STEM Initiatives Inventory

Updated: July 17, 2012

	Institution(s)	Source Funding	Name of Project (duration)	Target Population	Strategies/Goals	Expected or Actual Outcomes
1	MDC	Pre-school Tuition, Student Fees	Exploration Station	Pre-school Children	• Pre-school is one of the only science, technology, engineering and mathematics (STEM)–focused pre-schools in Miami-Dade County. • Children begin to develop their writing skills by keeping personal lab journals devoted to the growth of the garden. • Houses 100 children, from age 1 to pre-kindergarten. • Serves as a demonstration site for college students pursuing degrees in early childhood education.	• Students learn about environmental sustainability, how to care for plants and herbs, good nutrition and healthy eating habits.
2	MDC	US DOE	High-Tech, STEM-based Advisement	College Students	• V-Coach is a real-time, high-impact retention tool (Hobson) designed to improve the success and satisfaction of at-risk students. It sends students alerts on grades, attendance, financial-aid and other vital information. • Provides support through its Math Portal and a VIP webpage where students can access materials, ranging from educational videos to practice exams. V-Coach is designed mainly for STEM majors.	• ORTS Full Services (outreach activities, advisement, career exploration, Individualized Education Plan, tutoring) to 60% FTIC students. • Offer four cohorts in STEM Summer Academy LCs. • Offer four STEM SLS courses (SLS 1502 and/or 1505). • Merge the V--Coach Program Master Plans (Recruitment, Advisement/Career Services) and Retention master plans with the MDC Hialeah Campus Student Services Departmental Master Plans.
3	MDC	National Science Foundation (NSF); MDC Foundation	STEM-based scholarships	College Students	• Miami Dade College has partnered with federal funding agencies to offer scholarships with a maximum amount of $5,000 per academic year to students with unmet financial need (as established by federal guidelines) pursuing degrees in the biological sciences, physical sciences, mathematics, computer and information sciences, geosciences, and engineering. • American Dream Scholars - covers the in-state portion of tuition for two years of courses (60 college-level credits) for all Miami-Dade high school graduates who qualify.	• Attract better prepared students • Assigned a specific advisor • Means for intrusive advisement • Higher rates of completion
4	MDC	The Carnegie Foundation	Statway Project	College Prep Students	• To overcome math anxiety, Miami Dade College has partnered with The Carnegie Foundation and 19 other institutions to create StatWay, a pilot program to help students who are not mathematically inclined build the skills they will need to succeed in college and in their careers. • The key idea behind StatWay is that statistics can be used to provide students with a context for thinking quantitatively that does not resemble their previous math classes. • Development of the three-semester curriculum is reviewed weekly by faculty members and monthly with The Carnegie Foundation.	In progress
5	MDC	MDC	MDCPS Outreach	MDCPS Students	• 8th Grade to College Expos • College Career Days • Brain Bowls/Science Fair • High School College Fairs • Summer Programs, i.e. Robotics, CSI Miami • Dual Enrollment • Financial Aid Orientation • Placement Testing Presentations • Campus Tours	• Increased Enrollment • Build Partnership/relationships • Decreased enrollment in developmental classes
6	MDC	MDC	MDCPS Outreach	MDCPS Teachers	• Professional Development Workshops • Placement Testing Information Sessions/Updates • Career Pathways Seminar • Math Coaches Training Sessions • College Assistance Program (CAP) Advisor Retreats • Guidance Counselors Retreats • ACT Workshops	• Increased Enrollment • Build partnership/relationships • Decreased enrollment in developmental classes

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7	MDC-W	NSF	NSF STEP Tools for Success	College Students	• Increases the number of underrepresented students completing degrees in science, technology, engineering, and mathematics through online learning communities, specialized advisement, technological tools, mentoring, forums, field trips, and other extracurricular activities.	• Higher percentages of successful course outcomes than matched students. • Differences between the groups were significant between Tools and Group Match students in both chemistry classes, in MAC1140, overall in the science classes, and overall in the mathematics classes. • Differences were also significant between Kendall Tools and Individual Match students for biology and chemistry classes overall. • Wolfson Tools students also had significantly higher percentages of successful course outcomes than Individual Match students in overall mathematics.
8	MDC	MDC; US DOE; National Institutes of Health (NIH)	Peer-Led Team Learning		• Peer led team learning enhances the educational outcomes of students majoring in Science, Technology, Engineering and Mathematics (STEM) by facilitating tutoring sessions on a weekly basis led by peer leaders. • Peer leaders area closely trained and monitored by faculty mentors. • Students are provided additional classroom materials thereby enhancing problem solving.	• Reduces classroom anxiety. • Students feel less isolated and more encourage to participate in workshops. • Increases problem solving skills. • Improves class performance by one letter grade.
9	MDC-W	US DOE	Title V STEM First Year Experience	College Students	• The STEM FYE program exists to augment the number of underrepresented individuals in the fields of Science, Technology, Engineering and Mathematics through outreach education, student-centered services, and academic support and enhancement. • Recruit and enroll underrepresented populations in the fields of STEM. • Offer comprehensive student services that meet their needs and promotes academic success. • Contribute to the enhancement of an academic environment that fosters active learning and innovative teaching.	• Increase STEM retention by 8% by end of year 5. • Increase STEM enrollment by 5% by end of year 5. • At least 100 students will complete STEM Summer Bridge and remain as a STEM major by end of year 5. • Implement best practice pedagogy in 20% of STEM courses by year 5. • Enroll 30 first-time-in-college STEM Student in IDS courses annually.
10	MDC-W	NSF	The Scaling and Adapting Computing Alliance of Hispanic Serving Institution Initiative	College Students	• The NSF grant will enable the partners to adapt and implement five CAHSI strategies: 1. A new introductory course designed to attract and prepare students for majors in computing fields; 2. A peer-led, team-learning structure to provide academic support and motivation; 3. An affinity research group model to promote undergraduate retention through early research experiences and prepare students for success in upper-division and graduate studies; 4. Faculty and peer mentoring to improve student success; and 5. Outreach workshops to stimulate interest in computing careers among high school and undergraduate students and to disseminate project research and evaluation findings.	• Adapt and offer two CASHI-developed courses. • Train a minimum of nine faculty members from underrepresented groups in the selected CAHSI best practices. • Enroll a minimum of 180 students in Computer Science Zero. • Select 72 students to serve as peer leaders/mentors and/or research assistants. • Achieve a statistically significant increase in the enrollment rate in CISE programs for underrepresented students involved in the planned initiatives. • Achieve a statistically significant increase in the retention rate in CISE programs for underrepresented students involved in the planned initiatives.

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11	MDC-N	US DOE	Minority Science and Engineering Improvement Program (MSIEP), STEM Connections	College Students	• To increase the transition of high school minority students, particularly women, into college level STEM majors. • To increase enrollment and retention of declared STEM majors. • To develop mentoring networks to assist and support both STEM students and faculty from these institutions (PLTL).	• Plays a major role in increasing students' options and chances for success if there is effective outreach, transfer and mentoring systems in place to support science and mathematics skill development and build their confidence in a future that includes college retention and opportunities in high-demand scientific fields. • Early exposure to hands-on involvement in scientific research is critical to their development as workforce leaders and in becoming the scientists and researchers of the future for minority students. • Provides students an experience unlike anything inside a classroom as they encounter first-hand the excitement of discovery and a new vantage point to the sciences. • By conducting research as undergraduates, minority students begin to address common cultural barriers to their success in the sciences.
12	FIU MDC-N STU	USDA	HSI STEM, Florida-Caribbean Consortium for Agriculture Education and Hispanic Workforce Development	College Students	• Help the selected student make transition 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. • Upon satisfactory progress throughout the program at MDC and FIU, additional funding is available for computers, agricultural internships, conference travel and graduate school visits.	• 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.
13	MDC STU	US DOE	USDE HSI STEM - STEM Trac	College Students	• Support an educational center designed to attract Hispanic and disadvantaged students to enter and complete educational opportunities in STEM fields and attain a four-year degree. • A combination of high-impact practices will be used, including peer-led tutoring, service learning, virtual advising and coaching, and research experiences. • This project will be a cooperative grant with three MDC campuses and St. Thomas University.	• Increase the enrollment of full-time degree seeking Hispanics and other disadvantaged undergraduates enrolled at MDC by targeting a minimum of 500 high school students during the project period, and enrolling 50% of those at MDC. • Increase the number of returning first-time, full time degree seeking Hispanic and other disadvantaged undergraduates after their first year. • Increase the number of first-time, full time degree seeking Hispanic and other disadvantaged undergraduates enrolled at the two-year HSI and graduating within three years of enrollment. • Increase the number of first-time, full time degree seeking Hispanic and other disadvantaged undergraduates transferring to four-year institutions.

