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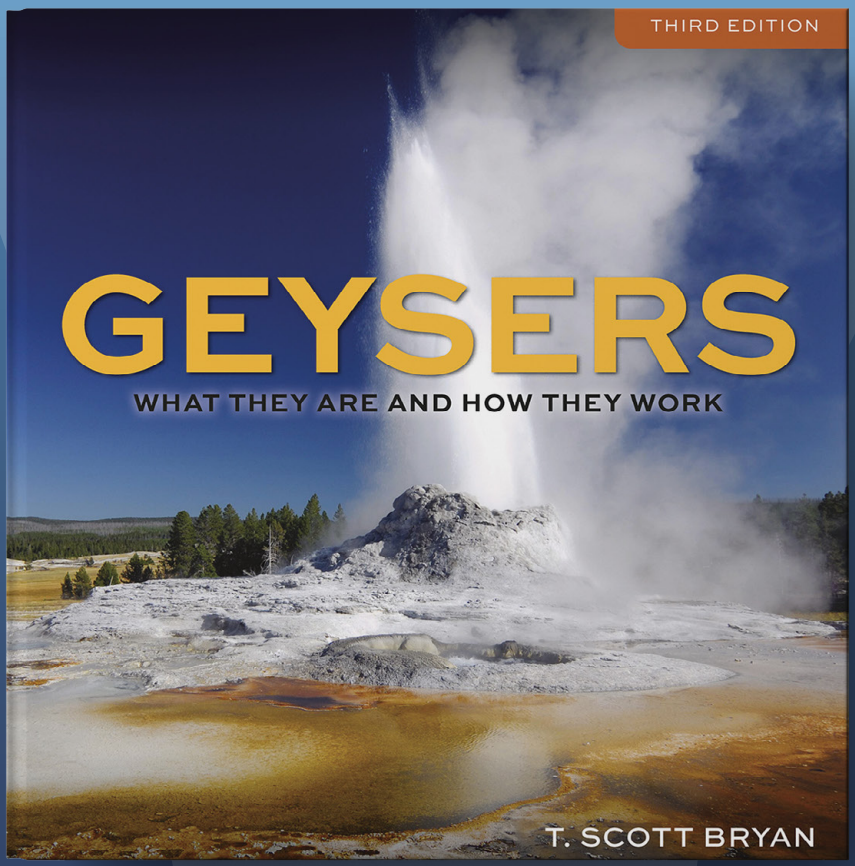

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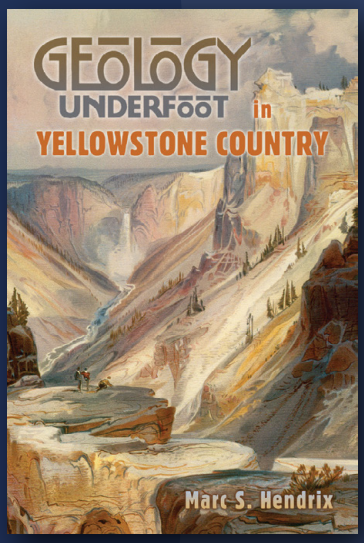

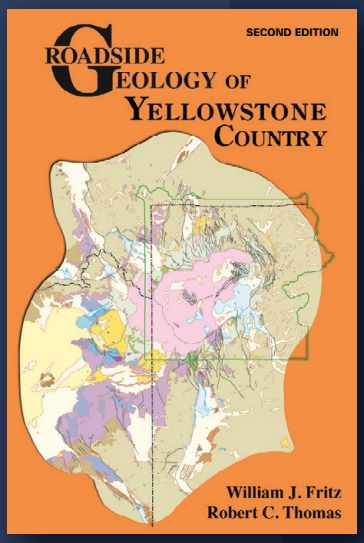

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***GSA TODAY* STAFF**

Science Editors: Peter Copeland, University of Houston, Department of Earth and Atmospheric Sciences, Science & Research Building 1, 3507 Cullen Blvd., Room 314, Houston, Texas 77204-5008, USA, copeland@uh.edu; **Christian Koeberl**, Department of Lithospheric Research, University of Vienna, Althanstrasse 14, A-1090 Vienna, Austria, christian.koeberl@univie.ac.at.

