

# **Strategic Plan**

## **DRAFT**

### **University of Kentucky College of Engineering**

**2006-2009**

#### **About the College:**

**The University of Kentucky College of Engineering is the Commonwealth's leading engineering institution. Since conferring the first degree in 1890, the College has sent more than 21,000 graduates into all phases of the engineering and computer science profession, and into business, law, and medicine, as well as a variety of related professions.**

**Engineering plays a significant role in the University of Kentucky's land grant mission. Academic faculty, together with staff in the College's research and technology transfer units, provide the Commonwealth with technical expertise and vital resources in support of technological and economic development. Now in its second century of service, UK's College of Engineering occupies an enviable position among the leading engineering schools nationally.**

**The College of Engineering offers programs leading to undergraduate and graduate degrees in biosystems and agricultural, chemical, civil, and computer engineering, computer science, and electrical, materials, mechanical, and mining engineering. Graduate training in biomedical engineering is also offered through the Colleges of Engineering and Medicine. A multidisciplinary master of engineering degree and a master of science in manufacturing systems engineering address the growing need for advanced engineering education by engineers throughout the Commonwealth.**

**The College is devoted to continuous improvement of all of its functions in the pursuit of excellence in its core processes of education, research and service.**

## **Our Vision:**

**We aspire to make the College of Engineering one of the nation's great engineering schools, recognized nationally and internationally for excellence in teaching, research, and public service. We seek to be a preferred choice of:**

- **students and practitioners seeking an engineering education;**
- **employers hiring engineering graduates; and**
- **organizations seeking advanced engineering knowledge.**

## **Our Mission:**

**To provide education, research and service in a scholarly environment in a way that:**

- **prepares our students for successful professional careers;**
- **addresses the changing needs of our other constituents; and**
- **responds to the technological challenges facing the Commonwealth and the Nation.**

## **Our Values:**

**We support the values of the University and in particular we value:**

- **academic excellence and freedom;**
- **continuous improvement of our programs/processes;**
- **success of our students and to know them personally;**
- **professional development of our students and engineering practitioners;**
- **the personal and professional development of our faculty and staff;**
- **diversity among our students, faculty and staff; and**
- **being a collaborative part of the University of Kentucky.**

# **Goal 1: Enhance the University's Stature Among Its Peers**

## **Objectives and Strategies:**

- 1.1 The College will update plans for achieving excellence in all its endeavors, in accordance with the University's Top 20 Business Plan.**
  - S1. Revitalize the COE Process Improvement Initiative. Restart the College's Continuous Quality Improvement Program with a review of existing teams, identify new initiatives, identify required resources and resume annual planning sessions with department chairs and center directors.**
  
- 1.2 The College will update its capital project priorities and Master Plan to accommodate a larger faculty and student body and the expansion of research and clinical operations.**
  - S1. Use the space plan to optimize space utilization annually.**
  - S2. Update the College's capital project priorities annually.**
  
- 1.3 The College will enhance substantially its research and engagement efforts.**
  - S1. Attract and graduate more Ph.D. students by using college and departmental resources more effectively.**
  - S2. The College will focus on recruiting renowned faculty in cohort hiring.**
  
- 1.4 The College will support the University's efforts to maintain competitive salaries, benefits, and professional support to retain and attract outstanding faculty and staff.**
  - S1. Update our analysis of the salaries of faculty and staff in comparison to regional, national and benchmark programs and develop equity in personnel salaries.**
  - S2. Establish a Faculty and Staff Professional Development Process.**

## **Key Indicators:**

- Increase new grants and contracts to \$35 million by 2009**
- Increase Ph.D. graduates to 45 and maintain M.S. graduates at 160 by 2009**
- Propose one major center per year from the College**

- **Increase College endowment to \$75 million**

## **Goal 2: Prepare Students for Leadership in the Knowledge Economy and Global Society**

### **Objectives and Strategies:**

- 2.1 The College will enhance interdisciplinary learning and inter-professional training.**
- S1. Develop certificate programs in support of the New Economy areas (nanotechnology, biopharmaceutical engineering, global engineering management, leadership development institute, living/learning).**
- 2.2 The College will increase opportunities for international and multicultural educational experiences for its students.**
- S1. Increase support for and participation of engineering students in identified international and multicultural educational experiences (BS/MBA, German engineering, Japanese exchange – Nagoya University, Malaysia Study Abroad, international capstone experience).**
- S2. Include international research exchanges in College center proposals.**
- 2.3 The College will set and achieve six-year growth and quality targets for undergraduate, graduate, and professional enrollments.**
- S1. Increase the number of transfer students into the upper division of all COE programs.**
- S2. Prepare K-14 pipeline students for transition to the College of Engineering.**
- 2.4 The College will integrate more aggressively its teaching, research, and outreach missions.**
- S1. Increase the number of students in E-club, undergraduates participating in undergraduate research, develop for-credit courses for students participating in service learning experiences.**

