

## ANNUAL PROGRAM REPORT

College	Science
Department	Earth and Environmental Sciences
Program	Environmental Science BS Geology BA/BS Environmental Geosciences MS
Reporting for Academic Year	2022-23
Last 5-Year Review	2020-21
Next 5-Year Review	2025-26
Department Chair	Patty Oikawa
Author of Review	Patty Oikawa, Emilio Grande, Jean Moran, Jeff Seitz
Date Submitted	1 October 2023

### I. SELF-STUDY

#### A. Five-Year Review Planning Goals

The four main goals of the department's current five-year plan, for 2021-2026, are:

- 1) Review degree requirements and curriculum for all degree programs and make any needed revisions.
- 2) Encourage overlap and unity across our programs Geology and Environmental Science.
- 3) Hire additional faculty in both Geology and Environmental Science.
- 4) Plan and execute a diversity, equity and inclusion plan for our programs

#### B. Progress Toward Five-Year Review Planning Goals

Last year we revised the ENSC Environmental Health Concentration in order to help increase enrollment and meet the needs of the students seeking Registered Environmental Health Specialist (REHS) certification. We are currently seeking certification for the program by the state. Specifically, we removed PH130 as a requirement, changed requirement CHEM 233 with CHEM 230, and removed the CHEM 112 prerequisite from ENSC 414. We also added hybrid or online modalities for GEOL 100, 101, and 632. Due to low enrollment in the BA Geology degree program, we are planning to dismantle it and only offer the BS moving forward.

In order to encourage overlap across the programs Geology and Environmental Science, last year we offered cross-listed capstone and field classes (GEOL/ENSC 499 and 397), making sure the topic was appropriate and appealing for both ENSC and GEOL majors. We have also continued support for the Earth and Environmental Sciences club which has Geology and Environmental Science student members. Finally, we are planning future hires that straddle both programs. During this academic year we plan to hold multiple faculty meetings dedicated to this topic.

As part of this report, we highlight our dire need for additional hires, especially given the 3 faculty who began the FERP program in Fall 2023. This is an area we plan to work hard on in the coming years, hopefully with multiple hires per year, provided requests for searches are approved by the Provost and Dean.

We are planning dedicated faculty meetings for the 23-24AY in order to specifically address DEI goals for our department.

### **C. Program Changes and Needs**

#### **Overview:**

The department offers undergraduate and graduate degree programs and teaches general education courses. Its faculty and students are very actively involved in research.

#### **Curriculum:**

The department offers two undergraduate degree programs and a graduate program; Geology (BS, BA), Environmental Science (BS), and Environmental Geoscience (MS).

#### **Students:**

During Fall 2022, there was a total of 60 majors in the department's programs; this includes 35 Environmental Science BS majors, 11 Geology BS or BA majors, and 14 students in the graduate program. The number of students in the graduate program has experienced a modest increase over the past five years while the other programs have experienced modest decreases (Fig. 1-3).

Graduates from department programs are currently in high demand in the workplace, and demand is expected to remain strong over the next decade. Employers include environmental and engineering consulting firms, municipal water agencies, California State agencies, US Department of Energy laboratories, and the US Geological Survey.

#### **Faculty:**

The Department currently has six tenure-track faculty, two of whom are full-time and four who are part of the FERP program (one began in Fall 2021, three in Fall 2023). One is an Assistant Professor, two are Associate Professors, and three are Professors. Two Assistant Professors left the university at the end of the 21-22 academic year. A tenure-track search was completed during 2021-2022, and a new faculty member with expertise in coastal hydrology joined the department in Fall 2022.

#### **Staff:**

The department has one staff member, an Instructional Support Technician, who joined the department in summer 2023. We share administrative help with other natural science departments in the College of Science.

#### **Resources:**

All current tenure-track faculty have assigned office space in Science North. In some cases, office space is combined with lab space or shared with lecturers. Some faculty use shared space in Science South for research or equipment storage. The department has sufficient space for current faculty, but will need additional office and lab space to accommodate any additional faculty. Please see more details in the Request for Resources Section below.

#### **Assessment:**

Assessment is discussed in Part II below.

#### **DEI Initiatives:**

The department has a high percentage of students from underrepresented groups, including women, Latinx and other URM groups. Last year we participated in the GANAS program, a transfer student academic and retention program for Latinx students at our campus, and plan to participate again this year in Spring semester. As we mentioned above, it is a high priority this year to assemble a DEI plan for the EES

Department, clearly outlining our obstacles and action items moving forward. We hope to provide more concrete details in our next year's annual report.

**Other:**

Our faculty are highly involved in research and regularly secure external grants used to support graduate and undergraduate students in our programs. These research activities bring prestige to the department and university.