Managing Editor: Katie Busser, kbusser@geosociety.org, gsatoday@geosociety.org

Graphics Production: Mia Rincón, mrincon@geosociety.org

For advertising inquiries, contact:
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Cover: View of granite boulders covered with ancient rock carvings and inscriptions on Sehel Island, Nile River, near Aswan. See related article on p. 4–9.

FEATURES

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Erratum: The March/April 2026 issue of *GSA Today* mistakenly omitted Mingxi Hu from the list of 2025 Graduate Student Research Grant recipients. Hu was recognized and received a grant for the proposal "Climatic Controls on Late Paleozoic Ice Age Cyclothem Deposition" by the Sedimentary Geology Division. *GSA Today* regrets this omission and congratulates Mingxi Hu on this achievement.

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Lost in Non-Translation: AI Translation Could Bring Non-English Literature into Modern Geoscience Research

Elena Robakiewicz,*[,1] Walter Alvarez,[2] Lung Sang Chan,[2,3] and Tadesse Alemu[4]

ABSTRACT

Over the past several decades, English has emerged as the dominant language across the geological sciences. Despite this growth of a "unifying" language, there is still substantial research, particularly from before the 1970s, that is available only in other languages. This results in unfamiliar concepts as well as regions of the world whose geology and geological history are not well incorporated in modern scientific literature, often causing them to be overlooked or understudied. Human translation of texts is not always possible due to high time and resources costs. This article, therefore, highlights the potential use of free, publicly available artificial intelligence (AI) tools to recover earlier findings and reincorporate them into scientific conversations. This paper is a call for lost geoscience papers in languages other than English. We aim to collect papers "lost in non-translation" containing pivotal scientific ideas that can be incorporated into the English scientific literature with the use of AI translation. We seek identification in particular of two kinds of legacy research: (1) papers that should be recognized historically as early proposals of hypotheses or theories that are now widely accepted or are currently debated (such as the metacraton, or diwa, concept from the Chinese literature); and (2) papers containing data that could contribute to current research (such as data from a Russian paper about what lies buried beneath the Aswan High Dam and Lake Nasser in Egypt). While AI cannot replace translations by scientifically trained experts, these services can be powerful tools for scientific discovery, and we urge our scientific colleagues to help us rediscover the potential of non–English language papers.

INTRODUCTION

A striking feature of 20th century science is how dominant English has become in scientific communication. International scientific journals are increasingly published in English. English is the language of international conferences and day-to-day communications among groups of scientists who have no other common language. The benefits of having a common language are obvious, but it also causes problems, such as disenfranchising and putting more pressure on non-native English speakers. In this paper we specifically address another problem—the loss of important scientific "legacy research" papers with key concepts published in other languages and never translated into English. We focus specifically on such lost concepts in earth sciences.

From the Scientific Revolution until the end of the 20th century, scientific research was discussed and published in many different languages (e.g., Kaplan, 2001; Ferguson, 2007). The two senior authors of this paper (WA and LC) recall a time when it was necessary to learn other languages to communicate globally.

Until 1914, German was the predominant international language of science. After 1914, however, its dominance declined due to post-war banishment of Germany from international scientific conferences (Ammon, 2001). After World War II, the United States rapidly expanded its scientific research, particularly compared to its academic rivals, Germany and France, who were rebuilding after the war and had also lost much of their scientific community due to emigration during the National Socialist regime.

Over decades, the Cold War stimulus to scientific research, development of computer technology, growth of large research-oriented universities, and increased political and ideological isolation of countries like China and the Soviet Union, all contributed to an increase in the United States' share of the world's research output (Ferguson, 2007), thus increasing the volume of English-language research. The dominance of the English language also benefitted from centuries of Great Britain's imperial expansion, which had spread the English language across the globe.

Since the 1900s, a steady decline has been observed in the percentage of non-English scientific papers published, with the exception of the periods of World War I and World War II. During wartime, the total volume of academic papers published decreased, particularly the share of French, German, and Russian papers, which did not rebound until reconstruction in the 1960s (in 1969 German represented 6.17%, French 5.38%, and Russian 5.06%; Fig. 1; Liu, 2017). According to the Science Citation Index Expanded (1900–2015), in the 21st century, <5% of papers published per year are in languages other than

* *erobakie@uni-koeln.de*

[1] *Institute for Geography Education, University of Cologne, Germany*
[2] *Department of Earth and Planetary Science, University of California Berkeley, USA*
[3] *Department of Earth Sciences, The University of Hong Kong, Hong Kong*
[4] *Geology and Environmental Science Department, University of Wisconsin Eau Claire, USA*

