# Sean I. Peters

*Curriculum Vitae*
*Updated November 2026*

**Visiting Assistant Professor**
Department of Earth and Climate Sciences
Middlebury College, Middlebury, VT

seanp@middlebury.edu
www.sipeters.com
ORCID: 0000-0002-9003-8867
Google Scholar · Bluesky: @siprocks

## RESEARCH INTERESTS

I am an experimental and physical volcanologist and planetary geologist interested in (1) the formation, evolution, and composition of the lithosphere of Earth and other planets, and (2) the interactions between a planet's interior, surface, atmosphere, hydrosphere, and—on Earth—biosphere. I combine orbital data, laboratory analog experiments, and numerical modeling.

Volcano formation, evolution, and hazards: volcanoes and their erupted products, with a focus on lava flow emplacement and mildly explosive eruptions.
Planetary geology: the origin and evolution of planetary interiors and surfaces through a volcanology and geomorphology lens.

Intentional mentorship sits at the heart of my research; undergraduate researchers are co-authors on my recent publications and conference presentations.

## EDUCATION

2020 **Ph.D., Geological Sciences**, Arizona State University
Dissertation: *Investigating lava flow emplacement: implications for volcanic hazards and planetary evolution*
Advisor: Dr. Philip R. Christensen

2015 **M.S., Geological Sciences**, Arizona State University
Thesis: *Investigating Late Amazonian Volcanotectonic Activity on Olympus Mons, Mars using Flank Vents and Arcuate Graben*
Advisor: Dr. Philip R. Christensen

2013 **B.S., Psychology**, Mississippi State University, *magna cum laude*
Minor: Geosciences

## ACADEMIC APPOINTMENTS

2024–present **Visiting Assistant Professor**, Department of Earth and Climate Sciences, Middlebury College
2023–2024 **Postdoctoral Fellow of Geology** (faculty instructor), Middlebury College
2021–2022 **Postdoctoral Fellow of Geology**, University of Idaho
Supervisor: Dr. Erika L. Rader
2020–2021 **Senior Research Specialist**, Arizona State University
Supervisor: Dr. Philip R. Christensen

### *Other Professional Experience*

2021 **Assistant Language Teacher**, Himeji Board of Education, Japan (Phoenix Sister Cities Teach Abroad Program)

## PUBLICATIONS

***Bold*** *= S.I. Peters;* <u>*underline*</u> *= student co-author*

### *Peer-Reviewed Articles*

8. <u>Cooper, E.G.K.</u>, I.T.W. Flynn, **S.I. Peters**, <u>E.W. Benson</u>, <u>S.B. Murphy</u>, and <u>E. Sterling</u> (2026), Volcanism at Piton de la Fournaise as an analog for Chloris Mons, Venus, *Journal of Geophysical Research: Planets*, 131(5), doi.org/10.1029/2026JE009756
7. Flynn, I.T.W., and **S.I. Peters** (2025), The usefulness of NotebookLM's Audio Overview for planetary scientists, *Perspectives of Earth and Space Scientists*, 6(1), doi.org/10.1029/2025CN000282
6. Russo, F.P., I.T.W. Flynn, **S.I. Peters**, and M.S. Ramsey (2025), The effects of measured slope on Martian lava flow modeling, *Icarus*, 434, 116544, doi.org/10.1016/j.icarus.2025.116544
5. **Peters, S.I.**, A.B. Clarke, and E.L. Rader (2024), The impacts of lulls and peaks in effusion rate on lava flow propagation, *Journal of Volcanology and Geothermal Research*, 451, 108099, doi.org/10.1016/j.jvolgeores.2024.108099
4. Rader, E.L., **S.I. Peters**, L. Vanderkluysen, A.B. Clarke, and H. Sheth (2024), Morphological transitions between resurfacing and distal breakout lava flows in flood basalts: insights from analog experiments, *Bulletin of Volcanology*, 86, 8, doi.org/10.1007/s00445-023-01693-6
3. **Peters, S.I.**, A.B. Clarke, and E.L. Rader (2022), The effects of unsteady effusion rates on lava flow morphology and emplacement: results from laboratory analogue experiments, *Journal of Volcanology and Geothermal Research*, 432, 107674, doi.org/10.1016/j.jvolgeores.2022.107674
2. **Peters, S.I.**, P.R. Christensen, and A.B. Clarke (2021), Lava flow eruption conditions in the Tharsis Volcanic Province on Mars, *Journal of Geophysical Research: Planets*, 126(7), doi.org/10.1029/2020JE006791
1. **Peters, S.I.**, and P.R. Christensen (2017), Flank vents and graben as indicators of Late Amazonian volcanotectonic activity on Olympus Mons, *Journal of Geophysical Research: Planets*, 122(3), doi.org/10.1002/2016JE005108