## II. SUMMARY OF ASSESSMENT

### A. Summary of Assessment Process – All Programs

**Instruments:** Course assignments are selected from required classes specified in the department's long-term (five year) assessment plan. PLOs are assessed on a rotating schedule; each PLO is assessed every 2-4 years.

**Sampling Procedure:** All enrolled students are normally included.

**Data Collection:** At the end of the semester in which the assignment is completed, the faculty member leading the course carries out the assessment.

**Data Analysis:** Student work is evaluated using a rubric to determine numeric scores, which are compiled in a spreadsheet. The instructor writes a narrative summary of the main findings and recommendations.

### ASSESSMENT OF ENVIRONMENTAL SCIENCE B.S. PROGRAM

#### A. Program Learning Outcomes (PLO)

PROGRAM STUDENT LEARNING OUTCOMES (PLOs)	
Students graduating with a B.S. in Environmental Science will be able to:	
<b>PLO 1</b> <i>ILO 1, 5, 6</i>	Demonstrate foundational knowledge of Earth processes, natural systems, and the effects of human activity ( <i>Knowledge</i> )
<b>PLO 2</b> <i>ILO 1, 2, 3, 4, 6</i>	Develop fundamental field, laboratory, and computer skills necessary for environmental science ( <i>Skills</i> )
<b>PLO 3</b> <i>ILO 1, 2, 3, 5, 6</i>	Critically evaluate, analyze, and integrate scientific findings, data, and socioeconomic context to understand environmental issues ( <i>Analysis and Synthesis</i> )
<b>PLO 4</b> <i>ILO 1, 2, 3, 4, 6</i>	Effectively communicate in oral and written form, and develop collaborative skills ( <i>Communication</i> )
<b>PLO 5</b> <i>ILO 1, 3, 5, 6</i>	Understand the role of the environmental science in local, regional, and global sustainability, and the role of an ethical scientist ( <i>Sustainability and Global Thinking</i> )

#### B. Summary of Assessment Process

**Instruments:** The final exam for ENSC 350 (Environmental Hydrology) was assessed for PLO 1 (Knowledge). PLOs are assessed on a rotating schedule; each PLO is assessed every 2-4 years.

**Sampling Procedure:** All enrolled students were included.

**Sample Characteristics:** About 75% of the students in the course were ENSC majors

**Data Collection:** At the end of the semester in which the Final Exam was completed, the faculty member leading the course carried out the assessment.

**Data Analysis:** a tally of accurate vs inaccurate statements was used to determine a numeric score for Knowledge.

**C. Summary of Assessment Results**

**ENSC 350 – Environmental Hydrology - Spring 2023: Knowledge (Grande)**

**Main Findings:**

The final exam of the course was assessed. The exam includes 32 multiple-choice questions at least partly based on knowing facts about hydrological processes. Students needed to remember essential topics listed in the course learning outcomes, such as the fundamental differences between unconfined and confined aquifer systems, and understand hydraulic properties of different geologic materials, and apply Darcy's Law to determine the rate of groundwater flow in different geologic media. Students used knowledge gained in lectures, class discussions, textbook readings, and practice problems to answer the questions. The content was new to students. However, fundamental knowledge of the physical and chemical properties of water and solutes was helpful as a basis for building knowledge of hydrology and water resources.

**Knowledge** was assessed based on the accuracy of the answers. A score of 5 indicates that the 28 or more questions were answered correctly; 4 indicates that 22-27 questions were correctly answered; 3 indicates that 16-21 questions were correctly answered; 2 indicates that 10-15 questions were correctly answered; 1 indicates that fewer than 9 questions were correctly answered. Twenty-five students submitted the assignment. Twelve students had a score of 5, eleven students had a score of 4, and three students had a score of 3. Average: 4.3. Lower scores seemed to mainly reflect the lower amount of time and effort expended by the students in the course, represented in the exam's outcome, and secondarily lack of fundamental physics and chemistry knowledge.

**ASSESSMENT OF GEOLOGY B.A./B.S. PROGRAM**

**A. Program Learning Outcomes**

PROGRAM STUDENT LEARNING OUTCOMES (PLOs)	
Students graduating with a B.A./B.S. in Geology will be able to:	
<i>PLO 1</i> <i>ILO 1, 4,6</i>	Develop foundational knowledge in geologic Materials, Processes & Time (Knowledge), Processes & Time (Knowledge)
<i>PLO 2</i> <i>ILO 1, 3,4,5,6</i>	Develop fundamental geological field and laboratory skills and computer competence (Skills)
<i>PLO 3</i> <i>ILO 1,4,5,6</i>	Integrate and analyze geologic information through synthesis & critical thinking (Analysis)
<i>PLO 4</i> <i>ILO 1,2,3,4,5,6</i>	Develop oral and written communication, and collaborative skills (Communication)
<i>PLO 5</i> <i>ILO 1,2,3,4,5</i>	Understand the impact of the Earth Sciences on local-to-global sustainability and their role as an ethical scientist (Global)

**A. Summary of Assessment Process, 2022-2023**

**Instruments:** A course assignment from GEOL 361 (Igneous and Metamorphic Petrology) was assessed for PLO 3,4 (Critical Thinking and Written Communication). PLOs are assessed on a rotating schedule; each PLO is assessed every 2-4 years.

