GSA TODAY

THE GEOLOGICAL SOCIETY OF AMERICA®

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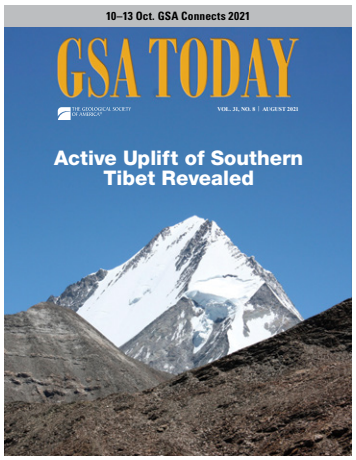

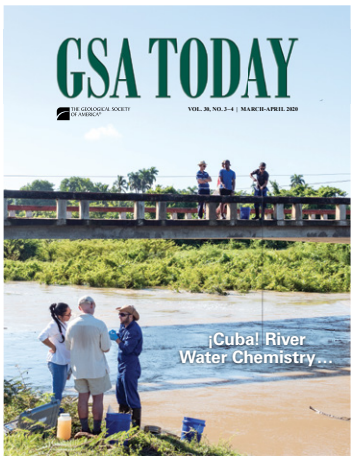

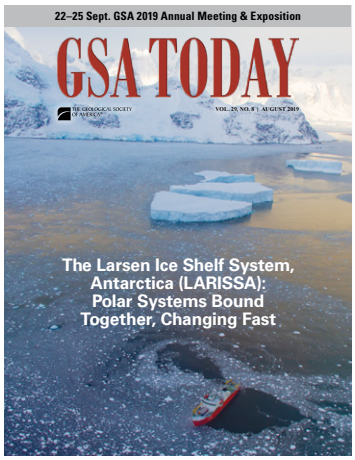

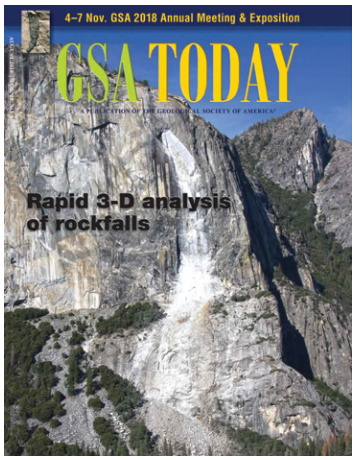

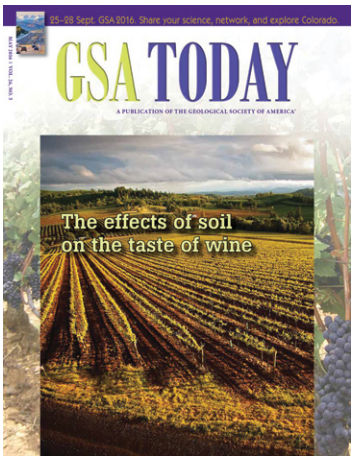

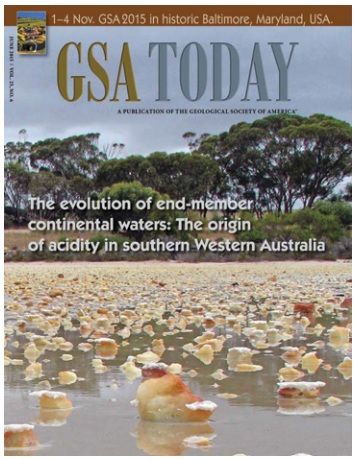

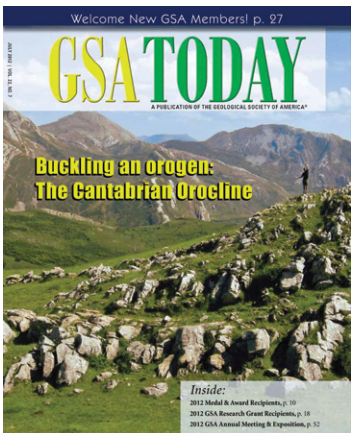

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- Birthdates of notable geoscientists
- Dates of GSA events & deadlines

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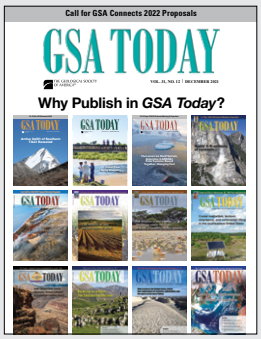

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Why Publish in *GSA Today*?

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GSA Today may seem like an odd place to publish one's science. It looks more like a magazine that informs the Society of timely matters, such as meetings, honors, and other aspects that pertain to the monthly life of this incredible organization. But this colorful society magazine is effectively an open-access publication that also produces highly cited peer-reviewed papers; it leads all GSA journals in the number of online hits and downloads per article and has an excellent record in citations among peer journals.

Manuscripts go through a thorough review process and, once published, have cleared the highest standards for any geoscience journal. *GSA Today* has published classic geoscience papers since 1991 and continues to receive some of the boldest, most intriguing, and potentially paradigm-shifting papers in geology.

GSA Today is not currently in a crisis when it comes to manuscript submission, but the number of submissions is fluctuating. They come in waves, at times too many, but with lulls in between as well. Some authors submit manuscripts that may not best resonate with the readership, even though their general topic is well within the scope of the journal. Because of that and because of the recent explosion of new journals on the market, the Society asked us (the current editors) to provide a short piece reminding the more experienced researcher why it is still a great idea to publish in *GSA Today* and drawing the younger researchers into it as well. We also explain what we think is an ideal scientific contribution for this outlet.

There are limitations on what *GSA Today* can offer, and we will list them below, but we would argue, it is also an excellent scene to be able to highlight one's discoveries, from the review type conveying in one short article several recent advancements made by a group in a field to new directions in geosciences, which would otherwise have a difficult time fitting into a regular journal. Moreover, because every GSA member gets this magazine either in print or via online links, *GSA Today* is one of the most visible venues for circulating scientific results in the earth sciences.

As editors of *GSA Today*, perhaps the most interesting and challenging part of the job is the incredibly different set of subjects we are confronted with from one submission to another. We see articles on the role of new phone apps as field tools, articles on new educational directions in geoscience, provocative tectonics hypotheses, and reviews on the origin of metals—the diversity of topics goes on. With a science paper in *GSA Today*, authors can draw attention to their topic from across all subdisciplines of our great science.

There are three main categories of contributed manuscripts for *GSA Today* (science articles, Groundwork articles, and Rock Star pieces), and Figure 1 outlines the main features expected for each type.

Science articles are relatively short and can be beautifully illustrated. In fact, we invite any scientist that has made a series of contributions to a topic (several hard-core papers published in topical journals) to cap that with a *GSA Today* science article, because it can reach much further than the "normal" papers. Ideally, a paper aimed at a graduate student–level hits the best. We live in a time when it is increasingly difficult to find up-to-date textbook material especially for the more advanced student (such as those taking graduate courses), and review papers come in handy for that purpose. *GSA Today* science articles fill that niche perfectly, competing with other reputable outlets like the influential magazine *Elements* or the iconic *Annual Reviews of Earth and Planetary Sciences* series. A simple but comprehensive review on a hot topic is probably the best type of science article that *GSA Today* can have on its cover.

Excellent contributions are also interdisciplinary papers that reach into new directions for geosciences, and that would otherwise have a hard time fitting into a "normal" journal. Technological advances (descriptions of new apps and new methods of surveying rocks in the field) are also excellent contributions because they teach us of what new cool tools are available.

Least successful articles in *GSA Today* are new contributions that are highly specific to a discipline and contain a lot of new data. Such submissions do happen, and in some cases, they see the light of day, if reviews are positive. Those types of articles, we would argue, should go instead to a highly specialized journal.

Another very popular type of submission in recent years consists of social science/social justice or geo-education pieces. The Society is deeply involved in increasing the diversity of its constituency and of our community in general. Therefore, such papers are in theory needed; we encourage authors to investigate the Groundwork format for those. As far as the main science article, it is difficult for editors with experience and expertise in earth science to review (or even identify appropriate referees for) manuscripts whose main focus lies not on rocks and minerals but lies more in the domains of sociology, social work, law, and related fields. Current and former editors of *GSA Today* agree that the feature science articles should be concerned with earth materials and processes, not the people who are studying them. Nevertheless, Groundwork articles are good vehicles to communicate the latest adjustments in the way we do our work (e.g., teaching in times of COVID) or a variety of other topics.

Groundwork articles are short and usually describe social science issues that are relevant to the Society or communications on news or tools of professional interest. Although there is a tighter constraint on the number of words, there is no limit as to what subject these shorter pieces discuss, so long as they are of broad interest to the Society members.

An interesting and little-explored type of article is "**Rock Stars,**" which are short papers dedicated to legends of geosciences, people who are no longer with us but have influenced deeply the evolution of knowledge in geology. We need more such contributions, and the impression is that we are in particular need of such short papers that honor non–North American "rock stars," the biggest names in this science from all corners of the world. It would help the Society be the home of a more international base, but it would also help the average North American geoscientist learn about the history of this

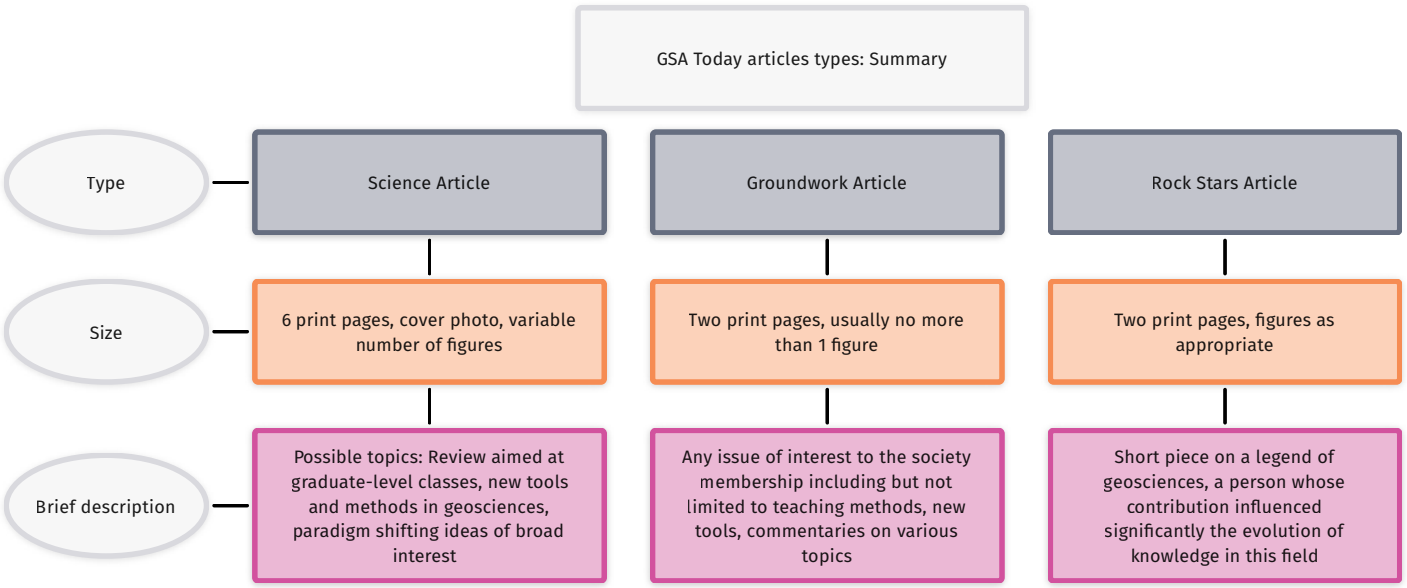

Figure 1. Summary of types of *GSA Today* articles.

field in a non-insular way. International contributors are more likely to bring to light the details of the life and work of their heroes and trailblazers. We encourage the submission of more such articles in the future.

Once a science article is accepted by *GSA Today*, the authors also have a cover. The cover of the issue will have an image or images of the authors' choice, be it a field shot or a representative figure. This alone is a great perk; many geology departments in the U.S. are decorated with cover images from papers written by home authors. *GSA Today* is one of those journals that would stand proudly next to a cover in *Geology*, *Elements*, or, of course, one tied to a *Nature* or *Science* paper. It is great free advertisement for one's work, and we live in an era where individual researchers cannot and usually do not know or have time to "sell" their work.

GSA Today moves pretty quickly through review (although we are guilty of some exceptions—they do happen). From submission to acceptance, science articles take about 4.3 months on average (for the period 2016–2021), and the pdf of the typeset article is then available on the *GSA Today* site in an average of 30 days. It takes only another 2.72 months on average for the accepted paper to be published in an issue. So, unless there are major changes in the flux of submissions, it's a pretty fast affair: Eight months from submission to publication on average.

GSA Today papers (science articles, groundwork articles, or Rock Stars pieces) are not counted in the Web of Science (owned by Clarivate Analytics), and that is something of a problem. The reason for not being counted by the Web of Science is that *GSA Today* publishes too small a number of science articles a year, which does not allow it to make the cut for the gate keepers of the Web of Science. Fair enough. This shortcoming is unlikely to change any time soon, and many scientists outside of the U.S. are required to have "WOS" (Web of Science) publications for their promotion packages or for grant proposal eligibility. This shortcoming alone could make *GSA Today* a nonstarter to an early-career foreign scientist. However, if this is not an issue (and it is not for most North American academics), one can note that in Elsevier's highly respected database Scopus (www.scopus.com), *GSA Today* consistently ranks in the top 10 of the over 250 journals listed in the field of "Geology" and has been in the upper 98th and 95th percentile (4th to 8th place) in 2020 and 2021, respectively. Its most recent impact factor is 6.9, which is near the top of geosciences journals. These numbers have been steady over the past decade, and they are impressive. Viewed from the popular Google Scholar database perspective, the numbers look even better: A *GSA Today* science article collects on average about 25 citations per year on that database. Many of these papers end up having many hundreds of citations over a 10–20-year period, which is hard to achieve in a topical journal. The message published in those *GSA Today* articles is getting across and citations do follow. So why not publish in *GSA Today*? To get started, go to **https://www.geosociety.org/gsatoday.**

Upcoming Award Deadlines

Details: **https://www.geosociety.org/about-awards**
Nominations: **https://www.geosociety.org/awardnoms**
You can also email GSA Grants & Awards at **awards@geosociety.org**

2022 GSA Medals and Awards

Nomination deadline: 1 Feb. 2022

- Penrose Medal
- Day Medal
- Young Scientist Award (Donath Medal)
- GSA Public Service Award
- Randolph W. "Bill" and Cecile T. Bromery Award for Minorities
- GSA Distinguished Service Award
- Doris M. Curtis Outstanding Woman in Science Award
- GSA Florence Bascom Geologic Mapping Award
- Honorary Fellow

2022 Post-Doctoral Research Awards

Application deadline: 1 Feb. 2022

- 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.

