***STUDENT LEARNING ASSESSMENT PROGRAM***

***SUMMARY FORM AY 2016-2017***

Please complete a separate worksheet for each academic program (major, minor) at each level (undergraduate, graduate) in your department. Worksheets are due to CASA this year by **June 15, 2017**. Worksheets should be sent electronically to [kjsanders@eiu.edu](mailto:kjsanders@eiu.edu) and should also be submitted to your college dean. For information about assessment or help with your assessment plans, visit the Assessment webpage at <http://www.eiu.edu/~assess/> or contact Karla Sanders in CASA at 581-6056.

B.S Geology

**Degree and**

**Program Name:**

# Submitted By:

Diane Burns

**Please use size 10 font or larger.**

**PART ONE**

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| --- | --- | --- | --- | --- |
| What are the learning objectives? | How, where, and when are they assessed? | What are the expectations? | What are the results? | Committee/ person responsible? How are results shared? |
| 1. Geology graduates will develop  skills to carry out scientific inquiry  in the earth sciences. | A. Graduating seniors were given a questionnaire in the last few weeks of the semester report how well they achieved the goals of the learning objectives enumerated in this assessment. Choices were “extremely well,” “very well,” “adequately,” “not very well” and “not at all.”  B. Graduating seniors are required to submit a portfolio to the department in their last semester. Within the portfolio binder, students submit artifacts (lab reports, research papers, etc.) from their classes that address each goal. The portfolios are assessed by faculty in the geology program (Burns and Stimac).  C. Geology graduates (those who graduated a year ago, 5 years ago, and 10 years ago) are e-mailed a survey to report how well they achieved the goals of the learning objectives enumerated in this assessment. Alumni information was obtained from the Foundations Office; only alumni with email addresses were contacted, as there is no money for a postal survey of graduates. Choices were “extremely well,” “very well,” “adequately,” “not very well” and “not at all.” | A. Our expectation is that all (100%) of graduating seniors will feel they have achieved the goal at the level of “adequately well” or better.  B. Our expectation is that 100% of graduating seniors will have achieved each goal to at least a level of 3. Our range is 1-5, with 1 being the lowest and 5 being the highest rating.  C. Our expectation is that all (100%) graduates will feel they have achieved the goal at the level of “adequately well” or better. | A. The survey was returned by 86% (6/7) of the graduating seniors. Responses:  1/6 – Extremely well  3/6 – Very well  2/6 – Adequately well  B. Portfolios were submitted by 57% (4/7) of graduating seniors. Responses:  Average = 4.75  Range = 3 - 5  C. There were 13 geology graduates for those specific years. We had e-mail addresses for 9 of them (69%). We received back surveys from 5 (56%), with representation from all targeted years.  Responses:  1/5 – Extremely well  4/5 – Very well | A. The surveys are distributed by Burns through e-mail. Students are encouraged to return them anonymously to Burns’ box. The results are shared with geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  B. Students are informed of the requirement for putting together a portfolio in one of the early core major classes (e.g., Historical Geology). The results are shared with Geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  C. The surveys are sent via e-mail. Graduates are asked to send them back to Dr. Burns. She collates the information for the report and will share the results with the faculty in a meeting in the fall. |
| 2. Geology graduates should have a thorough knowledge and understanding of core concepts in the earth sciences including the following areas:  2.1 Major physical and historical events of the Earth, and the methods used to interpret these events.  2.2 Common rock, mineral, and soil physical processes; the identification and classification of common minerals, rocks, and soils; and their genesis.  2.3 Surface geologic processes and their impact on development of landforms, and the ability to identify and interpret landform development.  2.4 Basic tectonic processes, and the ability to interpret structural relations from geologic data.  2.5 Processes occurring at different types of lithospheric boundaries.  