**Sampling Procedure:** All enrolled students were included.

**Sample Characteristics:** About 50% of the students in the program were enrolled in this class.

**Data Collection:** At the end of the semester in which the assignment was completed, the faculty member leading the course carried out the assessment.

**Data Analysis:** a rubric was used to determine numeric scores, which were compiled in a spreadsheet.

**B. Summary of Assessment Results, 2021-2022 GEOL 361 - Igneous and Metamorphic Petrology**  
 - Fall 2022: Critical Thinking and Written Communication (Seitz)

The assignment consisted of a six-page research paper on a suite of igneous rocks in the department's collections. Students chose a suite of rocks and summarized petrology, petrography, tectonic setting, field relations, and geochemistry. The rock suites consisted of hand samples, thin sections, and major and minor element analysis for individual samples. Students were also required to complete a detailed primary literature search. The assignment required that students would integrate data from the literature, their own petrographic observations, and their analysis of geochemical data. Students gained skills in photomicroscopy and the use of Excel-based geochemical discrimination diagrams and their interpretation. The format mirrored the author requirements for the journal *Geochimica et Cosmochimica Acta* to give students an opportunity to produce a publication-style paper. To give students an opportunity to revise their work, preliminary outlines, abstracts, and bibliographies were required during the semester. Students also had the opportunity for the professor to review their paper and offer suggestions for revisions. The papers were scored with a grading rubric that was aligned with the PLO rubric.

Of the five students in the course, two did very well on the assignment whereas two other students did reasonably well. One student struggled with the complexity required to complete the assignment – especially in terms of explaining the issues and providing evidence for their thesis. It is possible that a couple of students had life issues that made it difficult for them to perform at a higher level. Students differed in the use of academic and disciplinary language. It was clear that at least one student had not completed a thorough literature search and/or synthesis of the literature and their research paper lacked scientific depth. Thus, their use of scientific evidence, ability to explain the issues, and their central message was inadequate.

Numeric Scores:

<b>Program:</b>	CSUEB Geology BA/BS Program Assessment					
<b>Rubric:</b>	<b>Critical Thinking &amp; Written Communication</b>	<b>Class Average:</b>	<b>12</b>			
<b>Course:</b>	<b>GEOL 361</b>		<b>Std. Dev.</b>	1.9		
<b>Semester:</b>	<b>Fall 2022</b>					
<b>Assignment:</b>	<b>Research Paper</b>					
<b>Student ID</b>	<b>Context and Purpose</b>	<b>Disciplinary Conventions</b>	<b>Syntax and Mechanics</b>	<b>Explanation of Issues</b>	<b>Evidence</b>	<b>Total</b>
1	2	2.7	3	2.7	3	13.4
2	2.25	2.4	2.1	2.2	2.4	11.35
3	2.85	2.7	3	2.9	3	14.45
4	2.55	2.1	2.1	2.4	2.16	11.31
5	2.25	2.1	2.1	2.1	1.2	9.75
6						
7						
8						
9						
10						
11						
12						
Average						12.05
SD						1.86

### General Recommendations for Program Improvement:

Students enter department programs with a wide range in basic writing and quantitative skills. Students need to be encouraged to take basic Math, Physics, and Chemistry classes earlier.

Writing assignments with instructor feedback are valuable to the student and should be continued.

**Next Steps for Closing the Loop:** We will monitor assessment of PLOs to determine if curricular changes are necessary.

### Other Reflections:

Some of the courses specified in the long-term (five-year) plan for assessment have been taught by lecturers. Since assessment is not part of the normal duties expected of lecturers, and some lecturers are employed by the department on a temporary, part-time basis, it may be difficult to obtain assessment results for courses taught by lecturers.

