

# EARTH AND ENVIRONMENTAL SCIENCE

*Professors – Jeffrey Myers, Stephen Taylor, Jeffrey Templeton*  
*Assistant Professor – David Szpakowski*

## MISSION

The Earth and Environmental Science program at Western Oregon University provides a liberal arts education in geoscience with an emphasis on scientific methods, problem solving, and interdisciplinary science education. A key objective of the program is to prepare undergraduates for careers as professional geoscientists and educators. The program also promotes the development of an informed citizenry for wise decision-making on issues related to natural resources, environmental quality, and sustainability in Oregon and beyond.

## LEARNING OUTCOMES

Upon completion of the program, the student will be able to:

1. Demonstrate knowledge of the physical, chemical, and biological processes operating in the Earth system.
2. Apply technology-based methods to solve geologic problems and communicate results.
3. Conduct scientific investigations in laboratory and field settings.



*For More Information: Dr. Steve Taylor [taylor@s@wou.edu] or Dr. Jeff Templeton [templej@wou.edu]*

# Earth and Environmental Science

**Are you interested in the environment and saving planet Earth? The Earth and Environmental Science program at WOU has a career pathway for you.** Our Earth and Environmental Science majors learn about the geosciences with an emphasis in solving environmental problems through application of technology and scientific methods. Students enjoy small interactive classes and engage with caring faculty. Students have opportunities to conduct research with faculty on topics such as environmental geology, geographic information systems, paleobiology, petrology, remote sensing and volcanology. Earth science courses are enhanced by hands-on field trips to locations in Oregon and throughout the Pacific Northwest.

With a degree in earth and environmental science, you will be prepared for careers in the growing fields of geoscience, environmental management, and natural hazards mitigation. Students can gain further experience for diverse career opportunities through minor programs in geographic information science and environmental studies. Our students are trained to make wise decisions on important issues related to natural resources, environmental quality and sustainability in the Pacific Northwest and beyond. Students who complete a degree in earth and environmental science are qualified to pursue professional licensure as registered geologists in Oregon.

*"The WOU Earth and Environmental Science program is all about field experience, job training, internship opportunities, team building and collaboration. The professors care for WOU students and regularly go above and beyond their routine job duties to make sure that each individual is getting the most out of the program and is prepared for employment success after college. This program means so much more than just a building and homework; this department is women in science, it is first-generation students breaking a cycle, and it is students who care so much for their planet and communities that they enrolled at WOU to do something about it." ~Nicole Niskanen '21*



## SKILLS YOU'LL LEARN

- Application of the scientific method
- Enhanced observation skills
- Logic, reasoning, and problem solving
- Quantitative/math analysis
- Computer software applications
- Written and oral communication



WOU alumni, Nicole Niskanen '21 and Kyle Warren '18, working in the field.

## JOB OPPORTUNITIES

- Geoscientist
- Environmental scientist
- Surveying and mapping technician
- GIS analyst
- Hydrologist
- Natural resource management
- Conservation science
- Science teacher (with masters in teaching)

## SAMPLE FOUR-YEAR DEGREE PLAN

*This sample plan is a planning tool for prospective students. You will have an adviser to help navigate **your individual program.***

### YEAR 1

ES 201, 202, 203 Principles of Geology  
MTH 111 College Algebra  
MTH 243 Intro to Probability & Statistics

### YEAR 2

BI 101 General Biology: The Diversity of Life  
CH 104 Chemistry and the Environment  
ES 301 Earth Materials  
ES 302 Quantitative Methods  
ES 322 Geomorphology and Aerial Photo Interpretation  
ES 340 Geospatial Techniques

### YEAR 3

ES 321 Structural Geology  
Upper-division Earth and Environmental Science courses

### YEAR 4

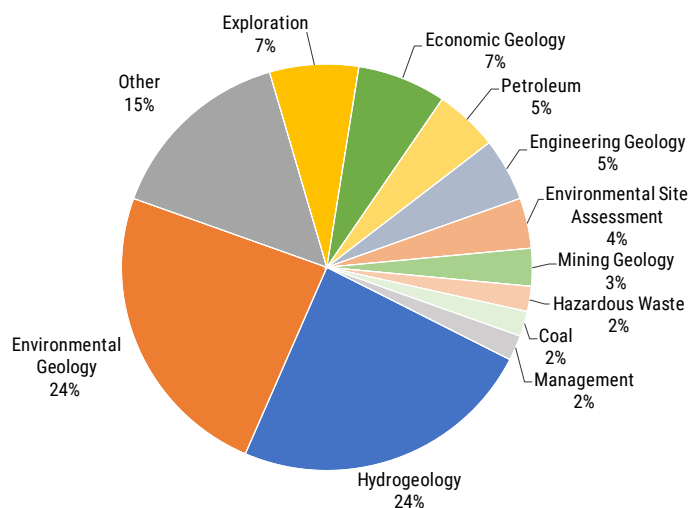
ES 491 Sedimentary Systems I  
ES 497 Senior Seminar  
Upper-division Earth and Environmental Science courses



