

**Departmental Review Report**  
**Department of Zoology**  
**Weber State University**  
**February 22-23, 2018**

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**Reviewers**

The review team, composed of Dr. Jennifer Turley, Weber State University (WSU), Department of Athletic Training and Nutrition, and Dr. Erin O'Brien, Dixie State University, Department of Biological Sciences, performed a site visit of the WSU Zoology Department on February 23-24, 2018. During this visit, the team toured the facilities and met with Dean Dave Matty, Department Chair Chris Hoagstrom, Zoology faculty, staff and students to discuss all aspects of the Department.

Based on this visit, the self-study document, and other documentation, the review team has several commendations and observations to communicate as well as some recommendations for the Department for the future. The review team extends commendations in the areas of the mission statement, curriculum, learning outcomes, faculty, program support, relationships with external communities, and progress made from results of the previous review. The review team has concerns about the assessment of learning outcomes, the adequacy of academic advising with the lack of staff support, the lack of an additional lab manager staff support person, and the functionality of the external advisory committee.

The review team recommends that the **Department** (1) faculty engage in more regular discussions about curriculum and lab course content and skills taught, (2) look into the feasibility of adding a shared first-semester life sciences majors course (the equivalent of BIOL 1610/1615), (3) be more consistent in assessing required courses for program learning outcomes, (4) develop an advisement assessment tool, (5) clarify the feasibility and functionality of their external advisory committee.

The review team recommends that the **Institution** secure additional funds for the Zoology Department for (1) additional staff support including academic advisement and lab management and (2) professional development funds to help cover costs of conference travel, publication, and research pilot studies. We also recommend that the **Institution** helps the College of Science secure and retain a dedicated development officer and make the assessment process and requirements easier with more meaningful and purposeful feedback.

The ratings and discussion below are in accordance with the Program Evaluation Worksheet format that provides for evaluation of each standard using the specified elements.

**Standard A -Mission Statement**

- A. *The expected outcomes of the program need to be clearly defined.*
- B. *A process by which these accomplishments are determined and periodically assessed based upon the constituencies served by the program.*
- C. *A clearly defined educational program, including a curriculum that enables graduates to achieve the mission.*
- D. *The program mission statement must be appropriate to and support the mission statements of both the college housing the program and the university.*

### Evaluation of Mission Statement

- A. Adequate
- B. Adequate
- C. Strength
- D. Strength

*Rating: Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** The mission statement with its supporting values is appropriately defined and includes expected outcomes for students that are in line with both the College of Science and Weber State University missions.

### **Standard B -Curriculum**

- A. *The program should demonstrate that the curriculum for each degree and for any general education/service courses offered by the program is the result of thoughtful curriculum planning and review processes.*
- B. *The curriculum should be consistent with the program's mission.*
- C. *The program should be able to demonstrate that there is an appropriate allocation of resources for curriculum delivery that is consistent with the mission of the program, the number of graduates, and the number of major/minor and general education SCHs produced.*
- D. *Courses to support the major/minor/general education/service programs are offered on a regular basis to ensure students are able to complete graduation requirements in a timely manner.*

### Evaluation of Curriculum

- A. Adequate
- B. Strength
- C. Strength
- D. Strength

*Rating: Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** The department offers lower division courses for non-science majors that fulfill life science general education credit, service courses for science and non-science majors (in 10-12 programs in the Colleges of Science, Health Professions, and Education) pursuing careers in medical or related fields, and upper division courses for science majors. The zoology program has one life science general education course required in the zoology major and four additional zoology life science general education courses (three focused on non-majors and one service course). The program also offers six upper division required courses for zoology majors, 21 upper division elective courses, and 10 upper division experience courses. Courses are diverse, up-to-date, emphasize zoological content and practical skills relevant to careers in the sciences, and many include laboratories that provide high-impact experiences. The department curriculum supports its mission. Courses allow students to get general education life science credit, serve as support courses for other programs on campus, and serve students graduating with a zoology or biology composite teaching bachelor's degree, zoology or biology teaching minor, and zoology BIS emphasis. Graduating science majors are prepared for next-step success in varied fields and for various advanced degrees and programs.

**Recommendations:** The review team recommends that already planned faculty discussions about skills and techniques taught in labs take place to ensure content diversity and prevent overlap. Zoology faculty are encouraged to pursue an introductory one-semester majors course such as BIOL 1610/1615 at other USHE schools. The

creation of this course could make it easier for students to meet major requirements prior to deciding on which life science to pursue. Release time for one semester for at least one zoology faculty member to engage in this work is recommended along with close collaboration with microbiology and botany. The review team does not recommend folding the three life science departments into one overly large interdisciplinary department of 27 faculty as the administration of such a large department is unlikely to be more efficient than the current organizational structure and students seem to especially like the separation of the specialties. There is anecdotal evidence from our interviews with current students that the specialized departments are a draw for prospective students.

