

Weber State University
Department of Zoology
Program Review February/March 2008

The Program Review Team for the 2008 review of the Zoology Department of Weber State University, was composed of two faculty members from Weber State (Dr. Sara Ewert, History Department; and Dr. John Sohl, Physics Department) and two external reviewers (Dr. Kate Grandison, faculty and previous Chair, Biology Department, Southern Utah University; and Dr. Rebecca Pyles, faculty, Department of Biological Sciences; Dean, The Honors College, East Tennessee State University).

Executive Summary

In general, the Review Team was very positively impressed by the Zoology Department, its faculty, chair, staff, and programs. Major strengths identified include: (1) the credentials, productivity and teaching quality of the faculty; (2) the climate of collegiality; (3) excellent leadership of the Chair; (4) research productivity and support of undergraduate research experiences; and (5) effective use of resources provided and overall resourcefulness.

Areas of concern within the Zoology Department identified include: (1) needed review and revision of their Mission Statement and Learning Outcomes, including integration of learning outcomes at the course level; (2) assistance for faculty to diversify pedagogies and assessment tools used in courses; (3) more targeted mentoring and earlier peer evaluation of teaching for new faculty; and (4) needed revisions of materials to reflect greater recognition of department role in and advising needs for students with goals in zoology jobs or graduate schools;

Areas of concern that lie within the realms of responsibility of the College of Science and/or the University as a whole, were identified as follows: (1) review of Tenure Document in the College of Science; (2) support for the Human Anatomy course sequence provided by Zoology; (3) need for formal recognition of teaching research students as part of faculty teaching workload; (4) need for adequate space for teaching and research; (5) need for adequate start-up funds for new faculty in the sciences; (6) revision of current distribution of indirect costs to provide incentives at the department level; (7) establishment of a Standing Advisory Committee for the Premedical Program; and (8) provide funding to utilize standardized Senior Exit Examinations in the area of major to support External Program Reviews.

The external members of the Review Team felt strongly that there is a potential need in the regional community for educational opportunities in zoology/biology, especially at the advanced and/or graduate levels. We (Grandison and Pyles) would like to suggest that the College and University investigate the potential of graduate certificate programs that could meet this need.

Zoology Department Program Review Narrative

In general, the Review Team was very positively impressed by the Zoology Department, its faculty, chair, staff, and programs. We found the major strengths of the department to be the faculty and the environment of collegiality, helpfulness, shared purpose, and teamwork within the department. The Chair, Dr. Sam Zeveloff, is to be commended for setting the tone and helping maintain such an excellent working climate among the faculty, staff, and students in the department. Each faculty and staff member believes they are strongly supported, valued and appreciated by their Chair. Students are pleased about their program, their access to and the quality of the faculty, and are excited about the opportunities provided them by the department. One student interviewed said "...faculty enthusiasm goes beyond simply teaching to inspiration." Students feel well-equipped and confident that their education will serve them well in their future careers.

We were very impressed with the quality of new faculty hired recently in the department; they represent a strong pool of talent that should serve the department well in the future, if provided appropriate support. We also were impressed by the strengths of many senior faculty in the department, especially their roles as teacher-scholars, as represented by their continued commitment to quality teaching, research and scholarship, and to mentoring younger faculty. However, the Review Team did feel that the process of mentoring new faculty could be improved. We would recommend a somewhat more formalized approach to ensure that each new faculty receives consistent information and targeted attention toward their professional development and progress toward tenure. An example would be for the Chair (or small group of senior faculty) to meet regularly (once a semester or year) with new faculty to discuss their progress. We also recommend that peer evaluation of teaching for newer faculty be utilized earlier in the tenure process. Peer evaluation of teaching should be constructive, rather than used simply as evaluation at tenure. As an example, consider peer evaluation of teaching to occur during second, third and fourth years before tenure decision.

