

USF Strategic Goal I: Supporting and increasing faculty research, scholarship, and creative activity

Rev. 5/9/03

College of Engineering Focused Contributions to USF Strategic Goal:

The strategic plan of the College of Engineering is driven by a continuous assessment of its programs to assure that it is neither “under invested” in areas of research growth or educational need nor “over invested” in continuing or old areas. Its investment in new faculty and infrastructure is targeted at attaining and/or enhancing prominence and recognition in nationally relevant interdisciplinary thrust areas. These efforts also include national recognition in the integration of engineering research and education.

CoE Action Plan	00-01	01-02	02-03	03-04	04-05	College Resources	Other Resources	Outcome Measures	Bench Marks
Objective 1: Increase externally funded support to Research I CoE levels a) Hire 30-35 new faculty in interdisciplinary thrust areas over the next five years b) Increase CoE Office of Research staff and capabilities c) Provide additional space and infrastructure		\$2M	\$2M	\$2M	\$2M	\$2M NR	\$2M NR \$4M R	Increase sponsored research to \$200,000/faculty/yr	00-01 levels are less than \$100,000/faculty/yr
Objective 2: Establish national centers in selected interdisciplinary thrust areas such as: a) Nanomanufacturing b) Bioengineering c) Robot Assisted Search and Rescue d) Software Testing and Productivity e) Energy Systems f) Wireless Communications			\$4M	\$6M	\$6M	\$4M NR	\$8M NR \$4M R	At least three new interdisciplinary national centers with total external support funding in excess of \$12M per year	One self-sustaining national center
Objective 3: Increase scholarly productivity to Research I CoE levels a) Hire 10 new instructors/lecturers b) Increase funding for adjuncts c) Increase TA support		\$50K \$25K \$400K	\$150K \$25K \$400K	\$150K \$25K \$400K	\$150K \$25K \$400K	\$200K R \$50K R	\$300K R \$50K R \$1.6M R	Increase measures of scholarly productivity such as publications, appointments to editorial boards and national associations, and others	
Objective 4: Develop innovative interdisciplinary graduate research and educational programs at the intersection of engineering and the life sciences (e.g., IGERT)			\$2M	\$2M	\$2M	\$600K NR	\$400K NR \$5M R	At least two nationally visible and highly competitive IGERT-style PhD programs	

USF Strategic Goal II: Developing a student enrollment profile consistent with a Research I University

College of Engineering Focused Contributions to USF Strategic Goal:

Since its inception in 1964, the College of Engineering has evolved from a primarily undergraduate student profile to one with a significant number of Masters students and a growing and emerging PhD student population. The ultimate quantity goal is an undergraduate to graduate student ratio of 75:25 with a 50:50 balance in Masters to PhD students. The action plan aims to achieve this goal by enhancing the quality of our PhD, Masters, and undergraduate programs and attracting and retaining a high quality and diverse student population at all levels.

CoE Action Plan	00-01	01-02	02-03	03-04	04-05	College Resources	Other Resources	Outcome Measures	Bench Marks
Objective 1: Significantly increase the quantity and quality of graduate students over five years a) Increase TA support b) Increase RA support c) Increase graduate stipends to nationally competitive levels by pursuing federal sources		\$400K \$400K \$500K	\$400K \$400K \$500K	\$400K \$400K \$500K	\$400K \$400K \$500K	\$ 400 K R \$ 500K R	\$ 1.6M R \$ 1.2M R \$ 1.5M R	50% increase in graduate students with a 50:50 PhD: Masters profile Federally competitive grad stipends for top 20% of students	500 graduate students in 00-01 with an 20:80 PhD; Masters profile Less than 5% of students on competitive stipends
Objective 2: Invest in the development of nationally recognized PhD programs a) Create named professorships to attract nationally recognized senior faculty and junior faculty with exceptional promise b) Additional TA, RA and grad stipend support for targeted programs			\$200K \$100K	\$200K \$100K	\$200K \$100K		\$600K R \$300K R	Two top tier ranked PhD programs	
Objective 3: Expand professional degree and certificate programs a) Invest in expansion of innovative delivery systems for professional programs (FEEDS) b) Develop new interdisciplinary certificate programs		\$150K	\$50K \$50K	\$100K \$50K	\$150K \$100K	\$200K R \$ 50K NR \$ 50K R	\$250K R \$ 100K NR	25% increase in professional student enrollment Three new self-sustaining certificate programs	
Objective 4: Increase the quality, retention, and diversity of the undergraduate student population a) Develop a College-wide REU program b) Develop innovative pre-entry and foundation experiences c) Increase support for recruitment and retention		\$50K \$25K	\$50K \$25K	\$100K \$25K	\$200K \$25K	\$200K R \$ 50K R	\$200K R \$ 50K R	At least 50% of all U/G's with research experience Increase graduation retention rate to 75%	Less than 5% of U/G's with research experience Retention rate less than 50%