2.6 Interactions between and major processes occurring within the major spheres (biosphere, geosphere, hydrosphere, and atmosphere) and cycles (e.g. geochemical) of Earth. | A. Graduating seniors were given a questionnaire in the last few weeks of the semester to report how well they achieved the goals of the learning objectives enumerated in this assessment. Choices were “extremely well,” “very well,” “adequately,” “not very well” and “not at all.”    B. Graduating seniors are required to submit a portfolio to the department in their last semester. Within the portfolio binder, students submit artifacts (lab reports, research papers, etc.) from their classes that address each goal. The portfolios are assessed by faculty in the geology program (Burns and Stimac).  C. Pre and Post Tests were given in our introductory general education course, GEO 1300 G, in the fall and spring semesters. These tests consist of 30 questions that are relevant to our program goals. The pre test and post test questions are identical. Pre-tests are administered in the first week of classes, with post test questions embedded in tests throughout the semester.  D. Embedded Questions:  Certain questions are asked on exams in core major classes in order to assess the understanding of program goals. Questions were used within GEO 3560 Principles of Stratigraphy and GEO 3420 Geomorphology.  In GEO 3420 (Geomorphology), students were assessed by using an embedded question on the final exam in Spring, 2017. This question required students to apply key processes discussed throughout the semester to describe the physical landscape of east central Illinois.  In GEL 3560 (Principles of Stratigraphy) students were assessed by using an embedded question on the final exam in Spring, 2017. This question required students to identify and define parts of a model used to interpret major geological events.  E. Geology graduates (those who graduated a year ago, 5 years ago, and 10 years ago) are e-mailed a survey to report how well they achieved the goals of the learning objectives enumerated in this assessment. Alumni information was obtained from the Foundations Office; only alumni with email addresses were contacted, as there is no money for a postal survey of graduates. Choices were “extremely well,” “very well,” “adequately,” “not very well” and “not at all.” | A. Our expectation is that all (100%) of the graduating seniors will feel they have achieved the goal at the level of “adequately well” or better.  B. Our expectation is that 100% of graduating seniors will have achieved a level of 3 for each goal. Our range is 1-5, with 1 being the lowest and 5 being the highest rating.  C. Our expectations were that students would increase their knowledge per goal by at least 25 %.  D. Our expectations for student performance on these embedded questions was that 100% of students would receive 75% of associated points for these questions.  E. Our expectation is  that all (100%) of graduates will feel they have achieved the goal at the level of “adequately well” or better. | A. The survey was returned by 86% (6/7) of the graduating seniors. Responses:  Goal 2.1  2/6 – Extremely well  2/6 – Very well  2/6 – Adequately well  Goal 2.2  2/6 – Extremely well  4/6 – Very well  Goal 2.3  1/6 – Extremely well  4/6 – Very well  1/6 – Adequately well  Goal 2.4  1/6 – Extremely well  2/6 – Very well  2/6 – Adequately well  1/6 – Not very well  Goal 2.5  2/6 – Extremely well  3/6 – Very well  1/6 – Adequately well  Goal 2.6  1/6 – Extremely well  3/6 – Very well  1/6 – Adequately well  1/6 – Not very well  B. Portfolios were submitted by 57% (4/7) of graduating seniors.  Results for each Sub-goal:  Goal 2.1  Average = 4.9  Range = 4 - 5  Goal 2.2  Average = 4.9  Range = 4 - 5  Goal 2.3  Average = 4.44  Range = 3 - 5  Goal 2.4  Average = 4.9  Range = 4.5 - 5  Goal 2.5  Average = 4.2  Range = 3 - 5  Goal 2.6  Average = 4.25  Range 3 - 5  C. **Results for 2016-2017**  We taught 107 students in GEO 1300 G. These classes were taught by Burns and Stimac.  Pre/post test tests were administered to 93 out of 107 students (87%) for the purpose of departmental assessment. Results:  Goal 2.1:  Averaging the gains in % correct for 2.1, we saw an increase of 25% in knowledge.  Of the 30 questions circulated in all of the pre/post-tests, 3 of them pertained to Goal 2.1.  Goal 2.2:  Averaging the gains in % correct for 2.2, we saw a 33.5% increase in knowledge.  Of the 30 questions circulated in all of the pre/post-tests, 5 of them pertained to Goal 2.2  Goal 2.3:  Averaging the gains in % correct for 2.3, we saw a 31% increase in knowledge.  Of the 30 questions circulated in all of the pre/post-tests, 5 of them pertained to Goal 2.3.  Goal 2.4:  Averaging the gains in % correct for Goal 2.4, we saw a 25% increase in knowledge.  Of the 30 questions circulated in all of the pre/post-tests, 7 of them pertained to Goal 2.4.  