## ASSESSMENT OF GRADUATE PROGRAM - ENVIRONMENTAL GEOSCIENCES M.S.

### C. Program Learning Outcomes (PLO)

PROGRAM STUDENT LEARNING OUTCOMES (PLOs)	
Students graduating with a M.S. in Environmental Geoscience will be able to:	
<b>PLO 1</b> <i>ILO 5, 6</i>	Develop advanced knowledge in geologic Materials, Processes and Time ( <i>Knowledge</i> )
<b>PLO 2</b> <i>ILO 4,5, 6</i>	Attain proficiency in geological and environmental field, computing and laboratory applications ( <i>Synthesis</i> )
<b>PLO 3</b> <i>ILO 1, 2, 6</i>	Perform original research by integration and analysis of geologic and environmental information and data sets ( <i>Research</i> )
<b>PLO 4</b> <i>ILO 2, 3, 4, 6</i>	Master effective oral and written communication, and practice collaborative skills ( <i>Communication</i> )
<b>PLO 5</b> <i>ILO 1, 2, 3, 4, 5</i>	Join an ethical community of scientists who recognize the importance of sustainability, the role of science in society, and the value of life-long learning ( <i>Sustainability and Global Thinking</i> )

### A. Summary of Assessment Process for Graduate Program, 2022-2023

**Instruments:** A course assignment from GEOL 631 (Isotope Geochemistry) was assessed for PLO1 (Knowledge) and PLO 4 (Communication). PLOs are assessed on a rotating schedule; each PLO is assessed every 2-4 years.

**Sampling Procedure:** All enrolled students were included.

**Sample Characteristics:** About 60% of the students in the graduate program were enrolled in this class.

**Data Collection:** At the end of the semester in which the assignment was completed, the faculty member leading the course carried out the assessment.

**Data Analysis:** a tally of accurate vs inaccurate statements was used to determine a numeric score for Knowledge; a rubric was used to determine numeric scores for Communication, which were compiled in a spreadsheet.

### C. Summary of Assessment Results

#### GEOL 631 – Isotope Geochemistry - Spring 2023: Knowledge & Communication (Moran)

##### Main Findings:

One of five homework assignments was assessed. The assignment includes an expository essay of about 2000 words that compares and contrast two isotopic dating systems. Students synthesize knowledge gained in lectures, class discussions, textbook readings, and practice problems to formulate the essay content. The content was new to all students; however, fundamental knowledge of chemical behavior of the elements was helpful as a basis for building knowledge of the isotope systems.

**Knowledge** was assessed based on the accuracy and completeness of written statements about the isotope systems. A score of 5 indicates that 5 or more accurate statements were included in the essay, and no inaccurate statements were included; 4 indicates 3-4 accurate statements were included and no inaccurate statements; 3 indicates that 3 or more accurate statements were included and one inaccurate statement; 2 indicates that 3 or more accurate statements were included and two inaccurate statements; 1 indicates fewer than 3 accurate statements and more than 2 inaccurate statements were included in the essay. Eleven students submitted the assignment. Five students had a score of 5, 3 students had a score 4, and 3 students had a score of 3. Average:4.18. Lower scores seemed to mainly reflect the lower amount of time and effort expended by the students on the assignment, and secondarily lack of fundamental chemistry knowledge.

**Communication** was assessed using the Written Communication rubric from the Faculty Senate. Essays were scored in 4 categories, on a scale of 1 (lowest) to 4 (highest). Scores are shown below

CSUEB Geology M.S Program Assessment					
<b>Rubric:</b>	<b>Communication</b>	<b>Class Average:</b>	<b>12.64</b>		
<b>Course:</b>	GEOL 631	<b>Std. Dev.</b>	<b>2.4</b>		
<b>Assignment:</b> Expository Essay					
<b>Student</b>	<b>Statement of Thesis</b>	<b>Organization, clarity</b>	<b>Presentation of Supporting Ideas</b>	<b>Language &amp; sentence structure</b>	<b>Total</b>
1	3	1	2	3	9
2	3	2	2	3	12
3	4	2	3	4	13
4	2	2	2	3	9
5	4	3	3	3	13
6	3	3	3	3	12
7	4	4	3	4	15
8	4	4	4	4	16
9	4	3	4	4	15
10	4	3	4	4	15
11	2	2	3	3	10

**Recommendations:**

The expository essay is an effective tool to address knowledge and writing effectiveness.

Supplemental instruction that is a review of college Chemistry course content (inorganic and physical chemistry) would likely help students gain the confidence needed to incorporate new knowledge in isotope geochemistry. Among the rubric categories, organization and presentation of supporting ideas scored lower than statement of thesis and mechanics. Students need practice writing from outlines and gathering accurate supporting information.

**General Recommendations for Program Improvement:**

Writing assignments with instructor feedback are quite valuable to the student and should be continued.

**Next Steps for Closing the Loop:** We will monitor assessment of PLOs to determine if curricular changes are necessary.