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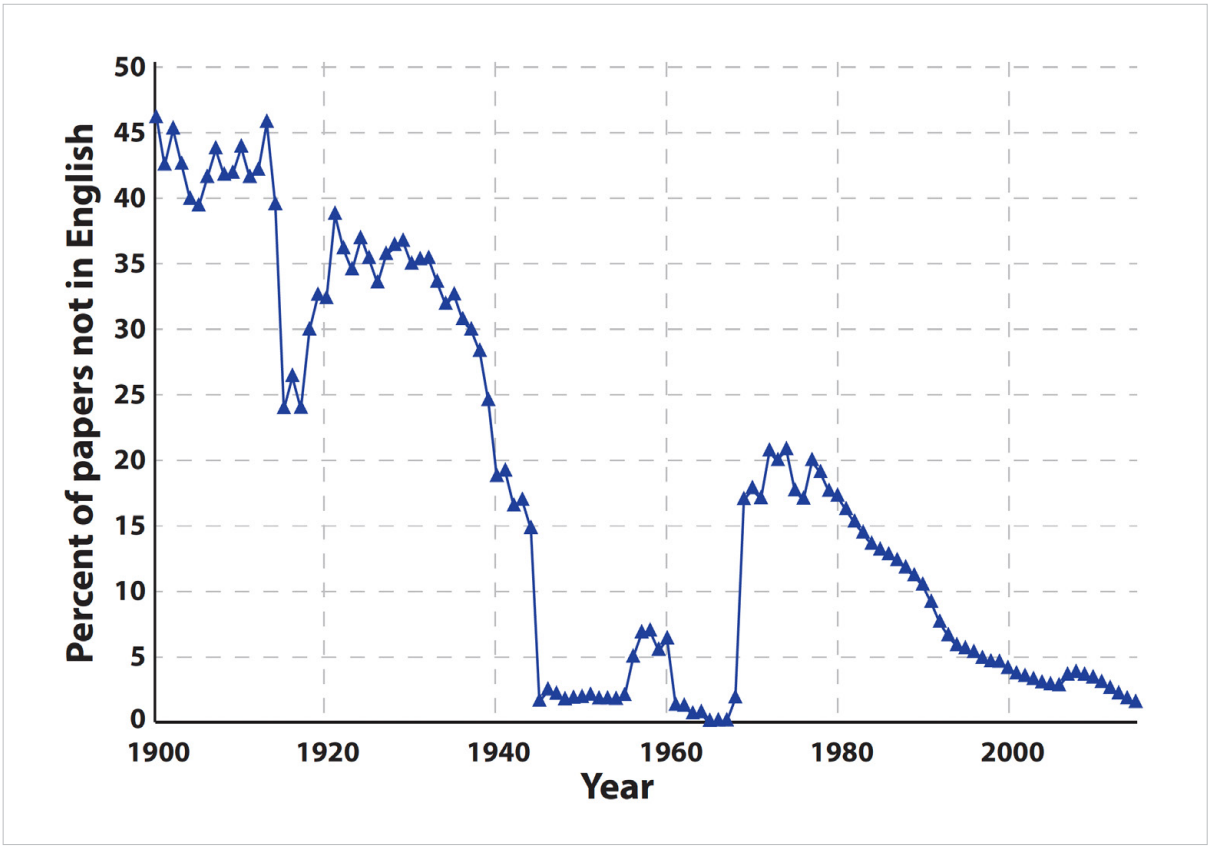

Figure 1. Percent of papers not in English in Science Citation Index Expanded (1900–2015) based on data reported by Liu (2017).

English (Fig. 1). An estimated 97% of all scientific papers in 2015 and 98.5% of all geoscience-related papers between 2006 and 2015 were published in English (Table 1; Liu, 2017; see Table S1 in the Supplemental Material[5]).

In this paper we call attention to the potential that the modern dominance of English in geosciences may have obscured a wealth of older papers published in other languages with important observations, ideas, and hypotheses that have not been incorporated in the modern lingua franca framework. While individual researchers may have unearthed many historically important but obscure papers in other languages (e.g., Şengör and Bach, 2025; History of Earth Sciences Society), we hope to provide a pathway for a more systematic approach. In this paper, we discuss two exemplary cases of important lost geological concepts: one published in Russian, the other in Chinese. We then highlight the benefits and harms of monolingual science to the geosciences and modern researchers. We conclude by highlighting the potential of modern translation technologies to recover historic texts from other languages.