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14	MDC-IAC	US DOE	Minority Science and Engineering Improvement Program (MSEIP); STEM Oasis	College Students	• Faculty development and implementation of science inquiry pedagogy in STEM courses to promote student engagement in science; • 20% increase in retention through incorporation of peer-to-peer STEM learning as a means to develop problem-solving skills, persistence, success, confidence, and leadership skills in STEM courses. • Engage 10 students in undergraduate, targeted research in order to build and improve critical STEM skills for advancement. • Establish a student-led STEM community-building platform through which students can form connections and stay engaged with STEM and successfully transfer to the Bachelor of Science program in a STEM field at MDC.	• Provide faculty development as well as dedicated time for trained faculty to develop inquiry-based curriculum of their STEM courses can yield an effective strategy for engaging minority students in STEM. • Training as envisaged in STEM OASIS is likely to lead to motivated faculty. • The student engagement, skills improvement, and supportive focus of the STEM OASIS program will yield enormous benefits for MDC students and lead to significantly higher completion rates in STEM fields for minority students, especially minority women. • Through participation in research experiences, minority students, in particular, have the opportunity to begin to address common cultural hindrances to their success in the sciences. • MDC will reap long-term benefits also as much needed enrollment, retention, persistence, and completion rates in STEM programs increase.
15	MDC-N	US DOE	HSI STEM Ladder	College Students	• Assist to increase enrollment of Hispanic and low-income minorities in programs leading to STEM degrees at MDC's North Campus. • Designed to include summer research institutes, high school summer campus, interdisciplinary teaching, service learning, and undergraduate research internships at four-year institutions. • More than 800 college students will benefit, as well as 11th and 12th-grade students within the Miami Dade County Public School System.	• Increase in the percentage of first-time, full-time degree-seeking undergraduate students who were in their first year of postsecondary enrollment in the previous year and are enrolled in the current year at the same institution. • Increase the percentage of first-time, full-time degree-seeking undergraduate students enrolled at four-year HSIs graduating within six years of enrollment. • Increase the percentage of first-time, full-time degree-seeking undergraduate students enrolled at two-year HSIs graduating within three years of enrollment.
16	MDCPS MDC FIU UM STU BU FMU	MDC MDCPS	MDCPS Science and Engineering Fair	K-12: High School Students	• Annual MDCPS Science and Engineering Competition including SECME; organized by MDC's School of Science. • STEM student engagement and promotion of discovery and learning. • College outreach/recruitment	• Community outreach event with Miami-Dade and Broward County school students visit research and teaching labs. • Students engage in hands-on science competition.
17	FIU MDC	Fairchild Tropical Botanical Gardens; The Bachelor Foundation; NSF	The Fairchild Challenge: An Environmental Education Program based on a Botanic Garden (2012-2015)	K-12	• Develop environmental education pipeline that runs from elementary to graduate education. • Encourage students to continue their post-secondary training with unique opportunities in tropical biology and wetland ecology.	• Create student opportunities that significantly enhance student retention in STEM areas.
18	FIU	Carnegie 100k in 10 Partners	100 in 10: Answering the STEM Challenge (year-round)	K-12 Educators	• Committed to recruit, prepare and retain 200 teachers who will be hired into Miami-Dade County Public School's (MDCPS's) 26 low-performing (Educational Transformation Office, ETO) K-12. • Offer undergraduate STEM teacher education scholarship.	• Expand opportunities for graduate research projects. • Matriculating STEM students will benefit with better preparation, leading to more and better prepared STEM graduates.
19	FIU	NSF	Broadening the Pipeline-Pathways & Persistence (8/15/11-7/31/14)	Graduates	• Conduct emerging research in a large, empirical, collaborative research study focused on black and Hispanic engineering undergraduates.	• Increase the number of minority engineers.

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20	FIU	NSF	Center for High-Energy Physics Research and Education Outreach (CHEPREO)	Undergraduate/ Teacher Institute	• Support core of physics transformation efforts via: Modeling instruction at FIU (undergraduate level), summer modeling workshops and year round community (high school), and Physics Education Research Group.	• Develops teacher and faculty advocacy and improved instructional practice that persists beyond project. • STEM students will benefit in all removed courses, leading to more and better prepared STEM graduates.
21	FIU	FIU	Discover Our Backyard	K-12 Students	• Seeks to increase appreciation of the native ecosystems of South Florida and to educate students and the general public about its relevance to the community. • Encourage students to learn more about the environment, sustainability and ecological citizenship.	• Increases the number of underrepresented students completing degrees in science, technology, engineering, and mathematics through online learning communities, specialized advisement, technological tools, mentoring, forums, field trips, and other extracurricular activities.
22	FIU	The Ware Family Foundation	Science Technology Engineering and Mathematics-Early Childhood (STEM-EC) (1-year)	K-12: Early Childhood Education	• Create an area of focus for research and professional development in early childhood math and science. • Meet a growing need for better preparation of teachers of young. • Looks to modernize the math and science curriculum in early childhood to meet the needs of 21st century leaders.	In progress
23	FIU	US DOE; Junior Engineering Technological Society	Engineering Dual Enrollment/ College Prep Course (duration not given)	High School Students	• Attract high school students (particularly underrepresented) to consider engineering as an undergraduate career choice and prepare them for: • The Florida Action for Minorities in Engineering (FLAME program is a joint, dual enrollment program between MDCPS and FIU's College of Engineering and Computing, specially designed for minority high school students. • GEAR UP is a program designed to increase the personal, academic and emotional development of students and their families in the Homestead and Florida City areas. • JETS UNITE program is a collaborative effort between FIU, the U.S. Army and the Junior Engineering Technical Society to increase the number of underrepresented students in the field of engineering.	• Program serves 1,400 students from the South Dade Federal Empowerment Zone during the regular academic year and 250 students during the summer semester.
24	FIU	FIU	Engineering Expo (annually during spring)	K-12: High School Students	• Annual community outreach event organized by FIU's College of Engineering and Computing. • Plant seeds for future student recruitment.	• Community outreach event with Miami-Dade and Broward County school students visit research and teaching labs. • Students engage in hands-on activities contests.
25	FIU	National Action Council for Minorities in Engineering; FPL; Florida-Georgia Louis Stokes Alliance for Minority Participation; The Caterpillar Foundation	Engineering Undergraduate Scholarships (40 Students per semester-fall and spring)	Undergraduate	• The Center for Diversity in Engineering awards need-based and merit-based scholarships per semester to FIU STEM students. • National Action Council for Minorities in Engineering (NACME) aims to increase the number of minority graduates in engineering education and careers.	• Student retention
26	FIU	The Kellogg Foundation; MDCPS; The Children's Trust	ENLACE: Engaging Latino Communities for Education (2000-present)	K-12: Elementary & Middle Schools	• Provide students with academic preparation and personal motivation to attend college.	• More than 90% of the students participating in after-school and summer programs have been promoted to the next grade and have demonstrated improvement on the reading and fitness evaluations.
27	FIU	D.O.E.- P200A090061	GAANN: Graduate Assistantships in Areas of National Need (8/15/09-8/15/12)	Graduate	• Recruit students from under-represented populations, particularly women Awards fellowships and educational opportunities including mentorship to Ph.D. students in Computer. • Provide fellows with high-quality education and additional training in teaching techniques.	• Awards fellowships and enhanced educational opportunities including faculty mentorship to Ph.D. students in Computer Science

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28	FIU	Howard Hughes Medical Institute	Innovative Introductory Science Education (HHMI); FIU Science Collaborative (year-round)	Undergraduate	• Improve science education across biology, chemistry, and physics through facilitating scientific learning implementation in introductory courses.	• Significant faculty professional development project targeting 20% of biology, chemistry, and physics faculty
29	FIU	FIU- Institutionalized across disciplines; The Noyce Foundation; Wal-Mart Minority Student Success Award; Project Gateways (Title V); STEM Departments	Learning Assistant Program (LA Program); (year-round)	Undergraduate	• Recruit science/math majors to become certified high school and middle school teachers. • Support future teachers with faculty and teacher-in-residence expertise. • Provide opportunities for non-education majors. • Create an innovative educational landscape at a Hispanic-Serving Institution that serves as a model for other institutions.	• Learning Assistants score higher on standardized exams. • Similar results at FIU will increase applications to graduate programs. • Improved experiences increase student applications to graduate school.
30	FIU	USDOE	Mastery Math Learning Model	Undergraduate	• Improve pass rates in college algebra, increase student retention and graduation, and improve STEM pipeline.	• Based on a two-semester pilot study, the pass rate for the Mastery model was 10.8% higher than the pass rate for regular algebra courses.
31	FIU	NSF	Mathematics Teacher Education Partnership (2012-2013)	Undergraduate	• Significantly increase the effectiveness of secondary math teacher candidates, ensuring that they can promote mathematical excellence and college and career readiness of their future students.	In progress
32	FIU	Ronald E. Post Baccalaureate Achievement Program	McNair Program (year-round)	Undergraduate	• Prepare students from disadvantaged backgrounds who have demonstrated strong academic potential for doctoral studies through involvement in research and other activities. • Provide enriching scholastic experiences that prepare eligible scholars for doctoral (Ph.D.) education.	• Students in the program are highly likely to graduate. • A large majority of the students in the program attend graduate school.
33	FIU	NASA's Office of Education University Research Centers Program	NASA WaterSCAPES: Science of Coupled Aquatic Processes in Ecosystems from Space (10/1/08-9/30/13)	Graduate	• Addresses the stocks and fluxes of water, nutrients and vegetative biomass through a quantitative approach that combines remote sensing observations, mathematical modeling of Eco hydrologic processes, and field Eco physical experiments.	• Program creates student opportunities that significantly enhance student retention in STEM areas.
34	FIU	NSF	Noyce Project/ Get Educators in Mathematics and Science (GEMS) (year-round)	Undergraduate	• Provide scholarships and support for the successful induction of chemistry, early science, mathematics and physics majors into secondary education teaching careers. • Implements LA (Learning Assistants) model across disciplines.	• Creates teacher advocacy and improved instructional practice that persists beyond project. • Improved preparation of secondary STEM high school students. • Develop teacher advocacy and improved instructional practice that persists beyond the project.
35	FIU	MDCPS; FIU	PAC: Partnership in Academic Communities (academic year)	K-12: Secondary School Students	• Enhance the STEM learning experiences and increase STEM achievement of underprivileged secondary school students in low socioeconomic areas. • Aims to foster student retention in high school and college, as well as recruitment of students to STEM fields.	• Student retention and graduation both at the high school level and later at FIU for those receiving scholarships.
36	FIU	Office of Naval Research	Pathways to Success in STEM (3 academic years)	Undergraduate	• Develop an integrated model for student retention in STEM that reduces high attrition in freshman and sophomore years. • Increase upper-division student population in STEM. • Primary targets are engineering, computer science and physics students with measureable impact on other STEM disciplines.	In progress