Learn more about these post-doc research awards at **https://www.geosociety.org/GSA/About/awards/GSA/grants/postdoc.aspx.**

John C. Frye Environmental Geology Award

Nomination deadline: 31 Mar. 2022

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. Learn more at **https://www.geosociety.org/GSA/About/awards/GSA/Awards/Frye.aspx.**

OTHER AWARDS

Nomination deadline: 1 Feb. 2022

Submit nominations for the following awards at **https://www.agiweb.org/direct/awards.html.**

- The **AGI Medal in Memory of Ian Campbell** recognizes singular performance in and contribution to the profession of geology.
- 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.

For a list of other national awards and links to information and nomination forms, go to **https://www.geosociety.org/awards/national.htm.**

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CONNECTS 2022

9–12 October
Denver, Colorado, USA

Call for Short Course and Technical Session Proposals


Credit: Visit Denver

GSA Connects 2022 being held on 9–12 October in Denver, Colorado, USA, will bring the geological community together to share ideas, best practices, and state-of-the-art knowledge. Share your scientific findings with colleagues, network with leaders in the field, and keep your skills relevant in a rapidly changing world. Plan now to be part of this gathering and amplify your research with your community by submitting a proposal for a short course and/or a technical session.

Present your evidence-based knowledge to a large international audience by chairing a technical session.

Deadline: 1 Feb. 2022
Proposals are being taken for Pardee Symposia and Topical Sessions.
https://gsa.confex.com/gsa/2022AM/cfs.cgi

Gain recognition as an expert in your topic of research as an instructor of a short course.

Deadline: 1 Feb. 2022
Courses run the Friday and Saturday before the meeting and are a half day to two full days. Both online and in-person proposals are sought.
https://gsa.confex.com/gsa/2022AM/shortcourse/cfs.cgi

Dear Colleagues,

As you know, GSA is committed to the ideal of scientific discovery, rigor, diversity, and integrity.

I invite you to prepare a proposal for a technical session for GSA Connects 2022 that reflects your expertise and research but also pushes the boundaries of the discipline. Without expanding our horizons we will not move the geosciences forward and maintain our relevance. I challenge you to also broaden your reach with whom you collaborate by including diversity in all ways: discipline, career progression, and individuals.

Thank you for considering sharing your science and work at GSA Connects 2022.

Vicki S. McConnell, GSA Executive Director

https://community.geosociety.org/gsa2022/home

GSA Fellowship Revisions and Update

Fellowship ad hoc Committee
Rufus Catchings, Joan Fryxell, Jose Hurtado, Don Siegel, Diane Smith, Peter Vrolijk (voting members)

GSA fellowship is an honor granted to members who demonstrate a sustained record of contributions to geoscience and to the Society. In 2020, GSA Council requested that an ad hoc committee be formed to evaluate whether the fellowship program reflected the principles of diversity, equity, and inclusion embraced by the Society. We are the committee that undertook this task in winter/spring of 2021.

We found little evidence for bias in the fellowship program, with two exceptions. Women remain underrepresented in fellowship in proportion to GSA membership, but this deficit has shrunk over the past years. Members who identify "industry" as their primary employment sector are also underrepresented in fellowship.

However, the previous fellowship nomination and evaluation process left open avenues for bias in fellowship awards, and we sought to reduce these potential avenues. We achieved this goal by examining the fellowship program from the perspective of diversity, equity, and inclusion, and by canvassing similar societies, both bigger and smaller than GSA, to compare their fellowship programs. We found instances where GSA does things better than other societies, and we sought to preserve those aspects, but we also discovered ideas used by other societies that we attempted to include in GSA's unique culture.

While those familiar with the fellowship program will find that many aspects remain, three big changes have occurred. First, fellowship nominations are now more open to the entire GSA membership; we think this will help ensure that fellowship continues to reflect all aspects of the membership. Second, automatic fellowship through Division awards has ended. While there is no evidence that members advanced to fellowship in this way are undeserving, this exception to the process creates a potential avenue for bias. Third, a concerted effort is underway to improve communication of fellowship requirements to help ensure a level playing field. A summary of these efforts and changes are on the GSA website at **https://www.geosociety.org/Fellowship.**

GSA Fellows will continue to reflect the membership only if members from all aspects of the Society participate. The Membership and Fellowship Committee can only grant fellowships to those who are nominated. We hope that we have made the nomination process fairer and easier. If you have any questions about the improved fellowship program, please contact us at fellowship@geosociety.org.

CALL FOR GSA FELLOWSHIP NOMINATIONS

Deadline: 1 Feb. 2022

Nominate a deserving colleague with the honor of GSA fellowship. GSA members are elected to fellowship in recognition of distinguished contributions to the geosciences and to the Society. See the election requirements at **https://www.geosociety.org/Fellowship.** Questions? Email fellowship@geosociety.org.

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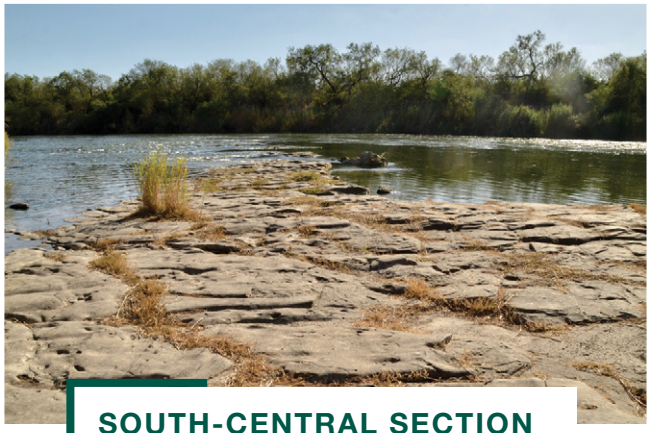
2022 GSA SECTION MEETINGS



SOUTH-CENTRAL SECTION

14–15 March
McAllen, Texas, USA
Meeting chairs: Juan González, juan.l.gonzalez@utrgv.edu; Chu-Lin Cheng, chulin.cheng@utrgv.edu
https://www.geosociety.org/sc-mtg

A resistant layer of the Roma sandstone is exposed crossing the Rio Grande. Photo by Juan González.

JOINT CORDILLERAN–ROCKY MOUNTAIN SECTION

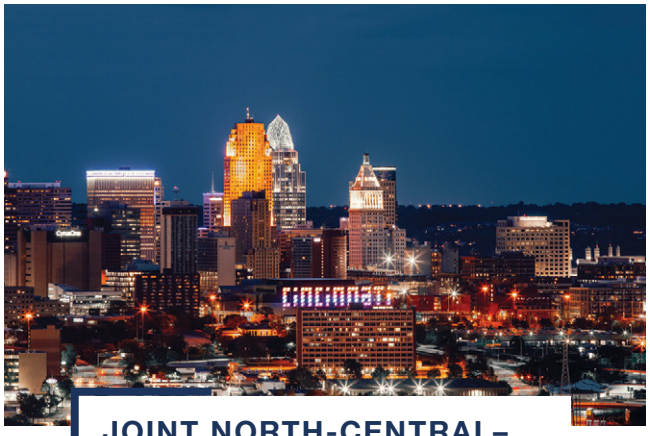
15–17 March
Las Vegas, Nevada, USA
Meeting chairs: Michael Wells, michael.wells@unlv.edu; Alexis Ault, alexis.ault@usu.edu
https://www.geosociety.org/cd-mtg

Red Rock Canyon, Nevada.
Photo by Daniel Halseth on Unsplash.

NORTHEASTERN SECTION

20–22 March
Lancaster, Pennsylvania, USA
Meeting chairs: Andy deWet, adewet@fandm.edu; Chris Williams, cwillia2@fandm.edu
https://www.geosociety.org/ne-mtg

Susquehanna River, southern Lancaster County.
Photo by Emily Wilson.



JOINT NORTH-CENTRAL–SOUTHEASTERN SECTION

7–8 April
Cincinnati, Ohio, USA
Meeting chairs: Craig Dietsch, dietscc@ucmail.uc.edu; Rebecca Freeman, rebecca.freeman@uky.edu
https://www.geosociety.org/nc-mtg

Cincinnati skyline at night.
Photo by Jake Blucker on Unsplash.

FINAL ANNOUNCEMENT AND CALL FOR PAPERS

South-Central Section

56th Annual Meeting of the South-Central Section, GSA

McAllen, Texas, USA | 14–15 March 2022

https://www.geosociety.org/sc-mtg

A resistant layer of the Roma sandstone is exposed crossing the Rio Grande. Photo by Juan González.

Geology Has No Borders

LOCATION

The 2022 GSA South-Central Section Meeting is planned as an in-person and online meeting to be held in McAllen, Texas, USA, at the heart of the Rio Grande Valley, on 14–15 March. McAllen, considered the South Pole of Texas, is served by a subtropical climate, with a rich, binational, and cultural history and authentic cuisines, and South Padre Island is just an hour's drive away. McAllen has a vibrant downtown with museums, restaurants, art galleries, and live music venues. The conference location is the brand-new Embassy Suites Hotel by the McAllen Convention Center, conveniently located at less than a 10-minute drive from the McAllen International airport (MFE) and within walking distance of many restaurants, shopping centers, and other hotels. McAllen is easily accessible by plane from Houston (United) or from Dallas (American).

CALL FOR PAPERS

Abstract deadline: 7 Dec.

Submit online at **https://www.geosociety.org/sc-mtg.** Oral presentations can be either in person or online; poster presentations are only in person.

Abstract submission fee: GSA members: professionals: US$30; students: US$18. Non-members: professionals: US$60; students: US$36.

TECHNICAL PROGRAM

Please direct questions related to the following sessions to the Technical Program co-chairs, Juan González, juan.l.gonzalez@utrgv.edu, and Chu-Lin Cheng, chulin.cheng@utrgv.edu.

Theme Sessions

T1. **Geology, Genesis, and Exploitation of Strategic Mineral Deposits (Posters).** Emily Fischer, Texas Tech University, emily.l.fischer@ttu.edu; Callum Hetherington, Texas Tech University, Callum.Hetherington@ttu.edu. Posters.

T2. **Petroleum-Produced Water.** Javier Vilcaez, Boone Pickens School of Geology, Oklahoma State University, vilcaez@okstate.edu; Todd Halihan, Boone Pickens School of Geology, Oklahoma State University, todd.halihan@okstate.edu. Oral and Posters.

T3. **U-Pb and Lu-Hf Detrital Zircon Geochronology and Provenance of the Missourian Cottage Grove Sandstone, Northern Anadarko Basin, Oklahoma.** Dylan Morton, Oklahoma State University, dylan.morton@okstate.edu. Oral and Posters.

T4. **Hydrogeology and Water Resources II: Extreme Events and Coastal Hazards: Flooding, Contamination, and Land Subsidence.** Dorina Murgulet, Texas A&M University Corpus Christi, dorina.murgulet@tamucc.edu; Mohamed Ahmed, Texas A&M University Corpus Christi, mohamed.ahmed@tamucc.edu. Oral and Posters.

T5. **From Grenvillian Basement to Neotectonics in Northeast Mexico: A 1.3-Billion-Year Journey of Geological Development.** Juan Alonso Ramirez-Fernandez, Universidad Autónoma de Nuevo León, alonso_fct@hotmail.com, juan.ramirezf@uanl.mx; Fernando Velasco-Tapia, Universidad Autónoma de Nuevo León, fernando.velascotp@uanl.edu.mx; Uwe Jenchen, Universidad Autónoma de Nuevo León, uwe.jenchen@gmail.com. Oral and Posters.

T6. **Environmental Significance and Preservation Mechanisms of Cretaceous Marginal-Marine and Terrestrial Ecosystems.** Alexis Godet, The University of Texas at San Antonio, alexis.godet@utsa.edu; Thomas Adams, The Witte Museum, San Antonio, thomasadams@wittemuseum.org. Oral and Posters.

T7. **Geoscience Education I: Geosciences Education Advancing Concepts and Inclusion.** Wendi J.W. Williams, South Texas College, wwilliam@southtexascollege.edu; Engil Isadora Pujol Pereira, University of Texas Rio Grande Valley, engil.pereira@utrgv.edu. Oral and Posters.

T8. **Exploring Opportunities for Carbon Management through CO_2 Capture, Utilization, and Storage (CCUS).** Miles A. Henderson, The University of Texas Permian Basin, henderson_m@utpb.edu; Eric Brain, The University of Texas Permian Basin, brain_e39586@utpb.edu. Oral and Posters.

T9. **Geoscience Education II: Innovative Approaches to Teaching Geology Courses using Open Educational Resources (OER).** Ravindra Nandigam, South Texas College, rcnandigam@southtexascollege.edu. Oral and Posters.

T10. **Tracer Tests in the Hydrological Cycle.** Yongli Gao, University of Texas at San Antonio, yongli.gao@utsa.edu. Oral only.

T11. **Tectonics and Sedimentation, Rio Grande Embayment/Burgos Basin.** Thomas E. Ewing, Frontera Exploration Consultants, tewing@fronteraexploration.com. Oral and Posters.

T12. **General Geomorphology.** Juan L. González, The University of Texas Rio Grande Valley, juan.l.gonzalez@utrgv.edu. Oral only.

FIELD TRIPS

GSA's Commitment to Care extends to all 2022 Section Meeting field trips. To prioritize your safety, we are implementing the following for all trips:

- Transportation in minivans, SUVs, vans, and buses will operate at half capacity to allow for social distancing.

For additional information, please contact the Field Trip chair, Sarah Hardage, sarah.fearnlyhardage@utrgv.edu.

FT1. **Ancient Landscapes: Exploring South Texas through Time.** The University of Texas Rio Grande Valley, sarah.fearnlyhardage@utrgv.edu. Sun., 13 March, 8:30 a.m.–4 p.m.

FT2. **Rio Grande Delta.** Thomas E. Ewing, Frontera Exploration Consultants, tewing@fronteraexploration.com; Juan L. Gonzalez, The University of Texas Rio Grande Valley, juan.l.gonzalez@utrgv.edu. Wed., 16 March, 8 a.m.–6 p.m.

SHORT COURSES

For additional information, please contact the Short Courses chair, Wendi J.W. Williams, wwilliam@southtexascollege.edu.

Get Techy and Walk through Ancient Landscapes through STEAM. Florestela Gomez, Donna ISD, fgomez@donnaisd.net. Sun., 13 March, 9 a.m.–noon.

Applications of Active Learning Strategies in the Design and Teaching of Geoscience Courses. Patrick Shabram, Front Range Community College, Patrick.Shabram@frontrange.edu; Chu-Lin Cheng, The University of Texas Rio Grande Valley, chulin.cheng@utrgv.edu; Leilani A. Arthurs, University of Colorado, leilani.arthurs@colorado.edu; Ming-Tsan Lu, The University of Texas Rio Grande Valley, mingtsan.lu@utrgv.edu. Sun., 13 Mar, 1–5 p.m. CST.