### *Submitted and Under Review*

Richardson, J.A., **S.I. Peters**, A.M. Ostwald, P.L. Whelley, J.R. Voigt, and E.L. Rader (resubmitted, under review), Volcanism on Mars, in *The Encyclopedia of Volcanoes*, 3rd ed.

**Peters, S.I.**, M. Gor, S.W.R. Tsang, and I.T.W. Flynn (resubmitted, under review), A review of thermomechanical erosion in lava emplacement within the inner solar system, *Geomechanics and Geophysics for Geo-Energy and Geo-Resources* (special issue).

**Peters, S.I.**, A.B. Clarke, E.L. Rader, and <u>A.E. Thompson</u> (submitted, under review), The role of slope and variable extrusion rates on wax flows: implications for lava flow emplacement, *Journal of Volcanology and Geothermal Research*.

Derenoncourt, K.L., and **S.I. Peters** (submitted, under review), Sinuous rilles on the Tharsis Montes rift aprons, Mars: distribution, characteristics, and implications for large shield volcano evolution, *Journal of Geophysical Research: Planets*.

### *In Preparation*

**Peters, S.I.**, I.T.W. Flynn, N. McGee, Z. Goddard, N. Bhatti, D. Mahmud, and A.X. Rodriguez (anticipated spring 2027), A catalog of volcanic vents in the Elysium Volcanic Province, Mars.

### *Other Publications*

**Peters, S.I.** (2019), Volcanoes on other planets, *Ask an Earth and Space Scientist*, Arizona State University, askanexpert.asu.edu/earthspace/explore/alien-lava

## GRANTS AND FUNDING

### *Submitted for review*

| Period | Project / Award | Funder | Role | Amount |
|---|---|---|---|---|
| *2027–2030* | A catalog of accessible lava tubes in Elysium Province, Mars | NASA | PI | N/A |
| *2027–2030* | Lava flows through time: multi-scale topographic, spectral, and thermophysical signatures of lava flow aging on Earth and Mars | NASA | Co-I | N/A |

### *External*

| Period | Project / Award | Funder | Role | Amount |
|---|---|---|---|---|
| 2024–2027 | Evolving volcanic eruption styles as recorded in Valles Marineris (active) | NASA Mars Data Analysis Program (MDAP) | Co-I | ~$159,000 subaward (~$1,000,000 total) |
| 2025 | DPS Travel Grant, EPSC-DPS Joint Meeting | American Astronomical Society, Division for Planetary Sciences | Recipient | $1,000 |

