GSA TODAY

THE GEOLOGICAL SOCIETY OF AMERICA®

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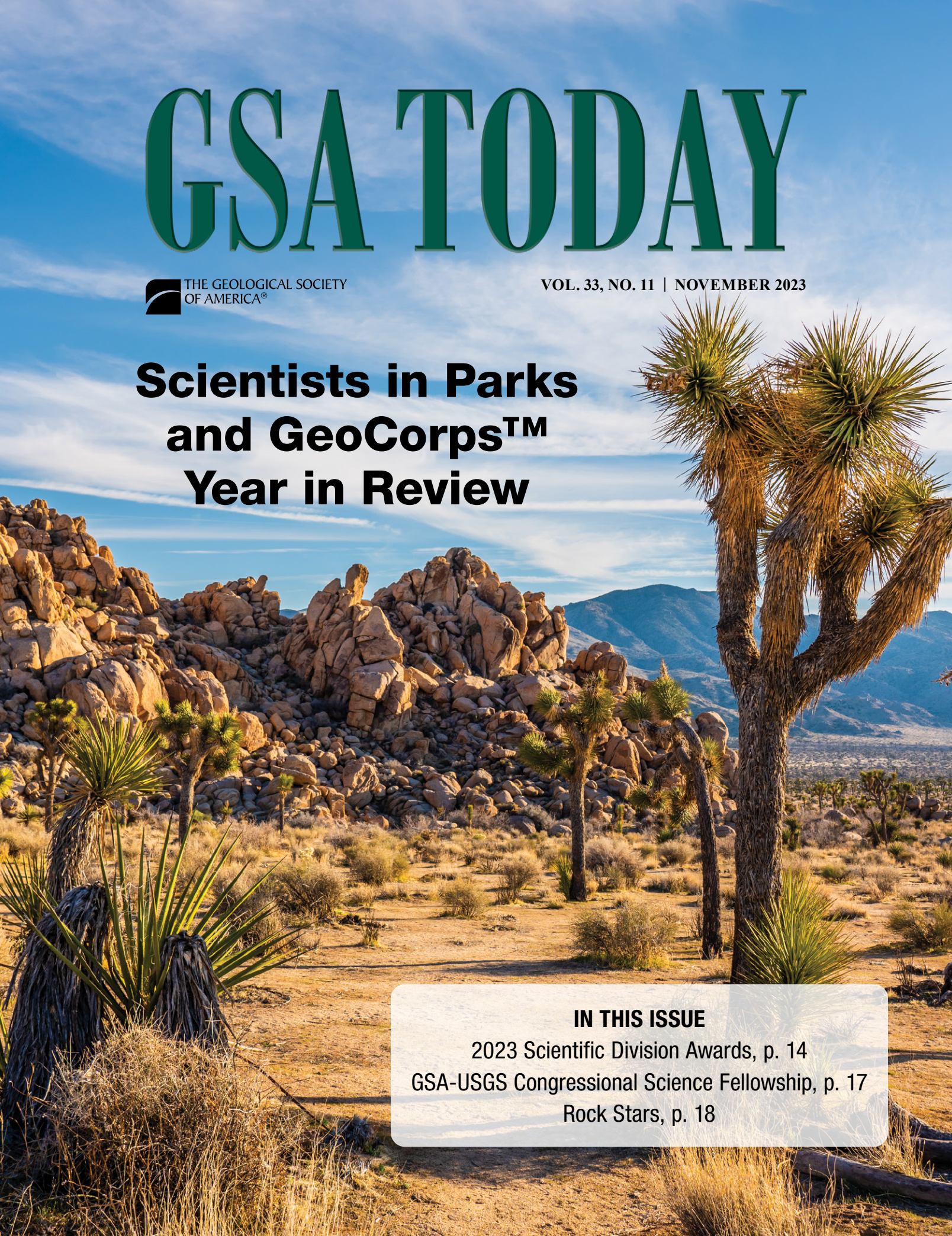
Scientists in Parks and GeoCorps™ Year in Review



IN THIS ISSUE

Call for Science Editors

GSA SEEKS SCIENCE EDITOR APPLICANTS FOR:

- *Geology* (3 openings)
- *Environmental & Engineering Geoscience* (1 opening)

Terms start 1 January 2025.

DETAILS

Geology editors should expect to handle 200–250 manuscripts each year, with ~35 active manuscripts on any given day. Preferred research interests include (but are not limited to) economic geology, environmental geology, geobiology, geochronology, geodynamics, mineralogy, paleoceanography, paleoclimatology, paleontology, planetary geology, Quaternary geology, sedimentary geology, structural geology, tectonics, and/or volcanology.

E&EG editors should expect to solicit submissions to the journal through interacting with colleagues at meetings and organizing special issues. Preferred research interests include (but are not limited to) hydrogeology, low-T geochemistry, geomorphology, and/or environmental geophysics.

Editors work from their current locations at work or at home. The positions are considered voluntary, but GSA provides an annual stipend and funds for office expenses.

DUTIES

- Ensuring stringent peer review.
- Expeditious processing of manuscripts.
- Making final acceptance or rejection decisions after considering reviewer recommendations.
- Working with co-editors to set the editorial tone of the journal.
- Maintaining excellent content by publishing a diverse range of papers.

REQUIRED QUALIFICATIONS

- Experience as an editor or associate editor for a geoscience journal. (Provide details in your application letter.)
- Demonstrated expertise in two or more fields in the geosciences or in interdisciplinary fields broadly related to the geosciences.
- Experience handling a significant editorial workload.
- Ability to make timely decisions.
- Strong willingness to handle paper topics outside of your main research discipline(s).
- Proven ability to communicate clearly and respond quickly to author needs.

LEARN MORE

Details on the Preferred Qualifications and Evaluation Process for applicants can be found at https://www.geosociety.org/gsa/pubs/editorsCall. Please contact Bridgette Moore, editing@geosociety.org, with any questions.

APPLY TODAY

In a single PDF, submit your curriculum vitae and a letter of application that demonstrates how your interests and experience fulfill the required and preferred qualifications to Bridgette Moore, Director of Publications, editing@geosociety.org.

Deadline: 1 March 2024.

Photo credit: Daniel Sessler on Unsplash.

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NOVEMBER 2023 | VOLUME 33, NUMBER 11

GSA TODAY

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Cover: Desert brush and rock formations in Joshua Tree National Park, one of many internship sites for the 2023 Scientists in Parks program. See related article on pages 4–7. Photo credit: yongyuan/iStock/Getty Images Plus via Getty Images.

GSA NEWS

Thank You to Our National Park Service Scientists in Parks Supporters!

The National Park Service (NPS) Scientists in Parks (SIP) program provides immersive, paid work experiences in natural resource fields, so the next generation of park stewards—especially those traditionally underrepresented in science—have a unique opportunity to work on important, real-world projects while building professional experience and lifelong connections to America's national parks. Prospective participants can review and apply for summer 2024 SIP Intern projects beginning in early December 2023.

www.geosociety.org/sip

Left: Coltan Riann surveys a stalactite structure at Carlsbad Caverns National Park, New Mexico. Above: SIP Intern Petra Zuñiga taking a water quality reading at High Toss Aquatroll Station in a kayak.

2023 Partners include:

National Park Service

Ecological Society of America

Stewards Individual Placements

AmeriCorps

2023 Supporters include:

Sally and Bob Newcomb

GSA FOUNDATION

Additional sources of funding include:

Badlands Natural History Association, Grand Canyon Conservancy, Great Basin National Park Foundation, Rocky Mountain Conservancy, Shenandoah National Park Trust, and the Schoodic Institute.

SUMMER–WINTER 2023 SCIENTISTS IN PARKS INTERN PARTICIPANTS

Acadia National Park
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Julia Smeltzer

Alaska Region Office
Graham Brady

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Bryce DiNardo

Badlands National Park
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Kelsey Mills
Morgan Nystuen
Carmen Urban

Bandelier National Monument
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Alyssa Connolly

Big South Fork National River and Recreation Area
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Big Thicket National Preserve
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Bighorn Canyon National Recreation Area
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Maite Gato-Fuentes
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Katherine Webber

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Michaela Compo
Molly Fisher
Charlotte Hohman
Maeve Noone-Price

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Alexa Lyne
Meadow Maturen
Sophie Smith

Cape Lookout National Seashore
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Joseph Hoberg

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Fletcher Levy

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Chattahoochee River National Recreation Area
Jordan Landrum
Thomas McCoy-Bruce

Chesapeake and Ohio Canal National Historical Park
Elaina Pecher

Chickamauga and Chattanooga National Military Park
Garrett Billings

Climate Change Response Program
Julianne Reas

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Erica Barrett
Kira Nolan
Zenja Seitzinger
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Luis Berrizbeitia
North Cascades National Park Service Complex
Megan Guinn
Mallory Mead
Daniel Wexler
Northern Colorado Plateau (16 Park Units)
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Mia Lombardo
Oregon Caves National Monument
Trey Brink
Alexis Sosa
Pacific West Region Office
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Cumberland Piedmont
Ayden Kelly
Eastern Rivers and Mountains
Sarah Wojtas
Greater Yellowstone
Lydia Druin
Abigail Volk
Mojave Desert
Irene Foster
Alison Gause
National Capital Region
Yaseen Ginnab
Nicholas Tait

SIP Intern Jared Shiffert at the vertebrate paleontology laboratory in Austin, Texas, during a visit to collect data from mammoths in the collections.