### **Key Indicators:**

- **Maintain a graduation rate of 350 undergraduates**
- **Increase the number of transfer students to 150.**
- **Increase the participation of students in certificate programs and joint**

**undergraduate programs to 50.**

- **Increase the participation of students in international activities to 40.**
- **Create a for-credit course for students participating in service learning experiences.**
- **College of Engineering will be an affiliate school for Project Lead the Way.**

## **Goal 3: Enhance the Intellectual and Economic Capital of Kentucky through Growth in Research**

### **Objectives and Strategies:**

- 3.1 The College will cultivate and celebrate the full range of efforts in creative achievement and research.**
- S1. Develop a process for nominating faculty for appropriate professional awards.**
  - S2. Expand the College's Research Channel Initiative.**
  - S3. Develop a process for announcing faculty and staff research success.**
- 3.2 The College will invest strategically in research areas of current strength, emerging interest, and greatest importance.**
- S1. Resource allocation and space planning will be driven by strategic decisions on strengths, interests and importance.**
  - S2. Focus faculty hires in research clusters of excellence.**
- 3.3 The College will actively transmit the benefits of its knowledge and expertise to the public it serves.**
- S1. Create new enterprises based on College intellectual capital and student/faculty expertise.**
  - S2. Promote research that is mutually beneficial to industry and the College.**

### **Key Indicators:**

- The College will retain its objective to reach \$35 million in research by 2009.**
- The College will reach a Ph.D. output of 45 and maintain M.S. output at 160 by 2009.**
- The College will reach 15 invention disclosures by 2009.**

## **Goal 4: Embrace and Nurture Diversity**

### **Objectives and Strategies:**

- 4.1 The College will use its organizational structure to improve diversity.**
- S1. The director of outreach will lead the efforts on recruitment and retention of women, minorities, and other under-represented groups in engineering.**
- 4.2 The College will establish a coherent, focused, College-wide implementation strategy to achieve diversity.**
- S1. The College will lead an institution-wide effort to develop a NSF Advance Proposal to support women and minorities in the sciences and engineering, including recruitment, and especially retention.**
- S2. The College will implement programs with the Engineering Student Council to improve the climate for diversity among the undergraduates.**
- S3. The College will work with the College of Education and the Kentucky Department of Education to implement programs that stimulate interest in the STEM disciplines.**

### **Key Indicators:**

- The College will increase women and minority enrollment to: 5.0% African-American and Hispanic, 15% women in the undergraduate programs; 3.0% African-American and Hispanic, 25% women at the M.S. level; 3.0% African-American and Hispanic, 25% women at the Ph.D. level.**
- The College will operate its plan to improve the first-to-second year retention rates and review the plan's effectiveness.**
- The College will work to improve the six-year graduation rates for African-Americans and Hispanics to reach the success rate of the student body as a whole.**
- The College will make 25% of its tenure-track faculty hires women.**
- The College will tenure 75% of all its untenured faculty hires, irrespective of gender, race, or national origin.**



## **Goal 5: Engage Kentuckians through Partnerships to Elevate Quality of Life**

### **Objectives and Strategies:**

- 5.1 The College will encourage greater engagement with external communities.**
- S1. The College will enlarge its K-14 outreach activities.**
  - S2. The College will use its centers (Center for Manufacturing, Visualization Center, Kentucky Transportation Center, and its other research centers) and center linkages (CAER, KWRRI, CPST) to expand new knowledge and technology for the Kentucky economy.**
  - S3. The College will increase publications in educational journals on its K-14 activities.**
  - S4. The College will continue its entrepreneurship activities.**
  - S5. The College will strengthen its industrial partnerships for curriculum through the EC 2000 process.**
- 5.2 The College will define research and scholarship more broadly to include work that engages the communities it serves.**
- S1. The College will continue its participation in Kentucky-wide research and scholarship activities, including work with Kentucky industry, Homeland Security initiatives, EPSCOR programs, the cooperative extension system, and Ft. Knox projects.**
- 5.3 The College will increase learning opportunities for its students by involving them in its engagement efforts.**
- S1. The College will work with its student professional engineering societies to help them develop their community engagement programs.**

### **Key Indicators:**

- The College will increase the number of engineering and computer science B.S. degrees statewide to 600, in concert with the STEM programs of AMSP and LSAMP.**
- The College will develop an undergraduate independent study course for students working on outreach activities.**
- The College will establish two SET 4-H extension positions in partnership with the College of Agriculture (Paducah and Lexington).**
- The College will establish three positions in the Beacon program (Princeton, Lexington and Quicksand) in concert with the College of**

**Business to promote business and engineering.**

- **The College will establish two joint positions with the College of Education to facilitate STEM engagement.**