### *Internal (Middlebury College)*

*SRA = Summer Research Assistant; UCRF = Undergraduate Collaborative Research Fund; FPDF = Faculty Professional Development Fund; URO = Undergraduate Research Office*

| Period | Project / Award | Funder | Role | Amount |
|---|---|---|---|---|
| *Spring 2027* | UCRF | Middlebury URO | Faculty Advisor | $1,250 |
| Summer 2026 | SRA | Middlebury URO | Faculty Advisor | $4,800 |
| Spring 2026 | UCRF | Middlebury URO | Faculty Advisor | $912 |
| 2025–2026 | FPDF | Middlebury College | Recipient | $2,400 |

| Period | Project / Award | Funder | Role | Amount |
|---|---|---|---|---|
| Summer 2025 | SRA | Middlebury URO | Faculty Advisor | $6,160 |
| Spring 2025 | UCRF | Middlebury URO | Faculty Advisor | $1,460 |
| 2024–2025 | FPDF | Middlebury College | Recipient | ~$3,952 |
| Summer 2024 | SRA | Middlebury URO | Faculty Advisor | $5,700 |
| Summer 2024 | SRA | Middlebury URO | Faculty Advisor | $4,864 |
| Spring 2024 | UCRF | Middlebury URO | Faculty Advisor | $1,000 |
| 2023–2024 | FPDF | Middlebury College | Recipient | $3,993 |
| 2022–2023 | FPDF | Middlebury College | Recipient | $2,997 |

## AWARDS AND HONORS

2022 Meet A Scientist, AGU Volcanology, Geochemistry, and Petrology (VGP) Section
2018–2019 Student Leader, ASU College of Liberal Arts and Sciences
2012 Dean's Scholar, Mississippi State University
2012 Nominated for membership, Golden Key International Honour Society
2009–2012 President's Scholar, Mississippi State University
2008–2013 Shackouls Honors College, Mississippi State University

## INVITED TALKS AND SEMINARS

2026 **University of New Mexico**, Earth and Planetary Sciences Colloquium
*Wax on, wax off: simulating lava flow emplacement in the lab*

2023 **Vermont State University–Johnson**, Science Colloquium Series
*From the lab to Mars: applying physical volcanology to extraterrestrial surfaces*

2023 **Bates College**, Earth and Climate Sciences Seminar Series
*From the lab to Mars: volcanic investigations using analog experiments and remote sensing*

2023 **Lamont-Doherty Earth Observatory, Columbia University**, Marine Geology and Geophysics / Seismology, Geology, and Tectonophysics Seminar
*From the lab to Mars: volcanic investigations using analog experiments and remote sensing*

2023 **University of Maryland**, Department of Geology Colloquium
*The effects of unsteady eruption rates on lava flow morphology and propagation*

2022 **AGU Fall Meeting** (virtual), invited panelist
*Early Career-Led DEI Initiatives: Actionable Insights Toward a More Just, Equitable, and Inclusive Scientific Environment*

2022 **USGS**, Sweet Science Seminar (virtual)
*Lava flow eruption conditions in the Tharsis Volcanic Province on Mars*

2022 **Georgia Tech**, Planetary and Astrobiology Seminar (virtual)
*Lava flow eruption conditions in the Tharsis Volcanic Province on Mars*

2022 **NASA Goddard Space Flight Center** (virtual)
*Lava flow eruption conditions in the Tharsis Volcanic Province on Mars*

2022 **Carnegie Institution for Science**, Planetary Reading Group (virtual)
*Lava flow eruption conditions in the Tharsis Volcanic Province on Mars*

2020 **University of Texas Institute for Geophysics**, Brown Bag Seminar (virtual)
*The emplacement of lava flows: implications for hazards and planetary evolution*

***Institutional Talks (Middlebury College)***

2026 Fall Faculty Forum: *Totally Tubular! Why are lava tubes so hot (and safe)?*

2026 Preview Days: *Exploring (extraterrestrial) volcanoes*

2025 Fall Faculty Forum: *Whodunit? Lava or water?*

2024 Fall Faculty Forum: *Doing geology in space: exploring volcanoes on Mars*

2024 Carol Rifelj Faculty Series: *The volcanic evolution of Mars: insights from comparative planetology*

2023 Fall Faculty Forum: *Linking lab experiments to the natural world*

## CONFERENCE PRESENTATIONS

***Bold** = S.I. Peters; <u>underline</u> = student co-author; * invited; † student presenter; ° presented on behalf of student(s)*

### *Submitted and Accepted (2026)*

#### *Oral Presentations*

2026 Matiella Novak, M.A., P.L. Whelley, **S.I. Peters**, <u>A. Xanthoudakis</u>, H.M. Meyer, J.A. Richardson, and D. Buczkowski, Evolution of volcanic eruption styles recorded in Valles Marineris, Mars: observations of effusive vs explosive deposits, *GSA Connects*, Denver, CO, Abstract #15657.