North Coast and Cascades and Sierra Nevada
Christina Appleby
Northern Great Plains
Graces Galles
Pacific Island
Addisen Antonucci
Kayla Vasarhelyi
San Francisco Bay Area
Shea Nolan
Timothy Smoot
Kaitlin Yap
Sierra Nevada
Shannon Lavelle
Southeast Coast
Alyssa Sanderson
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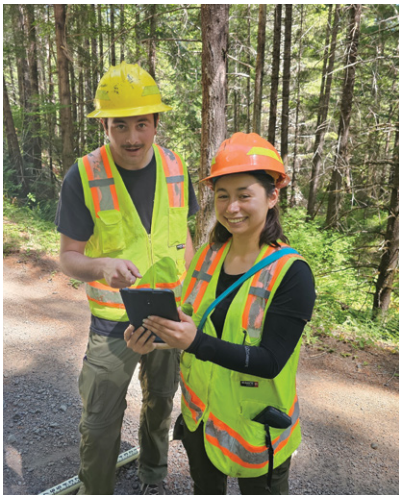
Additional thanks to the following NPS parks, offices, and networks who collaborated with other units to facilitate SIP Intern opportunities:

Allegheny Portage Railroad National Historic Site
Arches National Park
Black Canyon of the Gunnison National Park
Bluestone National Scenic River
Boston National Historical Park
Bryce Canyon National Park
Canyonlands National Park
Capitol Reef National Park
Cedar Breaks National Monument
Channel Islands National Park
Christiansted National Historic Site
Colorado National Monument
Curecanti National Recreation Area
Delaware Water Gap National Recreation Area
Dinosaur National Monument
Fort Necessity National Battlefield
Fossil Butte National Monument
Friendship Hill National Historic Site
Gauley River National Recreation Area
Golden Spike National Historical Park
Grand Teton National Park
Greater Yellowstone Network
Hawai'i Volcanoes National Park
Inventory and Monitoring Division
Johnstown Flood National Memorial
Mediterranean Coast Network
Midwest Region Office
Mojave Desert Network
New River Gorge National Park and Preserve
North Cascades National Park
North Cascades National Park Service Complex
North Coast and Cascades Network
Northeast Coastal and Barrier Network
Olympic National Park
Pacific Island Network
Pipe Spring National Monument
Salt River Bay National Historical Park and Ecological Preserve
Santa Monica Mountains National Recreation Area
Sonoran Desert Network
Timpanogos Cave National Monument
Valles Caldera National Preserve
Water Resources Division
Yukon-Charley Rivers National Preserve
Zion National Park

Thank You to Our 2023 GeoCorps™ America Supporters!

GeoCorps provides paid, short-term geoscience opportunities that encourage participants to develop professionally by engaging in the science and stewardship of public lands. We sincerely thank the program's participants, mentors, partners, and donors for their outstanding contributions in 2023. The GeoCorps America program is a partnership between the USDA Forest Service, Bureau of Land Management, and GSA. Prospective participants can review and apply for summer 2024 GeoCorps projects beginning in early December 2023.

www.geosociety.org/geocorps



Above: GeoCorps participant Aileen Macias measuring an endangered native plant, *Phacelia argentea*, during population surveys. Middle: 2023 GeoCorps participants, George Rump and Caitlin Ruelas, at Umpqua National Forest, input data into a field maps program on a tablet. Right: GeoCorps participant Jared Higgs, descending into a small pit on Kosciusko Island near Tongass National Forest, Alaska.

Government partners include:

Bureau of Land Management

USDA Forest Service

Staffing partners include:

Actalent, Inc.

Velocity Global

Donor:

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2023 BUREAU OF LAND MANAGEMENT (BLM) PARTICIPANTS

Royal Gorge Field Office
Sophia Brooks-Randall
Melissa Schmidt

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Applegate Field Office
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Arizona State Office
Jewelyssa Rodriguez
Bakersfield Field Office
Grace Howard
Border Field Office
Samuel Carpenter
Burns District Office
Kasserena (Kassie) Cvikel
Anthony Gordon
Morgan Misra
Carlsbad Field Office
Michael Bey
Tucker McCoy
Casper Field Office
Elyssa Allen
Coos Bay District Office
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Division of Recreation and Visitor Services (HQ-430)
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Bighorn National Forest
Alice Bandeian
Bridger-Teton National Forest
Hailey Galit
Cibola National Forest and National Grasslands
Kofoworola Fadeyi-Lawson
Cleveland National Forest
Susannah Budd
Custer Gallatin National Forest
Olivia Hoffman *(Sioux Ranger District)*
Jessica Shores *(Beartooth Ranger District)*
El Yunque National Forest
Kimberly Méndez Méndez
George Washington and Jefferson National Forests
Amelia Jelic
Grand Mesa, Uncompahgre & Gunnison National Forests
Itai Bojdak-Yates
Mark Twain National Forest
Sheri Williams
National Grasslands Visitor Center
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Northern Research Station, Grand Rapids, Minnesota
Nora Hencir
Pike-San Isabel National Forests & Cimarron and Comanche National Grasslands
Kofoworola Fadeyi Lawson
Julie Spawn
Southern Region (R8) Regional Office
Cheyenne Bartelt
Darian Bouvier
William Ebby
Superior National Forest
Noah Carrick
Samantha Mowen
Tongass National Forest
Jared Higgs
Elly MacKay
Courtney Roxby
Umpqua National Forest
Caitlin Ruelas
George Rump
Northern Region (R1) Regional Office
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White River National Forest
Sarah Engel
Karrah Spendlove

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Derek Strohl
Amy Titterington
Autumn Toelle-Jackson
CJ Truesdale
Josh Voorhis
Goldie Warncke
Mara Weisenberger
William (Justin) Wilkins

Anthony Gordon, BLM, sharing a specimen before recording and returning it to the earth in the Burns District, Oregon, USA.

Alexia Williams
Danielle Winterholler
Monica Zimmerman

Call for 2025 Penrose Conference and Thompson Field Forum Proposals

Are you looking for a chance to collaborate with colleagues, discuss current knowledge, and exchange exciting ideas on controversial, interdisciplinary topics? GSA's yearly Penrose Conference and Thompson Field Forum offer just those opportunities! These premier, small gatherings stimulate collaborative research and accelerate the advancement of science.

Submit your proposal today for the 2025 conferences! Selected proposals receive $US20,000 in unrestricted funds from GSA and the GSA Foundation.

Penrose Conference: **www.geosociety.org/GSA/Events/Penrose_Conferences/GSA/penrose/format.aspx**

Thompson Field Forum: **www.geosociety.org/GSA/Events/Thompson/GSA/thompson/format.aspx**

Deadline: Friday, 15 Dec. 2023

Insung Jeon/Moment via Getty Images

The 37th International Geological Conference (IGC) Mentoring and Travel Grant Program

BEXCO, Busan, South Korea | 25–31 Aug. 2024

GSA, the GSA Foundation, and the U.S. National Committee for Geological Sciences (of the National Academy of Sciences) are accepting applications for their Mentoring and Travel Grant Program to the 37th International Geological Conference (IGC) in Busan, South Korea.

Who should apply: Graduate students and early career professionals (within seven years of receiving their last degree). Applicants must be residents or citizens of the United States and be enrolled in, or employed at, a U.S. institution. Awards will be a maximum of US$3,500.

Deadline to apply: 10 Apr. 2024

www.geosociety.org/field-experiences

Questions? Contact Jennifer Nocerino, jnocerino@geosociety.org

Announcing GSA's First Annual

GEOLOGY CLUB TEE-OFF

Calling all geology enthusiasts!

Unleash your creativity and geological passion in the ultimate competition, the Geology Club Tee-Off! Submit your club's geologically inspired t-shirt logo into a thrilling bracket-style tournament and win!

Submit your logo by 31 Mar. 2024.

www.geosociety.org/tee-off

Questions? Contact Jennifer Nocerino, jnocerino@geosociety.org

Nominate a Deserving Colleague for an Award!

GSA AWARDS

Nomination deadline: 10 April 2024
To nominate, go to www.geosociety.org/awardnoms.

For details on each award, visit **www.geosociety.org/about-awards.** Questions? Email awards@geosociety.org.