USF Strategic Goal III: Fostering interdisciplinary research and education

College of Engineering Focused Contributions to USF Strategic Goal:

A major commitment of the College of Engineering lies in investments at the boundaries of traditional engineering disciplines and at the intersection of engineering and other fields such as the life sciences. Fostering interdisciplinary research and education (e.g., bioengineering; nanomaterials and nanomanufacturing; information and communications technologies; robotics; critical infrastructure; transportation; energy and environmental systems; advanced manufacturing and materials; and engineering the service sector) is a major component of the College of Engineering strategic plan.

CoE Action Plan	00-01	01-02	02-03	03-04	04-05	College Resources	Other Resources	Outcome Measures	Bench Marks
<p>Objective 1: Create a culture of interdisciplinary research and education across College departmental boundaries</p> <p>a) New development and marketing efforts to support interdisciplinary thrusts</p> <p>b) Develop hiring, promotion, tenure and faculty retention efforts based on interdisciplinary “matrix” model</p> <p>c) Invest in college-wide interdisciplinary graduate research center or institute activities</p> <p>d) Immerse undergraduates in this environment through REU and related experiences</p>		\$25K	\$50K	\$75K	\$100K	\$50K NR \$50K R	\$75K NR \$75K R	<p>Doubling of dollar value of proposals submitted by CoE faculty</p> <p>Tripling of dollar value of proposals submitted to competitive federal sources</p> <p>At least 50% of undergrads with research experience</p>	
<p>Objective 2: Invest in interdisciplinary research and education thrusts between Engineering and other USF Colleges</p> <p>a) Expand MS in Biomedical Engineering into MS, PhD and joint MD/PhD program with College of Medicine</p> <p>b) Invest in interdisciplinary infrastructure in nanotechnology with College of Arts and Sciences</p> <p>c) Develop interdisciplinary program in Materials Science and Engineering</p> <p>d) Develop innovative academic programs across College boundaries (e.g., Design Technologies with Visual and Performing Arts, Entrepreneurship with College of Business)</p> <p>e) Create internal “seed funding “RFP’s with sister colleges across USF.</p>		\$25K	\$100K	\$200K	\$400K	\$200K R \$ 25K NR	\$500K R	<p>A new graduate department in Biomedical Engineering</p> <p>Nanotech 1</p> <p>Certificate and professional programs in materials science and engineering</p> <p>Cross college capstone design experiences</p> <p>Cross college joint faculty proposals for external funding</p>	
			\$500K	\$3M	\$500K	\$4M NR			
			\$25K	\$50K	\$50K	\$50K R	\$75K R		
			\$100K	\$100K	\$100K	\$150K R	\$150K R		
			\$15K	\$45K	\$60K	\$60K R	\$60K R		

USF Strategic Goal IV: Increasing the engagement of the University with the community and region

College of Engineering Focused Contributions to USF Strategic Goal:

The College of Engineering has traditionally played a major role in the economic development of the State of Florida through its research, development and educational efforts in areas such as transportation and civil infrastructure. The strategic plan calls for the College to continue to be a major catalyst for economic development in these and many other areas of engineering and technological innovation. New investments support a major engagement of the College with the K-12 and community college community through a number of innovative programs and related efforts.