2026 <u>Derenoncourt, K.L.</u>, and **S.I. Peters**, A catalog of sinuous rilles on the Tharsis Montes rift aprons, Mars, *GSA Northeast Section Meeting*, Hartford, CT, Abstract #13228.

2025 *Matiella Novak, M.A., P.L. Whelley, J.A. Richardson, H.M. Meyer, and **S.I. Peters**, Searching for Mars' ancient tephra: alteration mineral sequences as a window into pre-Amazonian volcanism, *GSA Connects*, San Antonio, TX, 57(6), doi.org/10.1130/abs/2025AM-7253

2025 **Peters, S.I.**, I.T.W. Flynn, <u>N. Bhatti</u>, <u>Z.E. Goddard</u>, <u>D. Mahmud</u>, and <u>A.X. Rodriguez</u>, A catalog of volcanic vents in the Elysium Volcanic Province, Mars, *GSA Connects*, San Antonio, TX, 57(6), doi.org/10.1130/abs/2025AM-7616

2025 **Peters, S.I.**, <u>W.T. McDonald</u>, and <u>K.L. Derenoncourt</u>, Assessing the origin and evolution of effusive volcanic channels on Mars, *Europlanet Science Congress–Division for Planetary Sciences Joint Meeting*, Helsinki, Finland.

2025 **Peters, S.I.**, A.B. Clarke, and E.L. Rader, The effects of lulls and peaks in effusion rate on lava flows propagated on slopes: insights from analog experiments, *IAVCEI Scientific Assembly*, Geneva, Switzerland.

2024 ***Peters, S.I.**, Engaging students in space science at predominantly undergraduate institutions, *AGU Fall Meeting*, Washington, DC, ED34B-01.

2023 **Peters, S.I.**, A.B. Clarke, and E.L. Rader, The impact of lulls and peaks in eruption rate on lava flow propagation, *GSA Connects*, Pittsburgh, PA, Abstract #392740.

2023 ***Peters, S.I.**, Balancing research and teaching at a liberal arts college, *GSA Connects*, Pittsburgh, PA, Abstract #392687.

2023 Moore, S., C.A. Atkins, **S.I. Peters**, L. Velazquez Santana, R. Ulrich, and E. Wilson, What we learned from intentional mentoring of STEM majors from minority serving institutions, *GSA Connects*, Pittsburgh, PA, Abstract #396120.

***Poster Presentations***

2026 °**Peters, S.I.**, and K.L. Derenoncourt, A catalog of sinuous rilles on the Tharsis Montes rift aprons, Mars, *EGU General Assembly*, Vienna, Austria, Abstract 14066.

2026 †Xanthoudakis, A., **S.I. Peters**, H.M. Meyer, M.A. Matiella Novak, P.L. Whelley, and J.A. Richardson, Investigation of ancient volcanism in Valles Marineris: evidence for effusive activity and possible plutonic intrusions, *EGU General Assembly*, Vienna, Austria, Abstract 14022.

