FIU Responses to Program of Distinction for Environmental Resilience

We have reviewed your Universities of Distinction 2020-21 Legislative Budget Request and are requesting that you submit additional information to address the following issues:

1. What specific, existing academic degree programs are included in the broader programmatic area of Environmental Resilience?

   Since 2016, FIU has conducted a thoughtful, faculty driven process to identify and support specific interdisciplinary programs across the university. These programs include: the Institute of Water and Environment (this includes the departments: Earth & Environment, Biology, Chemistry, Environmental Engineering, Agroecology, Law, Mathematics & Statistics), Extreme Events Institute (this includes the departments: Civil Engineering, Business, Computer Science, Political Science), Center for Children and Families (this includes the departments: Psychology), and Brain Behavior and Environment (this includes the departments: Public Health, Electrical Engineering).

2. Re-review the metrics provided and if necessary, revise as follows. Only include program-specific, numeric metrics and rankings that align with the requirements outlined in the August 30 email and specify which proposed metrics meet which requirements. At least one metric must demonstrate a year-one accomplishment or success.

   - FIU will continue its improvement of student's four-year graduation rate, with an expected 60% percent graduation rate by 2025.
   - Recruitment of additional National Academies members.
   - Immediately generate an additional $15M in research grants for programs in environmental resilience

3. At least two metrics must demonstrate a return on investment to the state.

   Accelerate growth of Science & Engineering research expenditures to $200M annually by 2020-21; achieving $8M more for the year than currently expected, further bolstering the state's reputation as being number #1 in Higher Education.

   Mapping of coastal water monitoring needs and development of storm-related prevention workshops that can be used throughout the State.

4. Metrics that demonstrate how the program has improved over time as a result of the funding.

   The main program is Geosciences/Environmental Sciences. In the NSF HERD, the program's national ranking has progressed as follows: 2015 (#137), 2016 (#141), 2017 (#133) of a total of 431 programs.

The Biological and Biomedical program's national ranking has progressed as follows: 2015 (#115), 2016 (#112), 2017 (#109) of a total of 581 programs in the NSF HERD report.
Related to the Program is Psychology: In the NSF HERD, this has improved as follows: 2015 (#44), 2016 (#13), 2017 (#9) of a total of 438 programs.

5. Metrics and/or rankings to demonstrate program elevation to excellence and prominence.

   Over the first five years, the rankings, based on research expenditure growth, of the academic fields associated with the Program will improve in the NSF HERD's STEM field categories as follows:
   - Environmental Sciences – From current #65 of 431 programs nationally to top 50.
   - Computer Science – From current #54 of 430 programs nationally to top 40.
   - Health Sciences – From current #90 of 448 programs nationally to top 75.
   - Psychology – From current #9 of 438 programs nationally to top 5.

6. Please include sources of rankings and if known how many other SUS programs are ranked. Example if 8th in FL, 8th of how many programs? Do not include institution-level rankings, metrics, or action steps.

Chart 1: NSF HERD Rankings of Florida Universities in Research Expenditures

CATEGORY	2015	2016	2017									
			FIU	FSU	UCF	UF	USF	FGU	FAU	UNF	UWF	FAMU
Geosciences/Environmental	92	88	65 (N=431)	44	76	49	33	233	260	330	382	142
Computer Science	39	35	54 (N=430)	58	16	40	71	NR	147		237	216
Psychology	44	13	9 (N=438)	5	82	52	21	NR	115	247	279	208
Health Sciences	137	141	133 (N=448)	115	164	33	40	417	158	281	300	155
Chemistry	111	118	81 (N=493)	23	103	54	84	448	141	295	NR	486
Biological & Biomedical	115	112	109 (N=581)	120	134	31	32	339	163	369	263	514

Chart 2: NSF HERD FIU Research Expenditures by discipline as reported by NSF HERD

CATEGORY	2015	2016	2017
Geosciences/Environmental	92 $6.7M	88 $6.4M	65 $10.8M
Computer Science	39 $12.2M	35 $14.4M	54 $10.3M
Psychology	44 $9.7M	13 $18.8M	9 $20.5M
Health Sciences	137 $10.3M	141 $12.3	133 $15.4M
Chemistry	111 $3.9M	118 $3.8M	81 $7.3M

Biological & Biomedical	115 $20.2M	112 $24.2M	109 $28.5M
TOTAL	$63M	$79.9M	$92.8M

7. Please provide additional information on the spending plan outlined in Form II

   a) What specific program areas will the additional faculty and staff be part of?

      The additional faculty to be recruited (40 faculty and 11 postdoctoral fellows) will be strategically assigned across the following programs: Environmental Finance (3), Earth & Environment (2), Biology(4), Chemistry(2), Civil Engineering(4), Electrical Engineering(5), Public Health(2), Psychology(5), Political Science(3), Computer Science(3), Business(1), Environmental Engineering (1), Agroecology (3), Mathematics and Statistics(1), Law(1). Postdoctoral fellows will be distributed proportionally among faculty as they are recruited.

   b) What is included under other personal services?

      Personal services include stipends for Research Associates ($776K) and funds for a variety of fellows for teachers ($200K), Peer mentors ($100K) and Internships ($90K)

   c) What is included under expenses?

      Expenses include funds for retention and undergraduate research scholarships ($1.7M), schools participating in dual enrollment environmental fellows program ($50K), Summer Academy ($200K), Tech Transfers ($725K) and Equipment Maintenance and Repairs ($291K)

   d) What is included under other operating capital outlay?

      Capital expenses include equipment needed for environmental monitoring totaling $2.2M. This includes 5 (five) YSI BASE Buoys, Sensors, Doppler profilers, Flow Cytobots and other miscellaneous apparatus needed.

8. Funding category “Faculty Recruitment” (page 14) identifies 40 faculty but Form II lists 51 faculty FTE. Please clarify this discrepancy.

   a) FIU plans to hire 40 faculty and 11 postdoctoral fellows.

   b) Does the university have space to accommodate 51 new faculty and 12 staff hired in a single fiscal year?

FIU has been developing these programs over several years and has been developing dedicated core facilities and lab space that can accommodate many of these faculty in the short term. The addition of new buildings such as the School of International and Public Affairs Phase II (expected to be completed in 2021) and Engineering Phase I and II (received $30.6 Million already appropriated by the legislature) will provide office space in line with the hiring plans. This coupled with more efficient use of office space and continued enforcement of the university's research space formula will make it possible to accommodate the additional faculty and staff.

- Did you consider using alternative sources of funding – such as carry forward - for operating capital outlay and/or equipment?

    - FIU has used carryforward and re-allocated resources as well as Facilities & Administration (F&A)(Indirect) from externally sponsored grants to support these strategic programs in order for the university to grow these programs. FIU will continue this effort, however, this request will provide greater impact on these programs and on the State and FIU's pursuit of research and academic excellence.

    - Do you have an alternative plan if the request is not fully funded?
      The university plans to continue its progress, but without approval of this request the progress will be much slower.