PROGRAM REVIEW IMPLEMENTATION PLAN
PROGRESS REPORT
Biosystems and Agricultural Engineering
2020 - 2021

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 advertise three faculty positions. Due to budget constraints in 2020 we were only able to continue the hiring process of two. Two hires were made 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. An extension position related to water to be stationed at the Research and Education Center at Princeton was dropped due to funding.

Analysis of results and reflection:
The two faculty hires were very important for the department. We need to continue to evaluate faculty hiring in the new budget scenario.

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 being held to engage undergraduate students, graduate students, staff, and faculty. This will continue to maintain and expand the collaborative nature of the department.

Results:
This has been difficult the past two years. The greatest impact is the BAE Graduate League of Students (BAEGLS). This has been very helpful keeping graduate students engaged within the department. The group is working 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:
There is still hesitation by many people to meet in person. Hopefully this will change soon. Zoom can not replace face to face interactions.

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:
There were numerous staff lines used to meet the department budget cut. Constraints related to budget (and type of funds available) will limit our options to fill staff lines. Staff assistance dedicated to extension efforts has been low relative to research support. Additional workload required by department staff for example, vehicle/Voyager card logs and purchasing (ARIBA), will also impact how we hire staff in the future.

Ongoing improvement actions:
A committee has been tasked with evaluating department staff needs.

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 made significant improvements on laboratory operation practices. This includes improved chemical inventory and chemical storage. New training modules using Microsoft Teams allow the department to centralize storage of key documents, employee training records and lab specific training documentation. Prior to 2020, most of our laboratories were shared spaces. This resulted in inadequate PI oversight and lack of accountability. Where possible, individual PI's were assigned lab space.

Analysis of results and reflection:
All of the practices developed have significantly improved lab safety and accountability. This was a major culture shift that has gone very well.

Ongoing improvement actions:
Ongoing.

Recommendation 5. Develop coursework and timeline to match Ph.D. deliverables.

Assessment method:
Benchmark our program versus peer programs.

Results:
Benchmark data were obtained from our peer departments. There is still considerable discussion within the faculty.

Analysis of results and reflection:
Unless the bulletin is updated, we will continue to require the Graduate School minimum of 18 credits beyond an MS.

Ongoing improvement actions:
Ongoing.

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. There is a college committee providing recommendations on scholarly evidences for extension faculty. This should help documenting scholarly activity for extension faculty.

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 partially overlapping tasks related to this item. The Student Recruitment and Outreach Committee (SROC) focuses on improving the number and quality of students entering the

program their sophomore year. The Undergraduate Curriculum Committee (UGCC) manages student issues from sophomore year to graduation. Each committee is tasked with developing strategies to improve student recruitment and retention.

Results:
Both committees have been active. The SROC has focused on the FYE information sessions, student welcome events, and advertisements in ASABE (professional society). A major event was coordinating a media day with COE and CAFE communication groups. The support was tremendous and the video on the website is very well done. The other media generated will be valuable for future presentations and events. Surveys of current students have indicated that a large number of students have made a decision to enroll in Biosystems Engineering in high school, primarily due to STEM activities, 4H, or FFA.

The UGCC has been focused on ABET. One curriculum change has been discussed. The senior exit interviews have indicated that CAD skills are lacking for senior design. One option is to integrate a CAD course with hands on skills and engineering economics. This would allow additional emphasis on the application of CAD and engineering economics.

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 department's presence in 4H that would help with programming in STEM related education.

Ongoing improvement actions:
We are continuing to discuss methods to recruit students.

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.