## How do geologists make a living in 2019?

According to recent American Geosciences Institute (AGI) workforce data, less than 11% of geoscience graduates receiving a BA/BS or MA/MS degree develop a career in academia and/or research. Given this statistic, the question then arises: How are geologists making a living upon graduation in 2019? The majority of graduates are developing careers by applying knowledge as opposed to deriving new knowledge as done in academic and/or research positions.

### Areas of expertise for geologists who are members of the American Institute of Professional Geologists

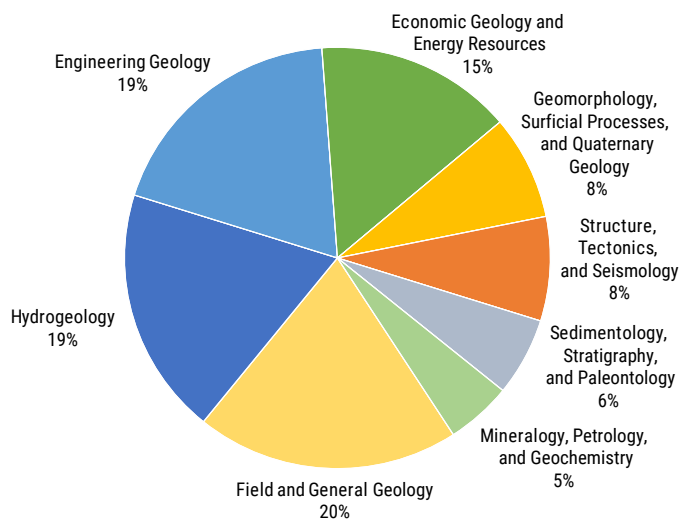


Credit: American Institute of Professional Geologists

Although the most common perception is that geologists look for oil, gas, and coal, the fact is that nearly everything a person touches on a given day, will have required the work of a geologist at some point along the way. Based on workforce surveys conducted by the American Institute of Professional Geologists (AIPG), National Association of State Boards of Geology (ASBOG®), and AGI, geologists are predominantly securing employment in three broad sectors:

- Environmental remediation and management
- Natural resource discovery and utilization
- Engineering and Construction

### ASBOG® Task Analysis Survey Practice of Geology Blueprint - Domain Percentages



Credit: National Association of State Boards of Geology

Geologists working in environmental remediation and management strive to mitigate human impacts. Geologists in this sector respond to spills and accidents, work to clean up sites where past human activities have created negative impacts, and work with companies, municipalities, and individuals to minimize the impacts of new projects. This work requires that geologists conduct field site assessments, using state-of-the-art technology to identify and understand the distribution of contaminants, determine the sources and pathways along which those chemical species move, and develop a mechanism to remove or otherwise mitigate the impact of those species on the environment.

Geologists working in natural resource discovery and utilization are tasked with finding the raw materials to provide the resources necessary to support modern society. Geologists working in this field use cutting edge technology to locate and define specific resources, and to plan for the extraction of those resources. All metals, building stone, as well as coal, oil, and gas, are located by geologists in this sector. As we transition from hydrocarbons to renewable sources of energy, the types of resources these geologists locate will change, but

the work must continue. Every wind turbine, solar panel, and hydroelectric plant requires copper, cobalt, silicon, aggregate, and a vast number of other metals and minerals. As society determines its best way forward, geologists will be there to help find and provide the raw materials that are needed.



**Field photograph of the Emerson Barite Mine.**  
Credit: R. Kath, 2015

Geologists working in engineering and construction work directly with architects and geotechnical/civil engineers to characterize the earth materials upon which new construction projects will be sited. These engineering geologists may also work with geologists in other subdisciplines to help design treatment facilities, retention structures, mine plans, or other structures that are required for geologic projects. Geologists in this field may conduct rock- and soil-strength tests to determine if rocks and other earth materials exhibit the correct properties to be used in the project at hand.



**Trailing gear of TBM, Bellwood Quarry, Atlanta, Georgia.**  
Credit: R. Kath, 2015

While geologists comprise a small percentage of the global workforce, their work extends support to nearly every aspect of modern society. Since less than 11% of graduating BA/BS and MA/MS students work in academia, it is incumbent upon college and university educators to align academic requirements for undergraduate and graduate degree programs with skills that are needed for professionals to hit the ground running in the largest areas of employment for geologists.