Established in 1927 by R.A.F. Penrose, Jr., the **Penrose Medal** is awarded in recognition of eminent research in pure geology, for outstanding original contributions or achievements that mark a major advance in the science of geology.

Established in 1948 through a donation by Arthur L. Day, the **Day Medal** is awarded to recognize outstanding distinction in the application of physics and chemistry to the solution of geologic problems, with no restriction to the particular field of geologic research.

Established in 1988, the **Young Scientist Award (Donath Medal)** is awarded to a young scientist (age 35 or younger throughout the year in which the award is to be presented) for outstanding achievement in contributing to geologic knowledge through original research that marks a major advance in the earth sciences.

Established by the GSA Council in honor of Eugene and Carolyn Shoemaker in 1998, the **GSA Public Service Award** is awarded for contributions that have materially enhanced the public's understanding of earth sciences or significantly served decision-makers in the application of scientific and technical information in public affairs and public policy related to the earth sciences.

Established by GSA Council in 1988, the **GSA Distinguished Service Award** recognizes individuals for exceptional service to the Society. GSA Members, Fellows, associates, and employees may be nominated for consideration.

The **Randolph W. "Bill" and Cecile T. Bromery Award** may be given to any minority, preferably African Americans, "who have made significant contributions to research in the geological sciences, or those who have been instrumental in opening the geoscience field to other minorities."

In memory of Doris M. Curtis, the **Doris M. Curtis Outstanding Woman in Science Award** is presented to a woman who has impacted the field of the geosciences in a major way based on her Ph.D. research. Women are eligible for the first five years following their degree.

Established in 2015, the **GSA Florence Bascom Geologic Mapping Award** acknowledges contributions in published high-quality geologic mapping that led the recipient to publish significant new scientific or economic-resource discoveries and to contribute greater understanding of fundamental geologic processes and concepts.

The **GSA Honorary Fellow Award** is presented to an international geoscientist who has distinguished him- or herself in geoscience investigations, promoting environmental awareness, linking science and society, providing notable service to implementing public policy in natural-resource management, or otherwise making outstanding contributions to science.

The **AGI Medal in Memory of Ian Campbell** recognizes singular performance in and contribution to the profession of geology.
More information: **https://www.americangeosciences.org/awards/iancampbell**

2024 POST-DOCTORAL RESEARCH AWARDS

The **Gladys W. Cole Memorial Research Award** for research on the geomorphology of semiarid and arid terrains in the United States and Mexico is awarded annually to a GSA member or Fellow between 30 and 65 years of age who has published one or more significant papers on geomorphology.

The **W. Storrs Cole Memorial Research Award** for research on invertebrate micropaleontology is awarded annually to a GSA member or Fellow between 30 and 65 years of age who has published one or more significant papers on micropaleontology.

Application deadline: 1 Feb. 2024
More information: **www.geosociety.org/post-doc**

OTHER AWARDS

John C. Frye Environmental Geology Award
In cooperation with the Association of American State Geologists and supported by endowment income from the GSA Foundation's John C. Frye Memorial Fund, GSA makes an annual award for the best paper on environmental geology published either by GSA or by a state geological survey.

The 2022 recipient of the Young Scientist Award (Donath Medal), Kimberly V. Lau, with past president Mark Little at GSA Connects 2022 in Denver, Colorado, USA.

Nomination deadline: 31 Mar. 2024
More information: **www.geosociety.org/GSA/Awards/Frye.aspx**

The **AGI Marcus Milling Legendary Geoscientist Medal** is given to a recipient with consistent contributions of high-quality scientific achievements and service to the earth sciences having lasting, historic value; who has been recognized for accomplishments in field(s) of expertise by professional societies, universities, or other organizations; and who is a senior scientist nearing completion or has completed full-time regular employment.

Nomination deadline: 1 Feb. 2024
More information: **https://www.americangeosciences.org/awards/legendarygeoscientist**

The **Tim W. Wawrzyniec Fellowship** supports research conducted by Ph.D.-holding investigators who have not previously worked through the Rocky Mountain Biological Laboratory. The intent is for the fund to award $5,000 annually.

Application deadline: 1 Feb. 2024
More information: **www.geosociety.org/GSA/About/awards/GSA/Awards/wawrzyniec.aspx**

For a listing of other national awards and links information and nomination forms, visit **www.geosociety.org/national-awards.**

INTERNATIONAL AWARDS

The **Distinguished Career Award** is given to a geologist who has made numerous, distinguished, and significant contributions that have clearly advanced the international geological sciences through service and or scientific activities.

Application deadline: 1 Mar. 2024
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Scientific Division Awards

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Lisa J. Pratt, Indiana University

ENVIRONMENTAL AND ENGINEERING GEOLOGY DIVISION

E.B. Burwell, Jr., Award
Syed E. Hasan, University of Missouri–Kansas City
Hasan, S.E., 2022, Introduction to Waste Management: A Textbook, 1st Edition: New York, John Wiley & Sons, 464 p.

Meritorious Service Award
Thomas Oommen, Michigan Technological University

Richard H. Jahns Distinguished Lecturer
Vincent S. Cronin, Baylor University

Roy J. Shlemon Scholarship Award
Raja Das, North Carolina State University
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Robert McSweeney, East Tennessee State University

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Colleen Hansel, Woods Hole Oceanographic Institution

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Simon J. Goring, University of Wisconsin

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Joy Foluso, University of California Davis

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Mian Liu, University of Missouri

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Clifford Irwin Voss, U.S. Geological Survey; University of Hawaii

Kohout Early Career Award
Margaret Zimmer, U.S. Geological Survey; University of California

Schwartz Award for Excellence in Mentoring and Education
Kenneth R. Bradbury, Wisconsin Geological and Natural History Survey

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Meritorious Contribution Award
Carol Hill

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Natasha Sekhorn, Brown University

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Kerry Kelts Student Research Awards
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Early Career Award
Carolina Munoz-Saez, University of Nevada, Reno

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Candice Joy-Hansen-Koharcheck

Ronald Greeley Award for Distinguished Service
Devon Burr, Northern Arizona University

Pellas-Ryder Award
Hui Ching Jupiter Cheng, University of Georgia
C. Adeene Denton, Purdue University

QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION

Kirk Bryan Award for Research Excellence
Simon Pendleton, Plymouth State University
Pendleton, S.L., et al., 2019, Rapidly receding Arctic Canada glaciers revealing landscapes continuously ice-covered for more than 40,000 years: *Nature Communications, v. 10.*

Distinguished Career Award
Gordon E. Grant, U.S. Forest Service, Corvallis, Oregon

Farouk El-Baz Award for Desert Research
Eric McDonald, Desert Research Institute

SEDIMENTARY GEOLOGY DIVISION

Laurence L. Sloss Award
Nicholas Christie-Blick, Lamont-Doherty Earth Observatory

Stephen E. Laubach Research Award
Sarah Giles, Columbia University

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John Platt, University of Southern California

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Elena Miranda, California State University

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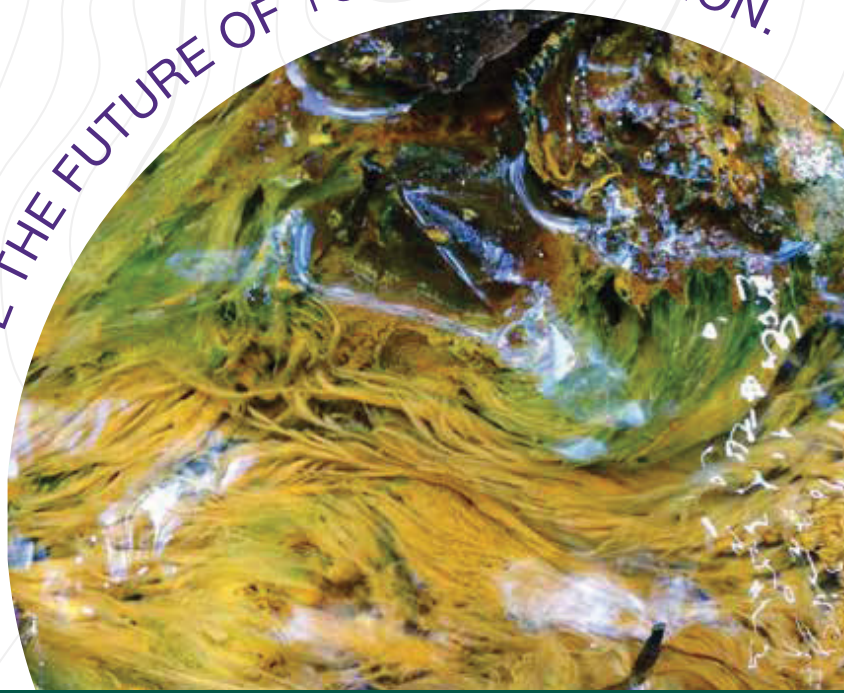

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2023–2024 GSA-USGS Congressional Science Fellow Announced

Robby Goldman

GSA and the U.S. Geological Survey (USGS) are pleased to announce that Dr. Robby Goldman will serve as the 2023–2024 GSA-USGS Congressional Science Fellow in the legislative office of Hawaii Senator Mazie Hirono.