Goal 2.5:  Averaging the gains in % correct for Goal 2.5, we saw a 10% decrease in knowledge.  Of the 30 questions used in the pre/post-tests, 5 of them pertained to Goal 2.5.  Goal 2.6:  Averaging the gains in % correct for Goal 2.6, we saw a 49% increase in knowledge.  Of the 30 questions used in the pre/post-tests, 4 of them pertained to Goal 2.6.  D. Results –  **GEL 3420:**  **Relates to Goal 2.3**  Ten students were enrolled; 3 were Geology majors and 2 were Earth Science minors. Nine students completed the exam question:  3 scored 90% or above (**Superior)**  4 scored between 75% and 89% (**Significant)**  2 scored between 60 % and 74% (**Satisfactory)**.  The average score for the questions was 83%.  **GEL 3560:**  **Relates to Goal 2.1 and 3.2**  Nine geology majors took this class in the Spring 2017 semester. The question was given on an exam and was worth 12 points. The range of scores was from 5/12 (58%) to 12/12 (100%). The average score on the question was 73%.  E. There were 13 geology graduates for those specific years. We had e-mail addresses for 9 of them (69%). We received back surveys from 5 (56%), with representation from all targeted years.  Responses:  **Goal 2.1 Historical Events:**  2/5 – Extremely well  2/5 – Very well  1/5 – Adequately well  **Goal 2.2 Rocks and Minerals:**  2/5 – Extremely well  2/5 – Very well  1/5 – Adequately well  **Goal 2.3 Surface processes:**  3/5 – Extremely well  2/5 – Very well  **Goal 2.4 Tectonic Processes:**  1/5 – Extremely well  1/5 – Very well  3/5 – Adequately well  **Goal 2.5 Lithospheric Boundaries:**  1/5 – Extremely well  3/5 – Very well  1/5 – Adequately well  **Goal 2.6 Interactions between spheres:**  4/5 – Very well  1/5 – Adequately well | A. The surveys are distributed by Burns through e-mail. Students are encouraged to return them anonymously to Burns’ box. The results are shared with geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  B. Students are informed of the requirement for putting together a portfolio in one of the early core major classes (e.g., Historical Geology). Burns collates the scores and includes them in this report. The results are shared with geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  C. The pre and post-tests are created by each instructor for their classes. The results are collected by individual instructors and shared with the assessment chair.  The assessment chair collates the scores and includes them in this report. The results are shared with geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  D. These embedded questions are asked on the final exam and results are collected by the instructors (D. Burns and J. Riley). Burns incorporates the data into the assessment report.  Burns collates the scores and includes them in this report. The results are shared with geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  E. The surveys are sent via  e-mail. Graduates are asked to send them back to Dr. Burns. She collates the information for the report and will share the results with the faculty in a meeting in the fall. |
| 3. Geology graduates should have a set of fundamental skills that they can apply to a variety of situations including:  3.1 Critical thinking skills- the ability to formulate strategies, collect and synthesize data, and apply mathematical and graphical techniques to arrive at solutions, and interpret results related to geological processes;  3.2 Development and use of models, visualizations, and three-dimensional conceptualizations.  3.3 Communication Skills- the ability to clearly express earth science concepts and present results from analysis, laboratory, and field work in written, oral, and graphic format.  3.4 Global Citizenship- the ability to function as responsible citizens by making objective decisions informed by multiple perspectives. | A. Graduating seniors were given a questionnaire in the last few weeks of the semester report how well they achieved the goals of the learning objectives enumerated in this assessment. Choices were “extremely well,” “very well,” “adequately,” “not very well” and “not at all.”    B. Graduating seniors are required to submit a portfolio to the department in their last semester. Within the portfolio binder, students submit artifacts (lab reports, research papers, etc.) from their classes that address each goal. The portfolios are assessed by faculty in the geology program (Burns and Stimac).  C. Assignments/tests addressing Goal 3.3.  