University of South Florida
College of Engineering

Strategic Plan 2008-2013
“We Envision a Great Future”
For more than 20 years, the College of Engineering has been pursuing national recognition in engineering research. This pursuit has been carefully continued from mid-1980s to the present. In the past decade, USF’s executive leaders and the Board of Trustees fully embraced strategic plans that have and will continue to move the university toward national recognition and rankings by becoming a top-tier research institution. The strategic plan outlined below builds on the efforts and plans that have permeated the College of Engineering for the past several decades.

Consistent with past plans, we remain committed to improving the quality of our undergraduate programs. The best path forward to improve our undergraduate programs requires continued investments in the research enterprise and our graduate programs. Revenue streams to the university are more lucrative for graduate programs on a per student basis. Increased revenues from graduate programs will justify the expansion of the faculty size, which ultimately leads to a better student to faculty ratio at both the undergraduate and graduate level. By achieving these goals, the College will establish a national reputation through its research efforts that will garner national rankings (U.S. News & World Report) and raise the quality of the incoming undergraduate and graduate students.

Outstanding students are attracted to universities because of their national reputation and reputation is driven by the national rankings.

Likewise, the caliber of faculty recruited will also increase as our reputation improves nationally. But this all takes time and perseverance. We remain steadfast in these goals.

The connection between our graduate and undergraduate program quality is intimate. The College had its first success in showing this synergy with the implementation of the Research Experiences for Undergraduates (REU) Program. This remains a cornerstone program for our College and provides important learning opportunities beyond the classroom for our undergraduates. As we move forward, we need to build on this model and expand it to the learning opportunities that exist in the public and private sectors outside of USF. We will be pursuing a new level of professional development and experiences for our students in the coming years.

In spite of the economic downturn, the College has garnered renewed support through investments in the infrastructure and faculty while adjusting and improving its operational structure. The College of Engineering continues to focus on growing the graduate program and increasing expenditures for research and development, while improving the quality of our undergraduates’ educational experience. To support this growth, 23 high-profile faculty members, all graduates of top-ranked engineering programs in the United States, joined an already prestigious group of educators that includes 15 National Science Foundation CAREER Award winners. With the start of this new strategic plan our ambition takes the College to the next level by recruiting an unprecedented number (107) of PhD students, nearly double the normal recruitment, for the 2010-2011 academic year.

Our future is bright and we are poised to make dramatic improvements in our programs. The plan below envisions our path forward over the next several years, but it does not veer from where we have been headed for a long time now. This plan continues to take a view far down the road.
OUR VISION
By providing a relevant, high quality educational experience for our students and by being a leader in innovative research in the areas of sustainability, renewable energy and biomedical engineering, the College of Engineering aspires to be a peer among engineering programs at research-focused public universities.

OUR MISSION
The Mission of the College of Engineering at the University of South Florida is to improve the quality of life in our community by:

- Providing a high quality education for our students and practicing professionals.
- Creating new knowledge and solving real world problems via innovative research.
- Engaging in effective community service and outreach.

OUR GOALS
1 Ensure academic and future professional success for our students.
2 Achieve and sustain national recognition in focused areas of research.
3 Establish essential operational infrastructure to achieve the College’s vision.

OUR VALUES
- Student Centric
- Innovation
- Collaboration
- Collegiality
- Commitment to Continuous Improvement
- Service to Humanity
- Diversity

Through the College’s support and emphasis of these values, we lead by example and pass these attributes on to our students, empowering them to be creative and innovative engineering professionals in the 21st century as their work influences and impacts humanity.

NATIONAL PEER INSTITUTIONS
University of Cincinnati
Rutgers University, The State University of New Jersey
University of Illinois at Chicago
University of Buffalo, The State University of New York

ASPIRATIONAL PEER INSTITUTIONS
AAU (Association of American Universities) Public Institutions with Engineering Programs

Assistive and Rehabilitation Robotics

Biomedical Engineering Helium Plasma generating pen
The Planning Process

The College of Engineering strategic planning began in 2008 with internal group listening sessions that were facilitated by USF’s Center for Transformation and Innovation, including four focus groups from the College of Engineering faculty and staff: Education, Services, Outreach and Research. Overall, more than 150 faculty, staff and students from the College participated in the sessions.

The strategic planning framework for the College included taking a snapshot of its current situation by using a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, indentifying short-, medium- and long-term plans, and envisioning a desired state for the College. During the planning sessions the College’s mission and vision were reviewed and revised to reflect the new strategic priorities of Education, Outreach and Service, Research, and Marketing.

This plan aligns with USF’s Strategic Plan. The goals and measures of success in this strategic plan are a direct result of those planning sessions and the invaluable input from students, faculty, alumni and staff who share our vision and commitment. Together, we envision a great engineering future.

