

**PROGRAM REVIEW IMPLEMENTATION PLAN
PROGRESS REPORT
Biosystems and Agricultural Engineering
2021 - 2022**

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:

We are still constrained by budget cuts in 2020 and promotions of faculty to administrative roles. In spring 2020, we transitioned Wayne Sanderson and two centers (Southeast Center for Agricultural Health and Injury Prevention – SCAHIP and the Central Appalachian Regional Education and Research Center - CARERC) from the College of Public Health to BAE. SCAHIP and CARERC provide significant funding and outreach to the agricultural community. We have worked with the Department of Community and Leadership Development on a joint hire that would oversee the CARERC. BAE proposed an extension title series faculty member to oversee SCAHIP. Our faculty numbers have decreased since the last review, this has been very noticeable in the extension title series.

Analysis of results and reflection:

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 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:

This has been difficult the past two years. The greatest impact continues to be 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.

The BAE Academic Showcase was held on April 27, 2022. This event is well attended by faculty, staff, students, and alumni. Additional social events were held (welcome back picnic, Christmas breakfast, etc) and attendance has improved.

Analysis of results and reflection:

There is still hesitation by many people to meet in person, however this has significantly changed recently.

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 has been substantial staff turnover during 2021-2022. This has caused short term logistical difficulties, but it will allow us to reevaluate staffing needs. This has impacted the Agricultural Machinery Research Laboratory, wet chemistry labs in Barnhart, business office, and extension programing.

We have made numerous improvements on information availability to the department through a sharepoint site. This provides a one stop location for department personnel to find information. It includes hiring, purchasing, travel, equipment scheduling, presentation templates, and numerous other items. This has helped during staff turnover.

Ongoing improvement actions:

A new committee has been formed to evaluate 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 ordering, inventory and storage. Sharepoint is utilized to provide guidance on hiring, training, equipment reservation, purchasing, and standard operating procedures. After online training is completed, lab managers review lab specific training for each new hire. When students finish, an exit interview with the lab managers is performed. This allows identification of samples, ensures proper labeling, and provides feedback on when/how samples are disposed.

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. Most of the information is stored on the departments sharepoint site.

Ongoing improvement actions:

Ongoing.

Recommendation 5. Develop coursework and timeline to match PhD 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:

Initial discussions have been made, but no action has been taken.

Analysis of results and reflection:

There are new guidelines from the College on scholarly activity from extension faculty. This should be helpful for evaluating the BAE Statement of Evidences related to scholarly activity. Evaluating peer reviewed journal articles is easy, there are impact factors and everyone understands the review process. With the wide range of outputs from extension faculty, it is difficult to evaluate relative to journal articles.

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 departments 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.

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:

The BAE Academic Showcase is the primary method to engage undergraduate students, faculty, staff, graduate students, and alumni. This highlighted scholarships, senior design projects and awards to alumni, graduate students, undergraduate, faculty, and staff. We had to cancel the event in 2020 and 2021. However, we to offered the event in 2022. Attendance was approximately 100. 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.