A term paper is assigned in **GEO 3560**, which is an upper level core course in the geology major (Principles of Stratigraphy). Students are required to write an ~15 page term paper with credible sources, relevant information, correct grammar, syntax, and style. Students must also present their paper and findings in a 15 minute timed presentation, followed by a Q&A session of 5 minutes.  In **GEO 3420** (Geomorpholoyg), students take a final exam in which one question is an essay three different sections that need to be addressed. This question required students to apply key processes discussed throughout the semester to describe the physical landscape of east central Illinos.  D. Geology graduates (those who graduated a year ago, 5 years ago, and 10 years ago) are e-mailed a survey to report how well they achieved the goals of the learning objectives enumerated in this assessment. Alumni information was obtained from the Foundations Office; only alumni with email addresses were contacted, as there is no money for a postal survey of graduates. Choices were “extremely well,” “very well,” “adequately,” “not very well” and “not at all.” | A. Our expectation is that all (100%) of graduating seniors will feel they have achieved the goal at the level of “adequately well” or better.  B. Our expectation is that 100% of graduating seniors will have achieved each goal to at least a level of 3. Our range is 1-5, with 1 being the lowest and 5 being the highest rating.  C. Expectations: Our expectations are that all students will earn at least a 75% on items that require proper communication skills.  D. Our expectation is that all (100%) of graduates will feel they have achieved the goal at the level of “adequately well” or better. | A. The survey was returned by 86% (6/7) of the graduating seniors. Responses:  Goal 3.1  4/6 – Extremely well  2/6 – Very well  Goal 3.2  2/6 – Extremely well  3/6 – Very well  1/6 – Not very well  Goal 3.3  2/6 – Extremely well  3/6 – Very well  1/6 – Adequately well  Goal 3.4  5/6 – Extremely well  1/6 – Very well  B Portfolios were submitted by 57% (4/7) of graduating seniors. Results:  Goal 3.1  Average: 4.6  Range: 3 - 5  Goal 3.2  Average: 4.7  Range: 3 - 5  Goal 3.3  Average: 4.9  Range: 4.5 - 5  Goal 3.4  Average: 4.4  Range: 3 - 5  C. Results:  **GEO 3560 (Principles of Stratigraphy):**  Nine Geology majors were enrolled in this class in Spring, 2017.  Paper – The average grade on the term paper was 82.8:  7 students had 90% or better  1 student had 70%  1 student had 40%  Presentation – The average grade for presentations was 86.1:  5 students had 90% or better  2 students had between 80% and 89%  2 students had 70%  **GEO 3420 (Geomorphology):**  Ten students were enrolled; 3 were Geology majors and 2 were Earth Science minors.  Nine students completed the exam question:  3 scored 90% or above (**Superior)**  4 scored between 75% and 89% (**Significant)**  2 scored between 60 % and 74% (**Satisfactory)**.  The average score for the questions was 83%.  D. There were 13 geology graduates for those specific years. We had e-mail addresses for 9 of them (69%). We received back surveys from 5 (56%), with representation from all targeted years. Responses:  **Goal 3.1 Critical Thinking Skills:**  2/5 – Extremely well  2/5 – Very well  1/5 – Adequately well  **Goal 3.2 Models:**  1/5 – Extremely well  1/5 – Very well  2/5 – Adequately well  1/5 – Not very well  **Goal 3.3 Communication Skills:**  2/5 – Extremely well  2/5 – Very well  1/5 – Adequately well  **Goal 3.4 Global Citizenship:**  1/4 – Extremely well  3/4 – Very well  \*\*one person did not answer | A. The surveys are distributed by Burns through e-mail. Students are encouraged to return them anonymously to Burns’ box. The results are shared with geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  B. Students are informed of the requirement for putting together a portfolio in one of the early core major classes (e.g., Historical Geology). Burns collates the scores and includes them in this report. The results are shared with geology faculty and the department chair through this report and a meeting at the beginning of the school year to go over the report.  C. These term papers and oral presentations are assigned and evaluated by the instructor for the course, D. Burns. She is also the assessment chair for geology. She collects, analyzes, and shares the data with faculty and the department chair through this report, as well as at a meeting at the beginning of the next academic year. The results of this report are discussed in the fall at a meeting of the geology faculty.  D. The surveys are sent via e-mail. Graduates are asked to send them back to Dr. Burns. She collates the information for the report and will share the results with the faculty in a meeting in the fall. |