Sustainable Management in Fluvial Aquifers and Transboundary Issues. Antonio Cardona, Universidad Autónoma de San Luis Potosí, acardona@uaslp.mx; Marusia Renteria-Villalobos, Universidad Autónoma de Chihuahua; Todd Halihan, Oklahoma State University, todd.halihan@okstate.edu; Rosario Sanchez, Texas A&M University, Maria.SanchezFlores@ag.tamu.edu; Raul Morales-Escalante, Moro Ingeniería, raul_agua@yahoo.com.mx; Martin Argueta-Hernandez, SIIMA, argueta_martin@yahoo.com.mx; Raul Mejia-Vázquez, Asociación Geohidrológica Mexicana.

Diversify Geoscience: Reveal Structural Racism and Make the Invisible Visible. Kristie Bradford, Lone Star College–Tomball, christine.d.bradford@lonestar.edu. Sun., 13 March, 9 a.m.–3 p.m.

ACCOMMODATIONS

Hotel registration deadline: 21 Feb.

A block of rooms has been reserved at the Embassy Suites by Hilton McAllen Convention Center Hotel at 800 Convention Center Blvd., McAllen, Texas 78501, USA, at a special meeting rate of US$129 per night plus tax. Reservations should be made by calling the hotel at +1-956-688-8329 and referencing the group name "SCGSA22."

REGISTRATION

Early registration deadline: 7 Feb.
Cancellation deadline: 14 Feb.

For further information or if you need special accommodations, please contact one of the meeting co-chairs: Juan González, juan.l.gonzalez@utrgv.edu; Chu-Lin Cheng, chulin.cheng@utrgv.edu. Registration fees are the same for in person and online.

REGISTRATION FEES (all fees are in U.S. dollars)

Member Type	Early		Standard	
	Full Mtg.	One Day	Full Mtg.	One Day
Professional Member	$225	$150	$275	$200
Professional Member 70+	$150	$100	$200	$150
Professional Nonmember	$275	$175	$325	$225
Early Career Professional Member	$150	$100	$200	$150
Student Member	$100	$75	$150	$125
Student Nonmember	$150	$100	$200	$150
K–12 Professional	$100	$75	$150	$125
Guest or Spouse	$50	n/a	$75	n/a
Field Trip/Short Course Only	$50	n/a	$75	n/a

OPPORTUNITIES FOR GSA STUDENTS AND EARLY CAREER PROFESSIONALS

Career Mentoring Luncheons

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To learn more about mentors and career workshops, go to **https://www.geosociety.org/mentors** or contact Jennifer Nocerino at jnocerino@geosociety.org.

PROFESSIONALS

If you 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, contact Jennifer Nocerino at jnocerino@geosociety.org.

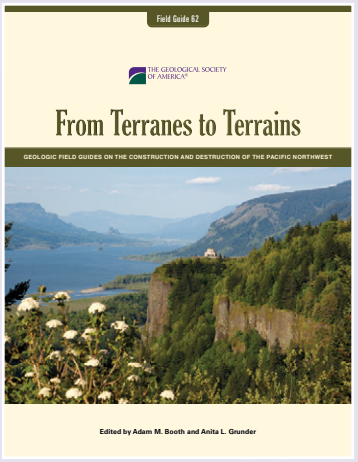
This meeting also offers an excellent opportunity to earn CEUs toward your continuing education requirements for your employer, K–12 school, or professional registration. The CEU certificate can be downloaded from the meeting website after the meeting.

LOCAL COMMITTEE

General Co-Chairs: Juan González, juan.l.gonzalez@utrgv.edu; Chu-Lin Cheng, chulin.cheng@utrgv.edu
Technical Program Co-Chairs: Juan González, juan.l.gonzalez@utrgv.edu; Chu-Lin Cheng; chulin.cheng@utrgv.edu
Field Trip Chair: Sarah Hardage, sarah.fearnlyhardage@utrgv.edu
Exhibits/Sponsorship Chair: Saad Mohamed, saad.mohamed@utrgv.edu
Short Course Chair: Wendi J.W. Williams, wwilliam@southtexascollege.edu
Student Volunteer Chair: Engil Pereira, engil.pereira@utrgv.edu
Judging Coordinators: Engil Pereira, engil.pereira@utrgv.edu; Ravi Nandigam, rcnandigam@southtexascollege.edu

FIELD GUIDES TO EXPLORE

at the GSA Store



From Terranes to Terrains: Geologic Field Guides on the Construction and Destruction of the Pacific Northwest

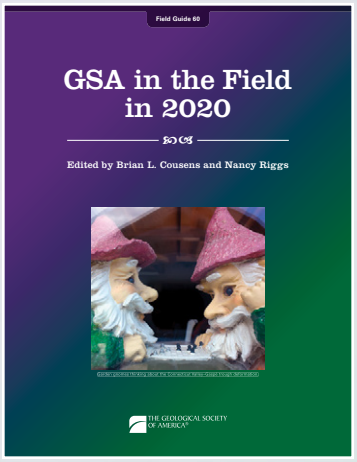
Edited by Adam M. Booth and Anita L. Grunder

FLD062, 352 p., ISBN 9780813700625
$60.00 | **member price $42.00**

Field Excursions from the 2021 GSA Section Meetings

Edited by Joan Florsheim, Christian Koeberl, Matthew P. McKay, and Nancy Riggs

FLD061, 289 p., ISBN 9780813700618
$60.00 | **member price $42.00**

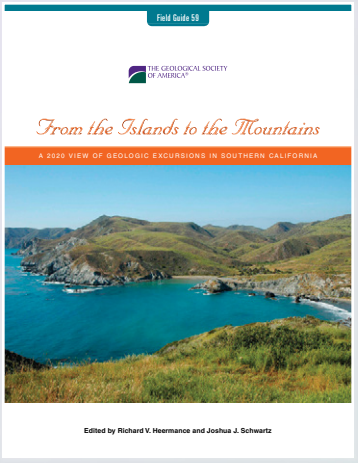


GSA in the Field in 2020

Edited by Brian L. Cousens and Nancy Riggs, 2021

▶ THIS BOOK IS AVAILABLE AS A PDF E-BOOK DOWNLOAD ONLY. ◀

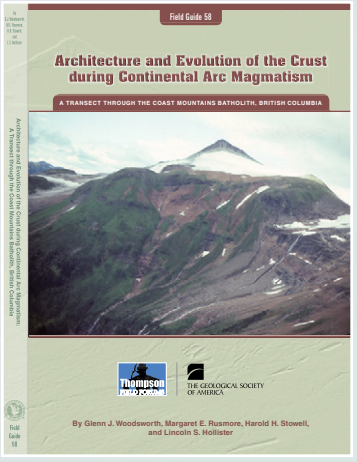
FLD060P, 94 p., ISBN 9780813756608 (ebk)
$9.99 | **member price $9.99**



From the Islands to the Mountains: A 2020 View of Geologic Excursions in Southern California

Edited by Richard V. Heermance and Joshua J. Schwartz

FLD059, 195 p., ISBN 9780813700595
$45.00 | **member price $32.00**



Architecture and Evolution of the Crust during Continental Arc Magmatism: A Transect through the Coast Mountains Batholith, British Columbia

By G.J. Woodsworth, M.E. Rusmore, H.H. Stowell, and L.S. Hollister

FLD058, 40 p., ISBN 9780813700588
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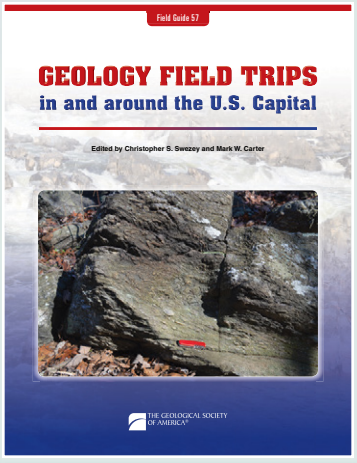

Geology Field Trips in and around the U.S. Capital

Edited by Christopher S. Swezey and Mark W. Carter

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THE GEOLOGICAL SOCIETY OF AMERICA®

FINAL ANNOUNCEMENT AND CALL FOR PAPERS

Northeastern Section

57th Annual Meeting of the Northeastern Section, GSA

Lancaster, Pennsylvania, USA | 20–22 March 2022

https://www.geosociety.org/ne-mtg

Susquehanna River, southern Lancaster County, Pennsylvania, USA. Photo by Emily Wilson.

Geoscience in a Changed and Changing World

LOCATION

The 2022 GSA Northeastern Section Meeting is planned as an in-person meeting to be held in Lancaster, Pennsylvania, USA. Lancaster is a welcoming and walkable small city with a rich history and arts and cultural community. The conference location is the Lancaster County Convention Center and Marriott at Penn Square, in the heart of downtown and convenient to shops, galleries, music venues, and restaurants, including the oldest operating indoor farmers' market in the country. Lancaster is easily accessible by car, train, and from the Harrisburg airport. We are pleased to announce a wide-ranging set of symposia, theme sessions, field trips, and short courses aligned with our meeting theme: *Geoscience in a changed and changing world*.

CALL FOR PAPERS

Abstract deadline: 14 Dec.
Submit online at **https://www.geosociety.org/ne-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, +1-303-357-1018, hclark@geosociety.org.

TECHNICAL PROGRAM

Symposia

S1. **Devonian of New York: A New, Extensive Volume on The North American Standard Section.** *Endorsed by Eastern Section, SEPM (Society for Sedimentary Geology).* Charles Ver Straeten, New York State Museum/Geological Survey, Charles.VerStraeten@nysed.gov; D. Jeffrey Over, SUNY Geneseo, over@geneseo.edu; Donald L. Woodrow, cardonwoodr@comcast.net.

S2. **Teaching the Anthropocene: A New Paradigm for Geoscience Education.** Gary A. Gomby, Central Connecticut State University, garygomby@ccsu.edu.

S3. **Adapting to Global Climate Disruption at Multiple Scales.** *Endorsed by GSA Hydrogeology Division; GSA Geology and Society Division; GSA Environmental and Engineering Geology Division.* Donald I. Siegel, Syracuse University, disiegel@syr.edu; Jennifer Rivers Cole, Harvard University Graduate School of Sustainability, jcole01@fas.harvard.edu.

S4. **Latest Science Results and Updates in Planetary Science Research, Programs, and Flight Projects.** *Endorsed by GSA Planetary Geology Division.* Michael S. Kelley, NASA Headquarters, michael.s.kelley@nasa.gov; Mitch Schulte, NASA Headquarters, mitchell.d.schulte@nasa.gov.

Theme Sessions

T1. **Leaving Footprints, Changing Landscapes: Advances in Ichnological and Zoogeomorphological Research.** *Endorsed by Eastern Section, SEPM (Society for Sedimentary Geology).* Ilya V. Buynevich, Temple University, coast@temple.edu; Stephen T. Hasiotis, University of Kansas, hasiotis@ku.edu; Logan A. Wiest, Mansfield University, lwiest@mansfield.edu; Hayden A. Thacker, Temple University, hayden.thacker@temple.edu.

T2. **Earth & Space Sciences at the K–12 Level: Importance, Successes, and Next Generation Science Standards–Based Examples.** Nancy Price, SUNY Plattsburgh, npric002@plattsburgh.edu.

T3. **Role of Natural History Museums in K–20 Education.** *Endorsed by National Association of Geoscience Teachers (NAGT); GSA Geoscience Education Division.* Lauren Neitzke Adamo, Rutgers and Geology Museum, Lneitzke@eps.rutgers.edu; Patricia Irizarry Barreto, Rutgers University, Science Explorer and Geology Museum, patricia.irizarry@rutgers.edu.

T4. **Celebrating Allan Ludman's First 56 Field Seasons in Maine: What Do We Know of Northern Appalachian Geology and What Questions Remain?** *Endorsed by GSA Structural Geology and Tectonics Division; Maine Geological Survey.* David P. West, Jr., Middlebury College, dwest@middlebury.edu; Henry N. Berry IV, Maine Geological Survey, Henry.N.Berry@maine.gov; Chunzeng Wang, University of Maine at Presque Isle, chunzeng.wang@maine.edu.

T5. **A Patchwork Quilt of Petrology: New Techniques, Methods, and Approaches to Deep Crustal Rocks in the Northeastern United States.** Joshua M. Garber, Penn State, jxg1395@psu.edu; Andrew J. Smye, Penn State, aus702@psu.edu; Jesse R. Reimink, Penn State, jreimink@psu.edu; Alicia Cruz-Uribe, University of Maine, alicia.cruzuribe@maine.edu.

T6. **Rosetta Stones: Decoding Tectonic Ciphers from Thin Section through Outcrop.** *Endorsed by GSA Structural Geology and Tectonics Division.* Howell Bosbyshell, West Chester University of Pennsylvania, hbosbyshell@wcupa.edu; Nancy Price, SUNY Plattsburgh, npric002@plattsburgh.edu.

T7. **The Grenville Orogen in Eastern North America.** Greg Walsh, U.S. Geological Survey, gwalsh@usgs.gov; John Aleinikoff, U.S. Geological Survey, jaleinikoff@usgs.gov.

T8. **Tectonic Evolution of the Eastern North American Margin from Birth to Demise of the Iapetus and Rheic Oceans: Insights from the Sedimentary Record.** *Endorsed by GSA Sedimentary Geology Division; Canadian Tectonics Group.* David Lowe, Memorial University, dlowe@mun.ca; Shawna White, St. Mary's University, shawna.white@smu.ca; Yvette Kuiper, Colorado School of Mines, ykuiper@mines.edu.

T9. **Tectonic Evolution of Eastern North America: Insights from Geology and Geophysics.** *Endorsed by GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division.* Yvette D. Kuiper, Colorado School of Mines, ykuiper@mines.edu; Maureen D. Long, Yale University, maureen.long@yale.edu; Allison R. Severson, Minnesota Geological Survey, sever270@d.umn.edu; Yantao Luo, Yale University, Luo, yantao.luo@yale.edu.

T10. **Tectono-Metamorphic Processes at Convergent Boundaries: Insights from Northeastern North America and Beyond.** Adrian E. Castro, Wellesley College, ac114@wellesley.edu; Wentao Cao, SUNY Fredonia, Wentao.Cao@fredonia.edu; Emily M. Peterman, Bowdoin College, epeterma@bowdoin.edu.

T11. **North Atlantic Arcs, Rifts, and Plumes: Ordovician to Today.** *Endorsed by GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division.* Tamara Carley, Lafayette College, carleyt@lafayette.edu; Tenley Banik, Illinois State University, tjbanik@ilstu.edu.

T12. **The Influence of Tectonic and Magmatic Processes on the Development of the Eastern North American Rift System and Passive Margin.** *Endorsed by GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division.* Martha Oliver Withjack, Rutgers University, drmeow3@eps.rutgers.edu; LeeAnn Srogi, West Chester University, lsrogi@wcupa.edu; MaryAnn Love Malinconico, Lafayette College, lovem@lafayette.edu.

T13. **Current Research in Coastal and Nearshore Processes.** *Endorsed by GSA Marine and Coastal Geosciences Division.* Bryan Oakley, Eastern Connecticut State University, OakleyB@easternct.edu; Mark Borrelli, University of Massachusetts Boston Center for Coastal Studies, Mark.Borrelli@umb.edu.