A few concerns were raised by the Review Team about the tenure process, as described in the College of Science Tenure Document. First, there is some concern whether scholarship in pedagogy and/or service areas are considered during tenure or encouraged among new faculty. Perhaps the College Tenure Committee ensures that these areas of scholarship are considered at tenure, but newer tenure-track faculty appeared unclear about the value of scholarship in these areas. Secondly, the external reviewers, in particular, felt the document was unnecessarily proscriptive and lacks clarity in certain areas. What value or usefulness lies in distinction of "category I" and "category II" in scholarship? Why is a "research grant" not a final product or outcome or a creative contribution? In addition, the tenure document identifies "channels" but without adequate representation of their meaning to the future of the faculty member. Quite simply, evaluation of teaching must be good or excellent and candidates cannot receive a "Satisfactory" evaluation in more than one of the remaining two areas. What is the meaning or value of "channels?" We recommend that the College of Science review their Tenure Document and consider whether the use of "categories" in research and "channels" truly reflect the goals and mission of the College.

The Review Team highly commends the Zoology Department for their consistent record of research productivity and the continued success of their efforts to involve students in Undergraduate Research experiences. The quality and success of undergraduate research by the Zoology faculty is exceptional; as noted by one reviewer..."in spite of the fact that they work with so many students." The fact that a Zoology faculty member also serves as Director of the Office of Undergraduate Research for the university is another example of the strong service to

the university provided by the faculty of this department. The grant record of the department is very strong for a department without a graduate program and without significant support from the administration---especially with regard to adequate space, appropriate start-up funding, and lack of recognition for the role of undergraduate research as teaching.

In fact, the external reviewers, in particular, feel that the research productivity by both faculty and students in the department are far superior to the level of support and recognition provided by the institution. The Review Team felt that the College of Science and/or Provost should consider a number of actions designed to support the research effort of this department. These recommendations include: (1) formal recognition of teaching research students as part of the teaching workload; (2) adequate start-up funds provided to new faculty; (3) distribution of some portion of indirect costs generated by grants back to the department or faculty member to serve as incentive and institutional support; and (4) heroic efforts to locate adequate teaching and functional research space for faculty.

The working climate of the department is exceptional. All faculty and staff feel part of a team with shared purpose working in a non-competitive environment where decisions are transparent and creativity is valued. We found consistent evidence of creative solutions to thorny problems--efforts to rehabilitate and utilize substandard space; joint efforts to seek outside funding to overcome outdated and under-maintained teaching and laboratory equipment; and efforts to promote quality teaching and learning experiences by recognizing the value of undergraduate assistants in laboratory preparation, research projects, and as peer teachers. The DNA Laboratory, funded primarily by a National Science Foundation grant to a Zoology faculty member, is just one example of the efforts by this faculty to modernize facilities (space and equipment) in order to provide exceptional educational opportunities for their students.

The curriculum offered by the Zoology Department is strong in breadth, diversity, and depth. The Department provides significant service to the rest of the university in general education, teacher education, Biotechnical training, and in supporting strong course sequences in Human Anatomy and Human Physiology. A substantial amount of faculty teaching in the department is devoted to support of these important service courses. This fact serves only to highlight more strongly the diversity and depth of coursework provided for students majoring in Zoology. Current revisions (e.g., addition of Endocrinology as an optional core course; restructuring of Principles of Zoology) reflect the faculty's ongoing review and attention to the curriculum. The Review Team commends the Department on their many courses that emphasize active learning modes, inquiry-based study, exercises devoted to enhancing communication and critical thinking, and that utilize a diversity of assessments to evaluate student performance. However, a few courses in the curriculum remain centered on lectures and examination only. We recommend that the department encourage and assist all faculty members in incorporating these valued pedagogies in their courses.

However, review of the mission statement, learning outcomes, and course syllabi contained in the Zoology Self Study raised a few concerns. The current mission statement of the department is more descriptive than goal-directed. It is a good description, but is not a mission statement. We recommend that the Mission statement of the Zoology Department be revised to reflect active goals. For example, the department *educates students* (rather than "is committed to training"), and *provides a sound academic foundation* (rather than "seeks to provide").