This paper acts as a call across the geoscience community to bring forward historic papers that may have been "lost in non-translation" to ensure a preservation of valuable scientific ideas that may have been overlooked due to the dominance of English. We further suggest that it would be valuable to establish a repository for machine translations of important older papers.

SCIENCE LOST IN NON-TRANSLATION

The Deep Gorge beneath the Aswan High Dam in Egypt

During exploratory drilling in preparation for construction of the Aswan High Dam in Egypt during the 1960s, a deep gorge was discovered beneath the site, cut to almost 200 m below sea level and entirely filled with Pliocene and Quaternary sediments. This posed a major problem for designing the dam foundation, which was to be constructed by Russian and Egyptian engineers. It also presented an intriguing geological mystery—how could such a gorge have been eroded to below sea level within the stable African continent during recent geological times?

This discovery was described in detail, in Russian, by I. S. Chumakov (1967)—a paper which was known to few, if any, geologists in the West at the time. In 1973, Leg 13 of the Deep Sea Drilling Project uncovered evidence that the Mediterranean had become isolated and dried up by evaporation during the Late Miocene Messinian Stage. This lowered the Nile's base level by perhaps as much as 3 km, resulting in headward erosion of the river for at least 700 km, forming a deep gorge beneath the Aswan Dam. Chumakov, then in Moscow, happened to see a newspaper report about the Messenian salinity crisis in the Mediterranean. He realized that this would explain the gorge and published a short account of the Aswan Gorge in the Initial Reports of DSDP leg 13 (Chumakov, 1973).

[5] Supplemental Material. Table S1. Comparison of English versus non-English articles science articles from 2006 to 2015. Please visit https://doi.org/10.1130/GSAT.S.32316507 to access the supplemental material; contact editing@geosociety.org with any questions.

Web of Science Categories	All Articles & Reviews (2006–2015)	Articles & Reviews in Languages besides English	Percent of Non-English Articles and Reviews (%)
ENGINEERING ENVIRONMENTAL	97,593	970	0.99
ENGINEERING GEOLOGICAL	22,338	94	0.42
ENGINEERING PETROLEUM	17,500	129	0.74
ENVIRONMENTAL SCIENCES	324,001	2,375	0.73
ENVIRONMENTAL STUDIES	53,071	312	0.59
GEOCHEMISTRY GEOPHYSICS	86,999	3,524	4.05
GEOGRAPHY PHYSICAL	43,233	330	0.76
GEOLOGY	23,749	3,540	14.91
GEOSCIENCES MULTIDISCIPLINARY	177,483	1,163	0.66
LIMNOLOGY	18,423	50	0.27
METEOROLOGY ATMOSPHERIC SCIENCES	103,234	23	0.02
MINERALOGY	22,962	357	1.55
MINING MINERAL PROCESSING	24,233	949	3.92
OCEANOGRAPHY	58,275	403	0.69
PALEONTOLOGY	24,572	761	3.10
REMOTE SENSING	29,157	380	1.30
SOIL SCIENCE	38,953	1,373	3.52
WATER RESOURCES	106,176	2,736	2.58
ALL EARTH SCIENCE DISCIPLINES	**1,271,952**	**19,469**	**1.53**

Table 1. Comparison of different branches of different earth science disciplines and the number of English versus non-English articles and reviews from the field (according to Web of Science) from 2006 to 2015, based on Liu (2017). Complete data is included in Table S1.

The Messenian Salinity Crisis was one of the great discoveries in the history of geology, and its details have been intensely studied for 50 years. But Chumakov's original paper, 115 pages long, full of geological detail, and with the critical figure more legible than in the 1973 paper, has never been translated. Thus, the detailed geological observations have been lost to the global English-language community for half a century.

The "Rediscovery" of Metacratons ("Diwa")

The concept of a "metacraton," a tectonic province that was once part of a stable craton but has undergone partial reworking and deformation, is relatively recent in Western geological literature. It may help to explain regions that do not fit neatly into the usual dichotomy between stable cratons and orogenic belts.

