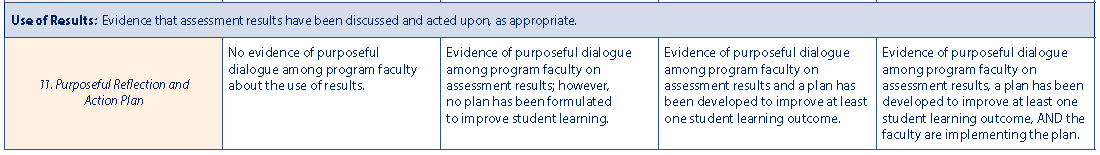
# Use of REsults



## Steps to Evidencing Learning Improvement

1. Quality Assessment
2. Program Faculty Conversations
   1. Purposeful dialogue and reflection
   2. Plans for Change
   3. Implementation of Plans

## Possible “Use of Results” scenarios

### Broad use of results

* Course changes (additional assignments, change in assignment, etc.)
* Course sequencing/scaffolding changes (the addition of a pre-requisite, creating specific intro course for majors)
* Additional course(s) (adding capstone experience, adding internship, adding methods class)
* Removing course(s) (redundancies)
* Professional Development for faculty

### Specific use of results

* Updating lab space/technology
* Course reDesign to improve course syllabus and activities or increase active learning opportunities
* Additional High Impact Practice offering(s)
* Embedding writing/oral/metacognitive reflection throughout the curriculum

### usually not considered use of results

* Improving assessment methods to better measure student learning

## Examples

\*Pay special attention to highlighted areas, as these address improvement methodologies most specifically.

### Undergraduate Program - Examples

#### 1.

“… we recognized that in order to be able to collect such data more frequently and from more diverse course offerings we needed to ensure that all language faculty had the ability to design and collect appropriate linguistic and cultural activities and work products. Thus, in January 2018, the department sponsored a faculty development workshop with a distinguished guest facilitator with expertise in task-based teaching and learning. Representatives from every level and language section participated. In that meeting we workshopped our tasks for specific courses and language levels that we had previously used in the classroom. The feedback we received enabled us to design, scaffold, and spiral tasks for optimum student learning outcomes throughout the curriculum. While this was a very impactful workshop, we recognize that faculty development will need to continue because it is fundamental to effective teaching and to producing consistently high scores on data results. In this way we will be responding directly to our assessment report feedback.”

#### 2.

“Assessment results have been used to guide faculty discussion about courses. The purpose of the discussion is to review the learning outcomes, subjects and skill taught, and alignment with educational objectives of all courses (85% of the courses have been reviewed in the last one year). The four questions listed below are used as starting point for discussion of each course. Notes from each faculty meeting are shared among all faculty, and faculty who need to do more detailed work on their course content meet later on an individual basis.

1. What are the topics/skillsets that you expect students to know in preparation for your course?
2. What are the topics/skillsets that you cover so that students are prepared for the next course?
3. Are the prereqs for your course adequate?
4. Do you have learning outcomes for the course? If yes, what are they?

So far this has resulted in a much better alignment of course content among faculty, helping to eliminate redundancy in topic coverage. We have also noticed many faculty are updating their syllabi and adding the official ABET learning outcomes covered for each course, as well as a “desired outcomes” of workplace competencies/ skills if not already present.

One piece of the feedback from last year’s assessment report was the need to better define lifelong learning (outcome i) and assess this learning outcome. Based on this feedback and starting Fall 2018, we will be modifying the approach we have used to expose program students to lifelong learning. Program students will now be required to participate in on-campus (and if appropriate off-campus) activities (e.g. seminars, thesis/dissertation presentations, graduate students poster sessions, conferences York lecture series etc.) that cover issues of globalization, society, environment, ethics, professionalism, life-long learning but are related to the biosystems engineering profession. The students will be required to attend one of these activities in fall of sophomore (2210), fall of junior (3310), spring of junior (3230) and fall of senior (4300). For each course, students will submit a one-page summary write up that contains the following sections: Title of Presentation/Activity, Presenters, Date, Location, Importance or Focus of Activity paragraph and Reflection paragraph (that should contain relevance of activity to program, surprise take away for the student, what the student learnt etc.).”

