Florida Gulf Coast University is an investment in Southwest Florida – an economically important and growing region in the State.

This LBR aligns with multiple goals in the **2025 System Strategic Plan**.

Teaching and Learning

- Strengthen quality and reputation of FGCU by improving quality and relevance of The Water School with regard to state and national preeminence
- Increase number of degrees awarded in STEM/Programs of Strategic Emphasis (all current degree programs in The Water School are identified by the BOG as STEM and Programs of Strategic Emphasis)

Scholarship, Research, and Innovation

- Improve quality and impact of scholarship and research activities
- Increase undergraduate participation in research
- Increase research activity and attract more external funding

Community and Business Engagement

- Improve quality and relevance of public service activities (FGCU is one of seven SUS institutions that have attained the Community Engagement classification by The Carnegie Classification of Institutions of Higher Education (2018))
- Increase faculty and student involvement in community and business engagement activities
- Increase percentage of graduates who continue their education or are employed full-time

This LBR also aligns with multiple objectives associated with three of the five critical areas – pillars – that guide FGCU, as outlined in the **FGCU 2017–2022 Strategic Plan**.

Student Success

- Improve retention and 4-year graduation rates
- Provide intentional opportunities for student engagement with faculty and staff to build a sense of community and an atmosphere designed to achieve success

Academic Excellence

- Increase externally sponsored research by 100% in next 5 years
- Resources and structures to foster faculty research and scholarship

while expanding opportunities for undergraduate and graduate student research

Community Engagement & Outreach

- Increase awareness of our people, programs and impact
- Strengthen outreach, engagement, and ties to our region
- Build partnerships and relationships with our five school districts, area businesses, and organizations to optimize opportunities to put FGCU expertise to work to support the region's economy, model innovative and sustainable practices and advance the community

This LBR also supports two of the top three Key Initiatives and Investments identified in the **FGCU 2021 Accountability Plan**:

- Meet the Workforce Needs of Southwest Florida
- Applied research to address issues critical to Southwest Florida

According to **Project Sunrise (The Florida Council of 100)**, Florida suffers from a smaller talent pool relative to other states due to an “underdeveloped pipeline of workers with Science, Technology, Engineering and Math (STEM) skills.” This challenge also provides great opportunity, as Professional, Scientific, and Technical Services is the 5th largest employment sector in Florida (The Florida Council of 100) and is expected to add another 112,000 workers by 2023 (The Florida Council of 100). Furthermore, sectors such as this are more resilient to economic shock than sectors more specific to Florida (The Florida Council of 100). Several strategic goals recommended in this report are supported by the implementation of this LBR as detailed below.

Human Capital

- Recruit talent from outside Florida to STEM and Programs of Strategic Emphasis in The Water School
- Retain regional talent by recruiting them to STEM and Programs of Strategic Emphasis in The Water School

Public Investment

- Partner with local communities and counties through the newly established Southwest Florida Regional Resiliency Compact to build resiliency and ensure the economic health of local communities

R&D and Innovation

- Create public/private partnerships to test new technologies that can be applied to solving environmental issues

Health

- Promote the quality of the environment as a measure of health and well being
- Develop current research tracks related to the impacts of harmful algal blooms on human health and well being

The six pillars identified in **Florida 2030** by the **Florida Chamber Foundation (2018)** parallel many of the recommendations made by The Council of 100 and are also supported by this LBR as detailed below:

Talent Supply & Education

- Address workforce needs by enlarging the pool of available talent in STEM and Programs of Strategic Emphasis

Innovation & Economic Development

- Increase FGCU research focused on environmental sustainability

Infrastructure & Growth Leadership

- Work with local communities and counties through the newly established Southwest Florida Regional Resiliency Compact to build resiliency and ensure the economic health of local communities
- Increase applied research to support science-based decision making “to protect, increase responsiveness, and invest in regions and communities at risk from extreme weather, coastal flooding, and other dangers” (Florida Chamber Foundation 2018).

Quality of Life & Quality Places

- Focus on research and policy initiatives that protect and conserve natural places and natural resources as important components of Florida’s economy and quality of life

Data provided by the **Florida Department of Economic Opportunity** also reflect a growing workforce need for graduates in STEM and Programs of Strategic Emphasis offered through The Water School. At the state level, projected job openings for related fields number 8,809 for 2020–2028 (Table 1), and in Southwest Florida projected job openings total 453 for the same period (Table 2).