2025 †Cooper, E.G.K., I.T.W. Flynn, **S.I. Peters**, E.W. Benson, S.B. Murphy, and E.D. Sterling, Piton de la Fournaise as a terrestrial analog to Chloris Mons, Venus, *GSA Connects*, San Antonio, TX, 57(6), doi.org/10.1130/abs/2025AM-8077

2025 †Nebolsine, R.N., and **S.I. Peters**, Constraining eruption parameters for terrestrial and Martian lava flows, *GSA Connects*, San Antonio, TX, 57(6), doi.org/10.1130/abs/2025AM-9283

2025 †Derenoncourt, K.L., and **S.I. Peters**, Sinuous volcanic channels on Tharsis Montes (Mars) rift aprons, *IAVCEI Scientific Assembly*, Geneva, Switzerland.

2025 †McDonald, W.T., and **S.I. Peters**, Lava channel formation on Martian central volcanoes, *Lunar and Planetary Science Conference*, Houston, TX, Abstract 2247.

2024 †Harring, P., R. Beauharnois, **S.I. Peters**, and I.T.W. Flynn, Observed differences in Martian channelized lava flow rheologies and emplacement, *AGU Fall Meeting*, Washington, DC.

2024 †McDonald, W.T., K.L. Derenoncourt, and °**S.I. Peters**, Lengths and distribution of lava channels on Martian central volcanoes, *Goldschmidt*, Chicago, IL, Abstract 22973, doi.org/10.46427/gold2024.22973

2024 †McDonald, W.T., †K.L. Derenoncourt, and **S.I. Peters**, Lengths and distribution of lava channels on Martian central volcanoes, *Earth and Climate Sciences Department Seminar*, Middlebury College.

2024 **Peters, S.I.**, A.B. Clarke, and E.L. Rader, The impacts of lulls and peaks in eruption rate on lava flow propagation: insights from analog experiments, *Cities on Volcanoes 12*, Antigua, Guatemala, Abstract 17.

2023 **Peters, S.I.**, A survey of volcanically emplaced rilles, *Lunar and Planetary Science Conference*, The Woodlands, TX, Abstract 1713.

2023 **Peters, S.I.**, A.B. Clarke, and E.L. Rader, The effects of unsteady vent conditions on lava flow propagation, morphology, and surface texture, *IAVCEI Scientific Assembly*, Rotorua, Aotearoa New Zealand, Abstract 589.

2022 **Peters, S.I.**, and E.L. Rader, Potential contributions of VNIR imaging and laboratory analogue experiments to inform modeling efforts, *Lunar and Planetary Science Conference* (virtual), Abstract 1150.

2020 **Peters, S.I.**, and P.R. Christensen, Constraining Martian lava flow eruption rates in the Tharsis Volcanic Province, *Lunar and Planetary Science Conference*, accepted (conference cancelled due to COVID-19).

2019 **Peters, S.I.**, and A.B. Clarke, The role of unsteady effusion rates on lava flow emplacement: results from laboratory analogue experiments, *AGU Fall Meeting*, San Francisco, CA, V23F-0270.

2019 **Peters, S.I.**, and A.B. Clarke, The effects of unsteady effusion rates on lava flow morphology and emplacement: results from laboratory analogue wax experiments, *GSA Annual Meeting*, Phoenix, AZ, Abstract 337812.

2018 **Peters, S.I.**, P.R. Christensen, and A.B. Clarke, Constraining lava flow eruption rates on Mars using laboratory analogue wax experiments, *Lunar and Planetary Science Conference*, The Woodlands, TX, Abstract 3002.

2017 **Peters, S.I.**, and A.B. Clarke, Controls on lava flow morphology and propagation: using laboratory analogue experiments, *AGU Fall Meeting*, New Orleans, LA, V43F-0586.

2017 Schaefer, E.I., C.W. Hamilton, C.D. Neish, M.M. Sori, A.M. Bramson, S.P. Beard, **S.I. Peters**, T.A. Miller, and E.L. Rader, Seeing pahoehoe from orbit (without squinting), *Lunar and Planetary Science Conference*, The Woodlands, TX, Abstract 2343.

2016 **Peters, S.I.**, and P.R. Christensen, Investigating the volcanotectonic evolution of Olympus Mons using flank vents and arcuate graben, *Lunar and Planetary Science Conference*, The Woodlands, TX, Abstract 1634.