### **Standard C -Student Learning Outcomes and Assessment**

- A. *Learning outcomes should describe the expected knowledge, skills, and behaviors that students will have achieved at the time of graduation (overarching program goals).*
- B. *Learning outcomes must support the goals of the program and the constituencies served.*
- C. *Learning outcomes should be directly linked to the program's curriculum. An explicit curriculum grid illustrating this alignment, as well as the depth to which each course addresses each outcome, is publicly available.*

#### Evaluation of Student Learning Outcomes and Assessment

- A. Adequate
- B. Adequate
- C. Adequate

**Rating:** *Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** General Education (GE) courses have four natural science and four life science clearly defined and measurable learning outcomes collectively the life science learning outcomes (LSLOs). The zoology program courses have six core concepts and four core competencies collectively the program learning outcomes (PLOs). These are either introduced, emphasized, utilized, or assessed comprehensively. Across the curriculum grid of required courses for non-general education zoology courses for majors, each concept was assessed comprehensively at least once and each competency was assessed comprehensively two to five times. The learning outcomes are measurable, ensure students will have the essential knowledge, skills, and competencies upon graduation, and are in line with the department goals defined in the mission statement. The learning outcomes are clearly linked to the curriculum as presented in the curriculum table in the self-study (Standard B). The only issues we see are that there is no logical development of competencies and concepts throughout the curriculum. These should generally be introduced (and potentially utilized) in the first year of a major and then emphasized, utilized, and comprehensively assessed in the following years. However, many upper-division courses appear to introduce topics that have already been emphasized in earlier courses. We suspect that this is more the result of faculty individually labelling their classes instead of faculty collectively developing program curricula as a team.

**Recommendations:** The review team recommends the department hold a discussion to clean up the majors curriculum map to more accurately reflect the development of topics during a typical four years of coursework keeping in mind that not every class needs to map onto every outcome for assessment purposes.

**The effectiveness of the assessment process was based on:**

- A. *The program has a developed set of measures for assessment that are clearly defined and appropriately applied.*
- B. *Each learning outcome is assessed with at least one direct measure of learning; thresholds for acceptable performance are defined (for each measure) and published.*
- C. *Demonstrate that evidence of learning is being gathered on a regular basis across the program, that the evidence is aggregated, and reported at the aggregate.*
- D. *Demonstrate that these measures are being used in a systematic manner on a regular basis and are reviewed against department-established thresholds, i.e., are the program faculty meeting regularly to discuss the evidence?*
- E. *Demonstrate that the assessment of the program mission and student outcomes is being used to improve and further develop the program. Is the evidence acted upon? Is it clear what drives program change?*

Evaluation of Effectiveness of the Assessment Process

- A. Adequate
- B. Adequate
- C. Concern
- D. Weakness
- E. Concern

**Rating:** *Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** Although the program overall had evidence of meeting the program learning outcomes there was a lack of evidence that each of the required courses in the curriculum are being assessed routinely even when the same PLO is being assessed. The burden of assessment falls on faculty members who often lack help and feedback on assessment efforts. There is little evidence that assessment is discussed among faculty or used to improve or further develop the program. This issue is tied to a greater institutional concern that data is collected and submitted with little assistance to faculty or feedback. The assessment process needs to be made easier. Institutional help needs to be provided in setting up data collection and harvesting data for each semester. The institution should provide more assistance and better feedback on annual assessment reports to make the process more meaningful and to close the loop on assessment. For example, the use of the CLA test provides valuable information about core competencies and soft skills, but nothing has been done with the test results. The CLA doesn't cover the competencies of the scientific process or science and society and, while there are signature assignments identified for some classes, information is missing for most courses in the self-study. Among GE courses, information is given for the sections of the same classes offered in two different semesters and the assessments are not the same (for example twice the number of exam questions in one semester compared to the other for the same LSLO) making it difficult to compare results.

**Recommendations:** If ensuring that all classes are assessed regularly and consistently is important to the Institution, the department needs instruction on how to meet this requirement. If clear instruction has already been provided, then there is either little faculty buy-in or a lack of time. The underlying issue is unclear making a specific recommendation difficult. For core concepts, adopting an outside standardized exam similar to the Majors Field Tests could be used to standardize assessment even though the program emphasis on zoology could create understandable issues with scores relative to peer institutions. Creating an assessment committee of three Zoology faculty tasked with learning from Weber programs with more developed assessment in place and then

proposing a department-wide assessment plan would help to jump start things. End of year department discussions regarding assessment data and appropriate changes to curricula if needed will help close the loop.