Table 1. Relevant employment data for Florida, 2020–2028 (FDEO 2021)

		State of Florida						
SOC Code	SOC Title	Employment				Percent Growth	Total Job Openings	2019 Median Hourly Wage
		2020	2028	Growth				
19-1031	Conservation Scientists	1036	1067	31	3.0	902	\$27.26	
19-2041	Environmental Scientists & Specialists including Health	5128	5569	441	8.6	5062	\$29.57	
19-2042	Geoscientists, except Hydrologists & Geographers	805	903	98	12.2	836	\$46.01	
19-2043	Hydrologists	253	279	26	10.3	256	\$36.46	
19-4091	Environmental Science & Protection Technicians, including Health	1204	1308	104	8.6	1295	\$17.54	
25-1051	Atmospheric, Earth, Marine, & Space Sciences Teachers, Postsecondary	426	481	55	12.9	355	\$104,527.00	
25-1053	Environmental Science Teachers, Postsecondary	124	140	16	12.9	103	NA	

Fostering an Innovative Economy

This LBR will also support the growth of an innovative economy that focuses on STEM and health. Through a collaboration with University of Florida, The Water School has been developing research-based tools to allow local communities to assess vulnerabilities due to climate change so they can adapt to rising sea levels,

increased coastal erosion, increased flooding, and saltwater intrusion of freshwater aquifers. All of these challenges present opportunities for innovation as we adapt to a changing environment and learn to live in new ways on the Florida landscape. In addition, several of our faculty are already partnering with local businesses interested in testing innovative new technologies or using existing technologies in new ways to solve Florida’s water woes.

Table 2. Relevant employment data for Southwest Florida, 2020–2028 (FDEO 2021)

Southwest Florida (Workforce Development Area 24) Charlotte, Collier, Glades, Hendry, and Lee Counties							
SOC Code	SOC Title	Employment				Total Job Openings	2019 Median Hourly Wage
		2020	2028	Growth	Percent Growth		
19-1031	Conservation Scientists	67	68	1	1.5	57	\$23.89
19-2041	Environmental Scientists & Specialists including Health	350	379	29	8.3	344	\$24.51
19-4091	Environmental Science & Protection Technicians, including Health	30	32	2	6.7	32	\$22.30
25-1053	Environmental Science Teachers, Postsecondary	23	27	4	17.4	20	\$59,347*

* Represents annual salary

Student Success

First-year retention rates (2015–2019 cohorts) for undergraduate programs (93% Environmental Studies; 94% Marine Science) in The Water School are above those for similar programs nationwide (CIP 03 Natural Resources and Conservation: 79%; NSCR Center 2019). However, many FGCU students work off campus to support their education or simply do not enroll in enough courses each semester to graduate in four years (average 4-year graduation rates 2012-2016 cohorts: 34% Environmental Studies; 26% Marine Science. Average six-year graduation rates for the same period (54% Environmental Studies, 53% Marine Science) also reflect this trend. In fact, 23% of students in Environmental Studies and 19% of students in Marine Science enroll part time and 79% and 69%, respectively, take less than 15 credits per semester (2016–2019). To improve these indicators of student success, we will **significantly increase financial aid** to students in The Water School to encourage and enable them to complete sufficient credit hours each semester to graduate in a more timely manner. This financial aid will also be used to **promote undergraduate research** so that students are more engaged in their education and receive training in additional skill sets that will help them obtain employment after graduation. Furthermore, these funds will be used to encourage students to enroll for a minimum of 12 credits per semester.

Second year retention rates for undergraduate programs in The Water School average 81% (2015-2019 cohorts), indicating a greater drop in retention, in many

cases prior to the student having interacted with a faculty member in their major. A *Sophomore Experience Survey* conducted by the National Resource Center for the First Year Experience and Students in Transition (2017) reported that less than 15% of sophomores interacted in a significant way with faculty and that the only campus experience predicting positive outcomes for these sophomores was the level of interaction and satisfaction with faculty. To engage students with program faculty to increase retention and success, The Water School will implement a **sophomore retention program** to connect students directly with their majors and future career paths and to provide additional opportunities for them to interact directly with program faculty.

There is a robust and growing workforce need for graduates of STEM programs and Programs of Strategic Emphasis offered by The Water School. At the state level, projected job openings for related fields number over 8,809, with a projected growth of 9% for 2020–2028; in Southwest Florida projected job openings total 453 for the same period, with a projected growth of 8% (FDEO 2021). To help meet these workforce needs – identified as a Key Initiative and Investment in the 2019 Accountability Plan – we will use LBR funding to connect Water School students with future career paths through the proposed sophomore retention program. The hiring of additional faculty will also increase the number of opportunities for Water School students to gain important additional skill sets that often fall outside the formal classroom setting through internships and senior research projects, and we will work to increase the number of partners outside the university willing to host internship opportunities for our students.