Goldman is a geologist who studies how volcanic eruptions impact human society and how scientists communicate with the public. Goldman recently completed his doctorate in geology at the University of Illinois Urbana–Champaign (UIUC) as a National Science Foundation (NSF) Graduate Research Fellow. Following the 2018 eruption of Hawai'i's Kīlauea volcano, Goldman volunteered with the USGS as an NSF Graduate Research Intern to evaluate the USGS Volcano Hazard Program's eruption communication response. This research provided Goldman a unique opportunity, as a Native Hawaiian volcanologist, to learn how volcano science can be conducted for the benefit of Native Hawaiians and other communities vulnerable to volcanic hazards.

Goldman grew up in Los Angeles and received his B.A. in geology (with a minor in physics) from Pomona College in 2015. Prior to beginning his Ph.D., Goldman conducted a one-year Fulbright research fellowship in Christchurch, New Zealand, where he investigated the evolutionary history of New Zealand's Miocene-aged Akaroa Volcanic Complex. Non-research highlights of Goldman's Fulbright fellowship include hiking along the picturesque Tongariro crossing and seeing *Ngāuruhoe* (the real-life "Mt. Doom" featured in the *Lord of the Rings* films), as well as learning how to perform Māori *kapa haka* at the University of Canterbury. Several years after his fellowship, Goldman volunteered with Fulbright Prism, a non-profit organization providing resources and community for LGBTQ+ Fulbright grantees and alumni.

Following his acceptance of the Geological Society of America's invitation to participate in the 2017 Geosciences Congressional Visits Day, Goldman developed a passion for science policy outreach that would last throughout his six-year doctoral program. Goldman served as the Advocacy Chair of UIUC's Science Policy Group from 2018 to 2019, while also participating in the 2018 AAAS Catalyzing Advocacy in Science and Engineering workshop. Furthermore, Goldman participated in the inaugural 2018–2019 class of the American Geophysical Union's Voices for Science Program. Since 2019, Goldman has served on GSA's Geology and Public Policy Committee, a role that he is eager and grateful to continue during his year as the Congressional Science Fellow.

Nevertheless, She Persisted: Winifred Goldring

Renee M. Clary, *Dept. of Geosciences, Mississippi State University*

Winifred Goldring (1888–1971). Photo courtesy of the New York State Museum.

Born the fourth daughter of nine children (eight daughters, one son) to Frederick Goldring and Mary Grey Goldring, Winifred Goldring (1888–1971) lived most of her life in her Albany, New York, family home. Winifred's father, trained as an orchid specialist at Kew Gardens, London, met her mother, a local schoolteacher and daughter of the Corning estate's head gardener, when he immigrated to the United States to manage Erastus Corning's orchid collection (Aldrich et al., 2005). In 1890, the family opened a successful floral business.

A good student, Winifred Goldring graduated as valedictorian of Milne High School in 1905 and then enrolled in Wellesley College. Although she had been exposed to botany throughout her life—and may have become enthralled with nature during childhood walks in the Slingerlands—Goldring originally intended to study classical languages. She pivoted to science as a career choice only *after* completing her two required science courses. In 1909, she graduated with honors with her A.B. in zoology and botany, though she also took geology classes under field geologist Elizabeth Florette Fisher (1873–1941). Drawn to geology, Goldring continued her studies at Wellesley and graduated with her M.A. in 1912. Harvard University's William Morris Davis (1850–1934), prominent geographer/geomorphologist and the Sturgis Hooper Professor of Geology, supervised her thesis research. In 1913, Goldring's education continued with a summer graduate course at Columbia University taught by Amadeus Grabau (1870–1946), paleontologist and stratigrapher. Although Goldring never completed a doctoral degree, she received honorary doctorates in 1937 and 1957 (Rossiter. 1982; Aldrich et al., 2005).

NEW YORK STATE MUSEUM AND PALEONTOLOGICAL RESEARCH

Winifred Goldring was first employed as an instructor, 1912–1914. She taught petrology and geology courses at Wellesley and geography courses at the Teachers' School of Science, but she disliked lecturing and never pursued an academic appointment (Siegel and Finley, 1985). In 1914, the New York State Museum director, John Mason Clarke (1857–1925), offered her summer employment as a "scientific expert." It was at the New York State Museum that Goldring found her niche, although she did not have a permanent position there until 1920, when she became associate paleontologist.

In 1916, Clarke assigned Goldring to a massive research project: the revision of New York's Devonian crinoids from James Hall's (1811–1898) earlier monograph and subsequent research and collections, including those of Charles White (1826–1910), Edwin Kirk (1884–1955), and Clarke himself. A monumental project, Goldring worked seven years before publishing her 670-page crinoid tome to professional accolades. Crinoids continued as her career-long interest, and Goldring continued to research, analyze, and publish on new crinoid finds.

However, Goldring also researched other fossil organisms. When the 1920 construction of a new reservoir threatened the fossil trees in Gilboa, New York, Clarke directed Goldring and Rudolf Ruedemann (1864–1956) to collect and research these Devonian plant fossils before the site was flooded. Later, in the 1930s, Goldring conducted an exhaustive study of stromatolites at the private Petrified Sea Gardens Park and Lester Park, the latter donated in 1914 to the New York State Museum. She affirmed the organic origin of these structures, identified the presence of cryptozooan species, and interpreted the ecological and environmental settings of three different reef environments. Goldring argued that the stromatolites were produced by plants (i.e., blue-green algae [now called cyanobacteria]).

GOLDRING AS INFORMAL EDUCATOR: PUBLIC DISSEMINATION OF PALEONTOLOGY

Even though she personally disliked lecturing, Winifred Goldring recognized the importance and impact of education. She authored handbooks on paleontology for amateurs (Goldring 1929, 1931), and her massive crinoid monograph contained introductory materials, intended for paleontology students, on crinoid morphology, evolutionary sequences, and stratigraphic occurrences (Aldrich et al., 2005; Goldring, 1923). She developed innovative museum displays, including "What is a Fossil?" and "What is a Geological Formation?" In 1925, Goldring interpreted the Gilboa plant fossils for museum visitors in a life-size diorama that showcased the fossil tree stumps in the foreground, displayed reconstructed tree models, and recreated the Devonian forest as a painted background.

The museum also worked with engineers at the dam site to set up a roadside display of the Gilboa fossils, the first scientific highway exhibit in New York (Aldrich et al., 2005).

PROFESSIONAL ACCOLADES AND CONTRIBUTIONS

Following the crinoid monograph, Goldring regularly conducted fieldwork in the summers. She worked on two quadrangles in the

Goldring's diorama, "Fossil Forests of Gilboa," at the New York State Museum. Photo courtesy of the New York State Museum.

Albany area, and then published a guide to John Boyd Thacher State Park in 1933. Her monograph and map of the Berne quadrangle, which includes Thacher State Park, appeared in 1935. In 1939, when Ruedemann retired, Goldring was appointed State Paleontologist of New York (1939–1954), the first woman to hold the title in the United States.

Goldring was elected a Fellow of the Geological Society of America in 1921 and served as the GSA vice president in 1950. She also served as the first woman president of the Paleontological Society (1949). Her legacy in the Paleontological Society endures with the Winifred Goldring award, established in 1998 to annually recognize an outstanding woman student pursuing a paleontology career. Beginning in 2016, two Goldring winners were named, and in 2020 the number of Goldring awards was expanded to three annually.

GENDER CHALLENGES

Goldring had a reputation as a perfectionist, with a research approach that included detailed data collection. As a woman, she was forced to circumvent gender barriers as a professional geologist that her male colleagues did not encounter. Men did not want to collaborate with her in field research, so Goldring developed a "bloomer outfit" for fieldwork and learned to shoot a pistol (Sichermann and Green, 1980). She wanted to apply for a position with the U.S. Geological Survey but was thwarted when she learned that they wanted a "he-man" paleontologist. Goldring's salary was not only substantially lower than her male counterparts, but also lower than clerks and stenographers at the New York State Museum (Aldrich, 1990).

Goldring never married; her life focus centered upon geology and especially paleontology. Goldring's overwork resulted in her mental breakdown in 1925, which led to a leave of absence from the museum; fortunately, she recovered in a year (Rossiter, 1982).