T14. **Soil Processes and Biogeochemical Interactions.** *Endorsed by GSA Soils and Soil Processes Division; GSA Hydrogeology Division; GSA Geobiology and Geomicrobiology Division.* Zsuzsanna Balogh-Brunstad, Hartwick College, balogh_brunz@hartwick.edu; Justin Richardson, University of Massachusetts Amherst, JBRichardson@umass.edu.

T15. **In Cahoots: Interdisciplinary Studies of Climate Change Impacts to Archaeological Resources.** Alice R. Kelley, University of Maine, akelley@maine.edu; Heather Wholey, West Chester University, HWholey@wcupa.edu; Carole Nash, James Madison University, nashcl@jmu.edu.

T16. **Glacial Geology and Proxy Records in Northeastern North America and Beyond.** *Endorsed by GSA Quaternary Geology and Geomorphology Division.* Greg de Wet, Smith College, gdewet@smith.edu; Sarah Principato, Gettysburg College, sprincip@gettysburg.edu.

T17. **Modern to Pleistocene Landforms and Change: Using Field and High-Resolution Topographic Data to Unravel Landscape History and Quantify Change.** Dorothy Merritts, Franklin and Marshall College, dorothy.merritts@fandm.edu.

T18. **Techniques for Acquiring Elevation-Derived Hydrography (EDH): Contributions and Collaborations.** Shane Csiki, New Hampshire Geological Survey, Shane.Csiki@des.nh.gov; Gale Blackmer, Pennsylvania Geological Survey, gblackmer@pa.gov.

T19. **Geologic Applications of Unmanned Aerial Systems.** Craig Ebersole, Pennsylvania Geological Survey, craebersol@pa.gov; Ryan Mathur, Juniata College, mathurr@juniata.edu.

T20. **Deep Learning–Enabled Remote Sensing Applications for Geology.** Thomas Y. Chen, Academy for Mathematics, Science, and Engineering, thomaschen7@acm.org.

T21. **How is the Practice of Geoscience Keeping Pace with a Changing World?** *Endorsed by GSA Geology and Society Division.* Tim Lutz, West Chester University, tlutz@wcupa.edu.

T22. **Applied Research at Northeastern State Geological Surveys.** Jonathan Kim, Vermont Geological Survey, jon.kim@vermont.gov; Richard Ortt, Maryland Geological Survey, richard.ortt@maryland.gov; Gale Blackmer, Pennsylvania Geological Survey, gblackmer@pa.gov.

T23. **Private Wells—Current Challenges and Opportunities.** Joseph Ayotte, U.S. Geological Survey New England Water Science Center, jayotte@usgs.gov; Kelsey Pieper, Northeastern University, k.pieper@northeastern.edu; Paul Susca, New Hampshire Dept. of Environmental Services, paul.a.susca@des.nh.gov; Jon Kim, Vermont Geological Survey, jon.kim@vermont.gov; Patti Casey, Vermont Dept. of Agriculture, Food, and Markets, Patti.Casey@vermont.gov.

T24. **Implementing the U.S. Geological Survey National Cooperative Geologic Mapping Program's U.S. GeoFramework Initiative: Constructing a Seamless, National 2D/3D Geologic Framework Model of the U.S.** Jenna Shelton, U.S. Geological Survey National Cooperative Geologic Mapping Program, jlshelton@usgs.gov; David Soller, U.S. Geological Survey National Cooperative Geologic Mapping Program, drsoller@usgs.gov; Don Sweetkind, U.S. Geological Survey Geosciences and Environmental Change Science Center, dsweetkind@usgs.gov.

FIELD TRIPS

Most field trips will run on Sat., 19 March. For additional information, please contact the field-trip chair, Jaime Tomlinson, jaimet@udel.edu.

FT1. **Accreted Forearc, Continental, and Oceanic Rocks of Maryland's Eastern Piedmont: The Potomac Terrane, Baltimore Terrane, and Baltimore Mafic Complex.** Sat., 19 March, 7 a.m. departure, 7 p.m. return. US$100. Trip leader: Rebecca Kavage Adams, Maryland Geological Survey, rebecca.adams@maryland.gov.

FT2. **Quaternary Evolution and Contemporary Fluvial Processes, White Clay Creek, Delaware–Pennsylvania.** Sat., 19 March, 8 a.m. departure, 5 p.m. return. US$80. Trip organizer: Jim Pizzuto, University of Delaware, pizzuto@udel.edu.

FT3. **The Piedmont and K–12 Pedagogy: How Geology Works and Why It Matters.** *Endorsed by National Association of Geoscience Teachers (NAGT) Teacher Education Division (TED).* Sat., 19 March, 8 a.m. departure, 6 p.m. return. US$105. Trip Leader: L. Lynn Marquez, Millersville University of Pennsylvania, Lynn.Marquez@millersville.edu.

FT4. **Geology along the York County Heritage Rail Trail.** Sat., 19 March, 8:30 a.m. departure, 4:30 p.m. return. US$80. Trip leader: Jeri Jones, Jones Geological Services, jonesgeo@comcast.net.

FT5. **Historical and Current Paleontological Collections at The Academy of Natural Sciences of Drexel University, Philadelphia.** Fri., 18 March, 9 a.m. departure, 5 p.m. return. US$115 (including transportation from Lancaster). Trip Leader: Ted Daeschler, Academy of Natural Sciences of Drexel University, ebd29@drexel.edu.

SHORT COURSES

Most short courses will run on Sat., 19 March. For additional information, please contact the short-course chair, Rob Sternberg, rob.sternberg@fandm.edu.

SC1. **Geo-Philately—Earth Sciences on Postage Stamps.** Online course. Sat., 19 March, Time TBD. US$25. Convener: Rob Sternberg, Franklin & Marshall College, rob.sternberg@fandm.edu.

SC2. **How to Create Your Own 3D Video-Game–Style Geologic Field Trip and Host it Online: Accessible, Immersive Data Visualization for Education and Research.** Sat., 19 March, 10 a.m.–5 p.m. US$50. Convener: Mattathias (Max) D. Needle, University of Washington, mneedle@uw.edu. Participants will need to bring a laptop with charger, and a mouse is highly recommended.

SC3. **Contaminant Plume Modeling and Analysis for the Environmental Professional.** Sat., 19 March, 1–3 p.m. US$20. Convener: Charles McLane, McLane Environmental LLC, cmclane@McLaneEnv.com. Participants will need to bring a laptop to the course.

SC4. **The Digital Geologic Map Schema (GeMS).** Online course. Sat., 19 March, 1–5 p.m. US$10. Convener: David Soller, U.S. Geological Survey, drsoller@usgs.gov.

SC5. **Teaching and Learning Geoscience in a Changed and Changing World.** Sunday, 20 March, 9 a.m.–noon. US$20. *Endorsed by National Earth Science Teachers Association; National Association of Geoscience Teachers (NAGT) Teacher Education Division (TED).* Convener: Missy Holzer, National Earth Science Teachers Association, missy.holzer@gmail.com.

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

Student Volunteers

Take advantage of work opportunities to earn free registration. Students interested in helping with the various aspects of the meeting should contact Emily Wilson, Franklin and Marshall College, emily.wilson@fandm.edu.

PROFESSIONALS

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CORPORATE SPONSORSHIP AT YOUR SECTION MEETING

Whenever possible, we like to reach out to industry representatives to mentor students and early career professionals (ECPs). Students and ECPs really enjoy talking to these individuals who can describe their career paths and what opportunities there are in their industries and companies. If there are possibilities to engage sponsors for the mentor programs, please contact Debbie Marcinkowski, Executive Director of the GSA Foundation, dmarcinkowski@geosociety.org. Sponsors enjoy meeting geology students and ECPs as potential employees, so we will work with you to bring these two groups together.

REGISTRATION

Early registration deadline: 14 Feb.
Cancellation deadline: 22 Feb.

For further information or if you need special accommodations, please contact the general chairs, Andy de Wet, andy.dewet@fandm.edu, or Chris Williams, chris.williams@fandm.edu.

REGISTRATION FEES (all fees are in U.S. dollars)

Member Type	Early		Standard	
	Full Mtg.	One Day	Full Mtg.	One Day
Professional Member	$195	$145	$240	$165
Professional Member 70+	$115	$95	$145	$115
Professional Nonmember	$215	$165	$265	$200
Early Career Professional Member	$150	$115	$200	$180
Student Member	$75	$55	$95	$75
Student Nonmember	$85	$75	$105	$95
K–12 Professional	$80	$65	$100	$75
Guest or Spouse	$65	$75	$80	$75
Field Trip/Short Course Only	$25	n/a	$25	n/a

ACCOMMODATIONS

Hotel registration deadline: 5 p.m., Friday, 25 Feb.

A block of rooms has been reserved at the Lancaster Marriott at Penn Square. The meeting rate is US$159 per night plus tax. Reservations should be made by calling the Lancaster Marriott at Penn Square at +1-888-850-6146 (toll free) or +1-717-239-1600 (local). Please be sure to mention that you are attending the GSA meeting. The Lancaster Marriott at Penn Square is ADA compliant. Mobility accessible rooms may be requested at time of booking.

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Why GSA Membership is Important to Me

The thing I value most about my GSA membership is…

… that it has allowed me to grow a network of colleagues, friends, and everything in between.

GSA meetings give me the opportunity to engage with new, exciting science while reconnecting with friends and colleagues, meeting new people, and forming new collaborations. GSA has also allowed me to share my science and science communication work with a broad audience through talks, poster presentations, and informal discussions.

Additionally, GSA has provided me with the opportunity to give back to my GSA community in various ways, including chairing sessions, serving on the ad hoc ethics community, and facilitating social media training for scientists. I especially appreciate that GSA is actively providing science communication skill building for their members! These free workshops give scientists a chance to develop their communication skills, which can empower them to share their science outside of the scientific community, thereby helping to build public trust in science (and scientists) and improving general science literacy.

Wendy Bohon
Senior Science Communication Specialist, Incorporated Research Institutions for Seismology (IRIS)
GSA member since 2002

ROCK STARS

Dr. Ferdinand Vandeveer Hayden: 150 Years after Yellowstone

Jacob O. Thacker, *New Mexico Bureau of Geology, 801 Leroy Place, Socorro, New Mexico 87801, USA*

Figure 1: Hayden portrait, 1859. E.R. Morgan photo, National Portrait Gallery, S/NPG.77.183.

FRACTURED CHILDHOOD AND DRIVE TO LEARN

Ferdinand Vandeveer Hayden was born in September 1828 or 1829 in Westfield, Massachusetts, USA, the eldest child of Asa and Melinda Hayden. As signified by his indeterminate birthdate, much of Hayden's early years are not well known. What is known is that Hayden had a troubled childhood, and he came from a poor background. His father was unreliable and had a prison record. Melinda divorced Asa in 1840 on grounds of neglect. She subsequently moved to Rochester, New York, and remarried in 1841. In 1841–1842 Hayden was sent to live with his aunt in Rochester in Lorain County, Ohio.

The move to Ohio benefited Hayden. His aunt and uncle cared for him greatly enough to offer to adopt him, which he declined due to not wanting to become a farmer (Fryxell, 2010). Instead, in September 1845 Hayden walked the 15 miles to Oberlin College. Virtually penniless and with few educational credentials he stated his case to the college president. He was admitted to the Preparatory Department, and in 1846 advanced to the freshman class. He was dubbed the boy of the class given his ability to fall in love regularly. One student said Hayden was an enigma to most teachers and classmates and thought of him as "an enthusiastic dreamer who would never conquer in practical life" (Foster, 1994).

Yet Hayden often said his Oberlin years were the happiest of his life. He joined a literary group, recommended books to his tutors, and studied under George Allen, who taught geology and natural history. He worked his way through college, never receiving a dime he did not earn (White, 1894). In August 1850, Hayden graduated "with a decided taste for the natural sciences" he claimed (Foster, 1994). Out of 40 students admitted in 1846, he was one of only 13 to graduate. In September 1850 he enrolled in Oberlin's Theological Department, but to earn money he taught at schools around northeast Ohio.

MEDICINE AND THE MISSOURI HEADWATERS

From 1851 to 1853, Hayden lived in Cleveland, Ohio, where he studied medicine and learned geology from Jared Potter Kirtland and John Strong Newberry. Through Kirtland and Newberry, Hayden became acquainted with numerous scientists of the day, and his desire to conduct field studies was born. "I feel as though I could endure cheerfully any amount of toil, hardship, and self denial provided I could gratify my strong desire to labor in the field as a Naturalist," he wrote Spencer Baird, Assistant Secretary of the Smithsonian Institution, in February 1853. "But I am poor," he continued, "…every longing desire to engage in that most delightful of pursuits…must be smothered by poverty."[1] Such correspondence shows Hayden's natural enthusiasm and drive to pursue his goals, despite hardship.

It was in 1853 that Hayden received his hard-earned break from the famous James Hall of Albany, New York, whom he had met through Newberry in 1851. With help from Kirtland and Newberry, Hayden had been trying to convince Baird or Hall to hire him. He wrote Hall on 3 March 1853, stating he had a job offer to teach, but would decline "if I can find employment in the 'field' at even one half the sum…[2]." Hall finally obliged by late March and began plans for a fossil collecting trip to the "Bad Lands" of the Upper Missouri River.

Fielding Bradford Meek, Hall's assistant, was also hired for the trip. From June to August, Hayden and Meek traveled upstream from St. Louis, explored the Badlands mid-June to mid-July, then traveled back downstream. They observed the stratigraphy and collected fossil and living specimens along the way. In all, the expedition was a success. Amongst other triumphs, Meek and Hayden's first expedition had doubled the known types of Cretaceous invertebrate shells at that time (Foster, 1994). More importantly, the trip proved Hayden's abilities to many prominent scientists. These included Joseph Leidy, who analyzed the vertebrate remains from the trip, and Spencer Baird, to whom Hayden continued to write. Along with Meek, Leidy and Baird became constant figures in Hayden's career after 1853.

Hayden completed his M.D. in January 1854 from Albany Medical College, but he was anxious to conduct more fieldwork. In 1854, he attached himself to a 20-month expedition that took him more than halfway up the Yellowstone River to the Bighorn River confluence and then on to the Upper Missouri River to north-central Montana in 1855. He explored Yellowstone River

[1]Smithsonian Institution Archives: SIA, RU 7002, letter number 351.

[2]New York State Archives, NYSA; Merrill Papers, Library of Congress.

Figure 2: Hayden and horse at camp in 1870. W.H. Jackson photo, USGS-jwh01647.

tributaries into Wyoming on a topographical survey in 1856, made collections in Nebraska in 1857, and worked with Meek in Kansas in 1858. In 1859–1860 he was on a 15-month military expedition that circled what is now known as the Greater Yellowstone Ecosystem, but due to difficult terrain the party could not navigate into the source region of the Yellowstone River.

Meanwhile, Hayden was becoming a major scientific contender. Still in his 20s, in 1856 he was elected to the Academy of Natural Sciences of Philadelphia and with Meek published their first of many joint publications. His first geologic map was published in 1857. By 1861, Hayden lived in Washington, D.C., where he summarized his work to that point in the large volume *Geology and Natural History of the Upper Missouri*. In 1862, he published what might have been the first claim that western North America had uplifted since Cretaceous time.