Academic Excellence

Southwest Florida is known for water-related issues that threaten its economy, human health, natural resources, and quality of life. In response, The Water School has invested significant research effort in the areas of climate change, hurricanes, sea level rise and coastal vulnerability, harmful algal blooms, water quality, and environmental restoration. This research is applied, collaborative with other institutions and community partners, and addresses issues that are critical to the region (see 2019 Accountability Plan). We will use a significant portion of this LBR to enhance research productivity and stimulate additional external grant funding in these and other critical areas by hiring new faculty and staff from various disciplines. These individuals will contribute to the understanding of how water issues impact the region – including the human, economic, and social dimensions of these impacts.

Funding will also go toward expanding opportunities for undergraduate research experiences during the summer as well as graduate student research. Undergraduate research helps students hone their critical thinking and communication skills, and trains them to develop specific skill sets needed to be successful in STEM careers or graduate school. Graduate-level research is more focused and prepares students to enter the workforce at a more advanced level

with concomitantly higher salaries. External funding from faculty drives undergraduate and graduate research, and resources from this LBR will create additional research opportunities for students through financial aid and through travel, operating expenses, and equipment and supplies.

Community Engagement & Outreach

FGCU will use LBR funding to expand significantly its community outreach and engagement efforts in Southwest Florida. We will partner with school districts to expand participation in the semester-long Watershed Teacher Leadership Academy (WeTLAnd) hosted by The Water School, and we will formalize our STEM Summer Camp for High School Girls, initially funded through the Southwest Florida Community Foundation. We will expand participation in The Water School Leadership Academy, a yearlong program that takes a cohort of community leaders through immersive education, training, and networking on water-related issues at strategic sites throughout the region. We will continue to help support the work of the Southwest Florida Regional Resiliency Compact that, when implemented, will bring together representatives from three counties and eleven municipalities to develop a regional plan for adapting to climate change and increasing coastal resilience. We will also expand our in-house lecture series *The Water School Presents* to bring eminent speakers from around the country to engage community members as well as FGCU students, faculty, and staff in important issues of our time related to water, the environment, and their human, economic, and social dimensions. To facilitate communication with local communities, The Water School will create a new social media footprint to engage local communities and will develop and operate a new web site that will function as a portal to special events, highlight research conducted at FGCU and its relevance to the region, and provide insight on important water-related issues by FGCU experts.

Budget Description

The spending plan (LBR Form II) advances the objectives of The Water School by providing necessary faculty, staff, student support, operating funds, and equipment. Faculty positions comprise 15 full-time equivalent (FTE) lines spanning multiple academic disciplines. Funding will also target faculty retention. New faculty will support academic programs within The Water School and create additional interdisciplinary connections across academic units. Instructor positions will help accommodate general education enrollment and support release time for faculty active in research to seek external grants and mentor student research. Staff positions (5 FTE) will support operational needs and outreach programs and will include an Environmental Education Coordinator, a Web and Social Media Coordinator, a Grants Specialist, and Research Technicians to assist faculty research and supervise undergraduate and graduate students. This LBR will also fund summer internships for undergraduate research experiences and assistantships to support graduate student research. Scholarships will allow us to recruit and retain high-quality undergraduate (40 x \$5,000) and graduate students

(20 x \$15,000) to Water School programs (STEM) and to encourage timely graduation.

Operating expenses will support research activities and student research projects, enabling us to purchase software, non-capital equipment, and consumables required for the day-to-day operation of on- and off-campus facilities. A recurring equipment budget will support start-up funds for new faculty, enhance existing research capacity and develop additional capacity to target emerging research questions and will allow for maintenance and replacement of existing equipment, instrumentation, vehicles, and vessels as necessary. We will also use operating expenses to implement new programs such as *The Water School Presents* lecture series, fully fund existing programs such as the STEM Summer Camp for High School Girls and The Water School Leadership Academy, and expand existing environmental education and outreach programs such as WeTLAnd.