CoE Action Plan	00-01	01-02	02-03	03-04	04-05	College Resources	Other Resources	Outcome Measures	Bench Marks
Objective 1: Promote engineering education across the entire K-20 spectrum a) Engage faculty and students in federal proposals for innovative partnerships with the K-12 community (e.g., NSF GK-12 STARS program) b) Engage faculty and students in proposals for innovative partnerships with community colleges c) Promote joint proposals with MOSI, FL Aquarium and similar education and outreach organizations		\$100K	\$550K	\$550K	\$550K	\$100K NR \$ 50K R	\$500K R	Highly visible national programs that provide graduate students and faculty with opportunities to integrate research and education with community partners	
Objective 2: Develop a Research Experiences for K-12 Teachers program (RET) in the College of Engineering		\$50K	\$100K	\$100K	\$200K	\$100K R	\$100K R	Triple the number of K-12 teachers who are provided each summer with an engineering research experience	Pilot program in summer 2002 supported 13 K-12 teachers
Objective 3: Increase and enhance long distance and web-based educational opportunities a) Invest in state-of-the-art delivery systems b) Invest in support infrastructure (studios)		\$50K	\$100K	\$100K \$200K	\$100K \$200K	\$ 50K R	\$ 50K R \$ 400K NR		
Objective 4: Increase student and faculty involvement in community and service projects a) Enhance Engineering EXPO b) Support capstone design and related experiences in unique service areas such as rehabilitation engineering and energy and environmental systems		\$10K	\$10K	\$20K	\$30K	\$10K R	\$20K R		

USF Strategic Goal V: Enhancing the quality of student life and the intellectual climate to support teaching and learning

College of Engineering Focused Contributions to USF Strategic Goal:

The College of Engineering is committed, as part of its strategic plan, to leverage the unique opportunities provided by a research comprehensive university to enhance the quality of life for its students. This includes investments in human resources and infrastructure to facilitate more effective learning, student retention and the development of creative curricular and educational experiences with national as well as local impact.

CoE Action Plan	00-01	01-02	02-03	03-04	04-05	College Resources	Other Resources	Outcome Measures	Bench Marks
Objective 1: Procure external support for the development of innovative curriculum development and educational projects a) Expand and procure support for programs aimed at enhancing student retention (e.g., "Engineering a Smart Start") b) Expand and procure external support for the college-wide Research Experiences for Undergraduates (REU) program c) Provide matching support for federally funded proposals in engineering education		\$20K	\$20K	\$20K	\$20K	\$10K R	\$ 10K R	Increase graduation retention rate to 75%	Currently less than 50%
		\$50K	\$50K	\$100K	\$200K	\$200K R	\$ 200K R		
		\$50K	\$50K	\$100K	\$100K	\$50K R	\$ 50K R		
Objective 2: Support and enhance the role of student organizations in the College a) Support participation in regional and national forums and competitions b) Provide support for student chapters to host regional and national forums and competitions		\$10K	\$20K	\$30K	\$30K	\$15K R	\$15K R	Enhance regional and national visibility of quality of students	
		\$20K	\$20K	\$30K	\$30K	\$15K R	\$15K R		
Objective 3: Develop a Tutoring Center with enhanced IT access and equipped study areas		\$30K	\$30K	\$30K	\$30K	\$15K R	\$15K R	Increase retention rate in first two years	
Objective 4: Leverage Career Resource capabilities to provide international co-op and immersion experiences for undergraduates									
Objective 5: Enhance support for advising and retention		\$50K	\$50K	\$50K	\$50K		\$50K R		
Objective 6: Provide highly interactive state-of-the-art classroom facilities				\$500K	\$500K		\$1M NR		