#### 3.

“With evidence of somewhat lackluster achievements related to SLO #2 “Design Development”, the studio faculty have committed to providing deliberate examples and teaching emphasis addressing design iteration and concept exploration as part of daily studio experiences. While a traditional hallmark of design action, it is possible that the notion of ‘creative exploration’ is being overlooked in the student experience as academic timelines and graded evaluations have encroached on the principles of growth and self-reflection. Faculty will discuss relevant benchmarks and select ‘creative’ techniques to be introduced as part of studio instruction as projects develop.

Based on results of the current assessment for SLO #3 “Design Communication”, faculty assigned to Professional Portfolio (fourth year, fall semester) have begun re-evaluating course content and identifying related activities in the studio

courses leading up to it. By incorporating the same discreet communication principles in a more comprehensive manner, the faculty anticipates improvements will follow.”

#### 4.

“On the other hand, our students are not performing to the desired standard on SLO 1 (i.e., articulating and applying HDFS‐related theory) or on SLO 4 (i.e., synthesizing learning to communicate preparation for accomplishing professional goals). Based on these findings, the following actions will be taken beginning Fall 2018 to improve student learning and performance:

Both SLO 1 (i.e., applying theory) and SLO 4 (i.e., synthesizing learning) assess our students’ ability to make connections between their learning and real‐life work. For SLO 1, it involves applying theory to the work of their internship site. For SLO 2, it involves synthesizing their undergraduate experience with their professional goals. As mentioned in the *Communicating Results* section above, we have taken steps to improve student performance on SLO 4 by communicating the results of our findings and providing additional guidance at our ePortfolio 101 and 102 meetings and through the HDFS internship Canvas course website. We have seen some improvement in students’ use of introductions and titles to explain how ePortfolio artifacts in proximity to each other are connected, but we have not seen improvement in their ability to explain how the artifacts relate to their professional goals. In regard to students’ ability to apply theory to the work of their internship site, we saw slight improvement between the 2016‐2017 and 2017‐2018 reports in their ability to summarize a theory, but not in their ability to apply the theory. It appears that additional action steps are needed to support student performance on both of these SLO.”

#### 5.

“The recent revision of our curriculum, where upper level courses were shifted to different semesters, will provide students with better pre-requisite flow upon which to build their food science knowledge. Fall 2016 was the first semester of the new course flow.

Additional writing practice has been incorporated via ePortfolios. The internship will now be graded rather than pass/fail so students are expected to put forth more effort on their written reports. A peer-evaluation component will be added to 5430 writing assignments this fall.

One challenge is the incorporation and measurement of problem solving in courses across the curriculum. In 2016 and 2017, deliberate attempts to “teach” problem solving were incorporated as a reading assignment and specific problem-solving lab sessions. Specific problem-solving exercises have been incorporated into 5430 to help better address SLO 15. More problem-solving experiences are needed.”

### Graduate Program - Examples

#### 1.

“The results as a whole are very satisfactory and exceeds the minimum performance criteria. On a scale of 1 to 5 (with 1 represents very poor performance and 5 represents excellent performance) the weighted mean scores range from 3.55 to 5.00. For all SLOs except SLOs 2.6 and 2.8, 70% or more students received a score of 4.00 or higher. In SLOs 2.6 and 2.8, 55% students scored lower than 4.00 and the mean score is just above the threshold value of 3.50. This indicates that students’ performance in these SLOs is a matter of concern but in other SLOs they performed well.

Comparison with Last Two Years Data (2016-17 v. 2015-16 and 2014-15)

A mixed trend is observed in the mean scores comparison with the last two years. The mean scores of some areas are increased and some are decreased however on average this increase/decrease in mean scores is within ±0.25 points and hence can be considered as normal except one area where mean score is dropped by 0.78 points as compared to the last year. This area is: 1. Student develops site utilization, safety and quality management plans for the project (LO# 2.6, 2.8)

Further investigation revealed that the relevant course (7040: Integrated Building Process-II) was taught by a new instructor (in fact three different instructors taught this course in the last three years) and these topics were discussed very briefly in the class. The instructor’s assumption was these topics are covered in the previous courses which was not the case. A plan for improvement is developed and presented in the next section. From now on, the same faculty member will teach this course in the next and following years and hence we can expect that the issue of inconsistencies in teaching will be minimized.