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37	FIU	Department of Biological Science	Peer-Led Team Learning (every semester for introductory biology courses)	Undergraduate	• Increase the number of biology and other science majors graduates within STEM fields.	• Overall passing rate for students who attended PLTL is significantly higher than those students who choose not to attend the program. • Participants in the program perform about 10% better on exams compared to those who do not participate.
38	FIU	FIU's Provost Office; NIH; National Institute of General Medical Science; NSF for 21 Scholarships	QBIC Program: Quantifying Biology in the Classroom	Undergraduate	• Create quantitative biological sciences track within the Biological Sciences major. • Increase the likelihood that scholars finishing the program can move fluidly among conceptual, analytical and quantitative approaches to solving biological • Act as an incubator for new pedagogical techniques, labs and methods within biological sciences.	In progress
39	FIU	Center for High-Energy Physics Research and Educational Outreach (CHEPREO); Physics Teacher Education Coalition; FIU STEM Department	Re-Modeling Science Instruction	Undergraduate	• Provide rigorous introductory science coursework in which students learn by constructing, validating, developing and revising scientific models. • Improve attitudes about science through scientific learning from faculty, graduate students and peers. • Increase retention rates by creating research-validated learning environments that encourage participation. • Serve pre-service and in-service teachers. • Create innovative educational landscape that may serve as a model for institutions.	• Summer Modeling Instruction Institutes in physic provide both pre-service (required for degree) and in-service teachers with research validated curricula and methodology that engage students as scientists. • Modeling trained teachers serve as recruiters into the discipline as well as to FIU.
40	FIU	Provost's Office; School of Integrated Science and Humanity; National Science Foundation (SISH); Wal-Mart, Project Gateways (Title V); FIU STEM Departments	SMTI: Science-Math Teacher Imperative	Undergraduate	• Achieve a threefold increase in the number of science and math teachers that FIU produces each year over the next four years (more than 40 per year expected by 2013 • Implement evidence-based innovations in curricula • Create innovative educational landscape at a Hispanic-serving institution that may serve as a model for other institutions.	• Pre-service (required for degree) and in-service teachers learn research validated curricula and methodology that engages students as scientists. • Modeling trained teachers will serve as recruiters into the discipline as well as to FIU.
41	FIU	FIU Provost Office; School of Integrated Science and Humanity; The Noyce Foundation; Center for High-Energy Physics Research and Educational Outreach (CHEPREO); Wal-Mart Minority Student Success Award; Project Gateways (Title V), STEM Departments	SSTEP: Secondary Science Teacher Education Preparation (2011-2015)	Undergraduate	• Increase the number of discipline-based science and math teachers that FIU trains each year by a factor of three in the next four years (more than 40 per year expected 2013).	• Most FIU graduate will remain in the area after graduation, thus impacting the quality of education secondary schools. • Many of their students will matriculate at FIU, thus impacting the quality of students and the economic prosperity of the state.
42	FIU	USDA National Institute of Food and Agriculture	STEAM: Science, Technology, Engineering, Agriculture and mathematics Education Agro ecology	Undergraduate/ Graduate/ K-12: High School	• Increase the number of underrepresented college graduates and professionals in agricultural and environmental sciences.	• Increased student satisfaction and enrollment in Agro ecology courses/activities. • 80-90% of supported students have graduated or are on track for graduation. • Trained agro ecology students landing jobs in government agencies and private industries. • Student placement in USDA and EPA internships.

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43	FIU	M-DCPS Tuition Reimbursement; State Farm funding for Course Texts and Materials	Teaching Certificates in Mathematics and Science Education for K-5 and 6-8 Teachers	K-12: K-5 and 6-8 Teachers	• To enhance the knowledge for those teaching mathematics, science in grades K-5 and grades 6-8 in Miami-Dade County Public Schools.	• Enhance STEM teaching of K-12 students for future workforce or college pathways. • Teacher cohorts can support retention of teachers in program. • Increased number of K-8 teachers pursuing graduate coursework in STEM education.
44	FIU	Potential funding sources: NIH; NSF; Institute of Education Sciences; Local and National Foundations	TEAM UP for Kids: Teaching Educators to Advance Math/Science in Underserved and Underrepresented Populations (2012-2014)	K-12: Early Childhood Education	• Improve the quality of Pre-K children's lives, particularly those from underserved and underrepresented populations, by ensuring that all children are equipped with the knowledge needed to succeed in math/science.	• Foster growth in children's spatial thinking to ensure that all children are able to pursue a future career in one of the Stem disciplines.
45	FIU	NSF	Women in Science Advance Grant: Awareness of, Commitment Empowerment of Women Scientists at FIU (3 academic years)	Graduate/ Professional	• Facilitate the hiring, retention and promotion of women scientists by educating faculty in best practices and promoting improvements in current departmental practices. • Increase the number of women graduate students in science and math seeking academic positions.	• Increase in the number of women and minority faculty increases pipeline of underrepresented students into STEM careers.
46	PBSC	Workforce Florida, Inc.	Banner Center for Life Sciences	College Students, Job Seekers, Workforce	• Serve as statewide resource for life science workforce training and education. • Support life science pipeline needs from entry-level to advanced. • Develop industry-driven workforce development training valued by industry. • Support life science pipeline needs from entry-level to advanced. • Deliver workforce training through partnerships with academic institutions statewide. • Promote and support economic development of the life science industry statewide.	• Establish and implement a statewide Industry Advisory Council to guide initiative. • Conduct 2 Life Science industry focus groups to extract industry intelligence. • Conduct statewide industry survey. • Refine existing curriculum products to meet industry needs and to create sustainable income. • Execute 10 Inter-Institutional Agreements/Partnerships to expand training delivery area. • Develop and implement a comprehensive Marketing and Outreach Plan (web-site, social media, newsletters, public relations and outreach). • Develop and implement a Sustainability Plan to achieve long term sustainability through revenue generation. • Train 250 individuals statewide and place 30 individuals into full time unsubsidized employment.

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47	PBSC	NSF	Biotechnology Laboratory Skills Training	College Students	• Fortify key element in biotechnology training pathways. • Increase enrollment, retention and completion of biotechnology programs. • Increase preparedness of life science and biotechnology students. • Promote careers in biotechnology and life science.	• Increase rates of enrollment, retention and graduation. • Offer student internships and conference presentation opportunities. • Increase preparedness by offering General Biology course with emphasis in biotechnology. • Improve assessment by use of manual technical skill rubrics. • Increase student success from mentoring and tutoring programs. • Offer customized academic advising and student ambassador program. • Implement Bi-Annual Student Poster Symposia and a Biotech Awareness Week to increase engagement. • Provide professional development for faculty and students.
48	PBSC	PBSC	Institute for Energy and Environment Sustainability	College Students, Workforce, Job Seekers, Incumbent Workers	• Create a pipeline of highly qualified workers for all emerging green sectors. •Offer academic and career technical programs in emerging Green Industry sectors such as: Renewable Energy, Clean Technology, Smart Grid Operations, Alternative Transportation and Energy Efficiency. • Support education and workforce development for Building a Sustainable Energy Future. • Create "rigorous" and "relevant" courses of study that connect STEM benchmarks to job skills for the New Green Economy that are of high value to employers .	•Develop innovative energy systems to accomplish improved alternative energy strategies and energy efficiencies. • Produce qualified energy workforce by means of college degrees and career & technical education. • Provide leadership in community outreach for public awareness of alternative energy. • Produce continuing education courses of study for further advancement and career opportunities in energy systems occupations. • Leverage resources with collaborative partners between community colleges, workforce boards, and university research centers to reduce duplication of efforts and speed efforts to achieve national energy initiatives and established partnerships with energy businesses & industry to design workforce specific training programs.
49	PBSC FPL Smart Grid Technology Associates	Department of Energy	Gateway to Power	College Students, Workforce, Job Seekers, Incumbent Workers	• Facilitate the development of a well-trained, highly skilled electric power sector workforce which is vital to implementing a national clean-energy smart grid.	• Developed the following courses: 1. Carbon Management & Greenhouses Gases: Issues & Solutions; 2. Introduction to Smart Grid – Infrastructure, Technology, and Career Opportunities; 3. Integrated Renewable Energy Systems & Distributed Generation.
50	PBSC	NSF	S-STEM	College Students	• Improve the educational opportunities and retention of underrepresented students in STEM academic and/or career pursuits through marketing, academic and social supports, and STEM exploration activities. •Increase the numbers of educated and skilled technologists and scientists in Palm Beach County, with a particular aim for populations underrepresented in STEM fields.	• Provide 85 scholarships for participants to receive either a two year or four year degree. • Provide mentoring and other academic services to increase student success.