(Continue objectives as needed. Cells will expand to accommodate your text.)

**PART TWO**

Describe your program’s assessment accomplishments since your last report was submitted. Discuss ways in which you have responded to the CASA Director’s comments on last year’s report or simply describe what assessment work was initiated, continued, or completed.

Responses/actions in regards to the CASA Director’s comments from last year –

“How, Where and When Assessed” – progress on acquiring assessment data last year was commended in the CASA Director’s notes. This year, we had substantially higher completion rates – higher percentage of students administered pre and post tests in the Introductory classes, higher return rates of alumni surveys and higher return rates of graduating senior surveys. The portfolios are proving somewhat problematic to get the students to hand in because it comes at the end of their last semester here, when there are so many deadlines besides just class completion (job hunting, graduate school applications, graduation requirements, etc.) and because there is no repercussion should they fail to submit a portfolio. As far as offering an incentive, there is no money to do so and – even if there were – approval for expenditures like these are not guaranteed. The Director had a suggestion about contacting Alumni Services about addresses and emails – from what we were told, the list obtained from the Foundations’ Office is the most accurate on campus. To try and get updated contact information, we now insert a request for an email/address update in our annual newsletter and ask for updates via our department’s Facebook page as well. It has netted some contacts that are not reflected in the Foundations’ Office database (although we share with them when we get new information).

“Expectations” – the CASA Director noted that sharing rubrics with the students might help them choose artifacts. Dr. Lewandowski requested that all Geology faculty submit suggestions of papers/lab reports/exercises from their individual courses that might speak to the various sub goals in the portfolios. This “laundry list” is shared with the students, so they have this aid at their fingertips. The portfolios this year were much improved in students’ choices of artifacts as a result; all students had submissions that met or exceeded expectations and were good examples to demonstrate meeting these goals.

“Results” – as mentioned above, this year the data collection was much more successful do to various efforts from Dr. Lewandowski and the rest of the Geology faculty. The CASA Director suggested addressing student comments (and more are included below from this year’s surveys) about increasing the amount of field work opportunities, with perhaps a practicum added to the curriculum. This issue is problematic with where we are located as a University. In order to see and understand a lot of Geology, you need to have outcrops, and we are in the midst of the “Corn Belt” – vast areas of flat land. As such, in order to provide **any** field experiences, we have to take the students on long day trips or multiday field excursions, which is already done in almost all of the Introductory classes and upper division courses. All of these trips cost money – especially the multiday trips – and are rarely funded from University accounts anymore. The Director should also realize that Geology majors **always** want more field trips – in any school or university. It is not just learning, it is also being in an outside classroom, doing work in the sunshine and – for the multiday trips – camping, campfires and that whole experience. It is like asking a child if they want candy – the answer is always “yes!” As far as integrating a practicum into our curriculum, we already have one in place. Each student is required to take a six-week field camp in either his/her junior or (usually) senior year. This is six weeks of just geological field work, usually in camps centered on the Rocky Mountains. While we no longer offer this course through EIU, it is still required of our majors to graduate (they just take it from another university and transfer the credits). Additionally, all Geology faculty take on students to do research projects, and it is well-known that this opportunity is available. Students wanting more hand’s on experience just need to contact a faculty member and commit to work on a project with him/her.

“How Results Will Be Used” – as mentioned above, percentage of data collection has increased due to ongoing efforts.

We have made progress with all areas of assessment – more data collected, all goals addressed in some fashion in Introductory and upper division classes, higher response rates from graduating students as well as alumni on the surveys. We are utilizing pre/post testing, embedded questions, surveys as well as written/oral presentations. Ways to improve upon these gains – a better database for contacting alumni needs to be constructed. This would not only improve our return rate for this type of project, but it would help the university tap into potential donors who may have fallen through the cracks by lack of contact information. Perhaps it might be better to consider a different deadline for portfolios – have them due at the end of the Fall semester of the student’s senior year instead of the Spring semester.