Multi-Year Spending Plan

Because of the large number of faculty hires requested as part of this LBR, we anticipate using salary savings as non-recurring funds in Year 1 to enhance research capacity, support faculty start-up costs, and jump start community outreach programs. In order to maximize the use of salary savings in Year 1, we will begin the hiring process for new faculty early in the Academic Year so that start-up costs can be supported before Year 2. Furthermore, because of the large number of faculty hires requested, we will likely use a two-year timeline for completing faculty hires, with only eight faculty being hired in Year 1 and seven faculty hired in Year 2. This will create additional salary savings in Year 2 that will again be used to enhance research capacity, support faculty start-up costs, and jump start community outreach programs.

- II. Return on Investment** - *Describe the outcome(s) anticipated, dashboard indicator(s) to be improved, or return on investment. Be specific. For example, if this issue focuses on improving retention rates, indicate the current retention rate and the expected increase in the retention rate. Similarly, if the issue focuses on expanding access to academic programs or student services, indicate the current and expected outcomes. University of Distinction proposals should also address the requirements outlined in the separate guidance document.*

Metrics 1–4 for this LBR (Table 3) focus on STEM degree production and research and have been carried over from the 2020–2021 LBR (targets were not adjusted due to COVID-19 related uncertainties and new targets may need to be adjusted for this LBR for the same reason). Outcomes 5–8 are new and focus on student success and community outreach/ engagement. All outcomes are Water School specific. Data were mined using Tableau data visualization software.

Table 3. Metrics used to evaluate program effectiveness of The Water School. Historic benchmarks: 2014–2015 (1–4); Fall 2016 (5); 2013 cohort (6); 2011 cohort (7); and 2018–2019 (8). Current/recent data: 2018–2019 (1–4); Fall 2019 (5); 2017 cohort (6); 2016 cohort (7), and 2019–2020 (8).

Program Outcomes	Historic Benchmark	Current/Recent	Trend w/o Investment 2023-2024	Trend w/ Investment 2023-2024 (% Improvement)
1. STEM degrees awarded	64	114	146	162 (11)
2. Research expenditures	\$1,272,684	\$853,504	\$853,504	\$1,200,000 (41)
3. Graduate Assistantships	19	27	27	30 (11)
4. Undergraduate Research	46	67	70	90 (29)
5. Students \geq 12 Credits	76%	82%	78%	80% (3)
6. Retention (Sophomore-Junior)	67%	74.7%	76%	83% (9)
7. 4-Year Graduation Rate	23%	41%	41%	44% (7)
8. Number Teachers Trained	0	5	10	20 (50)

To track the success of this LBR, we have aligned the following metrics with BOG priorities as identified in the University of Distinction Guidelines for Fiscal Year 2022-2023:

Year-one Accomplishment/Success

Metric 4: Undergraduate Research. We expect in the first year of funding to see growth in the number of undergraduate students participating in research. \sqrt **Target: 90 students participating in undergraduate research experiences**

Return on Investment to the State of Florida

Metric 1: STEM Degrees Awarded. An increase in the number of undergraduate and graduate degrees in STEM and Programs of Distinction will enhance the talent pool for the region and for the State of Florida for this important sector of the economy.

Metric 2: Research Expenditures. Increased research expenditures from external funding sources will have a direct impact on many Florida businesses directly through purchases and indirectly as faculty, staff, and students supported through the LBR contribute to local economies. Furthermore, faculty and staff recruited from out of state will also increase the region’s tax base.

Metric 8: Number of Teachers Trained. Local school districts and their students will benefit from increased teacher training to enhance classroom instruction and make it more impactful and more engaging to students. There is no better way to learn to teach science than to practice science.

How Has the Program Improved Over Time as a Result of Funding

Metric 2: Research Expenditures. Increased research expenditures from external funding sources are a measure of increased research productivity.

Metric 6: Retention (Sophomore-Junior). Improving second-year retention rates will decrease the number of students who find themselves searching for another degree and losing valuable time in the process.

Metric 7: 4-Year Graduation Rate. Increasing improving time to graduation means reducing the financial burden on students and their parents in attaining their degree and earlier entry into the workforce or admission to graduate school.

Program Elevation to Excellence and Prominence

Metric 2: Research Expenditures. Increased research expenditures from external funding are an important indicator of the research productivity of a faculty and therefore programmatic excellence.