In 1929, Walter Bucher wrote to Goldring to ask her opinion on women's role in paleontology, geology, and museums. In her detailed response, Goldring listed the issues women faced with available work and low salaries, and she encouraged women to consider botany and zoology *instead of geology and geography*. Goldring wrote:

> A general training in science is good for anyone (man or woman), but I do not think the teachers in colleges and universities have any right to urge women to specialize in any field unless they are quite certain that they can place their students in positions. A woman so trained is not fitted to turn to other work, in the event that she cannot obtain a position in her field, and it may mean an unhappy discontented life for her. (New York State Archives)

Nevertheless, Winifred Goldring persisted. In the face of challenges, she trudged a path forward, earned the respect of other geologists, and left a lasting legacy. Petrified Sea Gardens, preserved as a National Historic Landmark because of efforts spearheaded by Joanne Kluessendorf (1949–2018), conserves the Cambrian stromatolites that Goldring investigated. The Gilboa road display also endures. Ironically, perhaps Goldring's greatest legacy is that she has become a role model for women pursuing careers in paleontology, in spite of her advice that they consider other scientific disciplines.

FURTHER READING

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Rossiter, M.W., 1982, Women Scientists in America Volume 1: Struggles and Strategies to 1940: Baltimore, Maryland, Johns Hopkins Press.

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Joint Meeting: Cordilleran and Rocky Mountain Sections

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74th Annual Meeting of the Rocky Mountain Section, GSA

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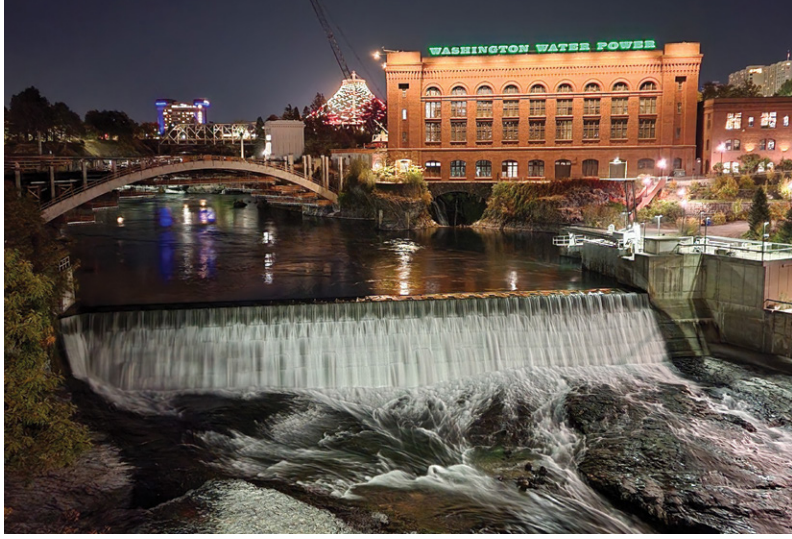
www.geosociety.org/cd-mtg



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Sharing at the Falls

LOCATION

Get ready for an unforgettable experience at "Sharing at the Falls," the GSA 2024 Joint Cordilleran and Rocky Mountain Section Meeting in Spokane, Washington, USA. Nestled west of the world-renowned Silver Valley, Spokane serves as a crossroads of geological history, with an incredible location at the intersection of Pleistocene megafloods, Miocene Columbia River basalt, the breakup of supercontinent Nuna, and the majestic Rocky Mountains, all intricately carved by the picturesque Spokane River. These features and more will be on display during a built-in field trip to the Spokane River and Falls at the meeting. Our meeting venue, the Davenport Grand Hotel, is perfectly situated along the enchanting Riverfront Park with a wealth of local restaurants, pubs, and coffee shops located nearby. The hotel is also conveniently close to hiking, climbing, and water sports, giving you ample opportunity to make the most of your time in this geological wonderland.

CALL FOR PAPERS

Abstracts deadline: 6 Feb. 2024, 11:59 p.m. PST
Submit online at **www.geosociety.org/cd-mtg**
Abstract submission fee: GSA members: professionals: US$30; students: US$18. Non-members: professionals: US$60; students: US$36. If you cannot submit an abstract online, please contact Heather Clark, hclark@geosociety.org.

TECHNICAL PROGRAM

Theme Sessions

T1. **Recent Advances in Mineral Resources Research and Exploration.** Niki Wintzer, U.S. Geological Survey, nwintzer@usgs.gov; Allen Andersen, U.S. Geological Survey, akandersen@usgs.gov.

A session devoted to mineral exploration and ore deposit research within the western United States. Presentations involving a variety of methods—such as geophysical surveys, geologic and mineral potential/prospectivity mapping, and geochemistry/geochronology—are invited. Active research on critical mineral resources will be emphasized.

T2. **Magmatic Rare Earth Element Ore Deposits and Minerals for the Future.** Kathryn Watts, U.S. Geological Survey, kwatts@usgs.gov; Erin Benson, U.S. Geological Survey, ekbenson@usgs.gov.

Rare earth elements (REEs) are critical mineral commodities in high demand as the global economy transitions from fossil fuels to renewable energy sources. REEs also serve as essential industrial applications. We welcome research contributions on magmatic REE deposits, including geological, structural, experimental, and geometallurgical aspects of their genesis and extraction.

T3. **Mineral Deposits of the Western United States: A View from the States and Industry.** Virginia S. Gillerman, Idaho Geological Survey, vgillerm@uidaho.edu; Haley Rambur, Perpetua Resources, Haley.Rambur@Perpetua.us.

Presentations and posters related to any aspect of mineral deposits and related issues are welcome. Papers are especially encouraged from industry, state surveys and agencies, and students. All commodities are fair game. New research and findings encouraged.

T4. **Undergraduate and Graduate Geoscience Student Lightning Talk Showcase.** James MacDonald, Florida Gulf Coast University, jmacdona@fgcu.edu; Peter Davis, Pacific Lutheran University, davispb@plu.edu; Chris Mattinson, Central Washington University, mattinson@geology.cwu.edu.

This lightning talk session invites undergraduate and graduate students to present their research findings as a short, one-slide talk followed by a poster session later in the meeting. This will allow students to gain experience giving a talk at a scientific meeting, but under a reduced-pressure setting.

T5. **The Boring Billion Was Not So Boring! Mesoproterozoic Tectonics, Sedimentation, and Geochronology of Northwest Laurentia.** Robert C. Thomas, University of Montana Western, rob.thomas@umwestern.edu; Paul Link, Idaho State University, paullink@isu.edu.

The Boring Billion (1850 to 850 Ma) was not so boring! Northwest Laurentia was tectonically active during the Mesoproterozoic, as shown by sedimentologic and geochronologic studies about the Belt Supergroup and overlying strata. The session is dedicated to Don Winston, whose passion for the Belt was essential to this understanding.

T6. **Advancements in Geologic Carbon Sequestration in Basalt.** Lee Florea, Washington Geological Survey, lee.florea@dnr.wa.gov; William Gallin, Washington Geological Survey, william.gallin@dnr.wa.gov; Todd Schaef, Pacific Northwest National Lab, todd.schaef@pnnl.gov.

Large basalt provinces in the Pacific Northwest, such as the Columbia Basin and the Snake River Plain, host enormous potential to permanently mineralize and store carbon. We invite ongoing research on reactive transport, reservoir properties, mapping and modeling of targets and seals, and plans for future implementation.

T7. **Faults, Fractures, and Fluids: Structural Control of Fluid Flow, Fault Zones, and Hydrothermal Processes.** Ben Melosh, U.S. Geological Survey, bmelosh@usgs.gov; Owen Callahan, En Echelon Geoconsulting, ocallahan@eegeos.com; Max Wilmarth, Baseload Power U.S., max.wilmarth@baseloadpower.us.

We welcome recent studies on the structural control of fluid flow, geothermal resources, and the influence of hydrothermal processes on fault strength evolution. This multidisciplinary session encompasses field geology, microstructure, rock mechanics, geophysics, numerical simulations, and neotectonics, with implications for resource development, fault zone mechanics, and structural evolution.

T8. **Geochemistry, Hydrology, and Microbiology in Yellowstone and Other Western North American Hydrothermal Systems.** Peter B. Larson, Washington State University, plarson@wsu.edu; Ken W. Sims, University of Wyoming, kims7@uwyo.edu; Everett Shock, Arizona State University, eshock@asu.edu; Jerry Fairley, University of Idaho, jfairley@uidaho.edu.

Hydrothermal systems are products of heat and mass transfer from the mantle and crust to Earth's surface. Yellowstone forms a natural laboratory for their examination. We invite contributions from Yellowstone and other western North American hydrothermal areas to discuss their chemical, hydrologic, biologic, and physical aspects.

T9. **Geothermal Resources of the Pacific Northwest and Intermountain West.** Lee Florea, Washington Geological Survey, lee.florea@dnr.wa.gov; Aaron Rothfolk, Washington Geological Survey, aaron.rothfolk@dnr.wa.gov.

