Departmental and Program Assessment
Annual Assessment Plan Report

Academic Year: 2007 - 2008

Academic Department or Program: Biology

Chair: Bruce Haggard

Assessment Plan

Is there an assessment plan for your department or program?

Yes

Does the assessment plan include stated student learning goals

Biology majors will:

1. Appreciate what biological science is and how the scientific method is used to increase our understanding of the natural world.
2. Use observations and experimental protocols to make and test hypotheses.
3. Apply appropriate analytical and statistical tools for the analysis of data used in the testing of hypotheses and for scientific writing and presentations.
4. Appreciate the breadth of biological science and understand the key principles of the major sub-disciplines.
5. Study one or more biological sub-disciplines in depth.
6. Be conversant with the major paradigms of biology and understand current debates over poorly understood biological principles.
7. Be able to read, understand and summarize articles from the current biological literature.
8. Appreciate the place of biological science in the liberal arts curriculum and the roles of scientist within society.
9. Develop intellectual curiosity and a life-long love of learning.
10. Have developed the intellectual and practical skills to be successful in graduate school, professional school or their chosen field of employment.

Does the assessment plan include a list of assessment data that are collected each year?

Yes. The measurements used in our assessment plan are listed below:

In assessing the overall success of the biology program we track:

- the number of biology majors in each graduating class.
- the acceptance rates into medical school (including which medical schools) and subsequent graduation rates.
- the acceptance rates into other professional schools (Veterinary Medicine, Pharmacy, Physical Therapy, Dental, etc.) and subsequent graduation rates.

- the acceptance rates into graduate schools, publication of papers while in graduate school, and completion of degrees.
- success at obtaining immediate employment for those who choose not to continue their academic education.
- relative level of preparation.
- student assessment of the Biology curriculum. We collect a survey each year of our graduating seniors, asking them to identify strengths and weaknesses of our program.

For assessing understanding of content and paradigms in Biological Science, we utilize the

- MFT
- MCAT
- Senior Seminar

To assess critical analysis and communication skills we use

- MFT
- MCAT
- Senior Seminar
- Participation in research conferences
- Papers written in classes and for independent research projects

To assess student involvement in research we track:

- the number of students who undertake Independent Study projects within the Department.
- the number and quality of research papers written by students.
- the number of applications and acceptances to the National Conference on Undergraduate Research, the Arkansas Academy of Sciences annual meetings and various discipline-specific national meetings.
- the number of students accepted to summer research positions at Hendrix and at research laboratories around the country.
- The number of research papers accepted for publication in scientific journals. Reprints of these articles are maintained in the Departmental office.

Has your department or program done an assessment audit of your courses to determine how course goals match overall student learning goals?

We discussed these issues during a departmental retreat in the fall of 2007. While no single course matches all the course goals, we are confident that they are well met by

our broad set of core required courses, the in-depth immersion of the upper level electives, the enhanced opportunities for undergraduate research and the Senior Capstone experience.

Are department or program student learning goals available to students? Are student learning goals included in course syllabi in your department or program?

Departmental goals will be posted on our website soon. Course goals are routinely included in course syllabi.

Student Assessments

Describe which *direct* assessments in your assessment plan have been collected for the year and which have not. ["Direct" refers to evaluated student work.]

We have collected MFT, Senior Seminar, MCAT (for those planning medical school), the numbers and abstracts of those participating in conferences.

Describe which indirect assessments in your assessment plan have been collected for the year and which have not. ["Indirect" refers to student surveys or opinions.]

We have collected surveys from our graduating seniors. We are in the process of collecting data on graduate and professional school admissions.

Assessment Planning

How is information about student learning shared and used for department or program decision making?

The Biology faculty meet almost weekly to discuss current departmental activities. Often, the issue of student learning and teaching effectiveness is discussed. Each spring the department discusses the results of the MFT exam and student's senior seminar presentation (these two components are their senior capstone experience). A departmental retreat was held early during the fall semester where we discussed the Biology curriculum in detail.

Describe any curricular or other programmatic changes that have been made that were based (at least in part) on the availability of your assessment data.

Our largest recent curricular change was done in 2006 when we removed Organismal Biology and replaced it with 2 courses, Botany and Zoology. We feel that this has

been a beneficial change that we expect to be reflected in improved MFT scores in the coming years.

We are planning some content changes to the Zoology course that would decrease the emphasis on taxonomy and increase the emphasis on processes and systems.

Next fall, in response to student and faculty interest, we are adding an upper level elective course in Neuroscience and are investigating the idea of introducing a Neuroscience interdisciplinary program.

Describe any changes in the Assessment Plan that have been made during this academic year.

Adding "goals" to our individual syllabi; attempting to systematically store assessment information in the Departmental Office so that it is more easily retrievable.

Define at least one action item for your group that will be a goal of your assessment discussions next year?

We are extremely concerned that the number of tenure-track faculty in the Department in not keeping pace with the increasing size the Hendrix student body and the increased demand for undergraduate research opportunities by our students. We will be discussing how this situation impacts our departmental goals and our ability to do long range planning. We are working on remodeling to increase the dedicated research space for our faculty and students.