HAYDEN'S SURVEY AND YELLOWSTONE

The Civil War derailed Hayden's mounting field endeavors. He joined the Union Army in 1862 and was assigned to several medical posts. Albeit he managed to collect some specimens from his post in Beaufort, South Carolina (Foster, 1994). In June 1865, he was honorably discharged with the rank of lieutenant colonel by brevet. In November 1865, Hayden was appointed auxiliary professor of geology and mineralogy at the University of Pennsylvania, with an arrangement that his duties would not interfere with western exploration (White, 1894). Hayden kept the position until 1872.

Nebraska statehood in 1867 granted Hayden his next hard-earned break, when Congress appointed him to direct the Geological Survey of Nebraska with a mere US$5,000 from unexpended legislative funds (White, 1894). Hayden had lobbied to conduct a survey there since the 1850s, and his appointment was essentially uncontested (Foster, 1994). This was the virtual start to the U.S. Geological & Geographical Survey of the Territories, as his survey would eventually be known—most commonly referred to as the Hayden Survey. With each year, Hayden expanded the survey's appropriations and geographic scope, and by 1879 it had scaled up to work large expanses of Colorado, New Mexico, Utah, Idaho, Montana, and Wyoming.

Following stories and his own curiosity, Hayden's survey finally set sights on the upper Yellowstone River in 1871. The roster included naturalists, scientists, and topographers, as well as photographer William Henry Jackson and artist Thomas Moran. The expedition's maps would be the first to coherently tie that region together, and the images by Jackson and Moran along with Hayden's lobbying efforts and an advanced copy of his survey's report proved to be crucial pieces in the 1872 decision to set aside Yellowstone as the world's first national park. Hayden (and Yellowstone) benefited from fame from the 1871 expedition, but his genuine appreciation of the landscape is writ large. "But no language can do justice to the wonderful grandeur and beauty" he remarked of the Grand Canyon of the Yellowstone, and of Yellowstone Lake, "…one of the most beautiful scenes I have ever beheld" (Hayden, 1872).

LASTING CONTRIBUTIONS

Despite meager beginnings, Dr. Ferdinand Vandeveer Hayden persevered to make an illustrious career. Arguably, his contributions have had lasting effects on American institutions. For one, his lobbying for appropriations essentially normalized government-funded science. Furthermore, although only one of the four "Great Surveys of the West," some considered his to be the model for the U.S. Geological Survey (Picard, 2010) established in 1879. He wanted to head that survey too, but it would be two other western survey leaders, Clarence King, then John Wesley Powell, who took the role before Hayden's death in 1887. Competition aside, however, Hayden's legacy perseveres, as his 1871 expedition was not only a turning point for himself and his survey, but also for land conservation and the American people.

ACKNOWLEDGMENTS

This article would not have been possible without Dr. Renee Clary. Thacker wishes to acknowledge the numerous peoples affected by the Western surveys, the results of which were used intentionally and unintentionally to displace them.

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[3]Hayden's 1853 correspondence with Baird and Hall are from Foster (1994) and Fryxell (2010).

THE GEOLOGICAL SOCIETY OF AMERICA®
Thompson FIELD FORUM

Old or Young? The Topographic Evolution of the Sierra Nevada

Reno, Nevada, USA | 20–27 June 2022

LEADERS

Elizabeth Cassel, University of Idaho, Dept. of Geological Sciences, Moscow, Idaho, USA
Chris Henry, University of Nevada Reno, Mackay School of Mines, Reno, Nevada, USA
Craig Jones, University of Colorado, Dept. of Geological Sciences, Boulder, Colorado, USA
John Wakabayaski, California State University, Dept. of Earth and Environmental Sciences, Fresno, California, USA

"Youth is the gift of nature, but age is a work of art." —Stanislaw Jerzy Lec

DESCRIPTION AND OBJECTIVES

After more than 150 years of geological investigation, the topographic history of the Sierra Nevada remains contentious. Is the range the remains of a greater Sierra from the Cretaceous? Is the range a phoenix, rising from the debris of an earlier range? These end-member conceptualizations have important implications that extend well beyond the Sierra to the history of orogens in places like the Andes and the Tibetan Plateau.

If the range is old, then erosion has been a minimal force through much of the Cenozoic. West-flowing rivers deeply incised into bedrock below older Cenozoic rocks would reflect a changing climate with only minimal removal of pre-Cenozoic material, an inference consistent with low post-Cretaceous exhumation and minimal total unroofing recorded by thermochronology. Variations in the modern gradients of Eocene channels with azimuth would be the product of bedrock anisotropy or a complex depositional history in a disequilibrium system that would mean that river gradients are more complex than most geomorphic models assume. In this case, geophysical observations of a relatively thin crust and buoyant mantle under the eastern half of the range suggest that such changes since the Miocene have had a minimal topographic impact, indicating that an older crustal root was effectively replaced by buoyant mantle with little net change in elevation.

If the range is young, we have a significant issue with our interpretations of several globally applied paleoelevation proxies. The geometry of the elevated interior of the U.S. Cordillera would seem far different than an Altiplano-like landscape if the western edge was lower than at present. The failure of the mountains to rebound as erosion unloaded them would suggest some destruction of buoyancy through the early Cenozoic. A range that recently increased its mean elevation would demand a mechanism only loosely tied to modern plate interactions, either by straight thermal warming as a subducting slab was removed or by physical removal of the old continental root through either lithospheric foundering or normal faulting.

This Field Forum will focus on disputed geologic features across much of the northern part of the Sierra Nevada that comprise the observational basis for the range of uplift and elevation estimates. We will consider observations and inferences from a broad range of specialties that have been employed to address this problem.

We will visit key locales that illustrate the following features:

1. Early Tertiary rocks cropping out deep in modern canyons, suggesting that most Sierra erosion is mere reoccupation of ancient canyons.
2. The distribution of Paleogene relief and its relationship to post-Miocene incision.
3. The nature and integration of the Eocene rivers that deposited the "Auriferous Gravels" of the '49er Gold Rush, including channel gradients and sedimentary features.
4. Depositional ages of the "Auriferous Gravels": Do they represent many millions of years of accumulation, or was deposition fairly short-lived?
5. Evidence for and against tilting and how younger faulting might contaminate inferences.
6. Evidence of relationships between weathering and erosion rates and the various controlling factors.

Additional discussions addressing observations not directly associated with outcrops will occur as relevant in the field and in evening sessions.

AGENDA

This incredible seven-day Field Forum will originate in Reno, Nevada, USA, and then travel across the range to visit locales in the northern Sierra for four days from a base in Grass Valley in the Sierra foothills. The group will then tour outcrops to the south from a two-night stay in Modesto after which we will return to Reno. Weather in June in this area is generally dry with temperatures from pleasant to warm or hot at lower elevations during the days. Most outcrops will be near vehicles, with a few requiring a bit of bushwhacking. Plans also include two optional hikes of up to one mile.

Day 1 (20 June): Arrival (by 11 a.m.) and introduction to early Cenozoic channels and paleocanyons and Eocene–Oligocene sedimentary and igneous fill (Dogskin Mountain and Haskell Peak).
Day 2 (21 June): Paleorelief and modern relief near the Sierra crest (Donner Summit, Royal Gorge area, Emigrant Gap).

Day 3 (22 June): Examination of physical characteristics of the "Auriferous Gravels" and their channels (Malakoff Diggins SHP, Alpha Diggins, and Paleo-Yuba River exposures).
Day 4 (23 June): Geometry and age of channels associated with "Auriferous Gravels" (Paleo-South Fork of the Yuba, Red Dog Diggins, and Chalk Bluff floral site).
Day 5 (24 June): Post-Eocene relief or absence of relief (in situ and questioned exposures near the American and Stanislaus Rivers).
Day 6 (25 June): Evidence of uplift and erosional styles in the southern Sierra (San Joaquin Table Mountain and uplands near Shaver Lake).
Day 7 (26 June): The fluvial-ocean interface of the Eocene and a Miocene deformation marker (Ione Formation and equivalents [?] near Oroville, Lovejoy Basalt).

LOGISTICS AND ATTENDEES

The registration fee will cover six nights lodging, based on double occupancy, 20–27 June 2022. Breakfast, lunch, snacks, and some group dinners along with trip materials and transportation during the field forum will be included in the registration fee. Travel to and from Reno will be the responsibility of attendees. Optional lodging prior to day one will be made available to attendees for a fee. Some single occupancy rooms are available, also for an additional fee. We currently estimate the cost for participants as between US$1,000 and US$1,500 per person, but the conveners are pursuing funds to reduce the cost. Updated estimates of the cost will be posted to the Field Forum website.

GSA welcomes applications from low-income, underrepresented, first-generation, non-traditional, women, veterans, LGBTQ+, students with disabilities, and others. Some financial resources are available for students and early career scientists and those with financial need; please state such need in your application. Attendees are expected to honor the GSA Code of Conduct (**https://www.geosociety.org/conduct**).

APPLICATIONS AND REGISTRATION

Application deadline: 2 Feb.
Registration deadline: 28 Mar.

Participants must commit to the full seven-day/six-night duration of the field conference. Group size is limited to 40 participants. To apply, please contact the conveners through cjones@colorado.edu with a letter of intent that includes a statement of interests, the relevance of your recent work to the themes of the field conference, the subject of a proposed presentation, and contact information. Please put "FF2022 Application" in the subject line of your email. We also request submission of basic demographic information (race, gender, disability, and ethnicity) and ask attendees whether they are willing to help drive one of the rented SUVs. Interested graduate students, members of underrepresented groups, and early career faculty are strongly encouraged to apply. Once you have been selected to participate, you will be sent registration information. Please check the conference website for updates and additional information: **https://www.geosociety.org/Thompson** (click on the "Current" tab.

COMMENTARY

Reginald Aldworth Daly on 'much data, but little thinking'

A.M.C. Şengör, İTÜ Maden Fakültesi, Jeoloji Bölümü ve Avrasya Yerbilimleri Enstitüsü, Ayazağa 34469 Istanbul, Turkey

In the 13 Sept. 2021 issue of *Nature* (v. 597, p. 305), Paul Nurse published a very timely warning for biologists titled "Biology must generate ideas as well as data" with the subtitle "Data should be a means to knowledge, not an end in themselves." When I read it, it reminded me of a piece published more than a century ago by the great Canadian geologist Reginald Aldworth Daly (1871–1957) in the introduction to his *Igneous Rocks and Their Origin* (1914, p. xxii):

> What geology, like every other science, needs to-day is a frank recognition that imaginative thought is not dangerous to science but is the life blood of science. Even the universities do not fully recognize this fact and are notoriously failing to develop the stimuli which are necessary for the controlled, scientific imagination. Not only is geology now characterized by rigorous thought; by its nature as a science involving long excursions into space—inaccessible places—and time—epochs long passed—geology is peculiarly fitted to stimulate the regulated imagination, a process at the core of the highest education. Science is built on a long succession of mistakes. Their recognition has meant progress. Progress, indefinitely more rapid, will be possible when men of science have more generally lost the fear of making mistakes in using to the uttermost their powers of correlation and deduction. Science is drowning in facts. It can only be rescued by the growth of systems of thought. Better than none are "little systems" that "have their day and cease to be." We can hope that geology, like every other science, will find its superman who shall show us the building hidden behind the scaffolding of myriad isolated facts of nature. Meantime, it is the duty of every worker in science to strive for a complete mental system in his field of research and, however mistaken he may be, he should have the special sympathy of fellows. The best sympathy is expressed in constructive criticism. The "facts" of to-day are the hypotheses of yesterday.

In a paper published in 2014 in *Geodinamica Acta* titled "Outcrops, Isotopic Ages, Terranes and the Undesirable Fate of Tectonic Interpretations" (https://doi.org/10.1080/09853111.2013.858953), I had complained about the same problem of "much data, little thought." The superman Daly was hoping for in geology did come from among his countrymen, when J. Tuzo Wilson (1908–1993) invented the theory of plate tectonics in 1965. It was followed by three decades of superb research in geology, but then geology sank back into its parochial nature, dominated by a craze of data collecting mostly without good theories; that activity added much to our knowledge, but not much to our understanding of the structure and the history of our planet. This reminds me of the episode in the twentieth century, which I called elsewhere "the Dark Intermezzo" between 1924, when the great genius Émile Argand (1880–1940), the only true heir to Suess, withdrew from geology and 1965 when Wilson put forward the theory of plate tectonics.

I think all geologists should read Daly's wise words from more than a century ago and contemplate what went wrong. I think we should ponder whether our education system in geology needs a reform. Let me end with a quotation from Charles Darwin:

"I am a firm believer, that without speculation there is no good & original observation" (Darwin to Wallace, 22nd Dec. 1857; see Burkhardt and Smith, editors, 1990, *The Correspondence of Charles Darwin*. Volume 6: 1856–1857: Cambridge, Cambridge University Press, 1990, p. 35).

FURTHER READING

Şengör, A.M.C., 2019, Observations: what for?: Canadian Journal of Earth Sciences, v. 56, p. xi–xiv.

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OTHER RESEARCH GRANTS

GSA provides members with additional opportunities to apply for research funding. Applications for these programs will be accepted beginning 1 Dec. 2021 through 1 Feb. 2022 at 5 p.m. MST.

- Farouk El-Baz Student Research Grant—Desert Studies
- Awards for Geochronology Student Research (AGeS) Program (supported by the National Science Foundation under Grant No. 1759201.)