An important example is the Saharan Metacraton in northeastern Africa, which was recognized and named by Mohamed Abdelsalam and his colleagues (Abdelsalam et al., 2002). They described it as "a craton that has been remobilized during an orogenic event but that is still recognizable dominantly through its rheological, geochronological and isotopic characteristics" (Abdelsalam et al., 2002, p. 123). Their paper cites earlier work on craton remobilization within the framework of the now-outmoded geosyncline theory and mentions "paraplatform" and "quasicraton" as alternative names for areas of reworked basement.

The related concept of the "paraplatform" was introduced by Russian geologists as early as 1953 (Pavlovsky, 1953). In 1956, Chinese geologist Chen Guoda further advanced this idea, referring to it as "diwa," which he described as a post-platform developmental stage (Chen, 1956). Both the South China and North China Blocks are considered to be diwas, or metacratons, and this theory has been instrumental in Chinese literature in explaining the crustal development of China.

Since Chen Guoda's initial paper on the concept of diwa, numerous publications and studies in Chinese have explored how this concept can account for the formation of basins, volcanism, seismicity, geochemistry, and mineral metallogenesis in ostensibly stable platforms, and a 1:5,000,000 geologic map of the diwa systems and three special volumes of selected papers on the diwa theory have been published

(e.g., Chen, 2009). A Diwa Theory Prize was established to recognize significant contributions to the development of the theory (Lung, 1986). Unfortunately, the pioneering works of Chen Guoda and subsequent geologists on diwa have not been translated or received the recognition they deserve outside of China, despite their continued relevance in geological debate.

DISCUSSION

Impacts of a Lingua Franca on the Geosciences

A dominant scientific language has the potential to unify scientific communities. For those who have learned it, a common scientific language brings them into the fold of scientific discussion (Steigerwald et al., 2022), expanding their research beyond the size of their linguistic community. Large interdisciplinary projects and teams like the International Ocean Discovery Program, International Continental Scientific Drilling Program, Greenland Ice Core Project, or Scientific Committee of Antarctic Research require standardized communication methods, and a single common language is necessary.

However, English as the common language of science harms researchers who are not fluent. Conducting research and publishing in English is associated with academic prestige, leading to greater career and scientific mobility and opportunities (e.g., Hwang, 2005; López-Navarro et al., 2015; Huttner-Koros and Perera, 2016). Non-native speakers must therefore put additional time and resources into conducting reputable work (e.g., Vasconcelos et al., 2008; Ramírez-Castañeda, 2020; Amano et al., 2023), causing them to feel increased pressure. This pressure is especially strong for individuals whose language is highly divergent from English or who are from areas with poorer English proficiency (Hwang, 2005; Amano et al., 2016). Native English-speaking scientists, particularly those from North America, therefore inevitably receive preferential treatment due to the dominance of English in scientific publishing over non-native English-speaking colleagues (O'Neil, 2018). This can result in non-native speakers publishing in lesser-known journals or regional non-English journals, reducing the visibility and prestige of their work (Mur Dueñas, 2012).

A *lingua franca* in science also negatively impacts the quality of the science itself. The dominance of English in academia diminishes the diversity of perspectives which can be vital in constructing robust and innovative scientific knowledge (UNESCO, 2021). Inhibiting diverse points of view to fit within the structure and vocabulary of a single language hinders scholarly discourse and scientific creativity (Suzina, 2021). Constraining global scientific discussions to a single language limits who builds, has access to, and communicates scientific knowledge to the broader public and invested local communities (e.g., Meneghini and Packer, 2007; Nguyen and Tran, 2019; Márquez and Porras, 2020). This is particularly relevant within rapidly changing fields such as environmental, conservation, and climate sciences whose knowledge greatly impacts the public.

Lastly, as highlighted by the Aswan High Dam and diwa examples, monolinguistic science can cause knowledge generated in other languages to be lost. Exclusive use of English during literature searches, which is amplified by language biases in search engines (Rovira et al., 2021), often creates gaps within global databases and reviews (e.g., Konno et al., 2020; Zenni et al., 2023; Hannah et al., 2024).

Revisiting Our Untranslated Examples

Our examples of untranslated geoscience publications from other languages underscore the cost of overlooking important scientific knowledge. In Chumakov's example, an astonishing discovery, the buried Aswan Gorge, was virtually unknown to the English-speaking scientific community. Without the serendipitous discovery of the work from ODP Leg 13 by Chumakov, that information might still be unknown, and many details from his 1967 publication would likely remain hidden.