***Communicating Results***

The results are shared with the graduate program faculty group that teaches courses related with SLOs 2.1-2.14. The following action plan is developed: (1) More classroom examples will be added (in 7040: Integrated Building Process-II) to strengthen students’ knowledge about developing site utilization, safety and quality management plans for the project; (2) Industry examples of site utilization, safety and quality management plans will be provided to the students via guest lectures; and (3) Standard templates will be provided so that the students do not miss out any important information in their submissions.”

#### 2.

“Placement and Methods. We have continued to provide a number of professional development experiences to augment students’ academic preparation from the courses and dissertation. These include brown bag lunches (see Table 12 for an overview of the proposed 2018-2019 schedule), sending students to other types of training (such as summer programs sponsored by ICPSR), providing non-credit/non- registration courses on using LaTeX or R on a volunteer basis, encouraging students to participate in the Preparing Future Faculty program delivered by the Biggio Center, and making additional funding available to students on the academic job market to attend conferences and meetings. The purpose of these experiences are to help round out doctoral students’ professional preparedness and acculturation, as well as to help prepare them for the academic job market.

Attendance at the brown bags continues to range from 8 to 20 students, and the audience has largely consisted of the students who hope to achieve academic jobs after graduation and who are full-time students. We believe that participation in these opportunities has increased students’ understanding of the discipline but it is difficult to ascertain the direct impact of these professional socialization activities. Nonetheless, we think the programs are important for exposing students to significant professional skills, information, and opportunities that fall outside the focus of their courses and thus they would not otherwise receive. These programs then help to make our students more successful candidates for placement. We continue to make minor modifications to this program.

To address issues related to methods training (and by extension obtaining the appropriate skills to publish and be successful on the academic job market), we have made two adjustments. We have built in faculty presentations of their current research into the brown bag series to expose the graduate students to the emerging research being done in the field and the methodological approaches used to support that research. In addition, we are addressing methods in the curriculum in four ways. In the new curriculum design, in addition to taking at least 3 methods courses, we have added a methods sub-field and have decided to include testing in methods during the core day of the comprehensive exams. The Ph.D. Director will encourage faculty teaching Ph.D. classes to embed assignments in the substantive courses that build on the skills developed in the main methods courses. Science of teaching and learning (SoTL) research on methods training in our discipline demonstrates that when methods are embedded across the curriculum, students both retain more knowledge from their methods courses but also reinforce old and develop new skills. Finally, we are continuing to send students to attend summer ICPSR training at the University of Michigan in greater numbers in order to expand their methods training beyond what we are able to offer at the university. While there are other methods courses offered at Auburn University and Auburn University at Montgomery beyond what we teach in the department and some students take advantage of these courses, ICPSR training focuses specifically on the advanced methodological skills used in our discipline and also serve to enhance students’ peer networks and acculturation in the discipline, and thus we see this as the preferable approach. We have offered partial funding to one student each summer to attend ICPSR, and hope to increase this to 2-3 students per summer in future years. With these changes we expect to increase the methodological sophistication, productivity, and attractiveness of our students on the job market and beyond.”

#### 3.

“The tentative action plan at this time involves two activities. This plan will be refined after our May 2 program retreat.

Activity 1-Create a minimum of 3 learning modules focused on content identified in the Comprehensive Exams as needing to be further developed.

These modules will be focused on (1) eligibility criteria, (2) eligibility process, and (3) learner characteristics.

Students will be required to complete each module with 80% accuracy. Students will do one module during each of their three practicum experiences.

Activity 2-For completion of the PWS, provide students with a template for reporting evidence-based practices that includes identification of primary research.”