

Academic Department Student Success Plan Annual Update: 2016-2019¹



Department: Biology

Department Chair: Diana Hews, Interim

Department Mission: The mission of the Department of Biology at Indiana State University is to nurture the academic potential of every student, advance knowledge through quality research, and serve the university and broader communities. Through experiential learning both within and outside the classroom, we motivate our students to become critically thinking, informed citizens with a heightened interest in science. Through one-on-one mentoring, we engage both undergraduate and graduate students in the excitement and challenge of original research. Through research and outreach education, we make valuable contributions at both local and national scales to the scientific community and the well-being of the general public.

Department Freshmen (1st year) Retention Goal(s):

1. Increase success in BIO 101 of under-prepared students (based on MAPLE scores and HS GPA).
2. Increase understanding of the profile of a successful biology major, careers in biology, and interest in the discipline.
3. *Decrease number of students failing BIO 101 lecture by diverting poor performers into a half-semester BIO 112 class.
4. * Decrease the decision time to transfer to a new major for students failing BIO 101 (F grade).
5. * Of the students that on course to fail BIO 101, increase the number of students who earn credit for a FS science lecture and lab courses in the same semester that they drop BIO 101, by creating the 8-week Bio 112 courses restricted to these students.

**Goals that facilitate moderate gains in retention within major, but also promote higher retention across university.*

Action Steps² (with dates & person(s) responsible):

- a. Create a Project Success course for targeted Bio Majors and continue refinement of the STEM Summer Starter (online program to enhance Math preparation).
Hews (in collaboration with Math Department Liz Brown and Science Librarian Shelly Arvin).
- b. Communicate to majors via signage, emails, Blackboard postings (**Hews, UG Affairs committee, Faculty Advisors, Lima, Mitchell, Hews, Gonser**)
- c. Analyze data for students in BIO 101 to determine which students would benefit from being diverted to BIO 112 partway through the fall semester. Relate BIO 101 performance to SAT scores and high school GPA to assess relevant performance measures that predict ultimate failure in BIO 101.
Lima and Mitchell, Spring 2017.
- d. Develop an 8-10 week BIO 112 lecture course (3 credits) to be taught in the second half of the fall semester. Course must be taught by experienced faculty member with track record for successful teaching in BIO 112. Class will emphasize skills needed to be successful in Biology major.
Review course content, Biology UA Committee, Spring 2017; Assign course to faculty member, Diana Hews, Fall 2017; Implement course, Faculty Member, Fall 2018.

¹ Plan updates are due to your Dean by Nov. 4 as informed by your 2015-16 End-of-Year Report that is due to your Dean by Oct. 3.

² **Action Steps Defined:** The specific activities/actions taken to realize progress toward the goal. Such action steps should include not only student support type activities/actions but also student learning enhancement focused activities/actions.

- e. Develop advising rubric for University College advisors to aid in decision making when diverting students from BIO 101 into BIO 112. Plan will outline scores that predict failure, how BIO 112/BIO 101 laboratory can be combined to earn FS credit (work w Dean Maule to develop this), and recommendations for students in Spring following an assessment of performance in BIO 112.

Biology Undergraduate Affairs Committee, Fall 2017.

Retention Benchmarks (by latest department)	Fall 2013 Cohort: 79.37%, n = 63	Fall 2014 Cohort: 70.37%, n = 81	Fall 2015 target & actual: (target 68%) 72%, n = 75
	Fall 2016 target: 70%	Fall 2017 target: 72%	Fall 2018 target: 74%

Note: Our FA15 target (68%) was lower than previous years because we used incorrect data.

Other Freshmen Retention related benchmarks of focal interest to department

1. Number of students and student-hours using our Biology tutors in the Science Building Help Center.
2. Number of students attending SI sessions in BIO 101 & BIO 102.

Department Persistence to Completion Goal(s):

1. **Decrease the number of students switching out of the major as junior or seniors.** Students with extremely low likelihood of success should be directed out of the major earlier. Data analyses will guide us in identifying strong predictors. Actions to increase freshmen retention (outlined above) will help us to achieve this goal.
2. **Decrease the average number of credit hours that Biology majors earn upon graduation.**
3. **Increase number of students with exposure to career options, research experiences, and connections of careers to class contents and exposure to visiting scientists.**

Action Steps (with dates & person(s) responsible):

- a. Examine enrollments in core Biology classes prior to start of semester, identify students who are re-taking core classes to improve their grades, and contact advisor, who will discuss with student whether it is advisable to re-take class.

Instructors of the required core classes: Dannelly/Hews, Fall 2017-19 & Steding/Mitchell, Spring 2017-19, follow up by departmental academic advisors

- b. Arrange invited alumni speakers and panel presentations, including minority alumni, to better-educate students about career options, and to maintain their interest in the major and degree completion.

Hews & Gonser, Spring 2017-Spring 2019

- c. Grow student awareness of the Biology MLS program (requirements of program, job placement, salaries, Alumni success). Expand the number of clinical sites possible for the 4th-year MLS students

Dannelly, Fall 2017-Spring 2019

- d. Prepare individual PowerPoint slide(s) to be used by BIO 101 and BIO 102 faculty in lectures, to communicate and illustrate connections between careers specific lecture topics.

Hughes, Lima, & Mitchell, Fall 2017-Fall 2018

- e. Obtain SURE funding to increase research experience opportunities. Research exposure assists students in identifying their true career interests and in making connections between lecture content & actual practices in biological careers.

Hews & Gonser, Spring 2017-Spring 2019

- f. Increase communication with majors via signage, emails, Blackboard postings, BiologyLIVE (in-house) screens.

Hews, UG Affairs committee, Faculty Advisors, Lima, Mitchell, Hews, Gonser- ongoing

Completion Benchmarks (by latest department, 4 year rates)	FA 2010 Cohort: 32.43%, n = 37	FA 2011 Cohort: 37.5%, n = 48	FA 2012 cohort target & actual: (target 40%) 37.14%, n = 70
	FA2013 Cohort target: 38%	FA 2014 cohort target: 40%	FA 2015 cohort target: 42%

Other Persistence to Completion related benchmarks of focal interest to department

1. Average number of hours to degree completion.
2. Number of majors participating in Career panels and workshops.
3. Number of majors involved in research experiences (volunteer, paid, or BIO 492)
4. Number of majors completing the Biology-with-MLS specialization degree.

Other Goal(s), Action Steps, and Benchmarks of focal interest to department:

1. Strengthen advising practices related to reducing excessive accumulation of credit hours (e.g., topics such as retaking courses solely to improve GPA; double majors, minors etc., determine earlier when the Biology major is not a good fit for the student). **Undergraduate Affairs Committee; Faculty Advisors, Hews. Ongoing**
2. Continue to develop and enact communication about careers and career-related events. **Hews, Undergraduate Affairs committee. Ongoing.**
3. Continue to develop and enact strategies for communicating research opportunities (on and off-campus) and benefits of engaging in such opportunities to Majors. **Grad Affairs committee, Undergraduate affairs Committee. Ongoing.**
4. Develop ways and identify individuals and offices at ISU that can assist us to grow the number of hospital clinical affiliations for our 3+1 program. **Dannelly (Program Director) and Hews. Ongoing**