Strategic Plan for Agricultural and Biological Engineering
2010-2015
(Approved December 8, 2010)

I. INTRODUCTION AND VISION

Agricultural and Biological Engineering has a history of serving the agricultural engineering and biological engineering needs of the state and region (since 1909 and 1968, respectively). Our Department has as its goal to be nationally recognized in our discipline as a leader in teaching, research, and extension.

Mission Statement
To educate students in the fields of biological engineering, biomedical engineering and agricultural engineering technology and business in order to prepare them for careers in biomedical, environmental/ecological, and natural resources engineering by which they will have the potential to become leaders in industry, the profession, and the community; to conduct quality research by applying engineering principles to solve biological and agricultural problems; and to spread the knowledge of applied biological, biomedical and agricultural engineering research to the people of the state and the nation. (Note: the mission statement was established in 1997 and modified in 1998 and 2010.)

Guiding Principles and Values
The following guiding principles and values will characterize how we carry out teaching, research, and service missions:

- We will deliver the best quality education possible for the students in our programs
- We will adhere to high standards of scholarly and professional ethics
- Rather than attempting to cover all areas in agricultural and biological engineering research, we will focus on areas where emerging needs have been identified and will reflect the training, experience, and interests of the faculty.
- We will provide service to the state in agricultural engineering through our Extension program
- We believe that our program is enriched and strengthened through a commitment to diversity
- We will constantly strive to pursue excellence in establishing a national reputation for our teaching, research, and extension programs

II. DEPARTMENTAL STRENGTHS

The Department of Agricultural and Biological Engineering has the following program strengths which have positioned the department for a future rise in it national reputation:

- Excellent undergraduate program in Biological Engineering which continues to attract the most talented students.
- Strong research programs in agriculture engineering, ecological engineering, bioenergy, and biomedical engineering
- Versatile degree program in Agricultural engineering technology and business with highly marketable graduates
- The only biomedical engineering graduate program in the state
- A high percentage of graduates admitted to post graduate programs in human and veterinary medicine, dentistry, biomedical engineering, environmental engineering, and law.
- A large percentage of women in the biological engineering undergraduate program

III. GOALS AND STRATEGIES

A. Major Goal

Our major goal is to be recognized as one of the top 15 programs in Agricultural and Biological Engineering.

The strategy for accomplishing this goal will be to strive for excellence in targeted areas and to publicize our accomplishments to other similar departments of agricultural and biological engineering through professional channels, our departmental newsletters, and personal interaction and visits.

In order to reach this level, the department will be committed to a continuing effort to build and improve our infrastructure in terms of offices, teaching facilities, and laboratory space as required by the pace of growing demand.

B. Other Ongoing Goals

1. Academic Program

   a) The quality of the undergraduate students in our program will be maintained such that the average incoming freshman ACT will be greater than or equal to a composite score of 27.

   b) A robust undergraduate population will be sustained by ensuring that we have sufficient numbers of students while maintaining the quality of the undergraduate program delivery by keeping the number of students within a manageable limit. The number of undergraduate students per E&G (CALS) FTE will be between 45 and 65 .

   c) National recognition of undergraduate students will be attained by accomplished by having at least one student or student group per year in national design or paper competition.

   d) A productive graduate program at the M.S. level will be maintained by having at least three M.S. graduates per year.

   e) A productive graduate program at the Ph.D. level will be maintained by having at least one Ph.D. graduate per year.

2. Research

   a) The department will generate refereed journal articles at a rate of at least two for every FTE. These should include both first author and non-first author articles.

   b) The department will have strong extramural grant funding including a mixture of agency, industry, private, and commodity funds. Every faculty member will be active participants in the pursuit of competitive grants.

   c) Research collaboration with investigators outside of the department will be encouraged and expected. Each faculty member will be involved in at least one interdisciplinary or collaborative project.

3. Extension

   a) Active extension publishing will be accomplished by having over 3 extension and other publications per extension FTE per year.

   b) The leveraged extramural grant expenditures per year per Extension base funding will be increased to a ration of 1.5 or greater.

4. Departmental Outreach

a) In order to showcase the accomplishments of our alumni and expose of students to job opportunities, the department will conduct an alumni career and research day once every two years.

b) To spread the news of departmental accomplishments to alumni, other departments, and the profession at large, the department will publish a newsletter twice a year.

C. Short-term Fixed Goals

1. Realistically Attainable

a) Establish a fund-raising campaign to seek donations to help furnish and equip the new building to a level higher than what is programmed by the state in the bond-generated income approved by the legislature.

b) Increase scholarships available to students in the biomedical engineering concentration and in the pre-medical emphasis area.

2. Resource-Dependent

a) Increase the number of teaching and research faculty members by two so that the department has 10 TR faculty and increase the extension faculty members by one so that we have 4. One of the new TR faculty members will be in the environmental area and one will be in the biomedical area. The extension faculty member will be in a area to be determined in agricultural engineering.

b) Establish an endowed professorship in an area that matches the desires of the future donor in the agricultural engineering area, the environmental engineering area or the biomedical engineering area