Since the 1960s, geothermal energy has been developed across the western U.S. Recently, this green energy resource has expanded beyond conventional hydrothermal settings. We invite talks discussing the spectrum of evolving geothermal resources and technologies: enhanced geothermal systems, heating and cooling, thermal energy storage, direct use, and REE extraction.

T10. **Paleontology in the West: Fossils, Localities, Research, and Education in the Rocky Mountain and Cordilleran Regions.** Lindsay MacKenzie, Eastern Washington University, lmackenzie1@ewu.edu; John Orcutt, Gonzaga University, orcutt@gonzaga.edu.

Western North America has one of the world's richest fossil records, encompassing everything from Precambrian microbes to Pleistocene megafauna. We welcome submissions focused on fossils and localities from the western U.S., Canada, and Mexico, their paleoecological and geological context, and their use in education and outreach.

T11. **Baja BC: What Is New, What Do Fossils Tell Us?** Peter Ward, University of Washington, argo@uw.edu.

The Baja BC Hypothesis rages on. Yet little from the fossil record has been put forward for many years. In this session, let us see what fossils, new paleomagnetism, and new zircon work can say.

T12. **Northwest Cordillera Eocene Tectonics, Volcanism and Climate: Bridging the Borders.** Nancy Van Wagoner, Thompson Rivers University, nvanwagoner@tru.ca.

Complexities of Early Eocene tectonics are recorded in the rocks of the NW Cordillera. This session aims to bring geoscientists together from across geographical borders to share ideas regarding the geology, geochronology and geophysics of the NW Cordillera at that time, with implications for tectonic models and global climate.

T13. **New Developments in the Magmatic Drivers of Cascades Volcanism.** Nathan Andersen, U.S. Geological Survey Cascade Volcano Observatory, nandersen@usgs.gov; Dawn C.S. Ruth, U.S. Geological Survey California Volcano Observatory, druth@usgs.gov; Dawnika L.Blatter, U.S. Geological Survey California Volcano Observatory, dblatter@usgs.gov; Emily R. Johnson, U.S. Geological Survey Cascade Volcano Observatory, erjohnson@usgs.gov.

The Cascades are marked by substantial diversity in the composition, eruptive style, and distribution of volcanic centers. We seek contributions that utilize petrologic and/or geochemical approaches to derive insights into magma genesis, evolution, and storage, the distribution and character of vents, or processes that catalyze eruptions in the Cascades.

T14. **Continental Mafic Volcanism: Honoring the Career of Vic Camp.** Arron Steiner, Washington State University, arron@wsu.edu; John Wolff, Washington State University, jawolff@wsu.edu; Emily Cahoon, Oregon State University, emily.cahoon@oregonstate.edu.

Vic Camp has made career-long contributions to understanding Cenozoic mafic volcanism in the inland northwestern U.S. and elsewhere. We encourage contributions on continental mafic magmatism, especially focused on the Columbia River basalts and broader Yellowstone Hotspot province as well as other large igneous provinces and intraplate volcanism.

T15. **Distributed Volcanic Fields in Western North America.** Kellie Wall, U.S. Geological Survey, kwall@usgs.gov; Nancy Riggs, Northern Arizona University, nancy.riggs@nau.edu; Emily Johnson, U.S. Geological Survey, erjohnson@usgs.gov; Mark Stelten, U.S. Geological Survey, mstelten@usgs.gov.

Distributed volcanic fields (DVFs) abound in Cascadia and western North America. DVFs may produce a variety of volcanic features, compositions, and eruption styles, including monogenetic scoria cones and polygenetic volcanoes. We

invite contributions that apply field observations, geochemistry, geochronology, and/or geophysics to investigate the processes and hazards of DVFs.

T16. **Expanding Your Professional Capacity: Navigating Leadership, Communication, Mentoring, Work-Life Balance, and Mental Health.** Jennifer Nocerino, The Geological Society of America, jnocerino@geosociety.org.

Over the past five years, the workforce and our workplaces have seen many changes from retirements, resignations, hybrid work, and culture shifts. Some of these changes have positive impacts to reduce burnout and increase our capacity for connecting with our colleagues. This session aims to grow your leadership capacity by providing tools for navigating change, communication and mentoring strategies, boundaries in the workplace, and compassionate mental health practices. Who we are, as geoscientists, is just as important as the work we do.

T17. **The Highest and the Deepest: The U.S. Frontier of Cave and Karst Research.** Lee Florea, Washington Geological Survey, lee.florea@dnr.wa.gov; Georgia Schneider, University of Denver, georgia.schneider@du.edu.

The western U.S. hosts caves of epigene, hypogene, volcanic, and glacial origin. The wide range of karst environments in temperate rainforests, deserts, and alpine landscapes produces an unrivaled diversity of karst. We invite presentations highlighting the origin, evolution, and modern-day processes associated with these important resources often on federal lands.

T18. **Using Geologic and Geophysical Data to Unravel Neotectonics and Long-Term Deformation across Cascadia.** Lydia Staisch, U.S. Geological Survey, lstaisch@usgs.gov; Scott Bennett, U.S. Geological Survey, sekbennett@usgs.gov; Ray Wells, U.S. Geological Survey, rwells@usgs.gov; Richard Blakely, U.S. Geological Survey, blakely@usgs.gov.

This session explores the dynamic tectonic architecture of Cascadia, which has been constructed through geodynamic mechanisms including hotspot, flood basalt, and arc volcanism, crustal accretion, subduction, regional rotation, and extension. We solicit abstracts focusing on geologic and geophysical approaches toward understanding long-term tectonic evolution, neotectonics, and earthquake hazards.

T19. **Structure and Tectonics of the North American Cordillera and Rocky Mountains.** David Pearson, Idaho State University, peardavi@isu.edu; Ryan Anderson, Idaho State University, ryananderson@isu.edu.

This session will explore the structural development and tectonics of the Cordillera and Rocky Mountains. We encourage submissions at all scales, as well as process-based studies, including work investigating its pre-orogenic framework, evolution as a convergent orogenic system, modification into a transform margin, and subsequent phases of extension.

T20. **Neotectonics across the Intermountain West from New Data to Classic Concepts.** Cal Ruleman, U.S. Geological Survey, cruleman@usgs.gov; David Lageson, Montana State University, lageson@montana.edu; Michael Stickney, Montana Bureau of Mines and Geology, mstickney@mtech.edu.

We invite new data and revisit foundational neotectonic and geomorphic concepts defining the tectonic development of intermountain west landscapes. We welcome papers on structures, rates, kinematics, and geomorphology contributing to our regional understanding of Quaternary tectonism across western North America. We challenge submittals to place local work into regional relationships.

T21. **Implications of Lithosphere-Crust Interactions within the Northern Cordillera.** Marlon Jean, Colorado Mesa University, mjean@coloradomesa.edu; Erin Todd, U.S. Geological Survey, etodd@usgs.gov.

The northern segment of the North American Cordillera is in part the product of interactions between oceanic lithosphere and western North America. Our session welcomes investigations that explore geochemical interactions between contrasting lithosphere types, their underlying mantle, and the diversity of igneous and metamorphic rocks resulting from those interactions.

T22. **Management of Hydrologic and Geologic Resources.** Attila Folnagy, Montana Department of Natural Resources and Conservation, afolnagy@mt.gov.

Effective planning and management of natural resources is critical for their conservation, development, utilization, and sustainability. This session will focus on projects with a broad applicability in managing natural resources. Management projects of interest include water quantity and quality, aquifer storage and recovery, carbon sequestration, exploration, characterization, restoration, and remediation.

T23. **The Transport and Fate of Contaminants in Aquatic Systems.** Priya M. Ganguli, CSU Northridge, priya.ganguli@csun.edu; Scott C. Hauswirth, CSU Northridge, scott.hauswirth@csun.edu.

We welcome presentations that explore physical, chemical, and biological processes that influence the mobility, form, and/or toxicity of contaminants, including sediment. Aquatic systems of interest include, but are not limited to, surface water and groundwater in coastal marine, riparian, lacustrine, and wetland environments. Student presentations are encouraged.

T24. **What Lies Beneath: The Basement Geology of Western North America.** Rich Gaschnig, University of Massachusetts Lowell, richard_gaschnig@uml.edu; Jeff Vervoort, Washington State University, jeffvervoort@icloud.net.

The age and extent of the Precambrian crystalline basement throughout western North America remain of fundamental interest to the geologic community. This session seeks contributions on the basement geology of western North America. Topics include age and origin of terranes, assembly into cratons, and implications for supercontinent configuration.

T25. **Exceptional Floods in the Cordillera.** James O'Connor, U.S. Geological Survey, Portland, oconnor@usgs.gov; Richard Waitt, U.S. Geological Survey, Vancouver, waitt@usgs.gov.