Additional concern was expressed about Student Learning Outcomes and assessment. The content of the first and last (#4) learning outcomes are excellent and measurable (see later), however it is difficult to measure the "appreciation" outcomes contained in the second and third

learning outcomes. Reference to data collection (i.e., #5) should not be included as a learning outcome. The Review Team also noted the lack of integration of program-level learning outcomes into course-oriented learning outcomes for *some* courses. We recommend that the Zoology Department review and revise Program Learning Outcomes for students and promote the integration of these outcomes in individual courses. Every course syllabus should contain reference to the appropriate basic principles and skills referenced in the Program Learning Outcomes that are addressed by the particular course.

Review of assessment data provided in the Zoology Self Study reveals strong support for the educational success of the curriculum and the teaching quality of the faculty. The Review Team did note, however, that additional assessment data should be provided. One suggestion was to include existing PRAXIS examination scores, for example. However, there is need for specific assessment in the area of biology/zoology. We strongly recommend that the Dean of College of Science locate support for use of a standardized Senior Exit Examination (e.g., ETS®) in the area of major, to be given at least once every 3—5 years, minimally scheduled to coincide with year before External Program Review for each department.

Assessment data also revealed that a significant number of Zoology graduates seek jobs in zoology-related fields or continue their studies at the graduate level. Basically, graduates of the program are split approximately 50:50 between those seeking professional careers and those continuing in the field. The Review Team felt that current materials distributed by the department accentuate advising and goals for pre-professional students. We recommend that advising materials, program descriptions, and marketing materials be revised to reflect the departments' role in training zoologists and sending students on to graduate schools, rather than only pre-professional schools.

Before moving past the curriculum, the Review Team would like to express concern over a few issues concerning the current Human Anatomy course sequence offered by the Zoology Department. A number of comments were received about the potential duplication of the current Human Anatomy courses (provided by Zoology) in another college/department at Weber State. The two external reviewers are, in particular, quite surprised that any university would consider such internal duplication. We hope that the institution will not consider revamping or replacing a course with such a record of quality, usefulness and popularity among the students at Weber State. The current quality of this course to students with career goals in medicine, and especially the added opportunity for advanced students to serve as peer teachers and preceptors should not be underestimated. However, we would like to take note that the current teaching facility for Human Anatomy is substandard and possibly represents health/safety and handicap access issues. If the University truly wishes to promote and maintain excellence, not only should this course be maintained in Zoology but it should be provided with adequate teaching space. Although the current Human Anatomy Teaching Laboratory is another example of the resourcefulness of Zoology in trying to provide decent learning environments for their students, the space is NOT sufficient in size or shape for this course. The existing space would be appropriate for a faculty research lab, but not for a teaching laboratory. We recommend that the College and University promote the excellence of this course sequence by maintaining its current home in Zoology and by locating appropriate teaching space.

The faculty of the Zoology Department provide significant service as dedicated advisors for a variety of pre-professional students, as well as students in the Bachelor of Integrated Studies program. The recently endowed Dumke Family Premedical Program supports a wide variety of student-oriented activities to help prepare students to succeed in gaining admission to medical school. The Zoology Department has followed through on the recommendation to establish an

Office of Premedical Advising to support this strong program. However, the recommendation that a Premedical Review Standing Committee be established at Weber State University has not been implemented. Considering the efforts made to date and the higher profile that will be provided by the endowment for this program, this Review Team strongly recommends that such a Standing Committee be established to provide for broader input to the student evaluation process and to serve as an advisory group for this endowed program.

