Geology

Degrees Offered

- Master of Science
- Doctor of Philosophy

Nature of the Program

The graduate program in geology provides study opportunities in the following areas:

- Hydrogeology and environmental geology with strengths in ground water flow and modeling; aqueous, contaminant and isotope geochemistry; mine reclamation; and floods and debris flows
- Basin analysis and sedimentary geology with strengths in seismic modeling, basin structures, deposition analysis, sequence stratigraphy, biostratigraphy, diagenesis, and plate tectonics
- Energy geology and geophysics with strengths in the exploration and development of oil, gas, and coal; and environmental impacts of fossil fuel usages
- Paleobiology and paleontology with strengths in macroevolution, paleoecology, and phylogenetics, particularly in relation to arthropods and mass extinctions
- Geochemistry. In particular aqueous geochemistry, stable isotope geochemistry and organic geochemistry
- Surficial processes and landscape evolution
- Tectonic evolution of the Appalachian, Cordilleran and Himalayan orogens

Tracks within the Masters Degree

- The Research Track requires students to complete independent scholarly research culminating in a thesis. This track is intended for students interested in a research-based graduate degree.
- The Professional Studies Track requires students to complete Professional Development credits/tasks in place of thesis-based research. This track is intended for students looking to obtain additional knowledge and skills for their professional careers in Energy, Geology, or Environmental Geology.

FACULTY

CHAIR

- Brent McCusker - Ph.D. (Michigan State University)

ASSOCIATE CHAIR

- Joseph Lebold - Ph.D. (West Virginia University)

PROFESSORS

- Kathleen Benison - (The University of Kansas)
  Regular Graduate Faculty, Geology Program - Sedimentary Geology, Planetary Geology
- Dengliang Gao - Ph.D. (Duke University)
  Regular Graduate Faculty, Geology Program - Exploration Geophysics, Petroleum and Structural Geology
- Amy Hessl - Ph.D. (University of Arizona)
  Regular Graduate Faculty, Geography Program - Biogeography, Forest Ecosystems, Climate Variability
- Brent McCusker - Ph.D. (Michigan State University)
  Regular Graduate Faculty, Geography Program - Livelihood Systems & Climate Change, Africa, Policy Making
- Brenden McNeil - Ph.D. (Syracuse University)
  Regular Graduate Faculty, Geography Program - GIS, Environmental modeling, Forest Ecosystem Services
- Shikha Sharma - Ph.D. (University of Lucknow)
  Regular Graduate Faculty, Geology Program - Isotope Geochemistry
- Jaime Toro - Ph.D. (Stanford University)
  Regular Graduate Faculty, Geology Program - Structure and Tectonics
- Dorothy Vesper - Ph.D. (Pennsylvania State University)
  Regular Graduate Faculty, Geology Program - Aqueous Geochemistry, Hydrogeology

ASSOCIATE PROFESSORS

- Jamison Conley - Ph.D. (Pennsylvania State University)
  Regular Graduate Faculty, Geography Program - Spatial Analysis, Geocomputation, Health Geography
- Karen Culcasi - Ph.D. (Syracuse University)
  Regular Graduate Faculty, Geography Program - Geopolitics, Identity, Middle East
- Cynthia Gorman - Ph.D. (Rutgers University)
  Regular Graduate Faculty, Geography Program - Gender, Migration, Human Rights, Refugee Communities
- James Lamsdell - Ph.D. (The University of Kansas)
  Regular Graduate Faculty, Geology Program - Paleobiology, Arthropods, Macroevolution, Heterochrony, Paleoecology, Phylogenetics
- Rick Landenberger - Ph.D. (West Virginia University)
  Geography Program - Forest ecology, Land use Management and Restoration
- Joseph Lebold - Ph.D. (West Virginia University)
  Geology Program - Paleoecology, Paleontology, Regional Geology
- Aaron Maxwell - Ph.D. (West Virginia University)
  Regular Graduate Faculty, Geology and Geography Programs - Geospatial Instruction, Remote Sensing, Image Analysis, Spatial Modeling
- Maria Alejandra Perez - Ph.D. (University of Michigan)
  Regular Graduate Faculty, Geography Program - Cultural Geography, Science & Technology Studies, Speleology, Latin America and the Caribbean
- Amy Weislogel - Ph.D. (Stanford University)
  Regular Graduate Faculty, Geology Program - Sedimentology
- Bradley Wilson - Ph.D. (Rutgers University)
  Regular Graduate Faculty, Geography Program - Social Movements, Local/Global Food Systems, Food Justice

ASSISTANT PROFESSOR

- Michael Harman - Ph.D. (West Virginia University)
  GIS Program - 3D visualization, modeling complex landforms and processes, GIS
- Jacob Hileman - Ph.D. (University of California, Davis)
  Regular Graduate Faculty, Geography Program - Environmental Sciences, Sustainability
- Lisa Lohr
  Geology Program - Hydrogeology