### **III. DISCUSSION OF PROGRAM DATA & RESOURCE REQUESTS**

#### **A. Discussion of Trends & Reflections Notable Trends;**

##### **Reflections on Trends and Program Statistics:**

##### **Overview:**

During Fall 2022, total enrollment for all classes offered by the department was 190 FTES. Enrollment reached an all-time high of 281 FTES in Fall 2019 and has declined for each of the past three years. SFR was 32 in Fall 2022, which has been stable the past two years.

##### **Students:**

Of the department's three main programs, the Environmental Science BS program has the largest number of majors. During Fall 2022, there were 35 Environmental Science majors (Figure 1). During the past five years, the number of Environmental Science majors oscillated between 35 and 53, with an average of 44 and a slight decreasing trend. Over the past 5 years we have had stable enrollment in the Environmental Health concentration (n=2-6), with 4 in Fall 2022 (Table 1). During Fall 2022, the race and ethnicity of majors in the program was 40% Latinx, 34% White, 23% Asian, 3% Multirace, and 0% Black (Table 2). Enrollment by black students is low and has been low over the past 5 years. Other groups have had stable enrollment over the past 5 years. We have had stable enrollment by males and females in the program over the past 5 years, with 49% female and 51% male in Fall 2022 (Table 3). We have also had stable enrollment from first generation students with 51% first generation in Fall 2022 (Table 4). In fall 2022, 63% of our students are first-time freshman with 37% transfer, which has been a stable trend over the past 5 years (Table 5). Time to degree is 2 years for transfer students and 5.1 years for first-time freshman (Table 7).

The number of Geology majors has ranged from 8 to 15 during the past five years (Figure 2). In Fall 2022, there were 12 Geology majors, with 1 enrolled as a postbaccalaureate student, 10 in the BS program and 1 in the BA program, Geoscience Education (Table 8). Enrollment is fairly stable over the past 5 years. During Fall 2022, the race and ethnicity of majors in the program was 45% Latinx, 45% White, 0% Asian, 9% Multirace, and 0% Black (Table 9). There has been increasing enrollment by Latinx students and declining enrollment by black and Asian students in the Geology program over the past 5 years. We have had a trend of increasing enrollment by females in the program over the past 5 years, with 55% female and 45% male in Fall 2022 (Table 10). We have had decreasing enrollment by first generation students with 45% first generation in Fall 2022 (Table 11). In fall 2022, 36% of our students are first-time freshman with 64% transfer, which has been a stable trend over the past 5 years (Table 12).

The number of students in the graduate program has experienced a modest increase over the past five years, ranging between 11-16 students and a total of 14 students in Fall 2022 (Figure 3). During Fall 2022, the race and ethnicity of majors in the program was 21% Latinx, 43% White, 14% Asian, 14% Multirace, 7% international, and 0% Black (Table 14). Enrollment by black students is low and has been low over the past 5 years. There has been increasing enrollment by Asian and multirace students and stable enrollment by other groups in the Environmental Geosciences program over the past 5 years. We have had a slight trend of decreasing enrollment by females in the program over the past 5 years, with 43% female and 57% male in Fall 2022 (Table 15). We have had stable enrollment by first

generation students with 57% first generation in Fall 2022 (Table 16). Time to degree is 3.1 years for students (Table 17).

**Faculty:**

Two tenure-track faculty left the department at the end of the 21-22 academic year. One new tenure-track faculty member joined the department in Fall 2022. One tenured faculty member started the FERP program in Fall 2021. Three tenured faculty members started the FERP program in Fall 2023.

During Fall 2022, the total faculty headcount was 16, with 6 tenure-track faculty and 10 lecturers, for an FTE of 190. FTEF was 6.5 for Fall 22 and has varied between 7.5 and 8.3 over the past five years. The relative proportions of tenure-track faculty to lecturers in terms of FTEF during Fall 2022 was 44% regular tenure-track faculty and 60% lecturers.

**Reflections on Trends and Program Statistics Faculty:**

The relative proportions of tenure-track faculty to lecturers in terms of FTEF fluctuates considerably from year to year due to the small size of the department and faculty assigned time. Averaged over the past five years, 44% of FTEF were tenure-track and 60% were lecturers. Although lecturers primarily teach general education (GE) courses, they also teach some classes for majors. This trend is worsening over time with more lecturers teaching the bulk of the courses including some upper division major classes.

**B. Request for Resources**

**Request for Tenure-Track Hires:**

In light of the departure of two tenure-track faculty in 2021/22, four TT faculty now enrolled in the FERP program, and as demonstrated by the Department's ongoing low proportion of tenure-track faculty to lecturers, high SFR, and large number of FTES, the Department needs four additional faculty members. Four new faculty members are needed to reduce the Department's reliance on lecturers for teaching specialized courses for majors, to mentor graduate students, and to provide better oversight of online GE courses that are currently taught by lecturers. We therefore request four tenure-track positions for 2023-24, one in Soils Science, one in Atmospheric Science or Oceanography, one Structural Geologist or Geophysicist, and one Environmental Hydrologist. Solicitations will emphasize expertise in the aspects of these subdisciplines associated with climate change and threats such as sea level rise, reduced air quality due to wildfires, climate whiplash and its affect on crops and fresh water supplies, and adaptation infrastructure. With these new faculty we will be able to better serve all 3 programs and increase tenure track density.