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51	PBSC	NSF	Biotechnology Laboratory Skills Training (BLAST)	College Students	• Fortify key elements in biotechnology training pathways. • Increase enrollment, retention and completion of biotechnology programs. • Increase preparedness of life science and biotechnology students. • Promote careers in biotechnology and life science.	• Increase rates of enrollment, retention and graduation. • Offer student internships and conference presentation opportunities. • Increase preparedness by offering General Biology course with emphasis in biotechnology. • Improve assessment by use of manual technical skill rubrics. • Increase student success from mentoring and tutoring programs. • Offer customized academic advising and student ambassador program. • Implement Bi-Annual Student Poster Symposia and a Biotech Awareness Week to increase engagement. • Provide professional development for faculty and students.
52	PBSC School District of Palm Beach County	Quantum Foundation	Science Pathway (three years)	High School and College Students	• Identification of gaps between high school and college Biology and Chemistry courses. • Alignment of curriculum between high school and college. • Development of curriculum and virtual learning objects to close gaps.	• Increased student success in Biology and Chemistry, two key gateway courses for further study in STEM areas. • Increased professional development of high school and college faculty.
53	PBSC	PBSC	Math Science Summer Institute (MSI)	High School and College Students	• Stimulate interest the fields of science and mathematics among high school and undergraduate students. • Provide concentrated summer program in STEM disciplines to integrate science and math subject areas. • Expose students to academic rigor of college math and science disciplines. • Offer scholarships for students pursuing degrees in mathematics, biological, environmental and physical sciences. • Provide applied activities and field trip experiences stimulate interest in careers in science and mathematics.	• Increased enrollment in math and science courses. • Improved student success in STEM disciplines. • Provide early exposure to hands-on involvement in scientific research. • Increased preparedness in science and math areas. • Increase college majors in STEM disciplines.
54	PBSC UF	PBSC and UF	PBSC and UF	College Students	• Partner with UF to provide advanced microbiology lab classes (UF) on PBSC campus, students can take the corequisite UF lecture class online, and can earn UF credit.	• Students can begin advanced microbiology studies while still at PBSC; increase enrollment in biology/microbiology ; increase awareness of PBSC's excellent biology & microbiology offerings.
55	PBSC Lake Erie College of Osteopathic Medicine (LECOM)	PBSC	PBSC and Lake Erie College of Osteopathic Medicine (LECOM)	College Students (pre-med)	• Partnership with LECOM.The goal is to offer at PBSC an intensive pre-med program after which students would be accepted to the medical school. The cooperation and planning between PBSC and LECOM would accelerate the medical studies, saving students one year. The PBSC pre-med program would be selective, restricted access.	• Increase visibility of PBSC's science as well as other STEM disciplines; attract highly qualified students to the program and the area. Once fully underway, the program could be a great benefit to the area in terms of medical services available as well as economic & social benefit.
56	PBSC	PBSC	HENAAC/Great Minds in STEM Conference	College Students	• Students apply to participate in conference, held every October. Dean of Academic Affairs and Associate Dean of Math, Engineering and Science accompany selected students to the conference, where students participate in workshops, meet STEM professionals and gain close up, hands-on exposure to STEM careers.	• Stimulate student interest in STEM careers; increase visibility of PBSC's programs.

	Institution(s)	Source Funding	Name of Project (duration)	Target Population	Strategies/Goals	Expected or Actual Outcomes
57	FGCU	Florida Space Grant Consortium/Florida Space Research Program/NASA	GEMS (Girls in Engineering Math and Science)	Middle School Girls	• *GEMS* is a hands-on program dedicated to science education for regional middle-school girls by enthusiastic professionals, undergraduate and graduate students as facilitators and role models in a girls-only environment. *GEMS* conferences occur in the Fall and Spring semesters and in the summer. Middle-school girls come to the FGCU campus and spend the day immersed in activities guided by faculty and FGCU student facilitators. Activities have included bioengineering, chemistry, biological science, biotechnology, forensics, astronomy, math, civil engineering, and environmental science. The participants enjoy working with the FGCU students and by design the positive experiences go both ways. It is exciting to watch women of all ages come together and work together engaging in engineering, math and science activities. We all reap the benefits.	• *GEMS* provides a launching pad to develop an early interest in engineering, math, and science as an impetus to higher education and highly-skilled careers. Because women are greatly under-represented in these fields, girls are a pool of human resources that should be developed and mentored to help alleviate the scientist and engineer shortage and bring greater gender equity to these areas. The technological and scientific achievements of the past decade and those projected for the future have created a heightened need for a scientifically and technologically literate workforce at a time when too few people are available for these positions. These nationwide concerns are apparent in Southwest Florida with a shortage in the fields of engineering, health professions, and math and science middle and high school teachers.
58	FGCU	Eco-Action an FGCU Student Organization	Environmental Field Trip	Three Oaks Middle School Honors Students	• On January 22, 2010 Benjamin Whitmore and Sylvie Mariolan, FGCU students, created an opportunity for Three Oaks Middle School students to visit the FGCU campus for a day of learning about the great variety of nature Southwest Florida has to offer. His team of FGCU students lead a guided nature and sustainability walk. They plan an opportunity for the students to visit campus lakes to learn about cycles and collect water samples. This Field Trip contributed to the middle school's mission to provide their students with exposure to hands-on experiences, creativity, and logic in the learning of science.	• Students react very positively to the well organized lesson plan on environmental science. It pulled together several threads that the students had explored in previous lessons in their schools science class and also showcased many strands on ecology that the students had not explored. The involvement of the students is viewed by their teacher as one of the best and liveliest of all of the field trips they experience at their school and highlights how well Benjamin's presentation captures the spirit of science with the students.
59	FGCU	Volunteer Work with FGCU Whitaker Center for STEM Education	Day of Discovery Discovery Village	middle school students	• Highlight engineering program to visitors at the Regional Science Fair. Undergraduate and faculty available to speak with students & parents. Various student projects and program specific devices available for visitors to learn more about engineering.	
60	FGCU	Florida Learns STEM Scholars	Florida Learns STEM Scholars	Gifted High School Students from Rural Districts	• The FLSS Program of Study aims to create a replicable model that will increase the knowledge of gifted and talented students in STEM content areas, create opportunities for authentic STEM research experiences, promote student leadership development, and provide multiple measures of support to encourage student pursuit of STEM postsecondary education and career goals. The following goals and measurable objectives will be reached over a three-year period. Goal One: Positively impact gifted and talented high school students' perceptions, knowledge and skills in STEM through the FLSS Program of Study. Goal Two: Capitalize on partnerships to maximize STEM-related experiences for gifted and talented high school students. Goal Three: Guide participants in establishing STEM academic and career goals. Goal Four: Enhance gifted and talented students' ability to assume leadership and participatory roles in learning situations, the workplace and society. Goal Five: Increase educator ability to provide instruction which addresses specific learning needs and builds on the strengths of each student. Goal Six: Develop and disseminate the FLSS Program of Study, to meet the educational needs of individual gifted and talented students. Panhandle Area Educational Consortium in partnership with Heartland Educational Consortium and North East Florida Educational Consortium www.floridalearnsstemscholars.org	• Positively impact gifted and talented high school students' perceptions, knowledge and skills in STEM. Through collaboration with the College of Engineering, another goal for the summer challenge is to Capitalize on partnerships to maximize STEM-related experiences for gifted and talented high school students.

	Institution(s)	Source Funding	Name of Project (duration)	Target Population	Strategies/Goals	Expected or Actual Outcomes
61	FGCU	FloridaLearns STEM Scholars	Engineering Summer Challenge	Gifted High School Students from our Rural Heartland Districts	• Week-long summer camp will provide a review of the engineering disciplines in U.A. Whitaker College of Engineering, hands-on activities in each discipline, and a series of design challenges.	
62	FGCU	Volunteer Work with FGCU Whitaker Center for STEM Education	SENCERizing Environmental Biology- A Journey down the Watershed	Undergraduates	1) To enhance the educational experiences for Gen Ed students by engaging in highly-interactive and innovative web-based techniques; 2) To apply the SENCER approach to pedagogy in STEM education classrooms by embedding supplementary civic engagement opportunities; 3) To gather baseline data related to student assessment of improved academic successes by incorporating the Student Assessment of Learning Gains (SALG) tool.	• Students will be able to positively influence southwest Florida and global communities by making evidence-based decisions regarding human use and impacts of coastal watersheds and ecosystems.
63	FGCU	SENCER's Post-institute Implementation Award	SENCERizing Marine Systems- Our Dynamic Blue Planet	Undergraduates	1) To enhance the educational experiences for Gen Ed students by engaging in highly-interactive and innovative web-based techniques; 2) To apply the SENCER approach to pedagogy in STEM education classrooms by embedding supplementary civic engagement opportunities; 3) To gather baseline data related to student assessment of improved academic successes by incorporating the Student Assessment of Learning Gains (SALG) tool.	• Students will be able to positively influence southwest Florida and global communities by making evidence-based decisions regarding human use and impacts of coastal and marine areas / resources.
64	FGCU	FGCU	E.A.R.T.H. (Environmental Analysis & Research Technical Help)	Undergraduates	• A Service Learning program link STEM courses with Environmental Education in regional schools and nature centers by focusing on spatial thinking and technologies (GPS & GIS).	• Increased interest in environmental science course content and greater commitment to dealing with related issues in the community; improved spatial thinking and skill with GPS and GIS technologies.
65	FGCU	Volunteer Work with FGCU Whitaker Center for STEM Education	STEMinars	STEM Faculty	• Series of brown bag lunches to showcase innovative undergraduate STEM teaching strategies.	• Increased familiarity among STEM faculty for strategies for innovative STEM teaching.
66	FGCU	Volunteer Work with FGCU Whitaker Center for STEM Education	Workshop/training session for Service Learning students	Undergraduates	• To provide a short workshop to assist our students who volunteer at area public, private, and charter K-12 schools. We want to ensure that FGCU is properly represented and our students are prepared to assist or implement lessons when they go to area schools as part of their service learning or civic engagement.	• Assurance that Undergraduate students behave and dress appropriately when representing FGCU in community schools and other community organizations.
67	FGCU	US Department of Education	TRIO Student Support Services Program for STEM majors	Low -Income, First Generation and Underrepresented Undergraduate STEM Students	1. Orientations 2. SSS Plan (academic and advising); 3. Monitoring academic progress (mid semester); 4. Required attendance at or completion of activities - vary with college class; 5. Tutoring in SSS offices; 6. Workshops/career advising; 7. Academic and financial aid advising and support.	1- 85% of all participants served will persist from one academic year to the next or graduate. 2. 85% of the SSS participants will meet the performance level required to stay in good academic standing at the FGCU. 3. 40% of SSS new participants served each year will graduate within six years. Actual for 2009-10 academic year: 88% persistence; 93% good academic standing; 43% graduation rate or higher.
68	FGCU	US Department of Education	CLASSIC SSS for STEM Majors	Low -Income, First Generation and Underrepresented Undergraduate STEM Students	1. Orientations 2. SSS Plan (academic and advising); 3. Monitoring academic progress (mid semester); 4. Required attendance at or completion of activities - vary with college class; 5. Tutoring in SSS offices; 6. Workshops/career advising; 7. Academic and financial aid advising and support.	1-70% of all participants served will persist from one academic year to the next or graduate (93% after one year actual). 2. 70% of the SSS participants will meet the performance level required to stay in good academic standing at the FGCU. 3. 40% of SSS new participants served each year will graduate within six years. (also - retention in STEM major - actual after one year 85%.
69	FGCU	FGCU Whitaker Center for STEM Education	STEM Research Grants	Undergraduates	• Provide mini-grants of up to $500 to support undergraduate research in a STEM field.	• Improve and increase the amount of undergraduate STEM research occurring at FGCU.
70	FGCU	FGCU Whitaker Center for STEM Education	STEM Education Research Grants	FGCU Faculty, Post Docs and Graduate Students	• Provide mini-grants of up to $500 to support STEM-education research.	• Improve and increase the amount of STEM-education research occurring at FGCU.
71	FGCU	FGCU Whitaker Center for STEM Education	STEM Travel Awards	FGCU Faculty, Post Docs and Graduate students	• Provide mini-grants of up to $500 to support STEM-related research dissemination.	• Increase the dissemination of STEM research occurring at FGCU.