*Geologists make use of their special knowledge for the benefit of others. No profession affects the public more than geology. "Civilization exists by geological consent, subject to change without notice"*

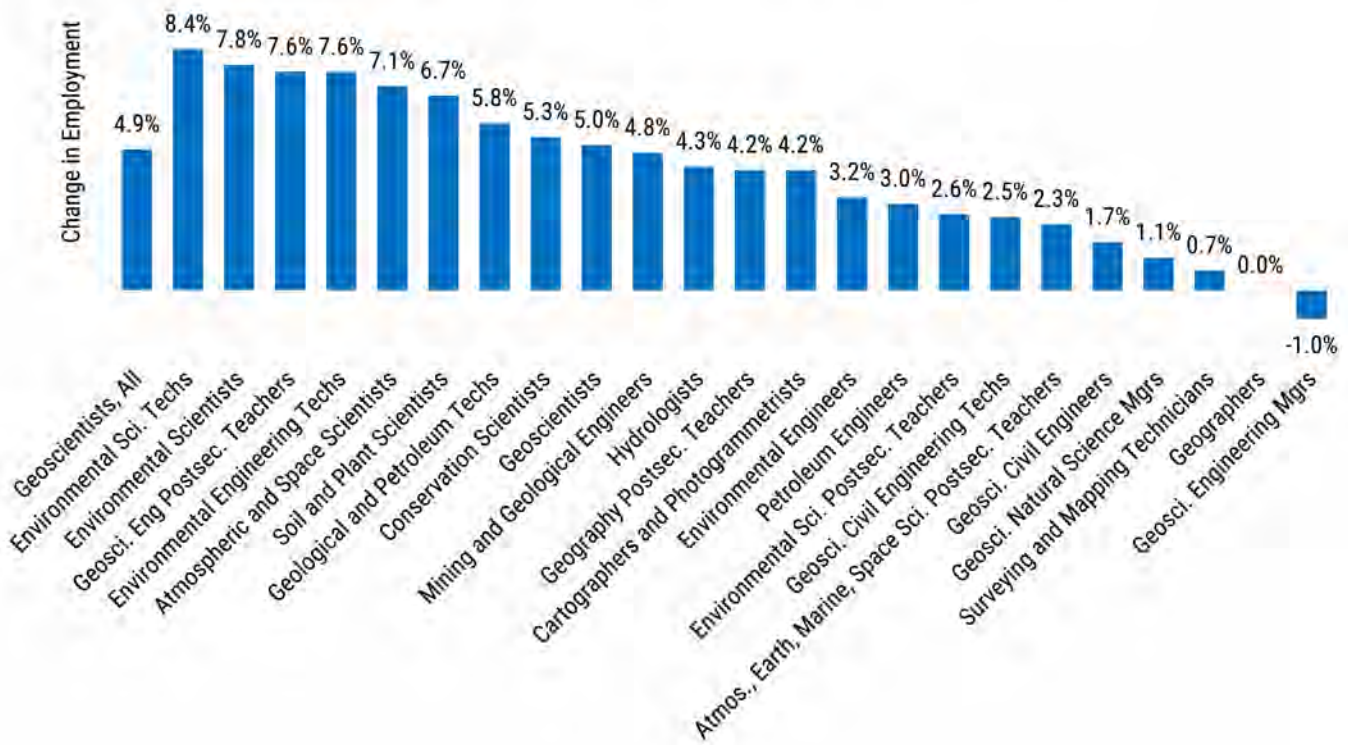
*- William Durant*

# Geoscience Workforce Projections 2019-2029

## Geoscience workforce expected to grow by 4.9%

Employment projections from the U.S. Bureau of Labor Statistics (BLS) indicate an overall 4.9% increase in geoscience jobs between 2019 and 2029, from 460,242 jobs in 2019 to 482,726 jobs in 2029. For comparison, the projected growth of the U.S. workforce over the same timeframe is expected to be 3.7%. While growth rates for individual geoscience occupations range between 0% and 8.4% for all but geoscience engineering managers (-1%), those occupations projected to gain the greatest number of jobs are environmental scientists (7,100 jobs), environmental science technicians (2,900 jobs), and environmental engineers (1,800 jobs).