### **Standard D -Academic Advising**

- A. *The program has a clearly defined strategy for advising their major/minor, or BIS students that is continually assessed for its effectiveness.*
- B. *Students receive appropriate assistance in planning their individual programs of study.*
- C. *Students receive needed assistance in making career decisions and in seeking placement, whether in employment or graduate school.*

#### Evaluation of Academic Advising

- A. Concern
- B. Concern
- C. Concern

**Rating:** *Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** The department has made strides in this area since the last review. General Education advising is done by the College of Science Academic Advisor. General zoology major advising is initially done by the department chair. Other zoology faculty members advise students after orientation to the curriculum and major by the department chair. The department chair also clears students for graduation. A significant amount of advising is done by the Associate Dean and Department Chair along with each faculty member. The review team cannot determine the effectiveness of the current advising system since students must opt-in for advisement and there is no assessment of advisement in place.

**Recommendations:** Add an advisement survey before the start of the senior year or before graduation. Seek funding from the provost office for a dedicated academic advisor to improve the availability to students (Cuseo 2003). Consider a shared advisor for the life science programs in the college of science if the zoology department cannot have their own dedicated academic advisor. We feel faculty will still be engaged in advisement and fulfilling advisement service activities but student needs will be better met and clerical related advisement processes can and should be handled by a staff person.

### **Standard E –Faculty**

- A. *Faculty size, composition, qualifications, and professional development activities must result from a planning process which is consistent with the program's mission.*
- B. *The program maintains a core of full-time faculty sufficient to provide stability and ongoing quality improvement for the degree programs offered.*
- C. *Contract/adjunct faculty who provide instruction to students (day/evening, off/on campus) are academically and professionally qualified.*
- D. *The program should demonstrate efforts to achieve demographic diversity in its faculty.*
- E. *The program should have appropriate procedures for the orientation of new contract/adjunct faculty.*
- F. *Processes are in place to determine appropriate teaching assignments and service workloads, to guide and mentor contract/adjunct faculty, and to provide adequate support for activities which implement the program's mission.*
- G. *Teaching is systematically monitored to assess its effectiveness, and revised periodically to reflect new objectives and to incorporate improvements based on appropriate assessment methods. For both contract and adjunct faculty, there is evidence of:*
  - *Effective creation and delivery of instruction.*
  - *Ongoing evaluation and improvement of instruction.*
  - *Innovation in instructional processes.*
- H. *A formal, periodic review process exists for all faculty, and the results of the reviews are available.*

### Evaluation of Faculty

- A. Strength
- B. Strength
- C. Strength
- D. Adequate
- E. Concern
- F. Adequate
- G. Adequate
- H. Adequate

*Rating: Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** All full-time faculty are highly qualified with superior credentials and reputations as outstanding educators, researchers, and mentors with solid research publication records. All have earned a Ph.D. (terminal degree for zoology) and are innovated educators and active in research and service. Of the seven adjunct faculty, 5 have terminal degrees and two have masters degrees. Adjunct faculty are hired on semester contracts by recommendation of the department chair. Zoology faculty members consistently have good to excellent student evaluations, ranging from 4 to 6 (out of 7) across criteria. The department chair follows WSU policy when establishing teaching loads and review of faculty members for tenure and rank advancement. Zoology faculty members contribute to advancement of life science through diverse faculty-directed research agendas and service in various student and community organizations and professional societies. Students reported that faculty are competent, available at convenient times, and provide effective instruction. Classroom and laboratory facilities support engaged and high impact practices.

**Concerns:** Several department faculty have release time for other appointments (department chair, associate dean, advisement, and other committee work). There is little diversity among faculty members but an equal gender split. Two new faculty searches are being conducted (Urban Ecologist and Neuroscientist) so this disparity may be resolved depending on the applicant search pools. Orientation, mentoring, and evaluation of adjunct faculty could be better established although it appears that at least some adjuncts are retired faculty.

**Recommendations:** We suggest targeted advertising of positions in the future to increase the diversity of the pool of applicants.

### **Standard F –Program Support (Staff, Admin, Facilities, Equipment and Library)**

- A. *The number and capabilities of the support staff are adequate to meet the mission and objectives of the program.*
- B. *Administrative support is present in assisting in the selection and development of support staff.*
- C. *The facilities, equipment, and library support needs are adequate to meet the mission and goals of the program.*

### Evaluation of Program Support

- A. Concern
- B. Adequate
- C. Strength

*Rating: Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** The Department of Zoology is housed in a state-of-the-art facility that supports excellent teaching, laboratory, research, office, and student community spaces. The department includes a full-time non-exempt staff member (Administrative Specialist) and a full-time exempt staff person (Laboratory Manager). The administrative specialist handles budgetary, class scheduling, and numerous other tasks associated with the department. The lab manager ensures that lab rooms are properly equipped and maintained, lab supplies are always on hand, live animals are properly cared for, and all classroom technology is maintained and properly serviced. The lab manager supervises several hourly employee students. Teaching Assistants (TAs) are used in a model where the students enroll in an upper division course and part of that course credit requires TA work in a lower division course (similar to an internship). Supplemental Instructors are employed for multiple challenging academic courses. The library offers adequate support for the department needs.