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Bonnie A.B. Blackwell
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Date of death: 1 Sept. 2021

Joseph E. Boudreaux
New Orleans, Louisiana, USA
Date of death: 22 May 2021

Carl J. Bowser
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Date of death: 20 June 2021

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Dublin, Ohio, USA
Date of death: 28 July 2021

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Evergreen, Colorado, USA
Date of death: 1 June 2021

Robert E. Dedoes
Katy, Texas, USA
Date of death: 15 Mar. 2021

Robert W. Deininger
Bethesda, Maryland, USA
Date of death: 1 Jan. 2021

Eric C. Grimm
Jefferson, South Dakota, USA
Date of death: 15 Nov. 2020

Thomas Alexander Johnson
Santa Barbara, California, USA
Date of death: 21 July 2020

Martha F. McRae
Lago Vista, Texas, USA
Date of death: 11 May 2021

Henry T. Mullins
Syracuse, New York, USA
Date of death: 18 July 2021

John S. Myers
Albany, Western Australia, Australia
Date of death: 8 Aug. 2021

David G. Nussmann
Rochester, New York, USA
Date of death: 24 Jan. 2021

Kenneth L. Pierce
Bozeman, Montana, USA
Date of death: 9 July 2021

Paul Ramaekers
Calgary, Alberta, Canada
Notified 4 June 2021

Michael R. Rosen
Carson City, Nevada, USA
Date of death: 27 April 2021

Carolyn S. Shoemaker
Flagstaff, Arizona, USA
Date of death: 13 Aug. 2021

Norman D. Smith
Lincoln, Nebraska, USA
Date of death: 9 Sept. 2021

Stuart Ross Taylor
Canberra, Australian Capital Territory, Australia
Date of death: 23 May 2021

Joseph G. Wargo
Moraga, California, USA
Date of death: 1 May 2021

C. Penny Webster-Scholten
Cedar City, Utah, USA
Date of death: 6 July 2021

John W. Winchester
Tallahassee, Florida, USA
Date of death: 11 July 2020

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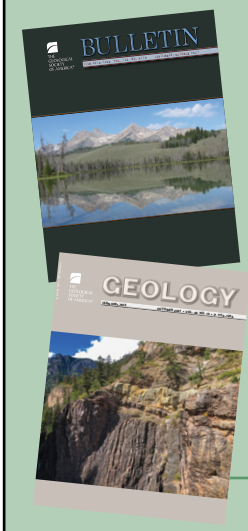


March 2020 through August 2021… GSA Publications by the Numbers

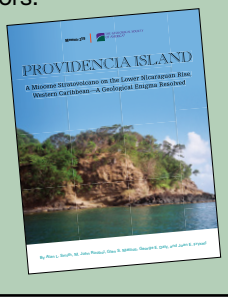
6,069
number of pages published by *Geology* and *GSA Bulletin*
(up 11% over previous 18-month period)

230
number of new submissions *Geosphere* received (up 20% over previous 18-month period)

12
number of volumes published, including two Memoirs

2,780,333
number of journal page views on GeoScienceWorld

None of this would have been possible without the groundbreaking science submitted by our authors, the help of our volunteer editors and reviewers, and the excellent service of our vendors. Most importantly we thank our members and subscribers for continuing to keep our content in demand. We look forward to serving you in 2022, and we wish you all the best in the year to come.



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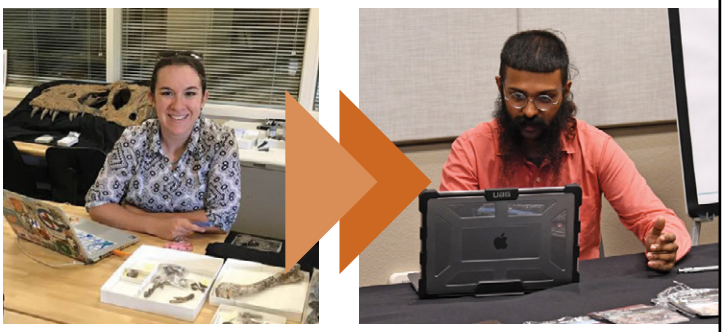

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J. David Lowell Field Camp Scholarships

GSA and the GSA Foundation are proud to announce that J. David Lowell Field Camp Scholarships will be available to undergraduate geology students for the summer of 2022. These scholarships will provide students with US$2,000 each to attend the field camp of their choice. Applications are reviewed based on diversity, economic/financial need, and merit.
Application deadline: 25 Mar. 2022
Learn more: **https://www.geosociety.org/field-experiences**
Questions? Contact Jennifer Nocerino, jnocerino@geosociety.org.

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Share your unique experience, perspective, or commentary on GSA's guest blog, ***Speaking of Geoscience™***, by submitting your blog post idea. We invite you to follow the blog, read previous posts, and add to the dialogue.

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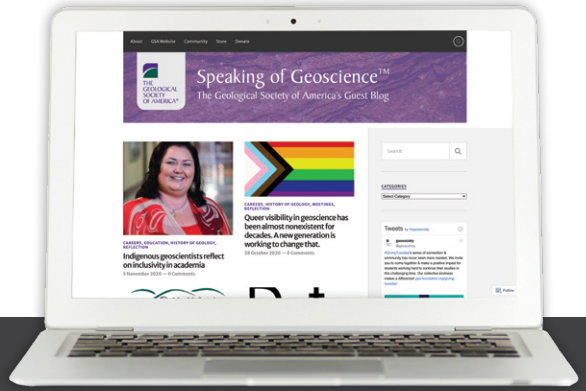
https://speakingofgeoscience.org/



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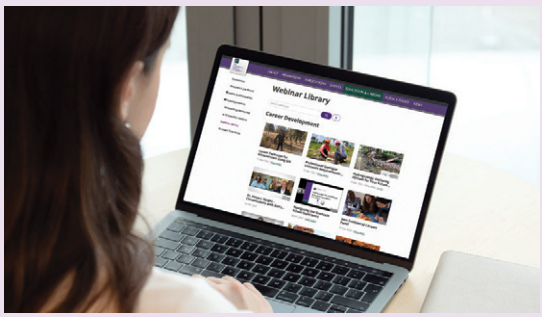

Whether you are entering the job market, looking for career advice for your students, or want to catch up on what GSA's Bromery Awardees are doing, make sure to visit this GSA member resource. Webinar topics include:

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- Policy
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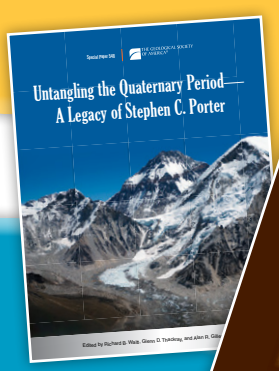

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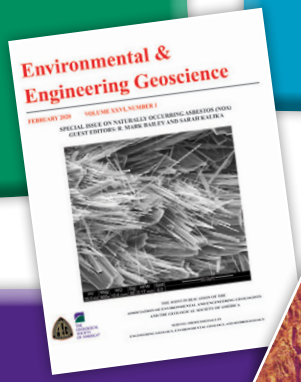

JOURNAL	Impact Factor 2021	Impact Factor 5-YEAR	SUBMIT ONLINE
Geology	5.399	6.079	geology.msubmit.net
GSA Bulletin	4.799	5.197	gsabulletin.msubmit.net
Geosphere	3.298	3.571	geosphere.msubmit.net
E&EG	0.736	0.758	www.editorialmanager.com/eeg

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Make a Meaningful Difference—Double the Impact of Your Gift

Your contribution can help a student attend field camp *and* ignite their passion for geology.

The number of geoscience disciplines students can engage with at field camp is broad, just like the disciplines represented at GSA. This year alone, students studied climate change through glacial research in Alaska, learned about the paleo- and neotectonics of the Anatolian plate in Turkey, uncovered fossils in the Bighorn Basin, and reported on the hydrogeological implications of the Line 3 pipeline in northern Minnesota. In addition to learning about specific disciplines, every field camp provided the opportunity to learn important geoscience skills like mapping, modeling, creating reports and recommendations, and learning how to use a Brunton compass. After spending the last year stuck inside due to the pandemic, many students experienced a refreshed love of geology. Thanks to their field camp experiences, they were reenergized to continue their studies in geoscience, and others honed their future career aspirations.

Recognizing the significant role that field camp has in the development of geoscientists, a generous donor issued a matching challenge, which launched on Giving Tuesday, 30 November. Between now and New Year's Eve, they will match one-to-one, up to US$10,000, every gift made to the J. David Lowell Field Camp Scholarship Program.

If you are a GSA member who has never made a gift, now is the perfect time to make your first gift and have it doubled in support of field camp opportunities. By giving just US$5 you could increase the reach of some of GSA's most important programs like field camp scholarships.

If the members who have yet to contribute gave just $5 each, 35 GSA student members could receive scholarships toward a field camp of their choice - a hallmark of many geologists' training

Help a student by making a gift today to support field camp opportunities (https://gsa-foundation.org/fund/field-camp-opportunities/) and keep an eye on your email, GSA's social media, and the Foundation blog (https://gsa-foundation.org/news-events/) for stories of impact as well as other ways you can be involved. You can also contact Debbie Marcinkowski, dmarcinkowski@geosociety.org, +1-303-357-1047, to discuss ways you can help.

"When I applied to the South Dakota School of Mines Geology Field Camp, I really did not know what to expect. I had spent the last year suffering in my very warm apartment trying to social distance and keep up with schoolwork. I often wondered if this field was able to make space for people like me, first generation college students who just took an introduction to geology course and ran with it. Now I feel revitalized and inspired going into my last semester at San Diego State University. I'm so grateful for what this scholarship has provided me: not only a geology field experience but with thirty other geology students who motivated me into believing that I was doing the right thing and was exactly where I needed to be." —Alina Hernandez, 2021 J. David Lowell Field Camp Scholarship recipient

gsa-foundation.org

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POSITIONS OPEN

Flint Postdoctoral Fellowship, Dept. of Earth & Planetary Sciences, Yale University

The Dept. of Earth & Planetary Sciences at Yale University (http://earth.yale.edu) announces an annual competition for the Richard Foster Flint Postdoctoral Fellowship. We welcome applicants with research interests in climatic processes, Cenozoic paleoclimate, historical climate records, and future climate predictions. Specific research areas include, but are not limited to, glaciology; climatology; atmospheric and oceanic circulation; low-temperature geochemistry; paleobiological and paleoecological responses to climate change; and coupling between tectonic, climatic, environmental, and biotic processes. This postdoctoral position is awarded for two years and includes a stipend ($63,000/yr) and research funds ($7,000/yr), plus health-care benefits and limited expenses for relocation. Applicants should contact a sponsor in the Department to discuss potential research projects, and then submit a short (2–3 page) statement of research interests and a proposed research plan, a curriculum vitae with a full list of publications, an endorsement letter from the sponsoring faculty member, and three confidential letters of reference. Applications should be submitted online at http://apply.interfolio.com/98110. The deadline for receipt of all application materials is January 5, 2022, and successful candidates are expected to begin their program at Yale between July 1 and December 31, 2022.

Yale University is an Affirmative Action/Equal Opportunity employer. Yale values diversity among its students, staff, and faculty and strongly welcomes applications from women, persons with disabilities, protected veterans, and underrepresented minorities.

Faculty Position in Sedimentary Systems Science, University of Minnesota–Twin Cities

The Dept. of Earth & Environmental Sciences at the University of Minnesota–Twin Cities invites applications for a tenure-track faculty position in sedimentary systems sciences at the assistant professor level. Exceptional candidates at higher ranks may also be considered. We seek a colleague who creatively uses field-based, lab-based, experimental, and/or theoretical approaches to investigate sedimentary processes and sedimentary records, and their implications for modern or ancient Earth-surface processes and changes related to the cryosphere, hydrosphere, lithosphere, biosphere, and/or atmosphere.

Successful applicants are expected to contribute to a diverse research and teaching community through the development of a vigorous, internationally recognized and externally funded research program, through teaching courses at both undergraduate and graduate levels, and through service including engagement in Diversity, Equity, and Inclusion (DEI) initiatives in the department, college, and university. The Dept. of Earth & Environmental Sciences is part of the College of Science & Engineering and houses research programs as well as state-of-the-art analytical facilities spanning a broad spectrum of Earth Science disciplines (further information is available at: https://cse.umn.edu/esci). The department and its faculty also maintain strong connections and collaborations with other relevant research units in the School of Earth & Environmental Sciences and across the University including (but not limited to) the Polar Geospatial Center, St. Anthony Falls Laboratory, the Minnesota Geological Survey, Continental Scientific Drilling Facility, and the Institute for Rock Magnetism. Faculty, staff, and students in the department are engaged in a strong and growing commitment to DEI initiatives within our unit, at the College and University levels, regionally in Minnesota, and beyond.

Applicants must have a Ph.D. in the geosciences or a related field and a track record of peer-reviewed publications at the time of appointment. Applicants should submit a cover letter, curriculum vitae, and separate statements on their research and teaching interests, as well as the names and contact information (email, phone) of three references. Each of the statements should not be more than three pages, and each must address commitments and activities related to promotion of diversity, equity, and inclusion, which are integral to performance and promotion criteria in the department.

These materials must be submitted along with your application through Interfolio: http://apply.interfolio.com/96956.

To request accommodation during the application process, please e-mail employ@umn.edu or call (612) 624-UOHR (8647).

Appointment may begin as early as August 2022. Review of applications will begin on January 5, 2022, and continue until the position is filled. For further information or questions, please contact Peter J. Makovicky, Chair of the Search Committee, at pmakovic@umn.edu.

The University of Minnesota values a diverse faculty, which fosters a richness of perspectives and an inclusive environment, and whose members serve as role models for a diverse student body. The University provides equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. The University supports the work-life balance of its faculty.

Assistant Professor, Tropical Meteorology including Cloud and Precipitation Physics and Chemistry, University of Houston

The University of Houston Dept. of Earth and Atmospheric Sciences (EAS) invites applications for a tenure-track position in Atmospheric Science at the assistant professor level.

This position request seeks a dynamic researcher and educator who can establish an externally funded research program in the field of Atmospheric Dynamics. This position is open to candidates whose research interest may cover any spatial scale in the climate system. Candidates with modeling and/or experimental background are encouraged to apply.

Areas of expertise may include but are not limited to regional climate including boundary layer dynamics, extreme climate events as well as attribution science, aerosol-climate interactions including aerosol-precipitation interactions, cloud and precipitation physics and chemistry in a changing climate, dynamics associated with rain formation ranging from the local scale (e.g. urban heat island effect) to the large scale (e.g. tropical storm research).

Candidates will teach undergraduate and graduate-level courses, such as climate change, meteorology, climate dynamics and physics, climate modeling, synoptic meteorology, cloud and precipitation physics and chemistry, satellite meteorology, and additional courses in the candidate's specialty.

The successful candidate is expected to build active collaborations within and outside the university, to develop externally funded research programs that are internationally recognized, to teach graduate and undergraduate level courses that bridge theory and practical applications in the atmospheric and geological sciences. EAS has a vibrant research environment covering Earth & Energy Resources, Earth & Planetary Dynamics, and Atmospheric & Earth Surface Systems and offers a wide range of opportunity of collaborations.

University of Houston is an equal opportunity/affirmative action employer. Minorities, women, veterans, and persons with disabilities are encouraged to apply. The University of Houston is responsive to the needs of dual career couples. Furthermore, we welcome candidates whose experience in teaching, research, or community service has prepared them to contribute to our commitment to diversity and excellence. More information about the department can be found at http://www.uh.edu/nsm/earth-atmospheric/. Candidates must have a Ph.D. in Atmospheric Science or a related field at the time of the appointment.

Applications received by January 03, 2022, will receive the fullest consideration, but the search will continue until the position is filled. Candidates should submit: 1) a statement of teaching and research interests, 2) a curriculum vitae, 3) a list of at least 3 possible references and their contact information. Applications should be submitted online through https://jobs.uh.edu/. A background check is required prior to interviewing. Questions about these positions may be directed to search committee chair Bernhard Rappenglueck.

Notes to Applicant: Official transcripts are required for a faculty appointment and will be requested upon selection of the final candidate. All positions at the University of Houston are security sensitive and will require a criminal history check.