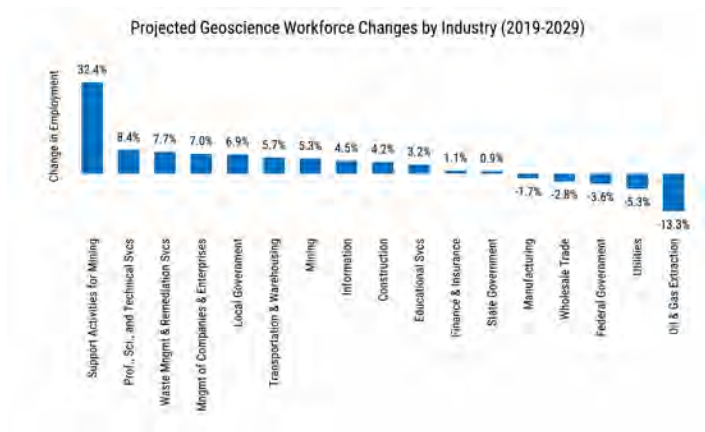
Projected Geoscience Workforce Changes by Occupation (2019-2029)



Credit: AGI; data derived from the U.S. Bureau of Labor Statistics, Employment Projections

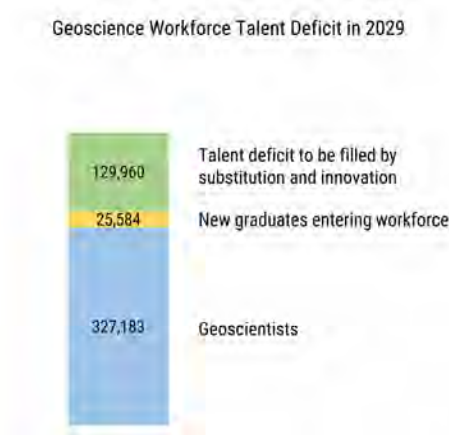
The majority of geoscience job growth over the coming decade will be within the professional, scientific and technical services sector where 39% of geoscientists currently work. This sector is projected to gain just over 16,000 jobs between 2019 and 2029, an 8.4% increase over this period. The support activities for mining sector which includes oil and gas support activities, currently employs approximately 2% of geoscientists and is expected to grow by 32% gaining just over 3,500 jobs.

Of those industries projected to see a decline in total geoscience employment between 2019 and 2029, the oil and gas extraction industry is projected to contract the most with a reduction of just over 2,800 jobs, followed by the federal government which is projected to shed just over 1,000 jobs. The utilities, wholesale trade, and manufacturing sectors are projected to shed a total of 700 jobs by 2029.



Credit: AGI; data derived from the U.S. Bureau of Labor Statistics, Employment Projections

Based on the age demographics of the current geosciences workforce as identified by the BLS, with an average retirement age of 65, then 27% of the existing geoscience workforce will be retiring by 2029. The number of geoscience graduates entering the workforce each year will not be sufficient to fill the gap created by these retirements and the addition of over 22,000 new jobs that are projected to be created in the profession by 2029. As a result, the expected geoscience workforce deficit will be approximately 130,000 full-time equivalent geoscientists by 2029.



Credit: AGI; data derived from the U.S. Bureau of Labor Statistics, Employment Projections and Current Population Survey, and from AGI's Directory of Geoscience Departments

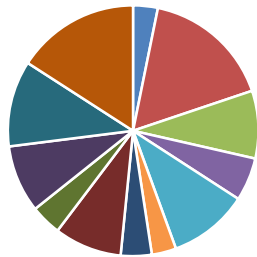
Full employment in the geosciences is expected to continue over the coming decade and we expect there will be a continued increase in the use of innovative technologies such as artificial intelligence and machine learning to fill the expected talent gap by increasing workplace efficiencies.