In the case of diwa, the divergence between the Chinese and English languages makes original works in Chinese less accessible to the broader scientific community compared to those in the Romance or Germanic languages (Ren and Rousseau, 2002). China's historic isolation from World War II to the early 1980s has left many early Chinese publications at risk of being lost, despite the recent increase in Chinese publications over the past few decades (Faghri and Bergman, 2024). The lack of effective translation may contribute to the permanent loss of early significant geological concepts. It is therefore critical to be proactive in finding and translating scientific ideas lost over the past century.

Translation can be a substantial undertaking, even for geologists fluent in multiple languages. As of 2025, despite many researchers, particularly senior ones, being aware of important ideas published in foreign languages, valuable insights and details of the original observations remain hidden from much of the scientific community, hindering the development of the geosciences as a whole.

Potential of AI in Translating Texts

The above discussion highlights the need to find and translate foreign publications that may contain important concepts in science and also the practical challenges in doing so. Translating academic texts is a large task for researchers, whether in devoting the time to translate a text or finding the money to hire another researcher to translate. Hannah et al. (2024) found that, in ecological sciences, the lack of language skills, limited funds, and time constraints are key factors that cause non-English literature to be overlooked in literature reviews. We therefore propose utilizing advanced neural translation technologies, specifically large language models (LLMs) and neural machine translation (NMT) to help preserve and disseminate concepts that are on the brink of being lost. While neural translation technologies are evolving rapidly, these neural translators probably represent the most advanced ones at time of publication.

LLMs such as ChatGPT are not designed to translate text, but they can be prompted to translate with decent accuracy. They scour open-access resources for information and piece together the most likely response based on the data and information compiled. While some studies have claimed LLMs have reached human parity between high-resource languages like English and Chinese, which have an abundance of online content available, others claim that those findings are probably overstated (Läubli et al., 2020), especially since LLMs were created for content analysis, making translations less direct and more susceptible to biases present within the training set. Regardless, LLMs are generally believed to be weaker than NMTs, particularly in translating low-resource languages, although future multilingual language models will potentially

begin to address some concerns.

NMTs, such as GoogleTranslate or DeepL, are specifically designed to create accurate and realistic-sounding translations. Created around 2014, NMTs first translates words and phrases in chunks. After initial translation by an "encoder," the full context of a sentence is used by a "decoder" to create a more natural sounding-translation. Rather than just translating words or phrases, NMTs explore words within their context, making all information within a sentence, weighted based on a source-language attention model, relevant to the translation (Way, 2018; Mohamed et al., 2021). The strength of these resources in replacing human translation has been debated (e.g., Castilho et al., 2017; Comelles and Laso, 2025), and ultimately NMTs have lower-quality translations for low-resource languages.

Beyond potential language errors, such as poorly translated scientific or technical terms and general mistranslations (Wan et al., 2022), AI translation technologies strive for idiomatic and highly fluent translations, which can limit accuracy and change the scientific meaning. It is therefore critical that these tools be used as a starting point rather than an end point. Understanding the broader scientific implications of papers requires human post-editing to achieve textual cohesion and higher standards of quality (e.g., Castilho et al., 2017; Läubli et al., 2020; Orrego-Carmona, 2022). While these technologies are useful for giving an overview of a paper, there is no assurance on the scientific accuracy of the translated text.

CALL FOR "LOST IN NON-TRANSLATION" PAPERS

How can we save papers on the brink of being lost in non-translation? AI translations can aid in identifying and promoting overlooked concepts, such as the Aswan buried gorge or diwa. With the help of AI translation, we believe the solution has two components. The first is sharing papers that have nearly been "lost in non-translation." This could be accomplished through a community repository for older papers, even without translation. The second is then translating these papers and hosting them in a forum where translations can be shared, commented on, and edited between members of the community.

We recommend building an open database within an already established hub, such as Zenodo, Pangaea, ResearchGate, where it's possible to host a community or create a forum to share texts "lost in non-translation." These texts can then be living documents where a community of interested researchers can discuss issues in translations and utilize skillsets to provide live updates to increase the accuracy of translations.