**PART THREE**

Summarize changes and improvements in **curriculum, instruction, and learning** that have resulted from the implementation of your assessment program. How have you used the data? What have you learned? In light of what you have learned through your assessment efforts this year and in past years, what are your plans for the future?

As with any assessment instrument, specific comments from the students are usually the most informative – quantified results are good but vague. As with course evaluations, the specific comments follow closely the quantified data, but the details of the students’ compliments and critiques leads to positive changes or continuation of successful techniques. For example, a large percentage of the surveyed stated or indicated that we do an above average to excellent job with developing their communications’ skills. As such, we will continue to require the rigor with the writing assignments that we have in the majority of our upper division classes. Some comments, however, cannot or should not be addressed. For example, some alumni stated (see below) that they wish we had taught “xxx” program or “yyy” program because that software package is the one that they use in their job. It is impossible to try and address this concern. There are as many geological and analytical software packages in use as there are sand grains on a beach. Our best approach in this area is to ensure that the students learn the science and then their employer/graduate school can teach them the software that they use.

Part of the graduating senior survey is asking open-ended questions to get feedback from the graduating seniors. Here are the questions and responses:

1. What aspects of your education in the Geology-Geography Department helped you with your learning and why were they helpful?

“Any hands on labs, trips, use of equipment have been overwhelmingly helpful. Writing notes (not Powerpoint), quizzes are very helpful for me.”

“The small class sizes really helped me to have a one-on-one relationship with my professors.”

“Teaching by chalk talks, clear and concise methods of explanation, labs done in class with guidance were all helpful in obtaining an actual full understanding of material.”

“I really liked chalk talks, the process might be slower but I feel like I got more information and understood what was important. Also the self-taught labs, while stressful and time-consuming, allowed me to teach myself and therefore the information is more permanent.”

“Small class sizes, and available teachers to help out if needed.”

“Being able to write papers and reports concisely and accurately; interpersonal communication skills.”

1. What might the Geology-Geography Department do differently that would help you learn more effectively, and why would these actions help?

“More online classes, because I personally am involved in multiple things, and regular class time constraints can become more difficult to schedule around. Also less morning classes, because I am not a morning person.”

“MORE FIELD TRIPS. I understand that they are time consuming and require funding, but you would not expect to graduate a student with a BS in Chemistry if they spent minimal time in a lab. As young Geologists, it is important that we get experience in the environment that we are expected to work (i.e., the outdoors). This, I feel, is essential for my understanding of my discipline. As far as funding is concerned, I pay to go to Eastern, I pay to take classes, I pay to be prepared to work as a Geologist. To not allocate funding towards academic field trips is to declare that Geosciences (Geology specifically) is unworthy of educated professionals.”

“I have trouble seeing objects/forms in 3-D; more physical models or use of them may be helpful. Also, more clarity on the math calculations.”

“I don’t know. If I knew something like that, I would have told someone.”

“If possible, be more consistent with electives. Multiple electives did not have books, and from semester to semester people were learning different things. Field trips or interactive labs help to firmly reinforce knowledge learned in class.”

“Have more Geology professors that are passionate about teaching their subject and helping students in their upper level classes both inside and outside of the field. Try to get more STEM employers to come to the EIU job fairs.”

Students who graduated one year ago, five years ago, and ten years ago were surveyed and asked the following open-ended questions. Their responses follow.

1. Do you actively use your background knowledge in geology in your career? Are you a practicing geologist/earth scientists? What do you do for a living?

“Yes, I am currently a geologist for Professional Environmental Engineers in St. Louis.”

“I am an administrative assistant at the USGS, IL Water Science Center; only occasional usage when communicating with general public. Future plans will more directly involve geoscience, however.”

“I currently work for a non-profit organization helping private water well owners find answers to questions about their well or well water. I do often use background knowledge of aquifers and the many aspects of geologic-groundwater interaction in my position. I am not a practicing scientist.”