<b>WOU Earth Science Alumni and Career Outcomes (1999-2023)</b>	<i>Updated Feb. 24, 2023</i>	
	<b>EMPLOYMENT CATEGORY</b>	<b>GRAD SCHOOL</b>
Tanja Aas, M.S. Ed, 2009, Science Teacher Norway	Education	
Samantha (Mandy) Abel, 2019, graduate student M.S. Geology Program, Central Washington University	TBD	Graduate School
Zander Albertson, ESS Minor, 2014, GIS Intern, City of Salem	GIS	
Sheila Alfsen, B.S. Earth Science, 2004, Community College Instructor	Education	
Brittanie Andrew, B.S. Earth Science, 2010, Recreation Instruction, City of Hillsboro	Education	
David Arnold, B.S. Earth Science, 2001, Construction	Construction	
Andrew Baertlein, B.S. Earth Science, 2013, GIS Technician, Simplot Precision Planting	Natural Resources	
Palmer Baldwin, B.S. Earth Science, 2019, TBD, Monmouth, Oregon	Unknown	
Tammy Baker, B.S. Earth Science, 2003, GIS Survey Analyst, Oregon Dept. Revenue	GIS	
Jody Becker, B.S. Earth Science, 2011, Academic Counselor, Coast Community College; Science Teacher Eddyville Charter	Education	Graduate School
Geoffrey Bingham, B.S. Earth Science, 2003, High School Science Teacher, Oregon City	Education	
Jeffrey Bird, B.S. Earth Science, 2004, Hydrology Technician, Umatilla County	Water Resources	
Trevor Brown, B.S. Earth Science, 2013, Geologist-In-Training; MAT Science Education; Teach New City Dept. of Education, Bronx	Education	
Richard Brown, B.S. Earth Science, 2015, GIS Analyst / Planner, City of Lompoc, California	GIS	
Matthew Buche, B.S. Earth Science, 2009, Senior Staff Geologist, Sage Engineers; Senior Project Geology, Gannett Fleming	Geotechnical	
Jeff Budnick, B.S. Earth Science, 2005, Field Hydrologist, Vancouver, WA	Water Resources	
Robin Bunse, ES Minor, 2005, FEMA Program Coordinator, City of Salem	Natural Resources	
Emily Carlston, B.S. Earth Science 2019, TBD, Monmouth, Oregon; GIS Analyst NV5 Geospatial, Seattle, WA	GIS	
Kari Carr, B.S. Earth Science, 2006, High School Science Teacher, Salem	Education	
Dylan Castle, B.S. Earth Science / Math Minor; 2015; TBD, Alaska; Environmental Health and Safety Technician, Cepheid, Renton, WA	Environmental	
Kevin Chambers, B.S. Earth Science, 2014, Water Well Driller, Robinson Drilling, Salem, Oregon; Dewatering Consultant, Project Manager, Michels Inc., Salem, Oregon	Water Resources	
Kolby Childers, B.S. Earth Science, 2019, Wine Terroir Consultant, Yakima Washington	Natural Resources	
Jared Christiansen, B.S. Earth Science, 2002, Physicians Assistant, Texas	Other	Graduate School
Hunter Collins, B.S. Earth Science, 2019, GIS Certificate Post-Bac, Western Oregon University	Unknown	
Shelby Collins, B.S. Earth Science, 2006, Park Interpreter	Parks	
Grace Comer, B.S. Earth Science, 2022, Applying to Graduate School, Environmental Science, OSU; Environmental Technician, Disney Corporation, Orlando, FLA	Environmental	
Tyler Cox, B.S. Earth Science, 2003, U.S. Air Force	Military	
Jacob Crusser, B.S. Earth Science, 2013, GIS Analyst, Oregon Dept. Agriculture, Salem	GIS	
Stephanie Cutsforth, ESS Minor, 2014, Program Assistant, U.S. Forest Service	Natural Resources	
Kelsii Dana, B.S. Earth Science, 2011, Park Ranger, Silver Falls State Park, Salem	Parks	Graduate School
Tunya Dhevaphalin, B.S. Earth Science / B.A. Dance, 2017; MAT Education WOU	Education	
