

## **Unit Plan for Assessing and Improving Student Learning in Degree Programs**

**Unit:** *School of Integrative Biology (SIB)*

**Unit Head approval:** *Fred Delcomyn, Director*

**Date:** *May 9, 2008*

<b>SECTION 1: PAST ASSESSMENT RESULTS</b>
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**Brief description of changes or improvements made in your unit as the result of assessment results since 2000.**

This unit was not in existence in 2000. Course offerings for majors in IB began in Fall 2001; the first graduating class was in 2005. Throughout 2004-2008, we have been accumulating assessment instruments to determine characteristics about our majors, their summer and career goals, their plans after graduation, their evaluation of their experiences as a major, the quality of our core course offerings, which advanced courses majors are selecting, and the quality of our advising program. In 2006 we held a 2-day faculty retreat to generate our unit's learning goals, to evaluate the quality of the existing core courses, to reach consensus on changes in the courses and curriculum to make, and to promote the use of active learning approaches in the classroom.

Changes that have been made since 2006 include:

- 1) Elimination of the core course in Genetics/Evolution; addition of two semester-long laboratory courses in Genetics and Evolution.
- 2) Approval of Ecology, a core course, as Advanced Composition.
- 3) Revision of syllabus in Introductory course; addition of I-clickers in Introductory and core courses.
- 4) Addition of Merit Program for Emerging Scholars in Introductory course; merit sections in upper level core courses begin in Fall 2008.
- 5) Addition of James Scholar section to Introductory course; individual faculty interact with them about their research program.
- 6) Development and implementation of Honors Concentration within the IB major. Honors students have a completely separate curriculum, separate core courses, and dedicated laboratory space and faculty.
- 7) Coordination among faculty to eliminate overlap in topics in core courses.
- 8) Regular observation and mentoring of new faculty in core courses; in some cases, replacement of faculty to improve instruction.
- 9) Annual appraisal of laboratories in core courses, based on input from students, teaching assistants, and academic professionals. Revision, removal, and addition of specific laboratory exercises.
- 10) Integration among labs of core courses to ensure more learning objectives were incorporated and reinforced.
- 11) Evaluation of advisors and their services.
- 12) Implementation of year-long weekly workshop series run by advisors. Topics include advice to transfer students, career options, selection of advanced

courses, preparation for GRE, MCAT, application to graduate and professional schools, summer opportunities and internships, and volunteer opportunities in C-U.

- 13) Ear-marking of funds to provide scholarship support for students enhancing their education in international experiences.
- 14) Encouragement of students to do independent research, to strive for a senior project resulting in graduation with distinction; implemented annual symposium (or poster presentations) based on research projects.

## **SECTION 2: REVISED ASSESSMENT PLAN**

### **(a) PROCESS: Brief description of the process followed to develop or revise this assessment plan.**

The plan is being coordinated by the School's Associate Director for Academic Affairs, Professor Carol Augspurger, with advisory input from the Department's faculty, academic professionals, advisors, and Courses and Curriculum Committee. For this assessment target date, the plan has been formally articulated based on the instruments previously developed and used, and combined with additional measures to produce a formalized Plan.

### **(b) STUDENT OUTCOMES: List Unit's student learning outcomes (knowledge, skills, and attitudes).**

**Outcome 1.** Develop an enhanced curiosity and caring about biology.

**Outcome 2.** Attain a significant knowledge base in integrative biology.

Awareness of the diversity of life and of biological thought.  
Understand that biology is integrative and multidisciplinary.  
Prepared for MCAT and GRE examinations.  
Prepared for a career.

**Outcome 3.** Develop intellectual skills.

Understand the process of scientific inquiry and have experience doing it.  
Develop critical thinking skills.  
Develop strong verbal and written communication skills.

**Outcome 4.** Relate what they have learned to the wider world.

Integrate what they have learned with other aspects of life via meaningful learning.  
Understand how the models and paradigms of biology relate to society and policy.

### **(c) MEASURES AND METHODS USED TO MEASURE OUTCOMES:**

**Existing Instruments:**

ICES (includes core questions for Lecture, Laboratory, and Discussion formats)  
Beginning of Semester Course Surveys by students (areas of biology in which interested;  
career goals; course expectations)  
End of Semester Course Surveys by students and TAs (especially lab sections)  
Evaluation of TAs by Course Coordinators  
Summer Plans Survey of non-graduating majors (internships; jobs; study abroad, etc.)  
Senior Exit Survey  
Campus Senior Survey  
Advisors Survey by students  
Advisors Workshop Survey by students

**Existing Instruments to be Revised:**

Senior Exit Survey: add the change in reaching learning goals (pre-major vs. at graduation)  
ICES core questions: add items evaluating achievement of learning goals

**New Instruments:**

GRE/MCAT scores; encourage students to check box to have their scores sent to their home institution.  
Independent Research Survey: who is doing lab/field research; with what faculty? Make results known to students seeking this experience; encourage faculty to participate as mentors.  
Study Abroad Survey: who is going where/when/why? What opportunities exist for biology-related experiences?  
Alumni Survey: We are waiting to accumulate a critical mass of alums; collect addresses as students pick up graduation tickets and work with the Alumni Center to increase our address pool.  
Faculty evaluation of core courses' contribution to learning goals. Identify way to measure achievement of learning goals. Work to increase integration across the curriculum and learning goals in both lecture and laboratory components of core courses. Link specific learning goals to specific activities in each course.  
Training/Supervision of Teaching Assistants: Develop an explicit set of guidelines for supervision of TAs.

SECTION 3: PLANS FOR USING RESULTS
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(a) **PLANS: Brief description of plans to use assessment results for program improvement.**

The Associate Director for Academic Affairs, with assistance from the Assistant to the Director, will write an annual report, to be presented to the Director of the School who will disperse it to the faculty and the Courses and Curriculum Committee. That committee will make specific recommendations to the Director for addressing issues that arise from the assessment of reaching our learning outcomes. Faculty meetings/retreats will be held periodically as well. The major effort for the upcoming few years will be to identify which learning goals are being addressed in which courses, to integrate the

curriculum regarding these goals, and to decide how to assess whether the goals are being achieved.

**(b) TIMELINE FOR IMPLEMENTATION:**

Revision of Existing Instruments:

2008-9

Senior Exit Survey Revision: for use by graduating seniors in spring 2008

ICES Revision of Core Questions: for use in fall 2008

Addition of New Instructions:

2008-9:

Independent Research Survey

Study Abroad Survey

Get reality check about ability to get GRE/MCAT scores back to institution.

Faculty evaluation of course's contribution to reaching learning goals:

Changes to be done independently in each course at first because of the newness of two courses; personnel in those courses have their hands full focusing only on their course.

In subsequent years, integration across the curriculum will be explored more deeply.

2008-2010:

Develop guidelines for supervision of TAs; develop mechanism to appraise the level of training being achieved.

2009-13:

Alumni Survey

Accumulate reasonable data base of addresses to do 1-yr; 5-yr; 10-yr appraisals by alumni about their current job status and their preparation for their career path by their IB major.