The Zoology Department also provides considerable service to the regional community, at large. Of particular note is the continual involvement with the Ogden Nature Center, interactions with the regional secondary school community, and work with various state agencies. These activities are certainly appropriate community involvement for the faculty, staff and students. Any effort to formalize these relationships in other ways would probably not be particularly productive for either the department or the community. However, the external reviewers (Pyles and Grandison) were impressed by the fact that these interactions provide evidence of significant regional employer needs in the areas of Wildlife and Conservation Biology. Various conversations led to the understanding that Weber State University is somewhat restricted by state-level strategic plans in higher education. The External Reviewers would like to suggest that the College and/or University investigate the potential for short-term, graduate certificate types of programs, especially in the areas of Conservation and Wildlife Biology that could serve educational needs of the local community. Graduate Certificate programs are the fastest growing program area in graduate education across the nation.

Finally, the Review Team feels strongly that a number of actions should be considered by the College of Science and Provost of Weber State University to correct the lack of support provided to this department. The most obvious areas for concern are not unfamiliar, we are sure. Adequate space is not being provided for current teaching demands OR in keeping with goals for research productivity. The fact that faculty are split among 3 different locations on campus is not conducive to success. Current levels of start-up funding for new faculty (stated as \$4,000 at best and only if negotiated in advance by incoming new faculty) are, quite honestly, ludicrous for a science department. Support for equipment maintenance and replacement is a critical need, as always, but is an issue especially true in the sciences.

Of the many strengths of the Department of Zoology, one of the greatest is dedication to Undergraduate Research and Mentoring---a strength that also serves to meet a major area of the mission of Weber State University. Unfortunately, administrative actions to support this mission and this strength of the Zoology Department simply fall short. If the University wishes to provide the "best undergraduate education in the region," then their support of Undergraduate Research (UR) is well chosen and well directed for Weber State University. Not unlike other UR programs across the country, undergraduate research experiences in the sciences in particular, are popular and useful to students. Science lends itself well to collaborative works and science faculty often are adept at designing such collaborative research projects appropriate to undergraduate students. The institution is to be commended for its stated goals and the financial support for undergraduate research. However, there are additional steps necessary to foster a successful and excellent Undergraduate Research Program. Most significantly absent at Weber State University is consideration of the faculty time required to mentor research students. It is strongly recommended that the College and/or the institution, as a whole, devise a clear protocol by which faculty receive workload credit for time spent with research students. The fact that mentoring undergraduate research IS teaching appears to have escaped recognition by the bureaucracy.

Summary of Recommendations

Recommendations Relating to Zoology Department Responsibilities:

1. Review and revise the current Mission Statement and Program Learning Outcomes.
2. Integrate learning outcomes into individual courses and include on syllabi.
3. Assist faculty in expanding the use of active learning pedagogies and diverse assessments in individual courses.
4. Review and revise program, advising, and marketing materials to reflect a balanced emphasis for students seeking jobs in zoology and graduate studies with those seeking pre-professional studies.
5. Provide for peer evaluation of teaching for newer faculty earlier in the tenure process and promote peer evaluation as a constructive tool.
6. Provide for a more consistent, targeted approach to mentoring new faculty.

Recommendations Relating to College/University Responsibilities:

1. Review the Tenure Document for the College of Science, reconsidering the usefulness of “categories” in research and “channels.” For example, comparison with the Boyer Model of Scholarship might be a useful approach for review.
2. Promote the excellence of the Human Anatomy course sequence by maintaining its current home in Zoology and by locating appropriate teaching space.
3. Provide formal recognition that teaching research students is part of the faculty teaching workload.
4. Provide adequate start-up funds for new faculty.
5. Consider distribution of some portion of indirect costs generated by grants back to the department or faculty member to serve as incentive and institutional support.
6. Engage in heroic efforts to locate adequate teaching and at least some functional research space for faculty.
7. Establish a Standing Committee for the Premedical Program to provide broader input and to serve as an advisory group for this endowed program.
8. Funds be identified for use of a standardized Senior Exit Examination in the area of major, to be given at least once every 3—5 years, minimally scheduled to coincide with year before External Program Review for each department.

Suggestion (External Reviewers): The College and/or University should investigate the potential of providing short-term graduate certificate programs in Conservation and/or Wildlife Biology designed to address educational need of local employers and the regional community.

This document is respectfully submitted by the following reviewers:

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