We recognize that the recommended method for translating texts is not peer-reviewed or published in a traditional sense. There will be shared materials with errors or poor translations. Yet we believe that the creation of a community interested in these texts and distributing them to a broader swath of earth scientists benefits the science far more than any potential harm. Through this call, we hope to restore papers on the brink of being lost, restoring them as living documents at the center of new scientific discussions. We invite interested researchers to contact the corresponding author to continue this discussion and explore the use of new AI technologies and open data repositories to recover pivotal science from the past.

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REFERENCES CITED

Abdelsalam, M.G., Liégeois, J.P., and Stern, R.J., 2002, The Saharan Metacraton: Journal of African Earth Sciences, v. 34, no. 3–4, p. 119–136, https://doi.org/10.1016/S0899-5362(02)00013-1.

Amano, T., González-Varo, J.P., and Sutherland, W.J., 2016, Languages are still a major barrier to global science: PLoS Biology, v. 14, no. 12, https://doi.org/10.1371/journal.pbio.2000933.

Amano, T., Ramírez-Castañeda, V., Berdejo-Espinola, V., Borokini, I., Chowdhury, S., Golivets, M., González-Trujillo, J.D., Montaño-Centellas, F., Paudel, K., White, R.L., and Veríssimo, D., 2023, The manifold costs of being a non-native English speaker in science: PLoS Biology, v. 21, no. 7, https://doi.org/10.1371/journal.pbio.3002184.

Ammon, U., ed., 2001, The Dominance of English as a Language of Science: Effects on Other Languages and Language Communities: Berlin, De Gruyter Brill, https://doi.org/10.1515/9783110869484.

Castilho, S., Moorkens, J., Gaspari, F., Calixto, I., Tinsley, J., and Way, A., 2017, Is neural machine translation the new state of the art?: The Prague Bulletin of Mathematical Linguistics, v. 108, p. 109–120, https://doi.org/10.1515/pralin-2017-0013.

Chen, G., 1956, Examples of activizing regions in the Chinese Platform with special reference to the Cathaysian problem: Acta Geologica Sinica, v. 36, no. 3, p. 239–271.

Chen, G., 2009, 陈国达全集 [The complete works of Chen Guoda]: Changsha, Central South University Press.

Chumakov, I.S., 1967, Плиоценовые и плейстоценовые отложения долины Нила в Нубии и Верхнем Египте [Pliocene and Pleistocene deposits of the Nile Valley in Nubia and Upper Egypt;: Academy of Sciences of the U.S.S.R., Geol. Institute Trans., Moscow, v. 170, no. 5.

Chumakov, I.S., 1973, Pliocene and Pleistocene deposits of the Nile Valley in Nubia and Upper Egypt (abstract), in Kaneps, A.G., ed., 1973, Initial Reports of the Deep Sea Drilling Project, Volume XIII, Part I: Washington, D.C., U.S. Government Printing Office, https://doi.org/10.2973/dsdp.proc.13.144-3.1973.

Comelles, E., and Laso, N.J., 2025, The impact of MT as a writing tool on EFL academic writing: A qualitative linguistic analysis: Journal of Second Language Writing, v. 69, https://doi.org/10.1016/j.jslw.2025.101231.

Faghri, A., and Bergman, T.L., 2024, Highly Ranked Scholars and the influence of countries and regions in research fields, disciplines, and specialties: Quantitative Science Studies, v. 5, no. 2, p. 464–483, https://doi.org/10.1162/qss_a_00291.

Ferguson, G., 2007, The global spread of English, scientific communication and ESP: Questions of equity, access and domain loss: Ibérica: Revista de la Asociación Europea de Lenguas para Fines Específicos, v. 13, p. 7–38.

Hannah, K., Haddaway, N.R., Fuller, R.A., and Amano, T., 2024, Language inclusion in ecological systematic reviews and maps: Barriers and perspectives: Research Synthesis Methods, v. 15, no. 3, p. 466–482, https://doi.org/10.1002/jrsm.1699.