2015 **Peters, S.I.**, and P.R. Christensen, Investigating Late Amazonian volcanotectonic activity on Olympus Mons, Mars using flank vents and arcuate graben, *AGU Fall Meeting*, San Francisco, CA, P33C-2139.

2015 **Peters, S.I.**, and P.R. Christensen, The characterization and implications of flank vents on Olympus Mons, *Lunar and Planetary Science Conference*, The Woodlands, TX, Abstract 2008.

2014 **Peters, S.I.**, and P.R. Christensen, The implications of flank vents on Olympus Mons, *AGU Fall Meeting*, San Francisco, CA, P41B-3898.

## PLANETARY MISSION EXPERIENCE

2020 **Lucy Thermal Emission Spectrometer (L'TES)**, thermal vacuum (TVAC) test operator
Instrument operator and analyst for L'TES during TVAC testing

2019 **Emirates Mars Infrared Spectrometer (EMIRS)**, TVAC test operator
Instrument operator and analyst for EMIRS during TVAC testing

2015–2016 **OSIRIS-REx Thermal Emission Spectrometer (OTES)**, TVAC test operator
Instrument operator and analyst for OTES during TVAC testing

## RESEARCH EXPERIENCE

2023–present **PRESSURE** (Planetary Research, Earth Science, and Space Undergraduate Experience), Department of Earth and Climate Sciences, Middlebury College
Faculty supervisor

2021–2022 **Crystallinity effects on lava flow morphology**, Department of Earth and Spatial Sciences, University of Idaho
Supervisor: Dr. Erika L. Rader

2016–2020 **Effects of unsteady effusion rates on lava flow morphology and emplacement**, Experimental Volcanology Laboratory, ASU
Graduate Research Assistant; supervisor: Dr. Amanda B. Clarke

2014–2020 **Lava flow dimensions and eruption conditions on Mars**, Mars Space Flight Facility, ASU
Graduate Assistant; advisor: Dr. Philip R. Christensen

2012 **Undergraduate Research Fellow**, Human-Environment Regional Observatory (HERO), Clark University
Advisors: Drs. Deborah Martin, John Rogan, and Verna DeLauer
Investigated the socio-economic and ecological consequences of the Asian long-horned beetle infestation on the urban forest of Worcester, MA (archival research, interviews, decision-making analysis)

2010–2011 **Undergraduate Research Assistant**, Advanced Social Psychology Lab, Mississippi State University
PI: Dr. H. Colleen Sinclair

## RESEARCH MENTORING

***Senior Thesis Advisor, Middlebury College***

2027 Riley Nebolsine (expected Spring 2027)
Fall 2026 Anne Thompson
2025–2026 Kijani Derenoncourt
Spring 2024 Will McDonald

***Undergraduate Research Assistants, PRESSURE Group (most recent first)***

Elizabeth Madden, Yannick Waltemode, Peter Warner, Calder Lange, Aris Xanthoudakis, Nicolai McGee, Springer Moore, Noor Bhatti, Phi Nguyen, Asa Stone, Henry Ericson, Cal Hobson, Remi Beauharnois, Piper Harring

### *Senior Thesis Committee Member, Middlebury College*

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|---|---|
| 2025–2026 | Kristyn Carroll, Lucinda Pollitt, Lake Willett |
| 2024–2025 | Piper Harring |
| 2023–2024 | Eliza Todd, Erin Hansbrough, Lizzy Vanderkloot |
| Spring 2023 | Abby Santis, Max Hanscom |

