

**PROGRAM REVIEW IMPLEMENTATION
PLAN PROGRESS REPORT
Biosystems and Agricultural Engineering
2019 - 2020**

Recommendation 1. Develop a portfolio approach to balance the department's efforts across all missions – research, instruction, and extension.

Assessment method:

Determine the proper distribution of faculty members (area of specialization within the department and Regular versus Extension Title) through departmental faculty meetings to determine future faculty hiring.

Results:

In the fall of 2019, we developed a plan to hire and advertised three faculty positions, with a closing date of January 2020. This group of hires was unanimously approved by the faculty. This would keep an appropriate distribution by specialization and title series. One position was an extension faculty member based in Princeton to work on agricultural water systems. The other two were in the regular title series with a focus on sustainable water systems related to suburban/agricultural interface and fermentation engineering in support of the James B Beam Institute for Kentucky Spirits.

Analysis of results and reflection:

The budget cuts and hiring pause in Spring 2020 changed the plan. We filled the regular title series position in Lexington related to sustainable suburban/agricultural water uses. We interviewed for the fermentation position and our preferred candidate declined. We still hope to fill the fermentation position. The agricultural water systems position in Princeton is on hold.

Ongoing improvement actions:

Ongoing

Recommendation 2. Develop strategies to preserve the collaborative and cooperative culture of the department.

Assessment method:

Increase the impact and number of events been held to engage undergraduate students, graduate students, staff, and faculty. This will continue to maintain and expand the collaborative nature of the department.

Results:

A new event was held targeted to undergraduate students, graduate students, staff, faculty, alumni, and retirees. The first BAE Academic Showcase was held at Spindletop Hall on April 25, 2019 to highlight the achievements of students, staff, faculty, alumni, and retirees. The attendance was very good (over 120) and was very well received. Awards to current students and alumni were presented. The Showcase in April 2020 was cancelled due to COVID restrictions.

The graduate students are working to form a Graduate Student Organization. This would provide an important effort to integrate graduate students into professional careers, provide mentoring, and assist students transitioning into graduate school.

Graduate students and staff wanted additional interaction and representation in departmental faculty meetings. The format has been changed to have an open meeting with everyone invited, followed by a faculty meeting.

Analysis of results and reflection:

We received numerous compliments on the BAE Academic Showcase. We plan to offer the Showcase when conditions allow. The BAE Graduate Student Organization has been formalized and is a registered student organization at UK. The departmental meeting followed by a faculty meeting has been well received. Currently meetings are held biweekly that is helpful in the current climate.

Ongoing improvement actions:

Ongoing.

Recommendation 3. Evaluate staffing needs (technical, professional, and administrative) and ensure that assignment of personnel matches needs.

Assessment method:

The breakdown of staff duties based on MJR's was performed. These were discussed with staff members during their annual performance review.

Results:

MJR's were tabulated and provided to the faculty for review.

Analysis of results and reflection:

A core group of administrative staff are required to perform the duties of the department. No changes to their MJR's are feasible. There are some staff that need the MJR's adjusted based on their current job responsibilities. These were relatively minor. Staff assistance dedicated to extension efforts has been low relative to research support. Current budget constraints will limit our ability to hire new staff.

Ongoing improvement actions:

We will need to reevaluate staffing at the Agricultural Machinery Research Laboratory (AMRL) versus the Barnhart building. Currently the Barnhart building has two staff, while the AMRL has four. We will look at moving one staff member from the AMRL to Barnhart.

Recommendation 4. Proactively develop and implement a departmental laboratory operations and maintenance plan for all labs.

Assessment method:

A committee has discussed issues and priorities to improve the laboratory wing.

Results:

We have ongoing issues with basic laboratory practices. This includes chemical inventory, storage, sample labeling and hazardous waste labeling. New training modules using Canvas have been developed. Most of our laboratories are shared spaces. This has led to issues with inadequate PI oversight. Issuing keys and verifying the return of keys has been emphasized. Signage has been modernized to help describe purpose and location of the labs.