Faculty Position in Sedimentary Systems Science, University of Minnesota–Twin Cities

The Dept. of Earth & Environmental Sciences at the University of Minnesota–Twin Cities invites applications for a tenure-track faculty position in sedimentary systems sciences at the assistant professor level. Exceptional candidates at higher ranks may also be considered. We seek a colleague who creatively uses field-based, lab-based, experimental, and/or theoretical approaches to investigate sedimentary processes and sedimentary records, and their implications for modern or ancient Earth-surface processes and changes related to the cryosphere, hydrosphere, lithosphere, biosphere, and/or atmosphere.

Successful applicants are expected to contribute to a diverse research and teaching community through the development of a vigorous, internationally recognized and externally funded research program, through teaching courses at both undergraduate and graduate levels, and through service including engagement in Diversity, Equity, and Inclusion (DEI) initiatives in the department, college, and university. The Dept. of Earth & Environmental Sciences is part of the College of Science & Engineering and houses research programs as well as state-of-the-art analytical facilities spanning a broad spectrum of Earth Science disciplines (further information is available at https://cse.umn.edu/esci). The department and its faculty also maintain strong connections and collaborations with other relevant research units in the School of Earth & Environmental Sciences and across the University including (but not limited to) the Polar Geospatial Center, St. Anthony Falls Laboratory, the Minnesota Geological Survey, Continental Scientific Drilling Facility, and the Institute for Rock Magnetism. Faculty, staff, and students in the department are engaged in a strong and growing commitment to DEI initiatives within our unit, at the College and University levels, regionally in Minnesota, and beyond.

Applicants must have a Ph.D. in the geosciences or a related field and a track record of peer-reviewed publications at the time of appointment. Applicants should submit a cover letter, curriculum vitae, and separate statements on their research and teaching interests, as well as the names and contact information (email, phone) of three references. Each of the statements should not be more than three pages, and each must address commitments and activities related to promotion of diversity, equity, and inclusion, which are integral to performance and promotion criteria in the department.

These materials must be submitted along with your application through Interfolio: http://apply.interfolio.com/96956.

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Assistant or Associate Professor of Geology, William & Mary

The Dept. of Geology at William & Mary, a public university of the Commonwealth of Virginia, seeks applications for a tenure track position at the Assistant or Associate Professor level in mineralogy, petrology, high-temperature geochemistry, geochronology, or volcanology.

Appointment will begin August 10, 2022.

The applicant is expected to establish and maintain a vibrant externally funded research program that incorporates mentorship of undergraduate research students. Teaching expectation is 2 courses per semester. Successful applicants must possess the skills to teach a mineralogy course (Rock-Forming Minerals), to contribute courses in geology at the introductory through advanced undergraduate level (e.g., Petrology and/or courses specific to specialty), and advise research students in their subdiscipline.

The Dept. of Geology has eight full-time faculty and graduates ~30 undergraduate majors per year all of whom complete a senior research project. The Dept. of Geology works closely with the College's interdisciplinary Environmental Science and Policy program as well as the Center for Geospatial Analysis.

Applicants must apply online at: https://jobs.wm.edu/postings/44198

For full consideration, submit application materials by the review date, December 15.

Assistant Professor of Instruction in Environmental Geoscience, Ohio University

Athens, Ohio

The Dept. of Geological Sciences invites applications for an Assistant Professor of Instruction. We seek a dynamic and collaborative colleague who is enthusiastic about teaching and learning, who will contribute to curriculum development at all levels, and will lead and coordinate our growing online professional MS program. To fill this permanent, full-time, non-tenure-track position, we are delighted to receive applications from scholars whose expertise draws from environmental geoscience or related fields to teach introductory geoscience courses and upper division/graduate courses in environmental geology.

Candidates are asked to identify relevant skills and expertise including, but not limited to, GIS, hydrological, geochemical, geophysical, and/or sustainability modeling, environmental remediation, etc. We welcome applicants whose expertise complements that of existing faculty in the Dept. of Geological Sciences and who can collaborate with other units on campus, such as the Voinovich School. The successful applicant will contribute to developing an innovative, inclusive, and equitable curriculum and program grounded in high quality mentoring and engaging online and traditional curricula. The successful applicant will have opportunities to mentor undergraduates and a newly renovated lab space. Candidates who have experience working with a diverse range of faculty, staff, and students, and who can contribute to the climate of inclusivity are encouraged to identify their experiences in these areas.

Ohio University is proud of its rich history, diverse campuses, international communities, and beautiful Appalachian settings. As part of our ongoing efforts to provide and support a transformative learning experience, we affirm our commitment to fostering a welcoming, respectful, diverse, and inclusive workforce and community. All qualified applicants are encouraged to apply and will receive consideration free from discrimination on the basis of race, color, religion, age, ethnicity, national origin, national ancestry, sex, pregnancy, gender, gender identity or expression, sexual orientation, military service or veteran status, mental or physical disability, or genetic information. Ohio University is an equal access/equal opportunity and affirmative action employer.

Applications close December 31, 2021. To apply for the position, and for more information, please visit this link: https://www.ohiouniversityjobs.com/postings/38626.

Assistant Professor in Structural Geology, The University of Texas at Austin

apply.interfolio.com/96933

The Dept. of Geological Sciences at The University of Texas at Austin seeks to hire a faculty member in the field of structural geology at the Assistant Professor (tenure-track) level. Extraordinary candidates at the Associate Professor (tenured) level may also be considered. We seek a scholar with outstanding potential who will establish an innovative, world class, externally funded research program and will play an integral role in both undergraduate and graduate student teaching and supervision.

The successful applicant is expected to develop a robust research program that addresses compelling questions about Earth processes and contributes to the fundamental understanding of structural geology and tectonic processes. Expertise in field and/or other observational techniques is desired. The area of research specialization is unrestricted and could complement and/or expand existing expertise in topics including dynamics and timescales of crust and mantle deformation, fault and/or shear zone processes, thermomechanical structural modeling, magmatism, orogen and basin analysis, natural resources and the energy transition, active tectonics and geohazards.

The Dept. of Geological Sciences is part of the Jackson School of Geosciences (JSG), which includes two closely allied research units, the Institute for Geophysics and the Bureau of Economic Geology. The Jackson School of Geosciences has a community of over 190 research scientists and

faculty with a broad range of specialties and access to outstanding research facilities and support. We seek a faculty member who will develop new and/or expand collaborations among faculty, researchers, and students within the JSG and other units on campus. The university is located in the thriving Austin metropolitan area with a vibrant community of over 2 million people.

A Ph.D. is required at the time of appointment. The University of Texas at Austin is an Equal Opportunity Employer with a commitment to diversity at all levels. The JSG is committed to expanding our culturally diverse intellectual community, and we strongly encourage applications from all underrepresented groups and from persons with a commitment to increasing diversity and inclusion in the geosciences.

Review of applications will begin December 1, 2021 and continue until the position is filled. Interested applicants should submit: a cover letter; CV; research statement; teaching statement; statement addressing past and/or potential contributions to diversity through research, teaching, and or service; and a list of at least three individuals who would be able to provide letters of reference. Submit copies of these materials through Interfolio's 'Apply Now' option: apply.interfolio.com/96933. Questions concerning the application process should be sent to Rosanna D'Souza dgs-front_desk@jsg.utexas.edu.

Mendenhall Fellowship Program, Postdoctoral Research Fellow, U.S. Geological Survey, Spokane, Washington

The. U.S. Geological Survey (USGS) Mendenhall Fellowship Program invites applicants to submit proposals for postdoctoral research on the Mountain Pass rare earth element (REE) deposit in southeastern California. Recent decades have seen a vast expansion in the technological applications of REEs, and they are currently at the forefront of revolutions in electronics and clean energy. As the Nation's premier REE ore deposit, and the only actively producing REE mine in the country, Mountain Pass is essential in bolstering domestic supply of critical REEs. The Mendenhall Fellow will establish key parameters in the space and time development of the Mountain Pass REE deposit. Experience studying magmatic-hydrothermal systems, carbonatites, and/or REE mineralization would be beneficial, but is not required. The Fellow will work with USGS scientists and industry partners, drawing on their Ph.D. expertise in a related field, for example geologic mapping, structural geology, igneous petrology, carbonate petrology, economic geology, aqueous geochemistry, geochronology, or isotope geochemistry. New types of data acquired may include: geologic mapping, geochronology, mineral chemistry, stable and radiogenic isotope geochemistry, thermobarometry, and thermodynamic modeling. The Mendenhall Fellow will be aided by a comprehensive inventory of rock samples, drill core samples, maps, polished thin sections, and geochemistry for the Mountain Pass carbonatite ore body. Access to the Mountain Pass mine site will be accommodated by MP Materials mine staff. Applicants are expected to have a demonstrated track record of peer-reviewed scientific publications and will be responsible for leading an independent research program that supports USGS programmatic goals.

The position is a full-time, two-year fixed-term appointment, with a duty station in Spokane, Washington. The salary range is $77,488 to $100,739 (GS-12, steps 1-10). Note: first time hires to the Federal Government are typically hired at step 1. Applicants must not have received a Ph.D. earlier than October 8, 2016 (5 years before the announcement opening date), or if close to completion, have all Ph.D. requirements completed and submit proof of completion prior to receiving an official start date. Under Executive Order 11935, only United States citizens may compete for civil service jobs. A Federal agency is permitted to hire non-citizens only in very limited circumstances where there are no qualified citizens available for the position. To apply, refer to the full Mendenhall Research Opportunity (RO# 20-35) advertised on the USGS Mendenhall Program website, https://www.usgs.gov/centers/mendenhall/20-35-tracking-spatiotemporal-evolution-a-world-class-carbonatite-ree-deposit. Applicants must develop a Research Proposal (8 standard pages in length) with: research objective(s), links to USGS science program strategy, how and where research is to be conducted, required scientific facilities, and a separate budget estimate with anticipated operating expenses. Applicants are strongly encouraged to contact Research Advisors early in the application process to discuss project ideas (primary contact: Dr. Kathryn Watts, kwatts@usgs.gov).

Mendenhall Postdoctoral Research Fellowships, U.S. Geological Survey

Various Locations

The U.S. Geological Survey (USGS) is seeking candidates for Mendenhall Research Fellows. The postdoctoral fellows are appointed to the USGS for two years and receive full salary and benefits at the GS-12 level, step 1. Mendenhall Fellow appointments are time limited, not to exceed two years, and are full-time. Under certain circumstances, the appointment may be extended up to an additional two years.

Open – Thursday 10/8/21, Close – Friday 1/6/22.

The USGS Mendenhall Research Fellowship Program provides an opportunity for postdoctoral fellows to conduct concentrated research in association with USGS scientists, often as a final element to their formal career preparation. The Program also provides: 1) research experiences that enhance the scientific stature and credentials of the Fellows; and 2) scientific expertise to assist in the implementation of the USGS Strategic Plan and the science strategy of its programs. Mendenhall Fellows are expected to publish their results in peer-reviewed scientific outlets.

Applicants are encouraged to contact the Research Advisor(s) for the Research Opportunity of interest to coordinate the development of a research proposal.

More information on Research Opportunities and specific application requirements can be found at https://www.usgs.gov/centers/mendenhall/research-opportunities.

For more information, contact the Mendenhall mailbox at mendenhall@usgs.gov.

The U.S. Geological Survey is an Equal Opportunity Employer.

Assistant Professor, 4D Digital Field and Structural Geology, University of Lausanne

The Faculty of Geosciences and the Environment (FGSE) of the University of Lausanne in Switzerland invites applications for an Assistant Professor in 4D digital field and structural geology, to be based in the Institute of Earth Sciences (ISTE).

We are looking for a candidate capable of leveraging remote sensing technologies (e.g., UAV mapping, structure from motion, LiDAR, hyperspectral and thermal cameras, inSAR, airborne imagery, geophysics) to advance field-focused structural geology research. We are particularly interested in research aiming at understanding the formation of mountains, their transformations and rock deformation through space and time (4D) by linking surface observations with, for example, deep structural constraints offered by geophysics, structural geology concepts or process-based modelling. The ideal candidate has a strong collaborative spirit and is willing to develop scientific collaborations over multiple domains of expertise within the Earth sciences. Knowledge about geology of the Alps and/or future research plans for this region is desirable. We are also interested in candidates addressing societal challenges related to the environment, resources or infrastructure. A willingness to contribute to structural geology teaching including field-based courses is expected.

The successful candidate is expected to i) develop a competitive research program within the Institute of Earth Sciences, ii) teach courses in the Bachelor of Geosciences and Environment, and Master programs taught by the FGSE, and, iii) supervise bachelor, master and doctoral students.

Appointment will be at the Assistant Professor level (tenure track). However, exceptionally, we will consider outstanding candidates for direct appointment at the Associate Professor level, particularly if this corresponds with our equal opportunity objectives.

Application deadline: 15th of December, 2021 (23:59 Swiss time GMT+1)

Details how to apply on: https://bit.ly/2XOa7zz

Or www.unil.ch/central/en/home.html -> Careers at UNIL -> Emplois -> Postes ouverts -> English -> structural geology (or ad 18207).

Tenure-Track Faculty, Geophysics, Auburn University

The Dept. of Geosciences at Auburn University invites applications for a tenure-track Assistant Professor position in Geophysics, beginning in Fall 2022. Applicants must hold a Ph.D. in Geophysics (broadly defined) or Geosciences at the time of appointment. Post-doctoral experience is desirable. Specialties may include, but are not limited to, near-surface geophysics, seismology, and hydrogeophysics. We seek a dynamic individual with strong research potential who can link their research program to existing

department strengths in geochemistry, hydrogeology, geochronology, tectonics, economic geology, climate science, remote-sensing and human-environment interactions. The successful candidate is expected to develop a vigorous, externally funded research program, publish scholarly work, and advise graduate and undergraduate students. The successful candidate will also participate in the educational mission through teaching specialty and existing courses at the undergraduate and graduate levels in Geosciences and in our interdisciplinary Earth System Sciences degree program (e.g., Applied Geophysics, Advanced Geophysical Methods, Tectonics). Research interests that promote collaborative engagement with faculty in other colleges are highly encouraged, especially in the university's four focus areas: Building Resilient Societies; Creating a More Secure World; Creating Intelligent Solutions; Improving Health and Wellbeing. Excellent written and interpersonal communication skills are necessary. The candidate selected for this position must meet eligibility requirements to work in the United States on the date the appointment is scheduled to begin (August 2022) and must be able to continue working legally for the proposed term of employment.

Applications must include the applicant's curriculum vitae, copies of transcripts, and the names and contact information of three professional references, as well as up to 2 pages each for the cover letter/letter of application, the statement of research interests, the statement of teaching philosophy and interests, and the statement of inclusion. In the statement of inclusion, please describe how your experience and/or potential contributions in research, teaching, and service will advance our mission of creating a more diverse, equitable and inclusive workplace. The College of Sciences and Mathematics is committed to providing resources to enhance awareness and appreciation of cultural and individual diversity, promote community, and prepare students, faculty, and staff to have a global impact in STEM (http://www.auburn.edu/cosam/departments/diversity/index.htm). Auburn University is understanding of and sensitive to the needs of faculty, including dual-career couples. Please visit the following link for more information: http://www.auburn.edu/academic/provost/facultyjobs/. To apply please go to https://www.auemployment.com/postings/25368, complete the online form and upload the required application documents.