“I actively use a portion of my background knowledge in my career. I am not a practicing Geologist. I am a Data Analyst that works on deepwater/ultradeepwater drilling rigs in the Gulf of Mexico. I started as a Mudlogger, which did involve identification of Sedimentary related drill cuttings.”

“I am an economic geology Ph.D. student working mostly with a combination of geochemistry, modeling, and fieldwork applied to mineral deposits, and I would say that I use some bit of background knowledge nearly every day. Before my master’s I worked at a gold mine where I got experience logging drill core and working underground in production (the same gold deposit that was the subject of my thesis). After I graduated with my MS, I worked in exploration for the new company that owned that gold deposit, and I worked up exploration models using hyperspectral clay mapping and drill core logging.”

1. What particular aspects of your education in the Geology-Geography Department have been most beneficial to you since you graduated from EIU?

“The ability to use the Microsoft Office package effectively. General geology concepts are helpful in my overall knowledge. The ability to write concisely and think in a scientific manner are of great benefit to my career.”

“I think the research and writing requirements really helped me to develop research and critical thinking skills that I use to research issues for well owners each day. I also believe the labs required in some of the courses really helped me to translate the materials learned in class to real-world experiences, giving the student a bit of perspective to how what they are learning can be applied in the ‘real world. “

“Experience in communicating science to non-scientists earned through TA work and volunteering with Geology Club.”

“I use a lot of cross sections and topographic maps on a daily basis. Having that knowledge of being able to correlate the lithology and put it together in a cross section has been a huge help.”

“I would say the fact that I actually do geology is hugely important. Many in the geochemistry world get their rocks in a box, knowing very little about the geologic terranes they are from and sometimes never having set foot in those areas. Yet, they do detailed isotopic or trace element analyses of the samples and haven’t looked at a thin section or a map first. I feel like EIU provided me the opportunity to be a geologist first, and then I was able to build on that with other classes and analytical techniques later. I do not feel that someone who only takes chemistry courses and works only in a lab should get a degree that says geology on it, just because the samples they analyze are rocks. I also feel that for a relatively small school in the Midwest, I also got a decent amount of field trips and doing/seeing geology in the field, compared to many (but more fieldwork is always a plus!).

1. What might the Geology-Geography Department do differently that would help prepare students for life after EIU?

“The addition of software programs to the department would be great, programs such as RockWare/RockWorks and Surfer. These programs are used in many aspects of the work I do and it has been a struggle to learn it at such a fast pace.”

“Fieldwork opportunities, TA or other science communication activities, research, presentations, publications emphasized as important for science careers.”

“I think students could really benefit from visiting working businesses (well drillers, Geological Survey, Environmental firms) to get a real picture of how working in these positions really look and what kind of skills are required.”

“Petrel, Techlog, 3-D modelling are highly sought after packages that students would benefit greatly from. Good resume and interviewing skills are important to help students find jobs in a very tough job market. Would strongly advise to push aspiring Geologists to take their GRE directly after school, if not immediately pursuing Master’s. Job shadowing or internship would be a good implementation in the EIU Geology program. Preparation for Master’s Degree program and specialization would be ideal to maximize job placement potential.”

“I suppose it would depend on the life a particular student wants after EIU. For those students interested in graduate school and have no idea of what to do, I would say just encouraging them to broaden their horizons and supporting them would be extremely important. I always felt supported, but I wish I would have taken more math and chemistry classes when I was at EIU, instead of having to make many up as a graduate student. Those are the two fields I use most outside of strictly geology, and I certainly think a basic amount of equilibrium thermodynamics (physical chemistry or a geochemistry course would be great additions!) and maybe more math would be good for folks interested in going to grad school. Also encourage them to do research projects that matter, either to a faculty member’s research or that matter to the student.

For those that want to work immediately, I think just having them make connections is a big deal. Get them to go to GSA or AGU if they have research posters, or get groups together to listen to talks at the ISGS, or organize talks from industry based folks to let students know the kinds of job opportunities that may be available for them in the future.”