Chandra Drury, B.S. Earth Science, 2005, Soil Hydrologist, Arizona	Water Resources	
Dan Dzieken, B.S. Earth Science, 2011; unknown	Unknown	
Skyler Edmison, B.S. Earth Science 2014, Treatment Plant Operator, Clean Water Services, Beaverton, Oregon	Water Resources	
Will Edwards, B.S. Earth Science, 2018, Medical Transport, Portland, Oregon	Other	
Alex Evernden, B.S. Earth Science, 2022, Staff Geologist, Portland; rumor is she got a job in geology business somewhere?	Environmental	
Jamie Fisher, B.S. Earth Science, 2006, Field Geology Manager, Resolution Copper, Arizona	Mining/Energy Resources	
Kara Fisher, B.S. Earth Science, 2013, Environmental Technician, U.S. Navy, Bremerton, Washington	Environmental	
Richard Fletcher, B.S. Earth Science, 2012, Fire Management, Oregon Dept. Forestry	Natural Resources	
Christina Francisco, B.S. Earth Science, 2013, Environmental Scientist, Pinellas County, Clearwater, Florida; GIS Graduate Certificate Program University South Florida	Environmental	Graduate School
Kyler Freiling, B.S. Earth Science, 2020, TBD, Monmouth, Oregon; interviewed at Oregon Water Resources Dept (reference call, TBD?)	Water Resources	
Brenden Frick, B.S. Earth Science, 2018, Staff Geologist, Oregon Dept. of Transportation, Salem, Oregon	Geotechnical	
Salvador Garcia-Lopez, B.S. Earth Science, 2020, Science Teacher, Teach for America, Americorps, Philadelphia, Pennsylvania; PSU Hispanic Stem recruiter	Education	
Denise Giles, B.S. Earth Science, 2003, M.S. Geology OSU, Watershed Manager	Water Resources	Graduate School
Brandon Ginos, B.S. Earth Science, 2013, Environmental Geologist, Donan Environmental Services, San Diego	Environmental	
Landon Glynn, B.S. Earth Science, 2017, Staff Hydrogeologist, Geopacific, Lake Oswego, Oregon	Water Resources	
Nick Griffith, B.S. Earth Science, 2020, TBD, Salem, Oregon	Unknown	
Tim Hagen, B.S. Earth Science, 2020, Fire Management / Paramedic First Responder, Salem, Oregon	Natural Resources	
Karla Hale, M.S. Ed, , Community College Instructor; Science education NTT instructor WOU	Education	
Katie Halvorson, B.S. Earth Science, 2016, Graduate Student, MAT Science Ed., Univ. Alaska Southeast; Middle School Science Teacher Puget Sound	Education	Graduate School
Spencer Helwig, B.S. Earth Science, 2012, GIS Technician, GeoSolv, Inc.	GIS	
Greg Helstrom, B.S. Earth Science, 2011, Cannabis Grower	Other	
Sylvia Herrold, ESS Minor, 2012, Science Teacher, Central High School	Education	
Andy Hernandez, ES Major, 2021, TBD, Salem, OR	Unknown	
Harrold Hill, ES Major, Program Assistant, OMSI, Portland	Education	
Heather Hintz, B.S. Earth Science, 2008, Park Ranger, U.S. National Park Service	Parks	
Ivy Hodgkinson, B.S. Earth Science, 2021, TBD, Oregon City	Unknown	
Troy Howard, B.S. Earth Science, 2021, Staff Geologist, Central Geotechnical Services, LLC	Environmental	
Taylor Hojnowski, B.S. Earth Science, 2021, TBD, Klamath Falls	Unknown	
Diane Horvath, B.S. Earth Science, 2014, Social Services, Salem	Other	
Alicia Hubbard, B.S. Earth Science, 2017, TBD, Portland, Oregon	Unknown	
Kaitlyn Hugmeyer, B.S. Earth Science, 2018, Tribal Staff Assistant, Grand Ronde Reservation, Oregon	Other	
Jeremy Hull, B.S. Earth Science, 2003, Forest Products	Natural Resources	
Nicole Inman, B.A. Interdisciplinary Studies - GIS / Geoscience Focus, 2017, GIS Specialist, Marion County,	GIS	