Applicants are encouraged to visit the AU website to learn more about Auburn University and Geosciences program http://www.auburn.edu/cosam/departments/geosciences/. Review of applications will begin December 17, 2021 and will continue until a candidate accepts appointment.

Auburn University is a EEO/Vet/Disability employer and committed to building a diverse and inclusive community.

Tenure-Track Assistant Professor in Earth and Planetary Data Analytics, Virginia Tech

The Dept. of Geosciences at Virginia Tech (http://geos.vt.edu) invites applications for a tenure-track faculty position in the broad area of Earth and Planetary Data Analytics. We anticipate hiring an Assistant Professor; however, candidates at a higher rank may be considered. The successful candidate will have a research and teaching portfolio centered in data science with a focus on problems in the Earth, planetary, environmental, or climate sciences. This may include the development and/or application of data analytics, machine learning, artificial intelligence, information theory or similar cutting-edge methods for making novel advances in Earth and planetary sciences.

Candidates must hold a Ph.D. in earth science, planetary science, data science, applied math, computational science, or a closely related field at the time of appointment and have demonstrated experience in the application of data analytics, analysis or machine learning, or artificial intelligence to earth or planetary science problems. Preference will be given to candidates who demonstrate: (1) a strong commitment to principles of diversity, equity, inclusion, and accessibility in research, teaching, and university service; (2) the potential to establish a strong research program and attract external funding; (3) how their teaching and mentoring will benefit our student community.

Candidates should apply online in response at http://careers.pageuppeople.com/968/cw/en-us/job/517630/assistant-associate-or-full

Application materials include: (1) cover letter, (2) curriculum vitae, (3) statement of research interests, (4) statement of teaching philosophy, (5) statement articulating the candidate's vision to enhance diversity in geo- and planetary sciences, (6) one research product that illustrates the quality and potential of the applicant's work (e.g., peer-reviewed journal article that is published or in-press), and (7) names and contact information for three references. Each statement should not exceed two pages, and the teaching statement should address both undergraduate and graduate teaching.

Review of applications will begin on December 6, 2021 with an anticipated start of employment in August 2022. The successful candidate will be required to have a criminal conviction check as well as documentation of COVID-19 vaccination [https://policies.vt.edu/assets/ppm%20317.pdf] or receive approval from the university for a vaccination exemption due to a medical condition or sincerely held religious belief. For further information, please contact the Chair of the Search Committee, Scott King, at sdk@vt.edu

Virginia Tech does not discriminate against employees, students, or applicants on the basis of age, color, disability, sex (including pregnancy), gender, gender identity, gender expression, genetic information, national origin, political affiliation, race, religion, sexual orientation, or veteran status, or otherwise discriminate against employees or applicants who inquire about, discuss, or disclose their compensation or the compensation of other employees or applicants, or on any other basis protected by law.

If you are an individual with a disability and desire an accommodation, please contact Sharon Collins at sharon72@vt.edu during regular business hours at least 10 business days prior to the event.

Tenure-Track Assistant Professor in Earth Data Science, Temple University

The Dept. of Earth and Environmental Science at Temple University (https://ees.cst.temple.edu) invites applications for a tenure-track Assistant Professor position in Earth Data Science, to begin July 1, 2022. We welcome applications from individuals who take a data-intensive approach to answer earth and environmental science questions. We particularly seek candidates who implement rigorous statistical analysis or leverage cutting-edge developments in data science which inform models of modern or ancient systems.

The successful candidate will develop a highly creative, externally funded research program, mentor graduate and undergraduate students, and teach undergraduate and graduate courses in geology/environmental science. Collaboration among faculty is strongly encouraged to leverage established expertise in hydrogeology, human-environment interactions, surface processes and sedimentary systems, energy, environmental and polar geophysics, geochemistry, and planetary geology. Making use of the existing high-performance and scientific computer cluster (https://www.hpc.temple.edu) is also encouraged.

Temple University is a state-related, R1 university located in the vibrant, urban center of Philadelphia with a total undergraduate and graduate enrollment of approximately 40,000 students. The Dept. of Earth and Environmental Science, which is affiliated with the College of Science and Technology, provides rigorous training in geological and environmental science to undergraduate (BS and BA Geology, BS Environmental Science), Masters (Geology), and Ph.D. (Geoscience) students.

To apply, email following materials as one PDF file to eessearch@temple.edu 1) cover letter; (2) CV; (3) statement of research plan; (4) statement of teaching philosophy; (5) names and contact information of at least three references; and (6) reprints of up to three peer-reviewed publications. Review of applications will begin December 3, 2021. The position will remain open until filled but application materials should be submitted by this date for full consideration. Temple University is an equal opportunity, equal access, affirmative action employer committed to achieving a diverse community (AA, EOE, M/F/D/V). The department specifically encourages applications from women and minorities.

Inquiries about this position should be directed to the search committee chair, Dr. Atsuhiro Muto amuto@temple.edu.

Structural and Neotectonics Tenure Track Position, Geological Sciences Dept., California State University San Bernardino

The Dept. of Geological Sciences at California State University, San Bernardino (CSUSB) invites applications for a tenure-track position in structural geology and/or neotectonics at the Assistant Professor level to begin August 2022. Applicants must have a strong commitment to teaching and a willingness to direct undergraduate and graduate students in research. Preference will be given to candidates with experience in structural geology and field mapping.

Teaching responsibilities will include introductory courses, structural geology, neotectonics, introduction to geological mapping, advanced field geology, and upper-level undergraduate and graduate courses in the applicant's specialty. This faculty member reports to the Chair of Geological Sciences and is a full-time faculty member appointment.

Minimum Qualifications: a Ph.D in Geological Sciences or a related field is required by time of appointment on August 1, 2022.

If interested, apply at: https://careers.csusb.edu/en-us/job/504568/structural-and-neotectonics-tenure-track-position-geological-sciences-department. Salary is commensurate with experience. Application review begins November 1, 2021 until the position is filled.

The Department has five full-time faculty members and offers B.A., B.S., and M.S. degrees; see details at: https://www.csusb.edu/geology. CSUSB exists in a geologically rich and diverse region of North America; specifically, our Department is located 0.5 km from the San Andreas Fault - the Pacific Plate Boundary.

CSUSB is in San Bernardino, 60 miles east of Los Angeles. CSUSB serves approximately 20,000 students, of which 81% are first-generation college students, and graduates about 5,000 students annually. CSUSB has one of the most diverse student populations of any university in the Inland Empire, and the second highest Hispanic enrollment of all public universities in California.

OPPORTUNITIES FOR STUDENT

Summer 2022 Science Undergraduate Laboratory Internships (SULI). Are you an undergraduate student or recent graduate in science, technology, engineering, or math looking to develop your research skills?

Then the SULI program is for you. Gain hands-on research experience on an exciting project under the guidance of a mentor and build your professional network at a national lab. Present your research to scientists and peers, join in social activities, and engage in a variety of professional development activities to enhance your career skills.

The SULI program is sponsored and managed by the Dept. of Energy (DOE) / Office of Science's Workforce Development for Teachers and Scientists (WDTS) program in collaboration with 17 DOE national laboratories and facilities across the U.S.

Benefits

- $650/week stipend
- Housing accommodations or housing allowance
- Round-trip travel reimbursement

Learn how to apply at https://science.osti.gov/wdts/suli/How-to-Apply.

Applications are due January 12, 2022 at 5:00 PM ET.

For full eligibility requirements, please visit https://science.osti.gov/wdts/suli/eligibility.

Summer 2022 Community College Internships (CCI). Are you a community college student in science, technology, engineering, or math looking to develop your technical skills?

Then the CCI program is for you. Gain hands-on experience in a technical project under the guidance of a mentor and build your professional network at a national lab. Present your work to scientists and peers, join in social activities, and engage in a variety of professional development activities to enhance your career skills.

The CCI program is sponsored and managed by the Dept. of Energy (DOE) / Office of Science's Workforce Development for Teachers and Scientists (WDTS) program in collaboration with 16 DOE national laboratories and facilities across the U.S.

Benefits

- $650/week stipend
- Housing accommodations or housing allowance
- Round-trip travel reimbursement

Learn how to apply at https://science.osti.gov/wdts/cci/How-to-Apply.

Applications are due January 12, 2022 at 5:00 PM ET.

For full eligibility requirements, place visit https://science.osti.gov/wdts/cci/eligibility.

Graduate Research Opportunities at Purdue. The Dept. of Earth, Atmospheric, and Planetary Sciences (EAPS) at Purdue University is looking for enthusiastic and self-motivated graduate students for a variety of research projects in Geology and Geophysics, Planetary, Environmental, and Atmospheric Sciences. As a multidisciplinary department within the College of Science, EAPS draws students from a variety of STEM backgrounds. Students with demonstrated academic and research excellence are invited to explore research opportunities at http://www.eaps.purdue.edu/gradresearch.

Jonathan O. Davis Fellowship, Quaternary Geology of the Great Basin, Desert Research Institute, Nevada. The Jonathan O. Davis Fellowship Supports Graduate Students Working on the Quaternary Geology of the Great Basin.

One Masters student will be funded up to $2500 and one PhD student will be funded up to $5,000. The national fellowship is open to graduate students enrolled in an M.S. or Ph.D. program at any university in the United States. Applications must be submitted as a single PDF to JODfellowship@dri.edu by January 15, 2022. Details on application and submission requirements can be found at https://www.dri.edu/about/awards-and-scholarships/davis-fellowship/. Proposals will not be returned.

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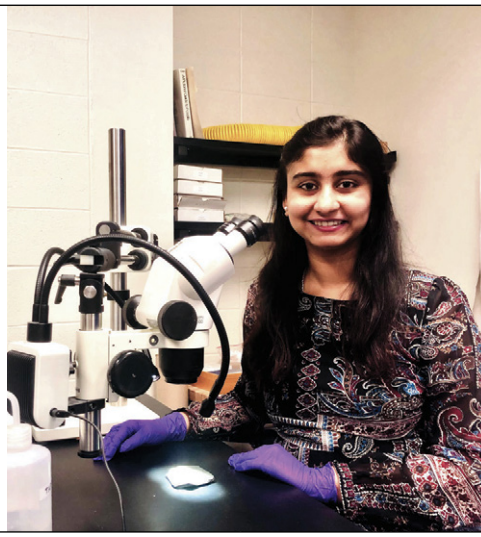
—Sinjini Sinha, member since 2017



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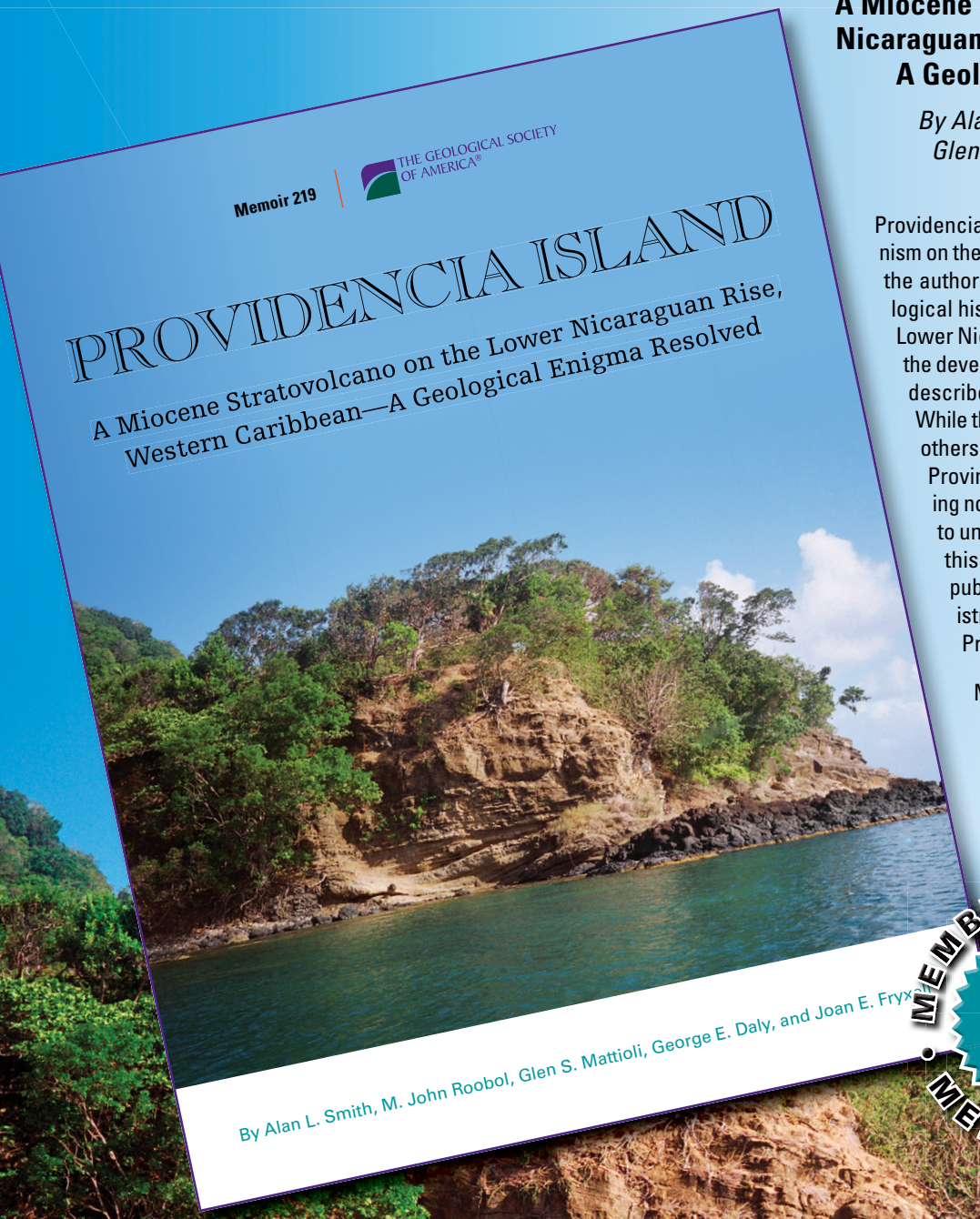

Providencia Island: A Miocene Stratovolcano on the Lower Nicaraguan Rise, Western Caribbean—A Geological Enigma Resolved

By Alan L. Smith, M. John Roobol, Glen S. Mattioli, George E. Daly, and Joan E. Fryxell

Providencia is the only example of subaerial volcanism on the Lower Nicaraguan Rise. In this volume, the authors examine this volcanism and the geological history of the western Caribbean and the Lower Nicaraguan Rise, whose origin and role in the development of the Caribbean plate has been described as enigmatic and poorly understood. While the Providencia alkaline suite is similar to others within the Western Caribbean Alkaline Province, its subalkaline suite is unique, having no equivalent within the province. In order to unravel its complex history and evolution, this volume presents new and previously published results for the geology, geochemistry, petrology, and isotopic ages from the Providencia island group.

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