GOAL 1
Ensure academic and future professional success for our students

Strategies:

• Provide a professional, relevant curriculum in all engineering disciplines that prepares our students for a successful career.
• Provide professional opportunities inside and outside the classroom that build our students’ skills set and positions them to be more competitive in securing their career aspirations.
• Improve our students’ opportunity to learn by enhancing and upgrading dated facilities and infrastructure.
• Align accreditation requirements (SACS and ABET) to encourage a more contained and focused quality enhancement in the planning and implementation process.
• Increase the teaching quality of our programs through innovative instructional methods and curriculum.

Goal 1
Indicators of Success

• Seven programs achieve six-year ABET accreditation during the next cycle.
• Improved admission metrics for selecting quality undergraduates that will increase retention rates and graduation rates.
• Increased outreach programs to pre-college students from elementary and middle school to high school that create interest in pursuing an engineering education.
• Increased outreach programs for under represented STEM groups such as minorities and women to consider a career in engineering.
• Increased diversity recruitment efforts faculty and doctoral students.
• Expanded opportunities for undergraduates to participate in internships, co-ops, research programs and learning experiences beyond the classroom.
• Improved overall GRE scores for admitted masters’ and doctoral students.
• Increased percentage of student job placement within six months after graduation through established relationships with professional associations, alumni, corporate leaders, and government officials.
• Innovation and modernization of curriculum by 2013.
• Increased investment in educational facilities and infrastructure.
GOAL 2
Achieve and sustain national recognition in focused areas of research

Strategies:
- Improve the undergraduate experience from enrollment through graduation, while continuing to grow the graduate program, especially PhD.
- Improve the quality of graduate programs.
- Increase research capacity in biomedical engineering and areas related to sustainability with a focus on several of the National Academy of Engineers’ Grand Challenges for the 21st Century.
- Establish a new interdisciplinary research center that leverages existing strengths across the college and among key collaborators throughout the University.
- Increase research productivity to levels commensurate with peer universities.

Goal 2
Indicators of Success
- Continued growth of R&D expenditures comparable to our aspirational peer universities
- Increased number of nationally recognized faculty, doctoral and post-doctoral students to the College’s research community
- Increased national reputation as a leader in focused areas of research
- Increased faculty productivity to levels comparable with AAU members.

▲ Research Experience for Undergraduates (REU) Wireless Robotics  ▲ Biomass-based jet fuel research  ▲ Students work on sustainability projects in various parts of the world. Left, Civil engineering students work on wastewater designs in Bolivia; and on sanitation and potable water projects in Africa with the Peace Corps.
GOAL 3
Establish essential operational infrastructure to achieve the College’s vision

Strategies:

• Align unit strategic plans with Collegiate and University of South Florida Strategic Plans.
• Align communications and marketing efforts with College’s vision and mission.
• Complete governance documents and structure for College.
• Engage broader community support for the College to achieve its mission and vision through Development Office initiatives.

Goal 3
Indicators of Success

• Increased reputational ranks among ranking surveys of College’s units and programs.
• Increased communications and marketing initiatives that align with the College’s strategic plan as measured against the 2008 Comprehensive Communication Management Audit.
• Significant increase in external support and interaction with Collegiate programs.
What is the American Association of Universities?

The Association of American Universities (AAU) comprises 63 leading public and private research universities in the United States and Canada. Membership in AAU is by invitation and is based on the high quality of programs of academic research and scholarship and undergraduate, graduate, and professional education in a number of fields, as well as general recognition that a university is outstanding by reason of the excellence of its research and education programs.

The University of South Florida envisions itself a premier research university and aspires to be an AAU member. The economic and societal impacts of AAU membership would not only enhance the prestige of USF, but benefit the local and state economy as well as the greater academic community in significant areas.

Economic and Societal Impacts of Membership

- AAU universities often serve as the economic engines of their communities and regions. They provide well-educated employees and create new businesses and opportunities. They foster civic engagement and public service by capturing the idealism of students and faculty to provide services and outreach efforts that improve the quality of life in their communities.

- AAU universities partner with their cities and schools, provide world-class health care through their medical centers and clinics, and open their museums, libraries, performing arts centers, and recreation centers and athletic fields to their communities.

- AAU universities contribute significantly to their regional and state economies, as well as to the national economy. AAU institutions employ approximately 800,000 people. The combined operating budgets of AAU U.S. universities total approximately $100 billion.

- AAU universities have patented and licensed thousands of innovative discoveries and technologies that have led to breakthroughs in communications, medicine, information technology, and energy, to name just a few areas. As a result, new industries, products, and jobs have been created. Licensing revenues generated by these innovations are used to enhance research and educational activities.

Source: “AAU Facts and Figures” (April 2009)