**Request for Other Resources**

All regular faculty currently have assigned office space in Science North. In some cases, office space is combined with lab space or shared with lecturers. Currently 3 faculty actively share research lab space in Science South 106. There is room for 1 additional faculty member but not more. Therefore, the department is currently at capacity in terms of faculty office space and lab space and will need additional space to accommodate new faculty hires. In order to alleviate this, we propose to make adjustments to current lab/office spaces in North Science. Rooms N352 and 350 could be combined into a large office suite with private offices for 4 faculty members plus a common conference room meeting space. Rooms N353 and 351 could also be combined to become shared lab space for new faculty hires who share equipment and/or disciplines. The current configurations of these rooms are outdated and could be more useful if remodeled. This proposed plan would not infringe on space currently occupied by other departments.

#### IV. APPENDIX

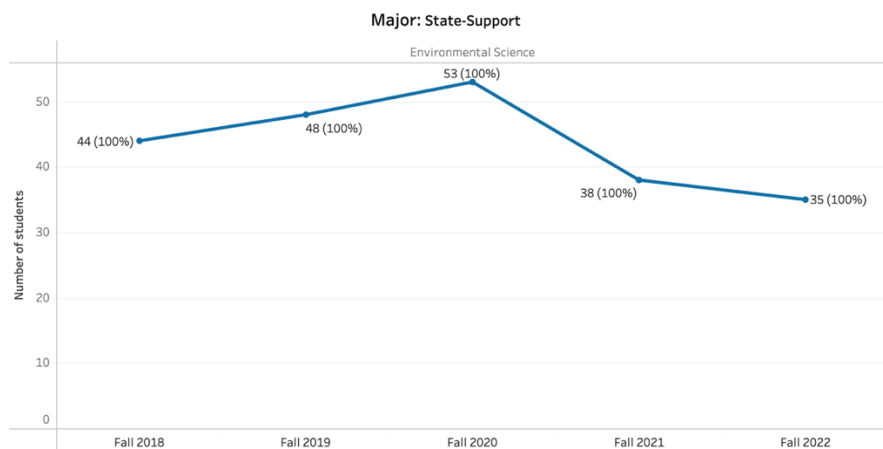


Figure 1. Environmental science student enrollment over the last 5 years.

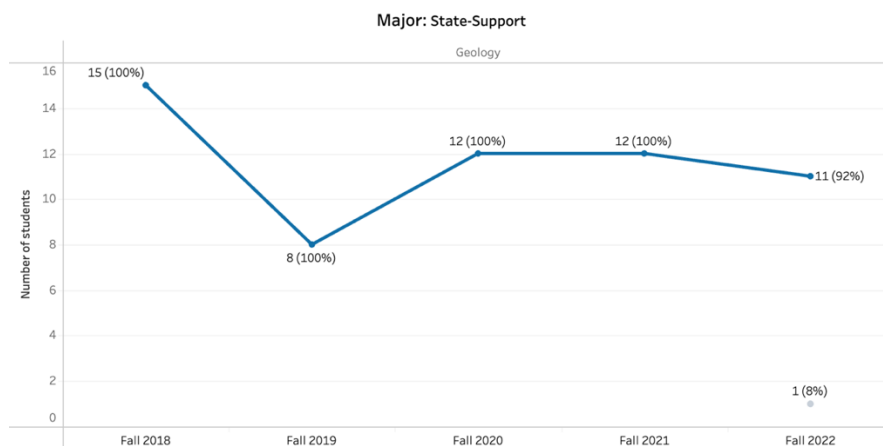


Figure 2. Geology student enrollment over the last 5 years.