Analysis of results and reflection:

Our training and oversight of laboratory activities by PI's needs improvement.

Ongoing improvement actions:

The department is assigning laboratories and/or bench space to allow for improved student oversight. This has to be a department and PI priority to keep our lab space.

Recommendation 5. Develop coursework and timeline to match PhD deliverables.

Assessment method:

Benchmark our program versus peer programs.

Results:

Benchmark data was obtained from our peer departments. Faculty voted on changes to the program. Updated requirements will be reflected in the bulletin next year.

Analysis of results and reflection:

After discussion, faculty arrived at a common decision.

Ongoing improvement actions:

Assuming this is approved by Graduate School, no additional action is planned.

Recommendation 6. Be proactive and build a strong relationship with the new Dean of the College of Engineering, and continue to collaborate at all levels to the benefit of both colleges.

Assessment method:

The department chair (or representative) will continue to attend the leadership meetings and events in both Colleges. The chair will meet with both deans once per semester to discuss issues and areas of strength.

Results:

The department is involved with events and meetings with both Colleges.

Analysis of results and reflection:

No additional changes are planned.

Ongoing improvement actions:

Continue to interact with both Colleges.

Recommendation 7. Recognize the importance of Extension with DOEs that promote faculty excellence in extension by allowing appropriate time on their major appointment.**Assessment method:**

Schedule a faculty meeting to revisit the BAE Statement of Evidences originally written in 2009 to insure they are still relevant. Vote on any changes within two years.

Results:

This was delayed until a new Associate Dean for Extension was appointed. A new Associate Dean has been hired, but this item has not been addressed due to other issues this year.

Analysis of results and reflection:

An emphasis has been placed on helping Extension faculty generate scholarly activity. This should help with output that can be documented.

Ongoing improvement actions:

Ongoing.

Recommendation 8. BAE branding should focus on the unique systems approach and benefits for addressing complex challenges today in industry careers, research, and extension.**Assessment method:**

Two committees have been tasked to address undergraduate numbers. The Student Recruitment and Outreach Committee (SROC) will identify one area to focus on improving the number and quality of students entering the program their sophomore year. The Undergraduate Curriculum Committee (UGCC) will identify one area to improve retention during the sophomore to senior year.

Results:

A survey of current students was conducted spring 2019 to determine student satisfaction with Biosystems Engineering. Students were asked when they decided, why they chose, what do they like, and what could be improved related to Biosystems Engineering. Recruiting events have been shifted online. Events have been held for the First Year Engineering Information Session and two virtual department open houses are scheduled later this fall.

Analysis of results and reflection:

The work of the UGCC and SROC has considerable overlap. Based on the survey, it was clear that most students decided on Biosystems Engineering in high school. STEM related activities in high school had a major influence on the decision to enroll in Biosystems Engineering. We are discussing

methods to increase our departments presence in 4H that would help with programming in STEM related education.

Ongoing improvement actions:

Most of the focus this semester has been developing online recruiting information. Limited action has occurred related to 4H.

Recommendation 9. Consider developing a marketing/communication plan to address the potential impacts of a bachelor's degree in Biomedical Engineering.

Assessment method:

Rejected, this is being addressed as part of recommendation 8.

Results:

Analysis of results and reflection:

Ongoing improvement actions:

Recommendation 10. Work with the college to increase BAE alumni relations and development funds.

Assessment method:

Track the growth in gifts/development funds to the department. Develop a list of funding priorities to provide to alumni

Results:

An Academic Showcase was held on April 25, 2019. Approximately 110 people were in attendance including undergraduate students, faculty, staff, graduate students, and alumni. This highlighted scholarships, senior design projects and awards to alumni, graduate students, undergraduate, faculty, and staff. The goal is to recognize all parties within the department and provide an opportunity for alumni to return to campus to visit the department.

Analysis of results and reflection:

Developing relationships with alumni is a long-term process. We have focused on events where students, faculty, and alumni interact. We will continue the Academic Showcase and will look for other opportunities to engage alumni.

Ongoing improvement actions:

Ongoing.