Exceptional floods in the Cordillera range from the huge late-Pleistocene megafloods to more recent natural dam failures, volcanic lahars, tsunamis, and meteorological floods. These floods have produced a lasting legacy of landforms, oceanic deposits, ecosystems, and cultural consequences. We invite contributions addressing all aspects of large floods.

T26. **Landscape Evolution and Geomorphology of the Greater Pacific Northwest and Northern Rockies.** Jessica Stanley, University of Idaho, jessicastanley@uidaho.edu; Joel Pederson, Utah State University, joel.pederson@usu.edu; Sean LaHusen, U.S. Geological Survey, slahusen@usgs.gov; Carlos Montejo, University of Idaho, mont7968@vandals.uidaho.edu.

The Pacific Northwest and northern Rockies are shaped by a myriad of processes from the mantle to the earth surface, including complex tectonism, hotspot and subduction-related volcanism, glacial and fluvial erosion, landslides, and a changing climate. We invite a wide range of contributions focused on landscape change in the region.

T27. **Undergraduate Research Posters.** Jeff Marshall, Cal Poly Pomona, marshall@cpp.edu.

This poster session will highlight geoscience research conducted by undergraduate students. Abstracts must be written by students, but may include non-student co-authors (faculty mentors or collaborators). The students must present the poster. Topics may include undergraduate research in any geoscience discipline or related field of study.

T28. **Mapping the West.** Kelsay Stanton, Washington Geological Survey, kelsay.stanton@dnr.wa.gov.

This poster session will focus on maps produced in the geosciences: geologic, geophysical, hydrologic, hazards, the list goes on! Both professional and student submissions are welcome.

FIELD TRIPS

Field trip registration opens in February. For additional information, please contact the field trip co-chairs: Mark McFaddan, mlmcfaddan@gmail.com, and Chad Pritchard, cpritchard@ewu.edu.

Elbow Tectonics: Smashing, Translating, and Rotating Outboard Terranes of the Syringa Embayment of the Laurentian Accretionary Margin of Western Idaho. Russell V. Di Fiori, Idaho Geological Survey, russelld@uidaho.edu; Keegan L. Schmidt, Lewis-Clark State College, klschmidt@lcsc.edu; Cody Steven, University of Idaho, csteven@uidaho.edu; Basil Tikoff, University of Wisconsin, basil@geology.wisc.edu; Ellen Nelson, University of Wisconsin, emnelson8@geology.wisc.edu.

This trip will showcase an array of impressive structures and oceanic/continental rock assemblages in the N–S to E–W elbow in the arc-continent boundary of western Idaho. Includes transects across the N-S boundary along the Salmon and South Fork Clearwater Rivers and along the E-W boundary on the main Clearwater River.

Arc Versus River: The Geology of the Columbia River Gorge. Jim O'Connor, U.S. Geological Survey (USGS), oconnor@usgs.gov; Ray Wells, USGS, rwells@usgs.gov; Scott Bennett, USGS, sekbennett@usgs.gov; Charles Cannon, USGS, ccannon@usgs.gov; Lydia Staisch, USGS, lstaisch@usgs.gov.

The Columbia River Gorge is a deep chasm cutting through the Cascade Range. The unique setting of a continental-scale river crossing an active and deforming volcanic arc has created a dynamic landscape where lava flows, landslides, and tectonic and magmatic deformation compete against fluvial processes to shape the river corridor.

Geologic Cross Section of the Mesoproterozoic Belt Basin from Glacier National Park, Montana, to Sand Point, Idaho. Jim Sears, Emeritus Professor, University of Montana, james.sears@umt.edu; Stuart Parker, Montana Bureau Mines and Geology, sparker1@mtech.edu.

The field trip will focus on the stratigraphy and paleotectonic evolution of the Mesoproterozoic Belt Basin on an E–W transect from the shallow-water facies of the east margin of the basin in Glacier National Park through its deep-water interior near Sand Point. The transect crosses the northern Rocky Mountains, with beautiful scenery and excellent exposures of the Belt Supergroup.

Uncovering a Miocene Forest in Ancient Lake Clarkia. Lindsay MacKenzie, Eastern Washington University, lmackenzie1@ewu.edu; Renee Love, University of Idaho, rlove@uidaho.edu; Ian Spendlove, University of Idaho, spen2878@vandals.uidaho.edu.

Discover the ancient flora and fauna preserved in ancient Lake Clarkia during the mid-Miocene Climatic Optimum. Modern and historical paleobiological sites of the Clarkia Fossil Beds Lagerstatte in northern Idaho will be investigated. Current and future research of the sites will be discussed and fossil collection will be permitted.

Depositional Contacts of Loess-CRB as Analogs for Lunar Regolith, Martian Dust, and the Matrix of Impact Ejecta Breccia Lobes. Shawn Wright, Planetary Science Institute, swright@psi.edu; Joe Michalski, Hong Kong University, jmichal@hku.hk.

Several outcrops in the Spokane region will be investigated. The guidebook and discussion will focus on the composition of the loess from multiple sources, including the Columbia River Basalt Group (CRB), along with the amorphous content and composition of Martian dust (remotely), Martian soil (Curiosity Rover), and basaltic impact ejecta (Lonar Crater and theoretical from basalt source).

Geologic and Anthropologic History of Riverfront Park, Spokane, Washington. Chad Pritchard, Eastern Washington University, cpritchard@ewu.edu.

This field trip to Riverfront Park, Spokane, Washington, showcases the impacts from historic Silver Valley mining practices, incisions into the Miocene Columbia River basalt, cataclysmic Pleistocene megafloods, the Spokane fault (which was recently described based on 15 mm of offset from satellite images), hydroelectric generation, stormwater solutions, and additional fascinating history.

Basement, Belt, and Batholith: Bedrock Geology of the Idaho Panhandle. Richard Gaschnig, University of Massachusetts Lowell, richard_gaschnig@uml.edu; Andy Buddington, Spokane

Community College, Andy.Buddington@scc.spokane.edu; Reed Lewis, Idaho Geological Survey, University of Idaho, reedl@uidaho.edu.

This trip will showcase the geology of the Idaho Panhandle with a focus on Archean and Proterozoic basement gneisses, the Mesoproterozoic Belt Supergroup, and the Cretaceous Kaniksu batholith.

Stratigraphy, Eruption, and Evolution of the Columbia River Basalt Group. Vic Camp, San Diego State University, vcamp@sdsu.edu; John Wolff, Washington State University, jawolff@wsu.edu; Arron Steiner, Washington State University, arron@wsu.edu; Evan Soderberg, Washington State University, evan.soderberg@wsu.edu; Rachelle Hart, Washington State University, rachelle.hart@wsu.edu.

The Columbia River Basalt Group is world famous as the best studied continental flood basalt province on Earth. This two-and-a-half-day field trip to the eastern Columbia Plateau will focus on the basalt flow sequence, dikes, vents, evolution of the basaltic magmas, and their relation to the larger Yellowstone Hotspot Province. The locations to be visited are in and adjacent to the canyon country of southeast Washington, western Idaho, and northeast Oregon, and feature feeder dikes, near-vent associations, and thick plateau basalt lava sequences. The formations to be examined include the Imnaha, Grande Ronde, and Wanapum Basalts. The stops are mostly roadside and involve walking a short distance (no strenuous physical activity). Accommodation is double-occupancy hotel rooms (single rooms available at extra cost). The trip will depart from and return to Spokane.

Unscrambling the Proterozoic Supercontinent Record of Northeastern Washington State. Daniel T. Brennan, Montana Bureau of Mines and Geology, dbrennan@mtech.edu; Stephen E. Box, U.S. Geological Survey, sbox@usgs.gov.

Northeastern Washington State contains a unique Proterozoic record that spans two supercontinents. This field trip explores the geology of the Belt Supergroup, Deer Trail Group, Buffalo Hump Formation, and Windermere Supergroup in this region. Topics will span from original mapping to recent isotopic provenance data and their local to global implications.

A Tour of the Fabulous Coeur d'Alene Mining District, Shoshone County, Idaho. Earl Bennet, University of Idaho, bennett@uidaho.edu; Steve Petroni, HECLA (retired), petronisteve@gmail.com.

The Coeur d'Alene Mining District in northern Idaho is one of the largest silver-producing districts in the world. From the beginning of lode mining in 1884, the district's mines have produced over 1.25 billion ounces of silver, 8.5 million tons of lead, 3.4 million tons of zinc, and byproduct antimony, cadmium, copper, and gold. The total historic value of this production is over $7.4 billion. This one-day bus tour will discuss the regional geology and history of Silver Valley, Idaho.

Cataclysmic, Ice Age Megafloods through the Cheney-Palouse Scabland Tract. Bruce Bjornstad, Ice Age Floodscapes, bjorn99352@yahoo.com; Eugene Kiver, Eastern Washington University, froghollow@sisna.com.

