Expected Outcome 1: Preparation for employment

Students completing the baccalaureate program in Geology will be well prepared to enter the workforce in the geological sciences and related areas.

Assessment Method 1: Tracking alumni

Assessment Method Description

Graduates will be tracked to find out if they are successful in finding employment in the discipline. Our expectation is that seventy-five percent or more of those students who graduated in the past academic year and who pursue professional employment in the geological sciences or related areas after graduation will be successful by the reporting deadline (October of the next academic year).

Findings

Eleven students graduated with a B.S. degree from the Geology program in 2013-2014, and we have been able to determine the whereabouts of all of them. Five sought immediate employment and were successful by the time of this report. Furthermore, they are all employed within the discipline: that is by geological or engineering companies. Thus, for the first time in recent years, 100% have been successful in finding a position in the discipline. Also, our increased diligence in keeping track of our B.S. graduates has paid off: two years ago, we lost contact with 3/10 students (30%), last year it was 2/11 (18%), and this year we have been successful in tracking all of our graduates. Our success is due largely to increasing use of social networks.

How did you use findings for improvement?

Although all of our students were successful in finding employment, we have assessed what did right and what we could do to maintain this success in the coming year. During the past reporting period, we followed through on last year's plan to attempt to contact graduates
approximately 3 months after graduation by e-mailing them using their Auburn University e-mail addresses, and we also called them using previously obtained cell-phone numbers. In addition, we have made use of the graduates’ friends who are still attending classes here, as well as former graduate students who knew the individuals during their tenure at AU. We tracked them using online social media to some extent, but we could probably have been more diligent about this.

Additional Comments

We are currently building a master spreadsheet of alumni data.

Expected Outcome 2: Preparation for graduate studies

In general, our B.S. students have been successful in being accepted by graduate programs either at Auburn University or elsewhere. Thus, our expectation is that eighty percent or more of our graduating seniors who choose to go on to graduate school will be accepted

Assessment Method 1: Tracking graduates

Assessment Method Description

Using the same procedures outlined above, graduates will be tracked to find out if they are successful in their applications to graduate schools.

Findings

Of the 11 students who graduated with a B.S. degree from the Geology program in 2013-2014, six applied to graduate programs for admission, and all six (100%) were accepted. Two of these students are currently MS candidates in our program and are doing well

How did you use findings for improvement?
See above for our efforts to continue improving our ability to follow the progress of our graduates.

Additional Comments
Expected Outcome 3: Research experience and communication skills
Students completing the baccalaureate program in Geology will have specialized familiarity with at least one research topic and be able to deliver written and oral summaries of this area.

Assessment Method 1: Senior Seminar course

Assessment Method Description
The Geology Senior Seminar course (GEOL 4110), required of all majors, has now been revised to accomplish a number of goals perceived by the faculty as important outcomes that were not met sufficiently well in the past. These goals center around an undergraduate research experience and the written and oral presentation of the student’s research. Specific goals of this course with regard to assessment are the following:
Geology majors should be able to do the following:
1. Search library and Web resources effectively and retrieve useful scientific literature.
2. Demonstrate familiarity with the format and content of the scientific article.
3. Graph numerical data and interpret the types of graphs commonly used in the geological sciences.
4. Express themselves in text in a professional manner.
5. Produce and deliver oral presentations, including illustrations, in a professional manner.

Findings
All of the eleven students took Geology Senior Seminar (GEOL 4110), although not all at the same time. Table 1 shows student performance on the written report (final draft) compiled from three different class sessions. Originally, the majority of students had only a poor grasp of the structure of the scientific article. Most had little experience with literature searching techniques at the outset of the course, but were conversant with databases such as Georef by the final draft of the main writing assignment. Students also mastered graphing software sufficiently by the end of the course.

With regard to the paper itself, often the purpose was not clear. In more than one case, the document seemed to be a summary paper until the last few pages in which original research was described. In several cases, the student was assisting a graduate student, but failed to clearly say so. As is
often the case in undergraduate library research papers, too much reliance was given to a single source, and this source was not adequately cited. Many format problems also showed up in the references section. Commonly, students failed to list all references cited in the text and only those cited. One persistent problem appeared in the Conclusion section, which in many papers read more like an editorial on what should be done in the future than a concise summary of the prior text.

The Geology Senior Seminar course (GEOL 4110) also addresses oral communication (no.5, above); and is used to satisfy the University’s oral communication requirement for the B.S. Geology Program. Table 2 and the accompanying rubric show the results of evaluating student presentations. Most students did reasonably well because of their past experiences giving talks in other classes. Large-scale organization was good overall, but arguments were not well developed in some cases. Illustrations were a problem for many students, chiefly because of their use of Web-based sources, which resulted in cartoon-like figures and/or low-resolution images. In some cases, illustrations lacked proper documentation of the source. Some students used vernacular and style of presentation that was not appropriate for the occasion and the audience. As found previously, students used colloquialisms that would have been more appropriate in casual communications. All students did well in the question-and-answer period, demonstrating a reasonably good mastery of their subject matter.
Table 1. The final draft of the research paper as evaluated using the scoresheet (column 1).

GEOLOGY PROGRAM - B.S. GEOLOGY
RESULTS 2013-2014
Geology Senior Seminar GEOL.4740, Final Draft of Research Paper
Spring 2013, Fall 2014, and Spring 2014

<table>
<thead>
<tr>
<th>Category/Total points</th>
<th>Individual Students</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Length and references (number and quality) 15</td>
<td>86.7%</td>
<td>90.0%</td>
</tr>
<tr>
<td>Mechanics: grammar and punctuation 10</td>
<td>80.0%</td>
<td>85.0%</td>
</tr>
<tr>
<td>Organization and structure (sentence, paragraph, and section) 15</td>
<td>60.0%</td>
<td>80.0%</td>
</tr>
<tr>
<td>Meeting the reader's expectations 5</td>
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<td>60.0%</td>
</tr>
<tr>
<td>Writer credibility (overall) 5</td>
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<td>80.0%</td>
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<tr>
<td>Proper documentation of sources 5</td>
<td>100%</td>
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<tr>
<td>Quality and use of illustrations 5</td>
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<td>80.0%</td>
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<tr>
<td>References (adherence to journal format) 5</td>
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<tr>
<td>TOTAL SCORE 65</td>
<td>85.8%</td>
<td>85.4%</td>
</tr>
</tbody>
</table>
How did you use findings for improvement?

Areas of concern in both written and oral products, including Conclusions sections that should have been more of a concise summary instead of editorial-like discussions, will be addressed in future instruction. Particular attention will be given to illustrations and their proper documentation. While the senior-level course serves a valuable purpose by ensuring that all majors have at least a minimal experience with individual research, the results point to the need to address these issues earlier than the students' final year. Faculty are currently addressing this issue by introducing ePortfolios into the Geology B.S. curriculum and working with students at all levels to help them create the components (artifacts) necessary to construct each student's ePortfolio.

Additional Comments