

JILLIAN R. CAVELLIER

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EDUCATION

Doctor of Philosophy, Geoscience Department of Earth and Environmental Sciences University of Kentucky, Lexington, KY GPA: 3.88	Expected August 2028
Master of Science, Geoscience Department of Earth and Environmental Sciences University of Kentucky, Lexington, KY GPA: 4.00	August 2024
Bachelor of Science, Geology, Minor in Mathematics State University of New York (SUNY) at Oswego, Oswego, NY GPA: 3.56	August 2020
Associates of Mathematics and Science, Science Concentration Jefferson Community College, Watertown, NY GPA: 3.68	May 2018

CURRENT APPOINTMENT(S)

Head Teaching Assistant Department of Earth and Environmental Sciences, University of Kentucky	2026 -2027
Graduate Teaching Assistant Department of Earth and Environmental Sciences, University of Kentucky Courses taught: Physical Geology Labs (2024, 2026), Petrology Lab (2025, 2026), A Climate for Change (Online, 2026), Oceanography (Online, 2025)	Fall 2026, Spring 2026, 2024-2025

TEACHING EXPERIENCE

Physical Geology Labs Department of Earth and Environmental Sciences, University of Kentucky Lead instructor for two lab sections per semester	Fall 2024, 2026
Igneous and Metamorphic Petrology Lab Department of Earth and Environmental Sciences, University of Kentucky Lead Instructor of the lab section and created new, updated lab exercises	Spring 2025, 2026
Enviropods Instructor Department of Earth and Environmental Sciences, University of Kentucky Taught middle school students about earth and environmental hazards	Summer 2025
Adjunct Professor of Mathematics Jefferson Community College Courses taught: Math Competency – designed for students with pre-college mathematical skills	August 2021 – May 2022
Undergraduate Teaching Assistant Courses taught: Earth's Fury (2020)	Spring 2020

PAST APPOINTMENTS

Graduate Research Assistant Department of Earth and Environmental Sciences, University of Kentucky Critical Minerals Research Grant	Fall 2025, Summer 2026
Senior Laboratory Technician – Cementitious Materials Group University of Kentucky's Center for Applied Energy Research Assisted with various experimental procedures	July 2022, May 2024-August 2024
Graduate Research Assistant – Cementitious Materials Group University of Kentucky's Center for Applied Energy Research	August 2022 – May 2024

GRANTS, HONORS, AND SERVICE

Lipman Research Award Geological Society of America "Controls on REE-mineral fertility in metasedimentary and metaigneous rocks of the southern Appalachians"	July 2026
Thomas Field Fellowship – '25-'26 Academic Year Department of Earth and Environmental Sciences, University of Kentucky	
Outstanding TA Award – '25-'26 Academic Year Department of Earth and Environmental Sciences, University of Kentucky	
Vice President – Graduate Geology Group – April 2024 – April 2025	

University of Kentucky
ERDC Scholars Program Award – August 2022 and August 2023
United States Army Core of Engineers and University of Kentucky, Center for Applied Energy Research
President – Graduate Geology Group – April 2023 – April 2024
University of Kentucky
Recruitment Alumni Development Diversity Equity and Inclusivity (RADDEI)
Graduate Student Representative - Graduate Geology Group – August 2022-April 2023
Department of Earth and Environmental Sciences, University of Kentucky
Boone Fellowship – August 2022, 2024
Department of Earth and Environmental Sciences, University of Kentucky
Pioneer Graduate Excellence Scholarship – August 2022, 2024
Department of Earth and Environmental Sciences, University of Kentucky
Outstanding Geology Graduate of 2020 – May 2020
Department of Atmospheric and Geologic Sciences, State University of New York at Oswego
Gary Forstoff Field Award – May 2020
Department of Atmospheric and Geologic Sciences, State University of New York (SUNY) at Oswego
Secretary - Geology Club – August 2019 - May 2020
State University of New York (SUNY) at Oswego

RESEARCH EXPERIENCE

Current Ph.D. Research

Metamorphic and igneous controls on REE accessory phase genesis in the Southern Appalachian terranes