A note on university rankings. As a relatively young institution, first opening its doors in 1997, Florida Gulf Coast University is still maturing, especially in the domains of research and outreach. As a Master's Larger Programs institution (The Carnegie Classification for Institutions of Higher Education), FGCU has no Ph.D. programs that offer the promise of mentoring high quality graduate students in a research-intensive setting. Therefore, we have to find innovative ways to attract nationally renowned faculty to support our growing programs and increase research capacity for this region. Because we are still maturing, we do not yet show up in the standard rankings used to judge institutional quality. U.S. News and World Report currently ranks FGCU 28th in the top public schools in Regional Universities South and 68th overall. FGCU is also ranked as the 16th Most Innovative School in Regional Universities South. As The Water School continues to grow, build research capacity, continue to add high quality faculty, and create strong partnerships with local communities and businesses, we expect these rankings to improve.

III. Personnel – Describe personnel hiring and retention plans, making sure to connect both plans to initiative(s) and goal(s) described in section I. State the amount of faculty FTE and staff FTE and estimated funding amounts used for retention and new hires in each category. In describing faculty hires, provide overall hiring goals, including academic area(s) of expertise and anticipated hiring level (e.g. assistant professor, associate professor, full professor. Please describe how funds used for faculty or staff retention will help the institution achieve its stated goals. University of Distinction proposals should clearly note how anticipated hires or retained

individuals will help the institution elevate a program or area to national or state excellence.

The Water School requests funding to hire additional faculty to support its four primary research clusters: Environmental Integrity, Coastal Resilience, Restoration and Remediation, and Health and Well Being. These research clusters bring together faculty from multiple disciplines to focus on important issues of local and state-wide concern, and their products are applicable to other communities across the country. We believe that bringing together faculty from across the disciplines to work together in solving problems will open up new areas of convergent research related to water and the environment that will benefit communities across the State. Furthermore, by hiring faculty that are nationally renowned and retaining highly productive faculty to focus on issues of concern in Florida, we will achieve national or state excellence. Further strengthening the quality of the faculty not only creates the potential for significant new contributions in research and partnerships with local communities, but it also allows us to strengthen the quality of our degree programs so that we produce high quality talent for the State and the region. Fifteen full-time faculty will be hired to meet multiple objectives and the outcomes described in this LBR.

Ecosystem Integrity Cluster

Biostatistics, Assistant/ Associate Professor (Joint Hire: College of Arts & Sciences – Department of Mathematics)
Environmental Education, Assistant Professor
Landscape Ecology, Professor

Coastal Resilience Cluster

Ecosociology, Assistant Professor
Natural Hazards/Geology, Professor
Science Communication, Assistant Professor (Joint Hire: College of Education)

Restoration and Remediation Cluster

Bioremediation, Assistant Professor (Joint Hire: Whitaker College of Engineering)
Ecohydrology, Professor
Environmental Chemistry, Assistant Professor
Land Use Changes, Assistant/ Associate Professor

Health and Well Being Cluster

Bioinformatics, Assistant Professor
Waterborne Pathogens, Assistant Professor (Joint Hire: Marieb College of Health & Human Services)
Environmental Health, Assistant Professor

In addition to the above positions, two instructors will be hired, one to support our Earth Science general education courses and the other to teach Geographic Information System courses so that we can develop a GIS certificate program.

Five full-time staff will be needed to manage and operate supporting functions. With the increase in research expenditures and associated hiring accompanying the growth of The Water School, we are requesting a Grants Specialist who can facilitate the post-award process. In order to recruit students and grow the regional impact of our research and outreach programs, we plan to hire a Web and Social Media Coordinator, and to support increased outreach activities in the community, we plan to hire an Environmental Education Coordinator. In support of faculty and student research, we also plan to hire two Research Technicians to provide additional support in the lab and in the field.

IV. Facilities *(If this issue requires an expansion or construction of a facility, please complete the following table.)*

	Facility Project Title	Fiscal Year	Amount Requested	Priority Number
1.	N/A			
2.				

2022-2023 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II
(to be completed for each issue)

University: Florida Gulf Coast University
Issue Title: The Water School

	<u>RECURRING</u>	<u>NON- RECURRING</u>	<u>TOTAL</u>
<u>Positions</u>			
Faculty	15.00	0.00	15.00
Other (A&P/USPS)	5.00	0.00	5.00
	-----	-----	-----
Total	20.00	0.00	20.00
	=====	=====	=====
Salaries and Benefits	\$2,131,463	\$0	\$2,131,463
Other Personal Services	\$281,050	\$0	\$281,050
Expenses	\$837,487	\$0	\$837,487
Operating Capital Outlay	\$250,000	\$0	\$250,000
Electronic Data Processing	\$0	\$0	\$0
Financial Aid	\$500,000	\$0	\$500,000
Special Category (Specific)	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$4,000,000	\$0	\$4,000,000
	=====	=====	=====