Thomas Jacobus, B.S. Earth Science, 2018, TBD, Monmouth, Oregon; maintenance worker WOU Facilities	Other	
Rachel Johnson, Geology Minor, 2011, MAT Program, WOU	Unknown	Graduate School
Ryan Johnson, B.S. Earth Science, 2016; Officer Training School, U.S. Navy; Lieutenant / Flight Navigator	Military	
Joshua Jones, B.S. Earth Science, 2008, Oil Field Inspector, California	Mining/Energy Resources	
Donald Kasper, B.S. Earth Science, 2009, Highway Construction, Newport	Construction	
Riccilee Keller, B.S. Earth Science, 2013, Environmental Manager, McFarland Cascade, Sheridan, OR; NETL Support Contractor, Dept. of Energy, Salem, Oregon	Environmental	
Robert Kelso, B.S. Earth Science, 2009, Science Teacher, Pt. Barrow, AK	Education	
Jeffrey Kent, B.S. Earth Science, 2006, Drilling Operations Manager, Boart-Longyear, Utah; Construction Manager, Evolution Projects LLC	Mining/Energy Resources	
Andy Kessinger, B.S. Earth Science, 2005, Forest Services, Oregon City	Natural Resources	
Elle Knopp, B.S. Earth Science, 2022, TBD, Colorado Employment Aspirations	Unknown	
Curt Knott, B.S. Earth Science, 2021, Newport, Oregon, grad. Student M.S. Geology Northern Arizona University	TBD	Graduate School
Aquilegia Leet, B.S. Earth Science, 2014, MAT Education, Science Teacher, Grants Pass, Oregon	Education	Graduate School
Josh Lucas, B.S. Earth Science, 2018, GIS / Traffic Control Analyst, Oregon Dept. of Transportation, Salem, Oregon; switch to Oregon Water Resources Dept.; Assistant Water Master	Water Resources	
Lee Lindley, B.S. Earth Science, 2017, Cannabis Grower, Salem, Oregon	Other	
Ian Macnab, B.S. Earth Science, 2009, Environmental Services Manager, Allied Waste	Environmental	
Brian Martin, B.S. Integrated Science, 2014, Science Teacher, McKay High School	Education	
Ian McBride, B.S. Earth Science, 2015, TBD	Unknown	
Jennifer Menkel, GIS Certificate / Vocational Rehabilitation, 2017, TBD	GIS	
Ryan Miller, B.S. Earth Science, 1999, GIS Specialist, Oregon Dept. of Forestry	GIS	
Morgan Miller, B.S. Earth Science, 2004, Commercial Fisheries	Other	
Andrea Misbach, ES Minor, 2001, GIS Specialist, Oregon Dept. of Forestry	GIS	
Kristin Mooney, B.S. Earth Science, 2008, M.A. Teaching, Science Teacher	Education	Graduate School
Matthew Moore, B.S. Earth Science, 2011, Geophysical Field Technician, Baton Rouge, LA; US Army Officer	Mining/Energy Resources	
Hannah Moshinski, B.S. Earth Science, 2021, Field Technician, ERM - Environmental Resources Management, Seattle	Environmental	
Melina Mullin, B.S. Earth Science, 2022, TBD, Oregon City	Unknown	
Nicole Niskanen, B.S. Earth Science, 2021, Dallas, Oregon; City of Salem Environmental Coordinator Seasonal; Geologist, Central Geotechnical Services, Portland	Geotechnical	
Katherine Noll, B.S. Earth Science, 2008, High School Science Teacher, International Schools	Education	Graduate School
Aaron Orr, B.S. Earth Science, 2018, M.S. Hydrogeology, Portland State University Spring 2020; Staff Geologist GSI Water Solutions, Portland, OR	Water Resources	Graduate School
Maddie Petersen, B.S. Earth Science, 2020, GIS Analyst / Intern, Quantum Geospatial, Portland, Oregon	GIS	
Rachel Piro, B.S. Earth Science, 2007, Engineering Geologist, Shannon & Wilson, Inc.; Engineering Geologist, Weyerhaeuser	Geotechnical	Graduate School
Amy Poff, B.S. Earth Science, 2002, Park Ranger, National Park Service	Parks	
Connor Pomeroy, B.S. Earth Science, 2018; Geotechnical / Drilling, McMinnville, Oregon	Geotechnical	
Alyssa Pratt, B.S. Earth Science, 2011, Program Assistant, Oregon Dept. of Geology and Mineral Industries	Other	
William Putman, B.S. Earth Science, 2013, Concrete Technician, Dallas, OR	Construction	
Esteban Quiles, B.S. Earth Science, 2015, TBD, Gresham, Oregon; Data Security Analyst, Salem, Oregon	Other	
Anna Robbins, B.S. Earth Science, 2000, Forest Ranger, U.S. Forest Service	Parks	
Kathryn Roberts, B.S. Earth Science, 2014, Environmental Law, Lewis and Clark; Law Clerk Oregon Dept. of Justice, Environmental and Cultural Resources Division	Other	Graduate School
Seth Rogers, B.S. Earth Science, 2004, Technical Analyst, Homeland Security	Other	
Paul Rostad, B.S. Earth Science, 2016, TBD, Portland, Oregon	Unknown	
Kimberly Schloeman, B.S. Integrated Science, 2001, Science Teacher	Education	
Walter Schoen, B.S. Earth Science, 2019, TBD, Portland, Oregon	Unknown	
David Shields, B.S. Earth Science, 2014, Geotechnical Construction Manager, San Diego, California	Construction	
Beeb Singson, B.S. Earth Science, 2015, Earth Science Lab Preparator, Western Oregon University	Education	
Jessica Smith, B.S. Earth Science, 2005, Forest Resources, Alaska	Natural Resources	
Brandon Snook, B.S. Earth Science, 2011, Graduate School at PSU, transferred to Univ. FLA; did not complete, joined USMC as Officer; Geo Eng. Grad Program NC State	Military	Graduate School
Mark Spiering, B.S. Earth Science, 2006, U.S. Army Officer	Military	Graduate School
Ryan Stanley, B.S. Earth Science, 2010, GIS Programmer, Apple Computers; MS Geographic Information	GIS	Graduate School
Patrick Stephenson, B.S. Earth Science, 2012, Fire Management, Oregon Dept. Forestry	Natural Resources	
Symone Stinson, B.S. Earth Science, 2011? Philomath, Oregon	Unknown	
Makani Stormont, B.S. Earth Science, 2018, TBD, Hawaii	Unknown	
Lexington Taylor, B.S. Earth Science, 2019, TBD, Portland, Oregon	Unknown	
Alicia Thompson, B.S. Earth Science, 2009, Team Leader, Boy Scouts of America	Other	
Joe Toliver, ES Major, 2012, Well Analyst, Geology, Chesapeake Energy, Oklahoma City	Mining/Energy Resources	
Julie Utley, B.S. Earth Science, 2002, M.S. Geological Engineering; High School Science Teacher, Houston, TX	Education	Graduate School
Thomas VanNice, B.S. Earth Science, 2010, Fisheries Survey, U.S. Dept. Fish and Wildlife	Natural Resources	
William Vreeland, B.S. Earth Science, 2011, GIS Research Assistant	Unknown	
Heather Wafford, B.S. Earth Science, 2002, U.S. Custom Service Agent	Other	
Dane Wagner, B.S. Earth Science, 2008, Field Geologist, Kane Geotechnical; Hi-Tech Rock Fall; Open Pit Mining/Quarries Business Development Manager, Geobruigg North America	Geotechnical	
Haley Waldner, B.S. Earth Science, 2021, Stream Crew Intern, City of Salem	Water Resources	
Kyle Warren, B.S. Earth Science, 2018, Staff Geologist, Central Geotechnical Services, Portland, Oregon	Geotechnical	
Austin Wegner, B.S. Earth Science, 2019, TBD, Salem, Oregon; GIS Analyst, Santiam Water Control District, Salem, Oregon	GIS	
Brianna Young, B.S. Earth Science 2015, Graduate Student, M.S. Geology, Portland State University; Staff Geologist TerraCon, Portland	Environmental	Graduate School