Master's Research

Thesis Title: "Thermal Alteration of the Mineralogy of Calcium Sulfoaluminate Cements: Implications for the Performance of Rapid Repair Materials"

Undergraduate Research

Analyzed fracture systems of the Black River and Trenton Groups in Jefferson County, NY

PRESENTATIONS AND WORKSHOPS

ORAL PRESENTATIONS

- *Unravelling the Extent and Conditions of Multiple Paleozoic Metamorphic Events in the Southern Appalachian Blue Ridge in northern Georgia: Insights from REE Accessory Phase Petrochronology.* Geological Society of America Connects Conference, San Antonio, Texas, October 2025.
- *Investigating Fault Motion History of the Brevard Fault Zone from Rosman, NC to the AL-GA Border.* UK EES ReSEES Symposium, April 2025.
- *Evolution of CSA Cement Mineralogy Heated to 400°C shown via X-Ray Diffraction.* UK EES ReSEES Symposium, May 2024.
- *Blast Effects on the Mineralogy of Calcium Sulfoaluminate (CSA) Cements.* UK EES ReSEES Symposium, April 2023.
- *Blast Effects on the Mineralogy and Interstitial Transition Zone in Calcium Sulfoaluminate Cement Applications.* Rast-Holbrook Seminar Series, UK EES, December 2022.

WORKSHOPS

- Exxon Mobil Short Course – Southeast U.S. Region – Fall 2023
Accepted to the Exxon Mobil Geoscience Recruitment Course at the University of Georgia

PROFESSIONAL ASSOCIATIONS

Geological Society of America
Sigma Gamma Epsilon

ANALYTICAL SKILLS

Characterization Methods:

- Scanning Electron Microscope (SEM)
- X-Ray Diffraction (XRD)
- TGA (Thermal Gravimetric Analysis) technologies

Software:

- IsoplotR
- Microsoft Office 365
- MATLAB and C++ programming languages

- Fourier Transform Infrared Spectroscopy (FTIR)
- Cilas 1090 particle size analyzer
- Polarized light and reflected light microscopy
- Heavy Liquid Separation utilized in Zircon and Monazite Geochronology
- Production of petrographic thin sections
- QGIS and ArcGIS Pro
- Adobe Photoshop and Illustrator
- Operation of both Gold and Carbon coaters for increasing conductivity of SEM samples
- Operation of Instron High-Capacity Universal Testing Systems for Compression
- Operation of Instron Drop Weight Impact Tester
- Operation of Magnetic Separator for sediment processing
- Construction of geologic maps and cross sections
- Writing of geological technical reports
- Website design

FIELD SKILLS

- Electrical Resistivity Tomography (ERT)
- Electromagnetic induction (EM)
- Magnetism (Magnetometer)
- Ground Penetrating Radar (GPR)
- Spontaneous Potential (SP)

RELATED COURSEWORK

- Graduate Fundamentals of Geophysics
- Graduate Principles of Physical Chemistry
- U/Pb Geochronology of Detrital Zircons in the Appalachian Basin – independent project being conducted with other geology graduate students
- Graduate Stable Isotopes
- Graduate Petroleum course
- Graduate Geochronology course
- Graduate Low Temperature Geochemistry
- Graduate Quantitative Methods for Environmental Science
- Graduate Environmental Chemistry
- Graduate Scientific Communications
- Graduate Tectonics
- Hydrogeology
- Structural Geology
- Igneous and Metamorphic Petrology
- Sedimentology and Stratigraphy
- Volcanology
- Exploration Geology
- Mineralogy
- Graduate Paleo-hazards course
- Graduate Stratigraphy course
- Graduate Remote Sensing course
- Geographic Information Systems (GIS)
- Field Geology
- Historical Geology
- Physical Geology
- Calculus I
- Calculus II
- Calculus III
- Calculus Based Statistics
- Ordinary Differential Equations
- Matrix Algebra
- Engineering Mathematics
- Mathematical Modelling
- General Physics I
- Science and Engineering Physics I (Calculus Based)
- General University Physics II (Calculus Based)
- General Chemistry I and II
- Principles of Biology I and II