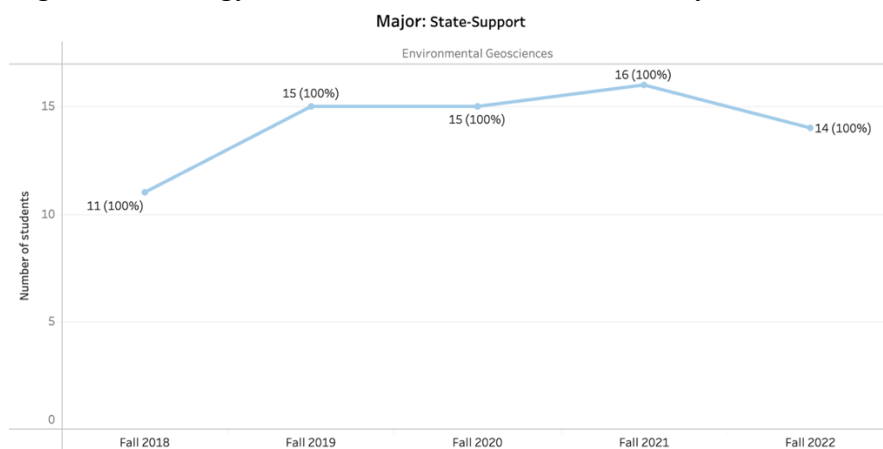


Figure 3. Environmental Geoscience student enrollment over the last 5 years.

Environmental Science: Concentration											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate		23	52%	36	75%	41	77%	32	84%	29	83%
	Environ Sys & Resource Mgmt	9	20%	6	13%	4	8%	1	3%	1	3%
	Environmental Health	2	5%	4	8%	6	11%	3	8%	4	11%
	Life Science	6	14%	1	2%	1	2%	1	3%		
	Physical Science	4	9%	1	2%	1	2%	1	3%	1	3%
	Total	44	100%	48	100%	53	100%	38	100%	35	100%
Grand Total		44	100%	48	100%	53	100%	38	100%	35	100%

Table 1. Concentration enrollment in the Environmental Science major over the past 5 years.

Environmental Science: Race/Ethnicity											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	Asian	8	18%	11	23%	12	23%	10	26%	8	23%
	Black			2	4%	2	4%	1	3%		
	International	1	2%			1	2%				
	Latinx	16	36%	18	38%	18	34%	14	37%	14	40%
	Multirace	3	7%	6	13%	4	8%	3	8%	1	3%
	Native American	1	2%	1	2%	1	2%				
	Unknown	4	9%	3	6%	1	2%				
	White	11	25%	7	15%	14	26%	10	26%	12	34%
	Total	44	100%	48	100%	53	100%	38	100%	35	100%
Grand Total		44	100%	48	100%	53	100%	38	100%	35	100%

Table 2. Race and ethnicity enrollment in the Environmental Science major over the past 5 years.

Environmental Science: Sex											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	Female	26	59%	25	52%	24	45%	17	45%	17	49%
	Male	18	41%	23	48%	29	55%	21	55%	18	51%
	Total	44	100%	48	100%	53	100%	38	100%	35	100%
Grand Total		44	100%	48	100%	53	100%	38	100%	35	100%

Table 3. Sex enrollment in the Environmental Science major over the past 5 years.

Environmental Science: First Generation											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	FG	24	55%	27	56%	26	49%	19	50%	18	51%
	Non-FG	20	45%	21	44%	27	51%	19	50%	17	49%
	Total	44	100%	48	100%	53	100%	38	100%	35	100%
Grand Total		44	100%	48	100%	53	100%	38	100%	35	100%

Table 4. First generation enrollment in the Environmental Science major over the past 5 years.

Environmental Science: Admit Type											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	First-time Fr..	28	64%	32	67%	30	57%	24	63%	22	63%
	Transfer	16	36%	16	33%	23	43%	14	37%	13	37%
	Total	44	100%	48	100%	53	100%	38	100%	35	100%
Grand Total		44	100%	48	100%	53	100%	38	100%	35	100%

Table 5. Admit type enrollment in the Environmental Science major over the past 5 years.

Environmental Science: Class Level											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	Frosh	10	23%	16	33%	13	25%	3	8%	5	14%
	Sophomore	6	14%	7	15%	8	15%	7	18%	1	3%
	Junior	8	18%	8	17%	8	15%	10	26%	10	29%
	Senior	20	45%	17	35%	24	45%	18	47%	19	54%
	Total	44	100%	48	100%	53	100%	38	100%	35	100%
Grand Total		44	100%	48	100%	53	100%	38	100%	35	100%

Table 6. Class level enrollment in the Environmental Science major over the past 5 years.

Time to Degree Years (and Headcount)		
	Transfer	First-time Freshmen
Overall	2.0 (4)	5.1 (4)
CSCI Environmental Science	2.0 (4)	5.1 (4)

Table 7. Time to degree years in the Environmental Science major over the past 5 years.

Geology: Concentration											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate		14	93%	8	100%	12	100%	11	92%	10	91%
	Geoscience Education	1	7%					1	8%	1	9%
	Total	15	100%	8	100%	12	100%	12	100%	11	100%
Postbaccalaureate										1	100%
	Total									1	100%
Grand Total		15	100%	8	100%	12	100%	12	100%	12	100%

Table 8. Concentration enrollment in the Geology major over the past 5 years.