	Institution(s)	Source Funding	Name of Project (duration)	Target Population	Strategies/Goals	Expected or Actual Outcomes
72	FGCU	FGCU Whitaker Center for STEM Education	STEM Undergraduate Travel Awards	Undergraduates	• Provide mini-grants of up to $500 to support dissemination of undergraduate research in a STEM field.	• Increase the dissemination of undergraduate STEM research occurring at FGCU.
73	FGCU	U.A. Whitaker College of Engineering	Engineering Extravaganza	Middle & High School Students & Parents	• Open house with tours of integrated lecture-lab classrooms and research laboratories.	
74	FGCU School District of Lee County Lee County Mosquito Control District	Lee County Mosquito Control District	Aquatic Systems/Mosquito Education Program 1987 - present	Lee County Public School Science Classes	• Provide a comprehensive environmental science unit for 5th grade, 7th grade, and high school biology and chemistry classes that has students participate in lecture, discussion, and lab experiences. Assist teachers in localizing the science curriculum to make it relevant. Assist teachers in meeting local and state science standards. Provide quality lab experiences for public school science students.	• Students learn about the local environment and local issues which because of generic statewide standards are often overlooked. Students realize the interrelatedness of education by using science, mathematics, language, and art skills. Students become interested in science by participating in an engaging hands-on lab activity.
75	IRSC	NSF	Biotrain	K-12 / Undergraduate	• The Florida Biotechnology Regional Access Initiative establishes a network along the nation's newest biotechnology corridor. The partnerships will create a broad-based accessible learning environment addressing the training needs in a region where the emphasis is heavily focused on basic biotechnology research, rather than production.	• Increase the number of undergraduate students pursuing STEM degrees and STEM
76	IRSC	DOE	Upward Bound Math & Science	K-12	• 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 experience that provides an intense educational experience in a science-project-based program.	• Increase in the number of first-generation college going students and encourage them to pursue a STEM career
77	IRSC	NRC	Curriculum Development Project	Undergraduate	• Develop a web portal and curriculum for the Nuclear Power Plant Institute	• Development of a web portal and curriculum for the Nuclear Power Plant Institute
78	IRSC FIT ORCA Smithsonian Institute	NSF	COSEE FLORIDA	College Students	• 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.	• 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
79	IRSC and 19 other colleges from across the Country	DHHS	Community College Consortia to Educate Health Information Technology in Health Care (HIT)	Undergraduate	• 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	• Increase in the number of health information technologists to support the increased utilization of electronic health records
80	IRSC MDC PBSC FIU FAU	DOE	Workforce Training for the Electrical Sector	Undergraduate	• Gateway to Power: partnership to develop Energy Smart Career Pathways.	• Provide Electrical engineering technicians: 75 to be developed in the course of the grant period; 25 to be retrained
81	IRSC, Chattanooga State Community College, Midlands Technical College, NC State University	NSF	Regional Center for Nuclear Education and Training (RC-NET)	Undergraduate	• Funds to establish the Regional Center for Nuclear Energy and Training to assure that the demand for skilled nuclear technicians is met in a unified, systematic way in the Southeastern United States.	• Provide training for 60 nuclear power technicians over the grant period; Serve as a resource to national nuclear power facilities for retraining of workers: expected to retrain 100 people over 5 years;
82	IRSC	NRC	Nuclear Scholarship / Fellowship	Undergraduate	• Funds to award 13 scholarships for the IRSC Nuclear Power Plant Technician program	• Training for national workforce in Nuclear technicians both new and retraining for next 5 years

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83	IRSC	NSF	Advanced Technological Education	Undergraduate	• Planning grant to become the Southeast Regional Center for Optics and Photonics Education and Training	• Outcomes will be to provide national training in the field of optics and workforce technician to repair and improve current optical equipment in various fields from medical to commercial uses
84	IRSC	Workforce Solutions	Health Care Initiative	Undergraduate	• To provide nursing workforce training to WIA eligible students	• Provide more RN's to local hospitals and train for the national nursing exams
85	IRSC	Employ Florida	Banner Center for Energy	Undergraduate	•The Banner Center for Energy is a deliverable based contract to support Florida's Energy workforce needs by aligning educational and career pathways.	• Provide workforce training to over 75 energy technicians in the three years of the grant
86	FAU	FAU, Lynn Cancer Institute, Wellington Regional Hospital, Broward Health, South Florida Radiation Oncology (SFRO) SFRO, Best Medical International, Advanced Radiation Physics Inc. (ARPI), CIVCO and Nucletron	Professional Masters of Science in Medical Physics (MSMP)	Undergraduate Science and Engineering majors, Graduate/Professional graduates	• To turn out medical physicists uniquely suited to the 21st-century workplace by developing advanced scientific knowledge through interdisciplinary education (physics, math, biology) and professional skills through partnerships with Hospitals for the on site training and education by professional medical physicists.	• Increase the number of scientists with professional goals who are interested in applying concepts and methods from physics to the diagnosis and treatment of human disease. • To meet the Statewide initiative for professional masters programs. • To meet the Statewide and Nation's professional and workforce needs. • To increase the job market for our graduates.
87	FAU	FAU	Professional Masters in Business Biotechnology	Undergraduate Science and Business majors, Graduate/Professional graduates	• The Professional Science Masters (PSM) are intended to provide the requisite skill sets for a graduate to move directly into the workforce. The internship component of this 2-year program will place students in organizations where there is an opportunity for an employment offer. The Program is housed in the Charles E Schmidt College of Science, Center for Molecular Biology & Biotechnology with the support of the Barry Kay College of Business.	• To meet the statewide professional and workforce needs. The Scripps Research Institute-FL and the Max Plank Institute, both located on the FAU-Jupiter campus are serving as a recruitment magnet for start-up and established biotechnology-oriented institutions. The majority of these companies are for-profit. There will be a clear need for individuals with both a strong science background and a knowledge of business and management.
88	FAU	FAU, Work force Alliance	Biotechnology Certificate	Undergraduate and Graduate Science majors/Professional graduates	• To train students who are planning for a career in a biotechnology-oriented field. Hands on lab-oriented training provides state of the art training in molecular Biology.	• To meet the statewide professional and workforce needs. The affiliate members from the local biotech industry, the Scripps Research Institute-FL and the Vaccine and Gene Therapy Institute (VGTI) at the College of Science are expected to contribute to joint research and training of students in life sciences.
89	FAU	FAU, NSF	NSF- Undergraduate Research Mentoring	Undergraduates in Biology	• The NSF Undergraduate Research and Mentoring (URM) program at FAU aims to increase the diversity of individuals in biological research and to mentor them in preparation for a graduate and academic career. This is a two-year program, during which the student receives financial support and is matched with a mentor from the Biological Sciences Department. Students actively participate in all steps involved in research – from the planning and execution of an experiment, to the analysis and dissemination of the results. The areas of research include: a) Conservation Biology, b) Marine Biology and Behavior, and c) Molecular, Cellular and Developmental Biology. Additionally, students may collaborate on their research projects with Harbor Branch Oceanographic Institute, Scripps of Florida, the Torrey Pines Institute, the USGS, or nearby state and federal laboratories.	• Graduate student pipeline well prepared to meet the challenges of an interdisciplinary graduate training and research.
90	FAU	FAU, NIH, NSF	Neuroscience Certificate Program	Graduate students in Science, Medicine and Engineering and Computer Science	• To provide Interdisciplinary graduate program across Science, Medicine and Engi	• Training of students with an understanding of the essential principles of neuroscience and elective concentrated study in Theoretical and Dynamical, Molecular and Cellular, Cognitive, and Behavioral Neuroscience.