PROFESSOR EMERITI

- Timothy Carr - Ph.D. (University of Wisconsin - Madison)
- Joe Donovan - Ph.D. (Pennsylvania State University)
- Greg Elmes - Ph.D. (Pennsylvania State University)
- Trevor Harris - Ph.D. (University of Hull)
- Thomas Kammer - Ph.D. (Indiana University)
- Steven Kite - Ph.D. (University of Wisconsin)
- Kenneth C. Martis - Ph.D. (Michigan University)
- Henry Rauch - Ph.D. (Pennsylvania State University)
- Robert C. Shumaker - Ph.D. (Cornell University)
- Richard Smosna - Ph.D. (University of Illinois)
- Timothy Warner - Ph.D. (Purdue University)
- Thomas Wilson - Ph.D. (West Virginia University)

Admissions for 2026-2027

The Geology program admits students to both the M.S. and the Ph.D. program. Applicants should apply to the program that best aligns with their professional goals. Applicants are required to contact potential advisers among the faculty prior to application and name potential advisors in their personal statement as acceptance into the graduate program is contingent on placement with a graduate faculty advisor willing and able to advise the prospective student. Information on faculty and their research areas can be found here (http://catalog.wvu.edu/graduate/eberlycollegeofartsandsciences/geology/#faculty). GRE scores are not required for admission to any of these programs.

M.S. IN GEOLOGY

The Geology program gives students the opportunity to earn the master's degree by completing either a professional-studies track or a research track. In addition to the University general admission requirements (http://catalog.wvu.edu/graduate/graduateeducationatwestvirginiauniversity/#classificationstext), all applicants should possess an undergraduate GPA of 3.0 or higher and a GPA of 3.0 or higher in any graduate coursework.

Applicants must hold a B.A. or B.S. degree in a STEM or relevant field that includes coursework in the equivalents of Geology and allied sciences and mathematics. Completed coursework in Geology is preferred.

PH.D. IN GEOLOGY

Applicants may apply to the Ph.D. program with an M.S. or seek direct admission with a B.S. or B.A. degree. In addition to WVU's general admission requirements (http://catalog.wvu.edu/graduate/graduateeducationatwestvirginiauniversity/#classificationstext), all applicants should possess an undergraduate GPA of 3.0 or higher and a GPA of 3.0 or higher in any graduate coursework.

List of Admission Requirements:

- See the steps to apply for admissions and access the application here (https://graduateadmissions.wvu.edu/how-to-apply/).
- Transcripts from all institutions attended (note: official transcripts are required to finalize an offer of admission to the graduate program).
- Three Letters of recommendation.
- Curriculum Vitae or Resume.
- A personal statement that identifies the applicant's preferred faculty advisor (who must be a regular member of graduate faculty within the Geology program), details of any contact applicant has had with them and why the applicant wants to work with them, subject areas that interest applicant, any prior research experience applicant has had; career goals and how a graduate degree will help fulfill these goals, and any achievements or pertinent issues that might influence applicant's academic record that may not reflect applicant's full potential.

International Applicants:

- See the steps to apply for admissions and access the application here (https://graduateadmissions.wvu.edu/how-to-apply/).
- International applicants should view additional requirements here (http://catalog.wvu.edu/graduate/graduateeducationatwestvirginiauniversity/#internationaltext) and here (https://graduateadmissions.wvu.edu/information-for/international-students/).
- Language proficiency is required in order to hold a graduate teaching assistantship. See here (https://elli.wvu.edu/testing-resources/english-proficiency-gtas/).

Application Deadlines:

- The Geology program admits students for the Fall and Spring semesters.
- The deadline for Fall semester admission is December 15th.
- The deadline for Spring semester admissions is October 1st.
- We will review applicants received after the December 15th and October 1st deadlines on a space-available basis.
- Exceptional PhD applicants may be nominated by the Geology program for competitive University Fellowships. Qualified applicants will be notified if they are nominated. More information on WVU fellowships can be found here (https://graduateeducation.wvu.edu/finances/fellowships/).

Assistantships

All applicants will be considered for financial support in the form of graduate teaching assistantships (GTAs) and Graduate Research Assistantships (GRAs).

Certain application requirements may be waived based on a preliminary review of an application by the program.

M.S. and Ph.D. Major Code: 1445

For specific information on the following program, please see the link to the right:

- Geology, M.S.

For specific information on the following program, please see the link to the right:

- Geology, Ph.D.

Annual Evaluation

All graduate students enrolled in at least one credit hour during the academic year must be provided with a written evaluation from their program following the end of each spring term. This requirement may be waived for students in good standing who are expected to graduate in spring or summer. Specific processes and timelines for each program's evaluation can be found in the graduate handbook. Annual evaluation may result in probation for students either not making adequate degree progress or failing to uphold professional standards.

Degree Progress - Masters

- By the end of year 1, students should have completed their thesis proposal defense.
- By the end of year 2, students should have completed all coursework as well as their thesis defense.

Degree Progress - Ph.D.

- By the end of year 1, students should have completed the preliminary exam.
- By the end of year 2, students should have completed core coursework and the dissertation proposal defense and comprehensive exam.
- By the end of year 4, students should have completed all coursework as well as the dissertation defense if entering the program with an MS degree
- By the end of year 5, students should have completed the dissertation defense if entering the program without an MS degree.