WOU Earth and Environmental Science Alumni Employment Outcomes (1999-2023)



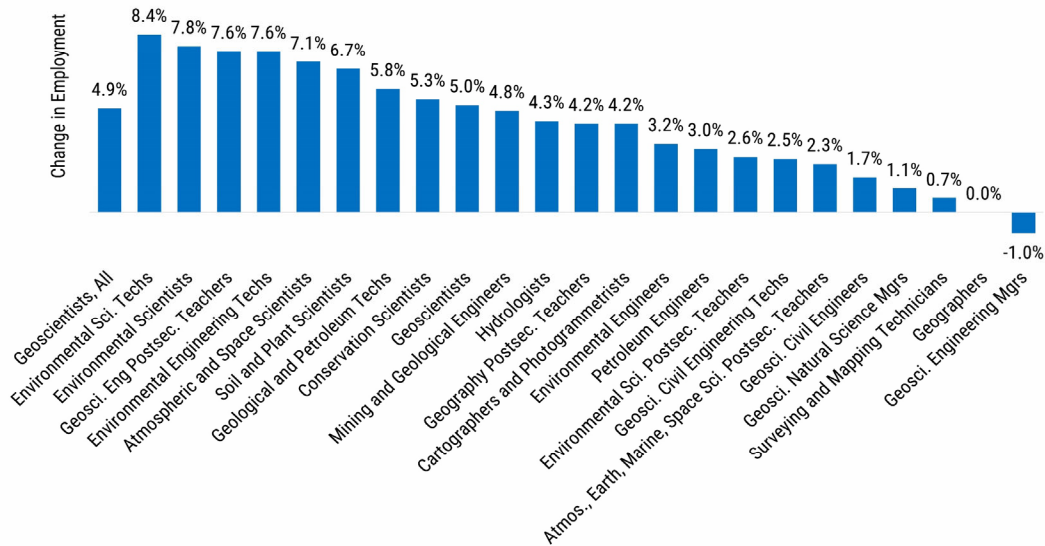
- Construction
- Environmental
- Geographic Information Science (GIS)
- Mining/Energy Resources
- Parks
- Other Employment
- Education / Teaching
- Geotechnical
- Military
- Natural Resources
- Water Resources
- Unknown Career Outcome

Percent Employment Sector

Construction	3.2
Education / Teaching	16.7
Environmental	8.7
Geotechnical	5.6
Geographic Information Science (GIS)	10.3
Military	3.2
Mining/Energy Resources	4.0
Natural Resources	8.7
Parks	4.0
Water Resources	8.7
Other Employment	11.1
Unknown Career Outcome	15.9
<b>TOTAL</b>	<b>100.0</b>

Total No. = 126

Projected Geoscience Workforce Changes by Occupation (2019-2029)



Credit: AGI; data derived from the U.S. Bureau of Labor Statistics, Employment Projections