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91	FAU	FAU, NIH, NSF, ACS, Foundations	Multi disciplinary Graduate Programs	Graduates in Biology, Chemistry, Mathematics, Physics, Medicine and Computer Science	• Interdisciplinary graduate programs across Science, Medicine and Engineering and Computer Science. Programs in Biology and Chemistry takes advantage of FAU Research Partners (Scripps, Max Plank, Torrey Pines and the Vaccine gene Therapy Institute).	• To help create the next generation of high tech work force to meet the needs of regional, state -wide and global market place across life sciences and computer sciences
92	FAU	NSF / Dreyfus/ FAU	Project ChemBOND:	undergraduate STEM majors	• To improve understanding of chemical principals in large lecture classes as a foundation for advanced STEM courses . Strategies; Peer Led Team learning breakout sessions in small groups	• More in-depth understanding of chemical concepts, ability to work in groups
93	FAU and School District of Palm Beach county	FAU, NSF	Project ChemBOND: The next generation	STEM graduate students , high school teachers, high school students	• To improve graduate students presentation and communication skills discussing research to a broader audience; to improve high school student achievement and attitudes towards STEM disciplines and careers, and to better prepare them for further study, to improve high school teachers knowledge of current research practices and inquiry-based pedagogies. STRATEGIES: Grad students in STEM spend 10 hours per week in high schools science classes partnering with teachers and students. Graduate students and teachers develop and implement pedagogically sound and innovative curricular activities, and integrate research and research practices in the curriculum	• Grad students improve their communication skills, Teachers improve their interest and knowledge of current research activities and K-12 students improve their knowledge, appreciation and achievement in STEM courses.
94	FAU	NSF / FAU	Combining Chemistry and College Writing	Freshman chemistry students	• To improve knowledge and understanding of chemical principles and research writing skills . Strategies: Integrate writing practices and the Writing Across the curriculum pedagogy into an honors General Chemistry II class	• Chemistry students taking this course will have greater understanding of chemical principles and ability to communicate them in writing.
95	FAU	FAU	Environmental Science Certificate	Science Undergraduates	• To enable students to better communicate, develop critical thinking and analytical skills and learn practical skills related to a specific field of environmental science.	• Students will demonstrate knowledge and understanding of: 1) Fundamental principles in the natural and social sciences; 2) Processes and feedbacks that govern complex dynamic systems; 3) Basic interactions between social systems and ecosystems; • Students will show proficiency in the practical skills related to: 1) Biology, 2) Chemistry, 3) Geology, and 4) Geographic Information Systems
96	FAU	FAU	The Center for Geo-Information Science	Graduate students in GeoScience	• The Center for Geo-Information Science pursues inter disciplinary applied and theoretical research in spatial information technology.	• To provide a key resource for business, industry, government, social services, with responsiveness to local, regional, and international problems in the area of spatial information technology.
97	FAU FIU	NSF PIRE Program	Partnership for International Research and Education	STEM graduate students and senior undergraduates	• Goals: To support high quality projects in engineering and computer science areas in which advances in research and education could not occur without international collaboration.	• In the last four years, engineering and computer science students spent summer conducting research in top-notch academic and industry institutions in countries such as China, India, France, Spain, Italy, Japan, Argentina, and Brazil. They conducted research with international partners and published high-quality papers.
98	FAU FIU	NSF-Sponsored Industry/University Cooperative Research Center	NSF-Sponsored Industry/University Cooperative Research Center for Advanced Knowledge Enablement	STEM graduate students and senior undergraduates	• Goals: To develop a long-term partnerships among business, academia, and government by working on the joint research projects. The applied research projects include areas of next-generation hardware/software development techniques, mobile systems and devices, Web-based applications, video and multimedia systems, innovative medical systems and technologies, advanced networking and communication systems, and various interdisciplinary areas.	• The Center has 15 industry members with more than $1.2M in memberships. The Center is presently conducting 18 collaborative research projects producing technological innovations and new ideas that are directly transferred to U.S. industry. One of the recently completed projects, Distributed Cloud Computing Study to Provide 3D Visualization Services for Climate Data on Demand, is selected by NSF to be published in their publication "Compendium of Technology Breakthroughs of NSF Industry/University Cooperative Research Center."

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99	FAU	FAU	Bioengineering Graduate Certificate Program	Graduate students in Science and Engineering and non-degree seeking students who wish to be introduced to Bioengineering	• The goal of the certificate in bioengineering program is to either prepare its graduates for the MS program in Bioengineering, or introduce them to Bioengineering fundamentals and basic methods.	• To meet the statewide professional and workforce needs. The Scripps Research Institute-FL and the Max Plank Institute, both located on the FAU-Jupiter campus are serving as a recruitment magnet for start-up and established biotechnology-oriented institutions. There will be a clear need for individuals with both strong science background and knowledge of engineering and computer science.
100	FAU	FAU	Result-Oriented Multi-Disciplinary Capstone Design to Aid Persons with Disability (2011-2015)	Senior level mechanical, computer and electrical engineering students and business MBA students	• Development of devices and assistive technologies for elderly and disabled individuals. The grant provides funding to up to 10 projects a year.	• Students and faculty will work closely with adult and assisted living communities to learn about real needs of the disabled community. Some of these student design projects will be commercialized partnering with industry.
101	FAU	FAU	Development of Mechanical, Environmental and Biomedical Engineering Education Modules for Middle School Students	Middle school Teachers and students	• Faculty participating in the FAU Bioengineering program developed education modules for Biomedical Engineering education. These one month teaching modules provided middle school teachers with game and hands-on activities on the subjects of genetics and nutrition and diabetes.	• Students participating in these STEM activities are expected to be better prepared for STEM oriented studies later in high school and beyond.
102	FAU	Corporate sponsors	Math Days (ongoing)	Elementary, Middle, and High School Students and Teachers	• Establish a program which enhances mathematics education across the K-12 curriculum. • Enhance knowledge for those teaching mathematics. • Recognize mathematical excellence.	• Increase interest in mathematics. • Recruit students to study STEM related fields. • Inspire local elementary, middle and high school students to pursue careers in mathematics.
103	FAU	FAU	Math Learning Center (ongoing)	University Students	• Establish a mathematics placement exam. • Provide walk-in tutoring help for all lower-division courses, one-on-one tutoring by appointment for all upper-division courses, and review sessions for exams. • Re-design introductory mathematics classes to incorporate an "extended classroom".	• Help students to be successful in their mathematics courses. • Improve students' mathematical problem-solving skills. • Give students the confidence and ability to solve mathematical problems on their own.
104	FAU School Board of Broward County	NSF	Standards Mapped Graduate Education and Mentoring (2004-2012)	Middle School Teachers	• Establish a Master of Science in Teaching Mathematics degree program for middle school teachers. • Create and enhance mathematics community resources for teachers. • Establish summer institutes to provide content and pedagogy enhancement for teachers beyond MST courses."	• Enhance the content knowledge and performance of SBBC middle grade mathematics teachers to deliver quality mathematics education. • Demonstrate a positive impact on student classroom performance and standardized tests. • Increase relevance and timelines

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105	FAU	FAU	Center for Cryptology and Information security (CCIS)	Graduates and senior undergraduates	•The goals of the Center for Cryptology and Information Security (CCIS) are to promote and advance the state of knowledge, methodology, and training in information security. In particular, the mission of the Center is to: • Be an internationally recognized center for research in cryptology and information security. Promote and facilitate collaboration with information and communications technology (ICT) industries in the South Florida region, the State of Florida and the Nation, providing leading edge solutions. • Promote and facilitate collaboration with federal and state government departments working in the areas of information security, especially the Departments of Defense and Homeland Security, and the State Office of Homeland Security. •To foster interdisciplinary collaboration between the Charles E. Schmidt College of Science, the College for Design & Social Inquiry, the College of Business, and the College of Engineering and Computer Science at Florida Atlantic University. • To train graduate students in cryptology and information security at the Master's and Ph.D. levels, taking into account our national needs, and to provide a stimulating research environment for post-doctoral and visiting researchers. •To provide industrial and government partners with access to center expertise and offer them technical short courses.	• To educate and train the students and information technology professionals. The center promotes collaboration with information technology industries of the region, and with federal and state government departments in the areas of information security.
106	FAU	DOE/ Broward County School Board	DEVELOP CURRICULUM FOR "GROWING STEM" for MAGNET SCHOOLS	Middle School Students	• To design, develop, and refine the engineering curriculum for five “Growing STEM” Magnet Middle Schools. The participating schools include: Lauderhill, Margate, McNicol, Parkway, and Silver Lakes Middle schools. • Six faculty members from the College of Engineering and Computer Science with the coordination Associate Dean for the Academic Affairs of COECS have participated in the proposed curriculum design and development activities.	• Four (4) modules in the area of civil engineering working with Margate Middle School • Four (4) modules in the area of biomedical/bioengineering working with Margate and Lauderhill Middle Schools • Four (4) modules in the area of mechanical engineering working with Parkway Middle School • Two (2) modules in the area of environmental engineering working with McNicol Middle School with input from Silver Lakes Middle School. McNicol is on a trimester schedule (12 week long classes) which begins at the end of July. BCPS recognizes that this module will be completed during the first trimester.
107	FAU	DOE/ Broward County School Board	"GROWING STEM" FOR TEACHERS AND STUDENTS(1 year)	Teachers and Middle School Students	• This Program will focus on Teachers and students completing projects and challenges in the various engineering fields (civil, mechanical, oceanographic, biomedical, computer science). Content to be determined and discussed but should focus on introduction to engineering with possibly some foundational computer programing.	• This professional development activity is the part of College of Engineering and Computer Science STEM initiative with Broward Schools. The program includes the following STEM instructional modules: Introduction to Engineering, Integrating STEM Across the Curriculum, Critical Thinking/Research Skills, Designing STEM Project-Based Learning Activities/Reverse Engineering, Robotics, Integrating Biomedical, Civil, Environmental, Oceanographic, Electro-Mechanical, Mechanical, and Civil Engineering.
108	UM	Dr. Astrid Mack Diversity Endowment Fund	Students Training in Research Program (STIR)	High School Students who have successfully completed their sophmore year.	STIR is a nonresidential summer research program for underrepresented students who display interest in laboratory research and academic promis in the sciences.	Develop skills and ability to perform scientific research, including laboratory research. Develop and improve public speaking and presentation skills. Incorporate ethical issues and the social consequences of laboratory research. Develop one-on-one relationships with assigned mentors.