**Concerns:** The department is viewed as being understaffed in the areas of lab management and academic advisement. The college is viewed as being underrepresented in the institute's development office. There are also minor issues with the new facility that were the result of construction quirks and which may benefit from minor adjustments such as the drain in the floor of the anatomy prep room.

**Recommendations:** Funding to hire a shared life science academic advisor should be provided to the College of Science to ease the burden of advisement on faculty, the chair, and the associate dean. The lab manager is exceptionally capable of performing job duties but it is clear that the job requirements are more appropriate for 1 ½ or 2 equivalent positions. Funding for at least another 50% lab manager is needed. Have institutional development work on an endowment to provide professional development funding as is found in other colleges at Weber.

### **Standard G - Relationships with External Communities**

- A. *If there are formal relationships between the program and external communities of interest they should be clearly defined.*
- B. *Such relationships should have a clearly defined role and evidence of their contribution to the program (curriculum, equipment, faculty, budget, etc.) should be demonstrated.*
- C. *If the program has an external advisory committee, it should meet regularly and minutes of the meetings be made available.*

#### Evaluation of Relationships with External Communities

- A. Adequate
- B. Adequate
- C. Concern

*Rating: Strength (S), Adequate (A), Concern (C), Weakness (W)*

**Comments:** Department faculty and staff members support regional primary and secondary schools. Faculty members are frequently involved in organizations, centers, and events such as their sponsorship of the regional science fair, faculty workload with the Center for Science Math and Education (CSME), and serving as the advisor of the Multicultural Advancement in Science (MAS), the zoology club, the wildlife society, as well as women in STEM, pre-vet, pre-med, and other student clubs with links to biology and education. These organizations provide students with extracurricular professional development opportunities and help Weber to develop the pipeline of future STEM

majors. The department has an external advisory committee that met once since the last program review. The department has yet to determine how an advisory committee can help guide curriculum efforts to assist the graduating students secure positions with a specific skill set to meet job demands. Perhaps this is because many students use their zoology degree as a pre-professional degree. The students and faculty in the department have a strong sense of community on and off campus. There is a strong emphasis on community involvement and support of K-12 education. The combinations of these relationships provide unique opportunities for students to have real world and community-based experiences.

**Recommendation:** Establish more formal and long-term partnerships if you continue your external advisory committee and/or establish a more formal pre-professional advisory committee for student graduates. The requirements of pre-professional students are very different from those looking to work in public lands or zoos after graduation and the department should reflect the diversity of career goals for zoology students in their advisory committee. If this does not allow the advisory committee to be productive, the department should organize their advisory committee(s) by field so that each group is able to provide feedback on the skills needed. Frequent employers of graduates will likely have excellent feedback on skills that could be added to the curriculum. Local companies and non-profits may also be interested in working with student interns. There is no evidence that these employers and intern mentors are helping to inform curriculum development decisions. In addition, advisory committees can be used to help with promoting the program within the regional community and help with assessment of the program (Schaeffer and Rouse 2014).

#### **Standard H -Results of Previous Reviews**

- A. *The program must show how it has implemented any recommendations from the previous review and what effect these changes had on the program. If any recommendations were not implemented the program should explain why they were not put into place.*

##### Evaluation of Results of Previous Reviews

###### A. Adequate

**Rating:** Strength (S), Adequate (A), Concern (C), Weakness (W)

**Comments:** The department has secured an additional tenure-track faculty line and is now housed in a new facility that meets classroom, laboratory, office, staff, student, and in some cases individual research space needs. Many recommendations from the previous review team were outside of the control of the department. The department has established a well-defined strategic plan and is open to collaborating within the life science areas to streamline lower division required common core curriculum. Some recommended curriculum changes were implemented. The program has a strong sense of community and a strong student demand.

**Recommendations:** The current review team continues to agree that the department still needs additional staff support for advising and assisting faculty with teaching and research labs. Further, although strides were made to improve assessment of learning outcomes, addition institutional support and faculty buy-in of the process and value are needed. Although a committee has explored establishing a common-core curriculum in the past, release time for one faculty member teaching in the core and from each life science department is advised to conduct a thorough needs assessment and develop the necessary curriculum.



**References**

Cuseo, J. 2003. Academic Advisement and Student Retention: Empirical Connections and Systematic Interventions. NACADA Clearinghouse of Academic Advising Resources web site, April 23, 2007.

[<http://www.nacada.ksu.edu/Clearinghouse/AdvisingIssues/Retention.htm>]

Schaeffer, D.M. and Rouse, D.N. 2014. Effective Academic Advisory Committee Relationships. *Contemporary Issues in Education Research*. 7(1): 23-29.