### *Mentoring Programs and Advising*

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|---|---|
| 2025–2026 | **First-Year Advisor**, Middlebury College (16 students) |
| 2023 | **Research Mentor** (hybrid), Strengthening Traineeships and Research Opportunities for Next Generation (STRONG) Geoscientists, University of Texas at Austin |
| 2022–2023 | **Mentor** (virtual), Geosciences Education & Mentorship Support (GEMS) Mentor Match Program |
| 2019–2020 | **Graduate Mentor**, SESE Graduate Mentoring Program, ASU |
| 2015–2016 | **Mentor** (general and research), Sundial Mentoring Program, ASU |

## TEACHING

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|---|---|
| 2023–present | **Instructor of Record**, Middlebury College<br>FYS 1106 First-Year Seminar: Space for Society—a small step or a giant leap?<br>ECSC 111 Natural Hazards<br>ECSC 140 Data in Earth Science<br>ECSC 300 Introduction to Petrology<br>ECSC 375 Physical Volcanology<br>ECSC 500 Readings & Research<br>ECSC 700 / 701 Senior Thesis Research<br>ECSC 705 Collaborative Capstone Research Seminar<br>ECSC 1005 Geology of Rocky Planets |
| 2022 | **Guest Instructor**, University of Idaho<br>Introduction to Volcanology; Exploring the Solar System (Dr. Erika L. Rader) |
| 2021 | **Assistant Language Teacher**, Himeji Board of Education, Hyogo, Japan<br>English instruction at two junior high and four elementary schools |
| 2019 | **Prison Teaching Intern / Teaching Assistant**, ASU<br>Introduction to Geology / Astronomy (Dr. Cornelia Wells) |
| 2013–2015 | **Graduate Teaching Assistant**, ASU<br>Introduction to Physical Geology Lab (J. Johnson), Spring 2014, 2015<br>Fundamentals of Planetary Geology (Dr. M.S. Robinson), Fall 2014<br>Physical Geology (Dr. D. DeVecchio & T. Perkins), Fall 2013, 2014<br>Historical Geology (Dr. D. Burt), Fall 2013 |
| 2011–2012 | **Undergraduate Teaching Assistant**, Mississippi State University<br>Introductory Psychology Statistics lab (Drs. C. Williams, M. Giesen, J. Keeley) |
| 2011 | **Guest Lecturer**, Mississippi State University<br>Social Psychology (online), Dr. H. Colleen Sinclair |

## PROFESSIONAL SERVICE

### *Peer Review*

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|---|---|
| Journals | *Communications Earth & Environment*; *Icarus*; *Journal of Geophysical Research: Planets*; *Journal of Volcanology and Geothermal Research*; *The Planetary Science Journal*; *Volcanica*; *Case Studies in Construction Materials* |
| Other | NASA; NSF; Oxford University Press |

### *Community Service*

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|---|---|
| 2026–present | AGU Volcanology, Geochemistry, and Petrology (VGP) Communications Committee |
| 2026 | NASA Exploration Science Forum, Science Organizing Committee member |
| 2025 | GSA Connects, session convener: *Petrology, Volcanology, and Mantle Plumes across the Solar System* (T163) |
| 2024 | GeoFutures 2024: Planetary Geoscience, Program Committee (GSA representative) |
| 2018 | 49th Lunar and Planetary Science Conference, session chair |
| 2016–2019 | Volcano Listserv, editor and moderator (ASU, Portland State University, Smithsonian Global Volcanism Program, and IAVCEI) |

### *Institutional Service*

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|---|---|
| 2026–present | Health Professions Committee, Middlebury College |
| 2026 | DataFest @ Middlebury, mentor and judge |
| 2020 | SESE Justice, Equity, Diversity, and Inclusion Task Force, member, ASU |
| 2018–2019 | SESE Graduate Council, President, ASU |
| 2011–2012 | Psi Chi International Honor Society in Psychology, Treasurer, MSU |
| 2010–2012 | Peer Tutoring and Academic Mentoring Program, tutor, MSU |
| 2010–2011 | Health & Wellness Service Program, volunteer, MSU |
| 2009–2010 | MSU Astronomy Club, Secretary |