	Institution(s)	Source Funding	Name of Project (duration)	Target Population	Strategies/Goals	Expected or Actual Outcomes
109	UM	Dr. Astrid Mack Diversity Endowment Fund	Medical College Admission Test Preparation Program	Minority and Disadvantaged Pre-Medical Students	This program includes class lectures on content found in Physcial Sciences, Biological Sciences, and Verbal Reasoning components of the MCAT, as well as instruction on preparing for written portion of the test. Participants also receive advice on study and test-taking strategies and can attend seminars that give them advice about the process of applying to medical school. They will have the opportunity to shadow physicians.	To enlarge the pool of qualified underrepresented minorities and individuals from disadvantaged backgounds who are interested in pursuing medicine as a career.
110	UM	Dr. Astrid Mack Diversity Endowment Fund	High School Careers in Medicine Workshop	High School Seniors from underrepresented backgounds	The program aims to enhance interest in medicine by exposing participants to a teachinglearning environment and nurturing the skills that will help them pursue careers in the medical field.	This seven-week, nonresidential program on the University of Miami's Coral Gables campus provides opportunities for hands-on learning, including in-depth laboratory sessions, as well as strong focus on community diversity and cultural issues related to health care. The college-prep curriculum includes selected topics in anatomy, cellular and molecular biology, language arts, sociocultural anthropology, and computer informatics—all taught in ways that demonstrate relevance to the study of medicine.
111	UM	Dr. Astrid Mack Diversity Endowment Fund	The Minority Students in Health Careers Motivation Program	Students from underrepresented backgrounds	Designed to be a mini first-semester medical education experience, this full-time, seven-week residential program exposes participants to classroom instruction in select basic science courses in the medical education curriculum and offers physician-shadowing opportunities. Great attention is placed on identifying and removing any barriers that may prevent a participant from being a competitive medical school applicant. Workshops develop skills for preparing strong admissions and financial aid applications. Each participant leaves the program with a realistic appraisal of his or her readiness for medical school.	Providing an opportunity to develop the skills necessary to successfully complete for admission to schools in these fields.
112	UM	Dr. Astrid Mack Diversity Endowment Fund	Summer Science Enrichment Program	Non-residential summer program for 25 underrepresented students	The curriculum focuses on preparation for the PSAT examination, including daily workshops with emphasis on the written exam.	Providing an opportunity to develop the skills necessary to successfully complete the PSAT.
113	UM MDC	NIH	Bridge to the Baccalaureate	College Students	• The University of Miami (UM) and Miami Dade College (MDC) have collaborated on the Bridge to the Baccalaureate Program since 1994. The long-term goal of the program is to encourage students from underrepresented groups to pursue PhDs in the biomedical sciences. The Bridge Program is funded and supported by the Howard Hughes Medical Institute (HHMI) and the National Institute of General Medical Science (NIGMS). The key components of the Bridge Program are: • Special courses • Research experiences • Faculty mentoring • Travel to national science meetings	•Scholars conduct an independent research project at UM •Scholars gain experience writing research papers and presenting their work at a national meetings •Scholars excel in MDC and UM courses and maintain a 3.5 GPA •Scholars graduate from MDC with an associate's degree •Scholars transfer into a baccalareate program at UM or another insitution •Scholars enter graduate school and later enter a career in research
114	UM	NIH	Initative for Maximizing Student Development (IMSD)	Undergraduate and Graduate Students	The IMSD program is designed to provide underrepresented minority students with an intense research experience to better prepare them for entry into PhD programs. At the graduate level our aim is to ensure that all pre-doctoral IMSD Fellows are competitive for post-doctoral or research faculty positions after completing the PhD degree.	•Scholars present and publish the research they conduct at UM •Scholars maintain at least a 3.0 GPA • Scholars gain theoretical knowledge and practical training in academic research and scientific experimentation • Undergraduate scholars receive assistance with navigating the graduate application process •Undergraduate scholars graduate from UM and enter graduate school •Graduate scholars complete graduate school and go on to have a career in research

	Institution(s)	Source Funding	Name of Project (duration)	Target Population	Strategies/Goals	Expected or Actual Outcomes
115	UM	HHMI	Howard Hughes Medical Institute (HHMI) Undergraduate Research Training program	Undergraduates	This program is for underrepresented minority students entering UM as biology or neuroscience majors. All HHMI scholars have the opportunity to take special research-based courses and are provided with paid research experiences during the academic year and summer. The long-term goal of the HHMI program is to encourage students from the underrepresented minorities to enter research careers in the biomedical sciences.	•Scholars enroll in special courses at UM and attend regular meetings with the program director •Scholars present their research at symposiums Scholars participate in an extramural summer research experience at another institution • Scholars gain theoretical knowledge and practical training in academic research and scientific experimentation • Scholars receive assistance with navigating the graduate application process •Scholars graduate from UM and enter graduate school
116	FAMU UM FIU MDC FMU	NSF	Florida-Georgia Louis Stokes Alliance for Minority Participation (FGLSAMP)	Undergraduates	An FGLSAMP student researcher is required to participate in biomedical engineering research for at least 10 hours a week as partial fulfillment of their grant funding. A faculty mentor guides students in developing a proposal and fulfilling the research requirements for the grant contract.	•Scholars take special courses at UM •Scholars conduct and present biomedical engineering research •Scholars participate in an extramural summer research experience • Scholars gain theoretical knowledge and practical training in academic research and scientific experimentation • Scholars receive assistance with navigating the graduate application process •Scholars graduate from UM and enter graduate school
117	UM MDCPS	HHMI	Howard Hughes Medical Institute High School Summer Scholars program	Miami-Dade County High School Students	This program gives public and private students with a passion for science the opportunity to gain hands on research experience. Students work in pairs to conduct biomedical research over the course of seven weeks at the University of Miami. Placements are available in biomedical engineering, neuroscience, ophthalmology, biology, and other research areas tailored to students' interests and experience.	•7-week summer research program •Scholars meet with the program director weekly •Scholars write and submit a research paper on their summer research •Scholars present their summer research project at a UM symposium •Scholars develop research, writing, and presentation skills
118	UM	HHMI	Research in Ecology (RIE)	Miami-Dade County Middle School Students and Science Teachers	This six-week summer program is funded by the Howard Hughes Medical Institute. The program is for rising 7th graders (summer between 6th and 7th grade) and middle school science teachers of all grade levels. This program is for students only from MDCPS. RIE was developed to offer middle school students the opportunity to see the exciting side of science, and feel the satisfaction of discovery. Seventh-grade students spend six weeks during the summer in an intensive program in which they explore the ecology of southern Florida, and see how many fields such as statistics, computer science, and writing are important to the life sciences. Students work in teams on research projects designed to allow them to gain confidence in their scientific ability.	•Middle school students conduct research in teams led by a UM faculty member, a UM graduate student, a UM undergradaute, and two middle school science teachers • Twice a week students take ecology, scientific writing, computer science, and statistics classes • Teachers produce four lesson plans based on the four componenets of RIE • Middle school students write a paper on their research project and present their research at a symposium at the end of the summer
119	UM	NIH	Leadership Alliance Summer Research-Early Identification Program	Undergraduates	In this ten-week summer research program, a select group of students from universities and colleges from around the country are mentored by University of Miami professors and are responsible for carrying out an investigative project, preparing a research report suitable for publication, and giving an oral presentation at a UM research symposium.	• Undergraduates work under the guidance of a faculty or research mentor at UM • Undergraduates gain theoretical knowledge and practical training in academic research and scientific experimentation • Undergraduates receive assistance with navigating the graduate application process • Undergraduates are required to present a written report at the end of their summer research activity • All participants are expected to participate in the Leadership Alliance's annual, national symposium and to make an oral or poster presentation of their research

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120	UM	NSF	Science Made Sensible (SMS)	Graduate Students and Miami-Dade County Middle School Science Teachers	SMS is a partnership between the University of Miami and Miami-Dade County Public Schools. The Miami-Dade Public School System is the nation's 4th largest. The SMS program pairs graduate student fellows in STEM disciplines with local middle school science teachers. Our three goals are: •Improve communication and teaching skills of the graduate students •Enhance the professional development of the middle school teachers •Advance the scientific curiosity and learning of the middle school students	• Selected graduate fellows in the STEM disciplines are paired with a middle school science teacher with whom they work in the classroom for one continuous academic year • Graduate fellows and teachers work together to develop inquiry-based, hands-on lesson plans and activities • Graduate fellows improve on their ability to communicate science to a general audience • Students become more engaged in science and learn about research from the graduate fellows
121	South Florida Workforce Board UM MDC	South Florida Workforce Investment Board	Life Science and Technology Park	College Students	• UM and MDC will create a career pathway center to identify adults and high school students from Overtown and surrounding areas who might be interested in pursuing careers in health care or biosciences • The center will facilitate awareness and access to existing programs and offer academic and career advising, as well as workforce development training.	• The career pathway will allow for students to have multiple entry and exit points that prepare them for employment in such jobs as pharmacy and laboratory technicians • Students will also be able to map out academic pathways to pursue associate degrees in fields ranging from health science to biotechnology that lead into baccalaureate degrees such as MDC's new proposed bachelor's degree with a major in biological sciences, which is in the final stages of approval
122	NSU	Expanding STEM Graduate Education Opportunities for Hispanic/Latinos and Other Underrepresented Minorities and Low-Income Students	USDOE	Graduate Students		