Geology: Race/Ethnicity											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	Asian	3	20%	1	13%						
	Black	1	7%	1	13%	1	8%	1	8%		
	Latinx	2	13%	3	38%	6	50%	5	42%	5	45%
	Multirace					1	8%	2	17%	1	9%
	NHPI	1	7%								
	Unknown	2	13%								
	White	6	40%	3	38%	4	33%	4	33%	5	45%
	Total	15	100%	8	100%	12	100%	12	100%	11	100%
Postbaccalaureate	Black									1	100%
	Total									1	100%
Grand Total		15	100%	8	100%	12	100%	12	100%	12	100%

Table 9. Race and ethnicity enrollment in the Geology major over the past 5 years.

Geology: Sex											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	Female	5	33%	4	50%	5	42%	6	50%	6	55%
	Male	10	67%	4	50%	7	58%	6	50%	5	45%
	Total	15	100%	8	100%	12	100%	12	100%	11	100%
Postbaccalaureate	Male									1	100%
	Total									1	100%
Grand Total		15	100%	8	100%	12	100%	12	100%	12	100%

Table 10. Sex enrollment in the Geology major over the past 5 years.

Geology: First Generation											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	FG	11	73%	5	63%	8	67%	6	50%	5	45%
	Non-FG	4	27%	3	38%	4	33%	6	50%	6	55%
	Total	15	100%	8	100%	12	100%	12	100%	11	100%
Postbaccalaureate	FG									1	100%
	Total									1	100%
Grand Total		15	100%	8	100%	12	100%	12	100%	12	100%

Table 11. First generation enrollment in the Geology major over the past 5 years.

Geology: Admit Type											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	First-time Frosh	6	40%	4	50%	5	42%	4	33%	4	36%
	Transfer	9	60%	4	50%	7	58%	8	67%	7	64%
	Total	15	100%	8	100%	12	100%	12	100%	11	100%
Postbaccalaureate	First-time Graduate									1	100%
	Total									1	100%
Grand Total		15	100%	8	100%	12	100%	12	100%	12	100%

Table 12. First time freshman enrollment in the Geology major over the past 5 years.

Geology: Class Level											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Undergraduate	Frosh	3	20%			1	8%	1	8%		
	Sophomore			3	38%					1	9%
	Junior	3	20%	2	25%	7	58%	3	25%	2	18%
	Senior	9	60%	3	38%	4	33%	8	67%	8	73%
	Total	15	100%	8	100%	12	100%	12	100%	11	100%
Postbaccalaureate	Postbacc									1	100%
	Total									1	100%
Grand Total		15	100%	8	100%	12	100%	12	100%	12	100%

Table 13. Class level enrollment in the Geology major over the past 5 years.

Environmental Geosciences: Race/Ethnicity											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Graduate	Asian							1	6%	2	14%
	Black	1	9%	1	7%						
	International	1	9%	2	13%	1	7%	1	6%	1	7%
	Latinx	2	18%	3	20%	3	20%	4	25%	3	21%
	Multirace			1	7%	2	13%	2	13%	2	14%
	NHPI			1	7%	1	7%				
	Unknown	1	9%	1	7%	1	7%	1	6%		
	White	6	55%	6	40%	7	47%	7	44%	6	43%
	Total	11	100%	15	100%	15	100%	16	100%	14	100%
Grand Total		11	100%	15	100%	15	100%	16	100%	14	100%

Table 14. Race and ethnicity enrollment in the Environmental Geosciences MS program over the past 5 years.

Environmental Geosciences: Sex											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Graduate	Female	6	55%	12	80%	10	67%	8	50%	6	43%
	Male	5	45%	3	20%	5	33%	8	50%	8	57%
	Total	11	100%	15	100%	15	100%	16	100%	14	100%
Grand Total		11	100%	15	100%	15	100%	16	100%	14	100%

Table 15. Sex enrollment in the Environmental Geosciences MS program over the past 5 years.

Environmental Geosciences: First Generation											
		Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
		n	%	n	%	n	%	n	%	n	%
Graduate	FG	5	45%	9	60%	8	53%	8	50%	8	57%
	Non-FG	6	55%	6	40%	7	47%	8	50%	6	43%
	Total	11	100%	15	100%	15	100%	16	100%	14	100%
Grand Total		11	100%	15	100%	15	100%	16	100%	14	100%

Table 16. First generation student enrollment in the Environmental Geosciences MS program over the past 5 years

Time to Degree Years (and Headcount)		
		Masters & Ed.D
Overall		3.1 (7)
CSCI	Environmental Geosciences	3.1 (7)

Table 17. Time to degree data for the Environmental Geosciences MS program over the past 5 years