## PROFESSIONAL DEVELOPMENT AND FIELD EXPERIENCE

### *Workshops*

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|---|---|
| 2026 | **AI Focus Group**, Middlebury College |
| 2026 | **Engaged Listening Project**, Fellow, Middlebury College |
| 2025 | **Bridging the gap between mathematical modelling of lava flows and field observations**, Edinburgh Futures Institute (organizers: H. Dietterich, E. Hinton, H. Huppert, C. Kilburn) |
| 2023 | **Planetary Data Training Workshop**, Arizona State University (D. Williams and D. Nelson) |
| 2023 | **NAGT Virtual Mentoring Workshop** (A. Eggers and S. Sit) |
| 2016 | **NASA FINESSE team**, NASA Solar System Exploration Research Virtual Institute (organized by Dr. Scott Hughes) |
| 2016 | **NASA Volcanology Workshop**, NASA / University of Hawai‘i at Mānoa (Drs. S.K. Rowland, S. Fagents, and P. Mouginis-Mark) |

### *Field Experience*

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|---|---|
| 2022 | Krafla lava flow, Mývatn, Iceland (led by Dr. Erika L. Rader) |
| 2016 | El Pinacate y Gran Desierto de Altar Biosphere Reserve, Mexico (led by Dr. Amanda B. Clarke) |
| 2016 | SP Crater lava flow, San Francisco Volcanic Field, AZ (independent) |

## OUTREACH

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|---|---|
| 2027 | Instructor (scheduled), Elderly Services Incorporated (ESI) College, Middlebury, VT |
| 2025 | Guest speaker, Weybridge Elementary School, Weybridge, VT |
| 2024 | "Ask a NASA Scientist," International Observe the Moon Night, Montpelier, VT |
| 2024 | Solar eclipse event, Rumney Memorial School, Middlesex, VT (with Drs. Patrick and Nikki Whelley) |
| 2017–2022 | Phoenix Fan Fusion (2017, 2018, 2022), science panelist (e.g., "Vulcan's Wrath," "This Just in from Deep Space," "How Misinformation Spreads") and AZ Science Fair judge |
| 2019 | Grand Awards Judge, Intel International Science and Engineering Fair |
| 2019 | Awards reviewer, Graduate and Professional Student Association, ASU |
| 2018 | "Walk on Mars" exhibit: Intel STEM Fair (South Mountain Community College); ASU Earth and Space Exploration Day; ASU Open Door |
| 2017 | Guest speaker, Earth Science, Mountain Pointe High School, AZ |
| 2014–2017 | Guest scientist, Mars Student Imaging Project, ASU |
| 2013–2014 | Mars exhibit, SESE Open House, ASU |

## PROFESSIONAL MEMBERSHIPS

| | |
|---|---|
| 2014–present | American Geophysical Union |
| 2022–present | International Association of Volcanology and Chemistry of the Earth's Interior |
| 2023–present | Geological Society of America |
| 2024–present | American Astronomical Society, Division for Planetary Sciences |
| 2025–present | The Planetary Society |
| 2012 | Phi Kappa Phi Honor Society |
| 2011–2012 | Psi Chi International Honor Society in Psychology |

## TECHNICAL SKILLS

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|---|---|
| Field | Lava flow margin characterization (Idaho); in situ sampling of lava flows (Arizona, Iceland); tephra deposit characterization (Mexico); in situ lava flow characterization using LIBS (Iceland) |
| Laboratory | Analog experiments using polyethylene glycol 600 wax to simulate lava flow emplacement; infrared spectrometry; scanning electron microscopy |

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| Software | *Proficient:* Claude, ImageJ, JMARS, Microsoft Office, NotebookLM, Overleaf (LaTeX), Tracker. *Some experience:* ArcGIS, DaVinci, HTML, ISIS3, MATLAB, RStudio |
| Languages | Japanese (conversational; reads and writes hiragana, katakana, and some kanji) |