It's been a hundred years since J Harlen Bretz first presented his outrageous hypothesis for ice age megafloods within the Channeled Scablands of eastern Washington. This two-day field excursion will examine the evidence for multiple megafloods within the Cheney-Palouse Scabland Tract, including some going back to the early Pleistocene.

SHORT COURSES

Preparing Your Students for the Jobs They Want. Anne Egger, NAGT and Central Washington University, Anne.Egger@cwu.edu; Karen Viskupic, Boise State University, karenviskupic@boisestate.edu.

In this short course, we will help you make more explicit connections between the skills you are building in your undergraduate geoscience programs and the skills that geoscience employers seek. You will explore what we know about what employers want and strategies to integrate workforce skills into your courses and programs.

Getting the Most Out of Your TA Experience. Anne Egger, NAGT and Central Washington University, Anne.Egger@cwu.edu; Karen Viskupic, Boise State University, karenviskupic@boisestate.edu.

In this short course, we will help graduate students build their skills as teaching assistants (TAs) and articulate those skills for future careers. Participants will develop skills in facilitating learning activities, explore strategies for fostering inclusive learning environments, and recognize and communicate the skills they develop as a TA.

Teaching Quantitative Reasoning Using Data: Project EDDIE. Carmen Nezat, Eastern Washington University, cnezat@ewu.edu.

This short course will focus on teaching scientific concepts using data exploration and open inquiry. Participants will build expertise in teaching quantitative reasoning using Environmental Data-Driven Inquiry and Exploration (EDDIE) modules that include topics from multiple environmental disciplines with a flexible structure to fit all teaching situations. Visit https://serc.carleton.edu/eddie/index.html for more information on Project EDDIE.

REGISTRATION

Registration opens Feb. 2024
Early registration deadline: 8 Apr. 2024
Cancellation deadline: 15 Apr. 2024

For further information or if you need special accommodations, please contact one of the general co-chairs: Chad Pritchard, cpritchard@ewu.edu; Peter Larson, plarson@wsu.edu; Tom Williams, tomw@uidaho.edu; or Jerry Fairley, jfairley@uidaho.edu.

ACCOMMODATIONS

Hotel registration deadline: 23 Apr. 2024

A block of rooms has been reserved at The Davenport Grand Hotel, 333 W. Spokane Falls Blvd., Spokane, Washington 99201, USA, which is the meeting location. The meeting rate is US$149 per night plus tax. You can book directly via this reservation link: www.marriott.com/events/start.mi?id=1693242805154&key=GRP

OPPORTUNITIES FOR STUDENTS AND EARLY CAREER PROFESSIONALS

Career Mentoring Luncheons

Ask your career-related questions and learn about nonacademic pathways in the geosciences while networking with professionals at the Roy J. Shlemon and John Mann Mentor luncheons. GSA student members are welcome to attend.

Career Workshop Series

This three-part series will feature career development planning, an exploration of geoscience job sectors, and information on best practices for crafting a résumé and cover letter. Nontechnical skills and workforce statistics will be reviewed. The series will be led by workshop presenters and geoscientists. No registration is required, and everyone is welcome.

Learn more at **www.geosociety.org/mentors.** Questions? Contact Jennifer Nocerino at jnocerino@geosociety.org.

STUDENT VOLUNTEERS

Take advantage of work opportunities to earn free meeting registration. Students interested in helping with the various aspects of the meeting should contact Nigel Davies, Eastern Washington University, ndavies2@ewu.edu.

PROFESSIONALS

If you would like to share your interest, enthusiasm, and experience in applied geology, consider being a GSA mentor. Being a mentor is a rewarding experience. To learn more about serving as a mentor at this meeting, contact Jennifer Nocerino at jnocerino@geosociety.org.

CONTINUING EDUCATION CREDITS

The GSA 2024 Joint Cordilleran and Rocky Mountain Section Meeting also offers an excellent opportunity to earn continuing education units (CEUs) toward your continuing education requirements for your employer, K–12 school, or professional registration. Please check the meeting website after the meeting to download your CEU certificate.

LOCAL COMMITTEE

General Co-Chairs: Chad Pritchard, cpritchard@ewu.edu; Peter Larson, plarson@wsu.edu; Tom Williams, tomw@uidaho.edu; Jerry Fairley, jfairley@uidaho.edu
Technical Program Chair: Kelsay Stanton, kelsaystanton@gmail.com
Field Trip Co-Chairs: Mark McFaddan, mlmcfaddan@gmail.com; Chad Pritchard, cpritchard@ewu.edu
Exhibits/Sponsorships Chair: Christopher Dail, chris.dail@perpetua.us
Student Volunteer /Activities Chair: Nigel Davies, ndavies2@ewu.edu

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Unleashing Potential: The Transformative Power of Field Camp Scholarships

As the sun sets on yet another day in the field, aspiring geoscientists gather around, sharing stories, discoveries, and dreams. They're not just participants; they're torchbearers for the future of geology. For many geologists, field camp is more than just an important educational journey. The boots-on-the-ground experience, where theoretical knowledge becomes tangible reality, catalyzes a profound transformation. Aspiring geoscientists immerse themselves in the terrain, meticulously observing, collecting data, and interpreting geologic features. This hands-on engagement is where academic pursuits fuse with field skills, forging experts who can navigate between their training and the untamed Earth.

This isn't just an academic exercise; it's an immersive experience in geological education—the field camp. For generations, this capstone venture has sculpted geologists, melding classroom theories with real-world encounters. However, as the cost of participation steadily rises, generous supporters of The Geological Society of America Foundation (GSAF) step in, ensuring that passionate learners are able to take advantage of these formative experiences. Here's why supporting the J. David Lowell Field Camp Scholarship program through GSAF is crucial.

BREAKING BARRIERS, FOSTERING DREAMS

Despite its undeniable value, the cost of attending field camp continues to grow, placing a barrier before many deserving scientists. The J. David Lowell Field Camp Scholarship Fund stands as a testament to the geoscience community's dedication to developing the future of the geosciences. The ripple effect of this support extends beyond the classroom and the field, cultivating a new generation of analytical thinkers and problem solvers.

PIONEERING TOMORROW'S EXPERTS

The numbers speak volumes. Over the past decade, GSA has enabled nearly 200 students to partake in field camp experiences that might otherwise have been beyond their reach. Each individual with this opportunity brings unique perspectives, diverse narratives, and fresh ideas to the geoscience table. This rich tapestry of minds fuels innovation and fuels the evolution of the field itself.

Supporting the Field Camp Scholarship program isn't just about financial aid; it's about kindling the fire of a promising future. It's an investment in minds that will shape our understanding of Earth, our stewardship of its resources, and our ability to adapt to the challenges of an ever-changing world.

Your commitment to supporting the J. David Lowell Field Camp Scholarship Fund ensures that this fire continues to burn bright, nurturing talents that will shape the world we inhabit. Join us in erasing financial barriers, igniting possibilities, and sculpting the geoscientists of tomorrow! Learn more by visiting gsa-foundation.org/fund/field-camp-opportunities/ or contacting Debbie Marcinkowski at dmarcinkowski@geosociety.org.

Left: Mable Hagans, 2022. Right: Alina Hernandez, 2022. J. David Lowell Field Camp Scholarship Recipients.

Northeastern Section Meeting

Manchester, New Hampshire
17–19 March

www.geosociety.org/ne-mtg

Left: Beach near Portsmouth, New Hampshire.

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Joint Cordilleran/ Rocky Mountain Section Meeting

Spokane, Washington
15–17 May

www.geosociety.org/cd-mtg

Below: Spokane Falls. Photo credit: Chad Pritchard.

Southeastern Section Meeting

Asheville, North Carolina
15–16 April

www.geosociety.org/se-mtg

Above: Blue Ridge Mountains. Photo credit: Ashley Lynn.

Joint North-Central/ South-Central Section Meeting

Springfield, Missouri
21–23 April

www.geosociety.org/nc-mtg

Right: Smallin Civil War Cave. Photo credit: Springfield CVB.

Mark your calendar for 22–25 September for an unforgettable experience at GSA Connects 2024 in Anaheim, California, USA! Help shape the future of geoscience exploration and discovery by submitting a proposal for a short course, field trip, and/or technical session.

IGNITE DISCOVERY

Lead a field trip

Propose an exciting field trip to explore spectacular regional localities ranging from a half day to five days in length. Online field trip proposals are also encouraged.

Deadline: 1 Dec. 2023

ELEVATE YOUR INFLUENCE

Chair a technical session

Help create a meeting program that will inspire imaginative insights. Submit your proposal for a Pardee Keynote Symposium or topical session.

Deadline: 1 Feb. 2024

SPARK CURIOSITY

Teach a short course

This is a fantastic opportunity to share your expertise by designing and leading an impactful short course. Courses can range from a half day to two full days and may be conducted in-person or online.

Deadline: 1 Feb. 2024

community.geosociety.org/gsa2024