

STEM K-20 & Workforce Development

Create, develop and strengthen programs designed to increase STEM student and workforce development within the region

– **Strengthen K-20 STEM career pathway:**

- Develop and implement STEM pipeline programs beginning in elementary and middle school, leveraging assets of universities, state colleges, and research institutes.
- Define what jobs are in the pathway, starting early pipelines in advance of college years.

– **Enhance workforce development throughout the continuum:**

- Build programs from one-year certificate to postdoctoral.
- Survey industry and determine gaps in curricular programs and skill sets of graduates.
- Leverage public and private funding to fill gaps in workforce training.
- Develop and strengthen teacher preparation programs in STEM for pre-service and in-service teachers.

LSSF STEM Initiative Inventory

Institution(s)	Funding	Name of Project	Target Population	Strategies/Goals	Expected or Actual Outcomes
IRSC	DOE	Upward Bound Math & Science	K-12	<ul style="list-style-type: none"> Program supports academic, social, and cultural activities for low-income, potential first-generation college going students in St. Lucie County middle and high schools. Services provided include academic, financial, and personal counseling; tutoring; mentoring; academic field trips; cultural events; and a summer residential college campus. 	<ul style="list-style-type: none"> Increase in the number of first-generation college going students and encourage them to pursue a STEM career
IRSC	NRC	Curriculum Development Project	College Students	<ul style="list-style-type: none"> Develop a web portal and curriculum for the Nuclear Power Plant Institute 	<ul style="list-style-type: none"> Development of a web portal and curriculum for the Nuclear Power Plant Institute
IRSC FIT ORCA Smithsonian Institute	NSF	COSEE FLORIDA	College Students	<ul style="list-style-type: none"> Collaborative partnership with IRSC, Ocean Research Conservation Association, Smithsonian Marine Station, Florida Institute of Technology, and Florida Sea Grant to become COSEE FLORIDA and advance ocean science literacy throughout the state of Florida. 	<ul style="list-style-type: none"> Provide training to Florida Ocean scientists in becoming stronger presenters: over 120 trained in first two years; provide research experiences for middle school pre-service science teachers: 6 completed to date; 30 for the five year grant period
IRSC and 19 other colleges from across the Country	DHHS	Community College Consortia to Educate Health Information Technology in Health Care (HIT)	College Students	<ul style="list-style-type: none"> Consortia to establish or expand medical informatics programs to ensure the rapid and effective utilization and development of health information technologies and train workers to support this process 	<ul style="list-style-type: none"> Increase in the number of health information technologists to support the increased utilization of electronic health records

LSSF STEM Initiative Inventory

- **Strengths**
 - 122 reported initiatives
 - Highly diverse, spanning all STEM departments
 - Strong community and K-12 system linkages
 - Emphasize \$\$\$ draw of the region, even at the undergraduate level
 - All institutions, including the State colleges, are regularly drawing federal \$\$\$ from National Science Foundation, US Department of Education, and other agencies

LSSF STEM Initiative Inventory

Institution(s)	Source Funds	Name of Project	Target	Strategies/Goals	Expected or Actual Outcomes
FIU MDC-N STU UIA	USDA	HSI STEM, Florida-Caribbean Consortium for Agriculture Education and Workforce Development	College Students	<ul style="list-style-type: none"> Assist students from a two-year program to a four-year degree college in the general field of agricultural and natural resources sciences and obtain knowledge and skills necessary to pursue advanced education and career in the above fields. Provide scholarships and research opportunities 	<ul style="list-style-type: none"> The long-term impact of the proposal is to directly contribute to the USDA's educational and agriculture, food and natural resource protection goals as solicited in the current RFP.
IRSC MDC PBSC FIU FAU	USDOE	Workforce Training for the Electrical Sector	College Students	<ul style="list-style-type: none"> Gateway to Power: partnership to develop Energy Smart Career Pathways. 	<ul style="list-style-type: none"> Provide Electrical engineering technicians: 75 to be developed in the course of the grant period; 25 to be retrained
FAMU UM FIU MDC FMU UF FSU	NSF	Florida-Georgia Louis Stokes Alliance for Minority Participation (FGLSAMP)	College Students	<p>Student researcher is required to participate in research as partial fulfillment of their grant funding. A faculty mentor guides students in developing a proposal and fulfilling the research requirements. * Participant requirements vary by institution.</p>	<ul style="list-style-type: none"> Scholars take special courses Conduct and present research Participate in an extramural summer research experience Receive assistance with navigating the graduate application process

LSSF STEM Initiative Inventory

- **Weaknesses**
 - Far fewer collaborations (21 reported)
 - Collaborations are often within districts
 - Some projects appear redundant and may benefit from sharing of “best practices” and increased, broader collaborations

Recommendations

- **Annual LSSF Student Research Symposium**
 - Rotates between LSSF institutions
 - FGLSAMP model
- **LSSF “Common Threads” Collaborative grant**
 - K-12 outreach
 - Curricular redesign
 - PLTL or other methods of student enrichment
 - Professional Development (K-20 faculty)
 - Student research
- ❖ INTEGRATE strengths of LSSF and include the development of an industry internship repository