STEM Collaborations Across the Region

Updated: July 17, 2012

	Institution(s)	Source Funding	Name of Project (duration)	Target Population	Strategies/Goals	Expected or Actual Outcomes
1	FIU MDC-N STU	USDA	HSI STEM, Florida-Caribbean Consortium for Agriculture Education and Hispanic Workforce Development	College Students	• Help the selected student make transition 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. • Upon satisfactory progress throughout the program at MDC and FIU, additional funding is available for computers, agricultural internships, conference travel and graduate school visits.	• 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.
2	MDC STU	US DOE	USDE HSI STEM - STEM Trac	College Students	• Support an educational center designed to attract Hispanic and disadvantaged students to enter and complete educational opportunities in STEM fields and attain a four-year degree. • A combination of high-impact practices will be used, including peer-led tutoring, service learning, virtual advising and coaching, and research experiences. • This project will be a cooperative grant with three MDC campuses and St. Thomas University.	• Increase the enrollment of full-time degree seeking Hispanics and other disadvantaged undergraduates enrolled at MDC by targeting a minimum of 500 high school students during the project period, and enrolling 50% of those at MDC. • Increase the number of returning first-time, full time degree seeking Hispanic and other disadvantaged undergraduates after their first year. • Increase the number of first-time, full time degree seeking Hispanic and other disadvantaged undergraduates enrolled at the two-year HSI and graduating within three years of enrollment. • Increase the number of first-time, full time degree seeking Hispanic and other disadvantaged undergraduates transferring to four-year institutions.
3	MDC FIU UM STU BU FMU	MDC MDCPS	MDCPS Science and Engineering Fair	K-12: High School Students	• Annual MDCPS Science and Engineering Competition including SECME; organized by MDC's School of Science. • STEM student engagement and promotion of discovery and learning. • College outreach/recruitment	• Community outreach event with Miami-Dade and Broward County school students visit research and teaching labs. • Students engage in hands-on science competition.
4	FIU MDC	Fairchild Tropical Botanical Gardens; The Bachelor Foundation; NSF	The Fairchild Challenge: An Environmental Education Program based on a Botanic Garden (2012-2015)	K-12	• Develop environmental education pipeline that runs from elementary to graduate education. • Encourage students to continue their post-secondary training with unique opportunities in tropical biology and wetland ecology.	• Create student opportunities that significantly enhance student retention in STEM areas.
5	PBSC FPL Smart Grid Technology Associates	Department of Energy	Gateway to Power	College Students, Workforce, Job Seekers, Incumbent Workers	• Facilitate the development of a well-trained, highly skilled electric power sector workforce which is vital to implementing a national clean-energy smart grid.	• Developed the following courses: 1. Carbon Management & Greenhouses Gases: Issues & Solutions; 2. Introduction to Smart Grid – Infrastructure, Technology, and Career Opportunities; 3. Integrated Renewable Energy Systems & Distributed Generation.
6	PBSC School District of Palm Beach County	Quantum Foundation	Science Pathway (three years)	High School and College Students	• Identification of gaps between high school and college Biology and Chemistry courses. • Alignment of curriculum between high school and college. • Development of curriculum and virtual learning objects to close gaps.	• Increased student success in Biology and Chemistry, two key gateway courses for further study in STEM areas. • Increased professional development of high school and college faculty.
7	PBSC UF	PBSC and UF	PBSC and UF	College Students	• Partner with UF to provide advanced microbiology lab classes (UF) on PBSC campus, students can take the corequisite UF lecture class online, and can earn UF credit.	• Students can begin advanced microbiology studies while still at PBSC; increase enrollment in biology/microbiology ; increase awareness of PBSC's excellent biology & microbiology offerings.
8	PBSC Lake Erie College of Osteopathic Medicine (LECOM)	PBSC	PBSC and Lake Erie College of Osteopathic Medicine (LECOM)	College Students (pre-med)	• Partnership with LECOM.The goal is to offer at PBSC an intensive pre-med program after which students would be accepted to the medical school. The cooperation and planning between PBSC and LECOM would accelerate the medical studies, saving students one year. The PBSC pre-med program would be selective, restricted access.	• Increase visibility of PBSC's science as well as other STEM disciplines; attract highly qualified students to the program and the area. Once fully underway, the program could be a great benefit to the area in terms of medical services available as well as economic & social benefit.
9	FGCU School District of Lee County Lee County Mosquito Control District	Lee County Mosquito Control District	Aquatic Systems/Mosquito Education Program 1987 - present	Lee County Public School Science Classes	• Provide a comprehensive environmental science unit for 5th grade, 7th grade, and high school biology and chemistry classes that has students participate in lecture, discussion, and lab experiences. Assist teachers in localizing the science curriculum to make it relevant. Assist teachers in meeting local and state science standards. Provide quality lab experiences for public school science students.	• Students learn about the local environment and local issues which because of generic statewide standards are often overlooked. Students realize the interrelatedness of education by using science, mathematics, language, and art skills. Students become interested in science by participating in an engaging hands-on lab activity.
10	IRSC FIT ORCA Smithsonian Institute	NSF	COSEE FLORIDA	College Students	• 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.	• 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
11	IRSC and 19 other colleges from across the Country	DHHS	Community College Consortia to Educate Health Information Technology in Health Care (HIT)	Undergraduate	• 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	• Increase in the number of health information technologists to support the increased utilization of electronic health records
12	IRSC MDC PBSC FIU FAU	DOE	Workforce Training for the Electrical Sector	Undergraduate	• Gateway to Power: partnership to develop Energy Smart Career Pathways.	• Provide Electrical engineering technicians: 75 to be developed in the course of the grant period; 25 to be retrained
13	IRSC, Chattanooga State Community College, Midlands Technical College, NC State University	NSF	Regional Center for Nuclear Education and Training (RC-NET)	Undergraduate	• Funds to establish the Regional Center for Nuclear Energy and Training to assure that the demand for skilled nuclear technicians is met in a unified, systematic way in the Southeastern United States.	• Provide training for 60 nuclear power technicians over the grant period; Serve as a resource to national nuclear power facilities for retraining of workers: expected to retrain 100 people over 5 years;

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14	FAU School District of Palm Beach county	FAU, NSF	Project ChemBOND: The next generation	STEM graduate students , high school teachers, high school students	• To improve graduate students presentation and communication skills discussing research to a broader audience; to improve high school student achievement and attitudes towards STEM disciplines and careers, and to better prepare them for further study, to improve high school teachers knowledge of current research practices and inquiry-based pedagogies. STRATEGIES: Grad students in STEM spend 10 hours per week in high schools science classes partnering with teachers and students. Graduate students and teachers develop and implement pedagogically sound and innovative curricular activities, and integrate research and research practices in the curriculum	• Grad students improve their communication skills, Teachers improve their interest and knowledge of current research activities and K-12 students improve their knowledge, appreciation and achievement in STEM courses.
15	FAU FIU	NSF PIRE Program	Partnership for International Research and Education	STEM graduate students and senior undergraduates	• Goals: To support high quality projects in engineering and computer science areas in which advances in research and education could not occur without international collaboration.	• In the last four years, engineering and computer science students spent summer conducting research in top-notch academic and industry institutions in countries such as China, India, France, Spain, Italy, Japan, Argentina, and Brazil. They conducted research with international partners and published high-quality papers.
16	FAU FIU	NSF-Sponsored Industry/University Cooperative Research Center	NSF-Sponsored Industry/University Cooperative Research Center for Advanced Knowledge Enablement	STEM graduate students and senior undergraduates	• Goals: To develop a long-term partnerships among business, academia, and government by working on the joint research projects. The applied research projects include areas of next-generation hardware/software development techniques, mobile systems and devices, Web-based applications, video and multimedia systems, innovative medical systems and technologies, advanced networking and communication systems, and various interdisciplinary areas.	• The Center has 15 industry members with more than $1.2M in memberships. The Center is presently conducting 18 collaborative research projects producing technological innovations and new ideas that are directly transferred to U.S. industry. One of the recently completed projects, Distributed Cloud Computing Study to Provide 3D Visualization Services for Climate Data on Demand, is selected by NSF to be published in their publication "Compendium of Technology Breakthroughs of NSF Industry/University Cooperative Research Center."
17	FAU School Board of Broward County	NSF	Standards Mapped Graduate Education and Mentoring (2004-2012)	Middle School Teachers	• Establish a Master of Science in Teaching Mathematics degree program for middle school teachers. • Create and enhance mathematics community resources for teachers. • Establish summer institutes to provide content and pedagogy enhancement for teachers beyond MST courses."	• Enhance the content knowledge and performance of SBBC middle grade mathematics teachers to deliver quality mathematics education. • Demonstrate a positive impact on student classroom performance and standardized tests. • Increase relevance and timelines
18	UM MDC	NIH	Bridge to the Baccalaureate	College Students	• The University of Miami (UM) and Miami Dade College (MDC) have collaborated on the Bridge to the Baccalaureate Program since 1994. The long-term goal of the program is to encourage students from underrepresented groups to pursue PhDs in the biomedical sciences. The Bridge Program is funded and supported by the Howard Hughes Medical Institute (HHMI) and the National Institute of General Medical Science (NIGMS). The key components of the Bridge Program are: • Special courses • Research experiences • Faculty mentoring • Travel to national science meetings	•Scholars conduct an independent research project at UM •Scholars gain experience writing research papers and presenting their work at a national meetings •Scholars excel in MDC and UM courses and maintain a 3.5 GPA •Scholars graduate from MDC with an associate's degree •Scholars transfer into a baccalareate program at UM or another insitution •Scholars enter graduate school and later enter a career in research
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Miami Dade College

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