History of Earth Sciences Society, 2022, About Us: https://historyearthscience.org/about-us (accessed May 2026)

Huttner-Koros, A., and Perera, S., 2016, Communicating science in English: A preliminary exploration into the professional self-perceptions of Australian scientists from language backgrounds

other than English: Journal of Science Communication, v. 15, https://doi.org/10.22323/2.15060203.
Hwang, K., 2005, The inferior science and the dominant use of English in knowledge production: A case study of Korean science and technology: Science Communication, v. 26, no. 4, p. 390–427, https://doi.org/10.1177/1075547005275428.
Kaplan, R.B., 2001, English—the accidental language of science, in Ammon, U., ed., The Dominance of English as a Language of Science: Berlin, De Gruyter Brill, p. 3–26, https://doi.org/10.1515/9783110869484.3.
Konno, K., Akasaka, M., Koshida, C., Katayama, N., Osada, N., Spake, R., and Amano, T., 2020, Ignoring non-English-language studies may bias ecological meta-analyses: Ecology and Evolution, v. 10, no. 13, p. 6373–6384, https://doi.org/10.1002/ece3.6368.
Läubli, S., Castilho, S., Neubig, G., Sennrich, R., Shen, Q., and Toral, A., 2020, A set of recommendations for assessing human–machine parity in language translation: Journal of Artificial Intelligence Research, v. 67, https://doi.org/10.1613/jair.1.11371.
Liu, W., 2017, The changing role of non-English papers in scholarly communication: Evidence from Web of Science's three journal citation indexes: Learned Publishing, v. 30, no. 2, p. 115–123, https://doi.org/10.1002/leap.1089.
López-Navarro, I., Moreno, A.I., Quintanilla, M.Á., and Rey-Rocha, J., 2015, Why do I publish research articles in English instead of my own language? Differences in Spanish researchers' motivations across scientific domains: Scientometrics, v. 103, p. 939–976, https://doi.org/10.1007/s11192-015-1570-1.
Lung, S.C., 1986, 地洼学说奖励基金简介 [Introduction to the Geodesic Doctrine Incentive Fund]: Geotectonics and Mineralogy.
Márquez, M.C., and Porras, A.M., 2020, Science communication in multiple languages is critical to its effectiveness: Frontiers in Communication, v. 5, https://doi.org/10.3389/fcomm.2020.00031.
Meneghini, R., and Packer, A.L., 2007, Is there science beyond English?: Initiatives to increase the quality and visibility of non-English publications might help to break down language barriers in scientific communication: EMBO Reports, v. 8, p. 112–116, https://doi.org/10.1038/sj.embor.7400906.
Mohamed, S.A., Elsayed, A.A., Hassan, Y.F., and Abdou, M.A., 2021, Neural machine translation: past, present, and future: Neural Computing & Applications, v. 33, p. 15919–15931, https://doi.org/10.1007/s00521-021-06268-0.
Mur Dueñas, P., 2012, Getting research published internationally in English: An ethnographic account of a team of Finance Spanish scholars' struggles: Ibérica: Revista de la Asociación Europea de Lenguas para Fines Específicos, v. 24, p.139–155.
Nguyen, A., and Tran, M., 2019, Science journalism for development in the Global South: A systematic literature review of issues and challenges: Public Understanding of Science, v. 28, no. 8, p. 973–990, https://doi.org/10.1177/0963662519875447.
O'Neil, D., 2018, English as the lingua franca of international publishing: World Englishes, v. 37, no. 2, p. 146–165, https://doi.org/10.1111/weng.12293.
Orrego-Carmona, D., 2022, La traducció automàtica en mans de tots: Adopció i canvis entre els usuaris generals de TA [Machine translation in everyone's hands: Adoption and changes among general users of MT]: Tradumàtica: Tecnologies de la Traducció, p. 322–339, https://doi.org/10.5565/rev/tradumatica.324.
Pavlovsky, E. V., 1953, О некоторых общих закономерностях развития фауны [On some general regularities of fauna development]: Proceedings of the USSR Academy of Sciences, Geological Series, no. 5.
Ramírez-Castañeda, V., 2020, Disadvantages in preparing and publishing scientific papers caused by the dominance of the English language in science: The case of Colombian researchers in biological sciences: PLoS One, v. 15, no. 9, https://doi.org/10.1371/journal.pone.0238372.
Ren, S., and Rousseau, R., 2002, International visibility of Chinese scientific journals: Scientometrics, v. 53, no. 3, p. 389–405, https://doi.org/10.1023/A:1014877130166.
Rovira, C., Codina, L., and Lopezosa, C., 2021, Language bias in the Google Scholar ranking algorithm: Future Internet, v. 13, no. 2, https://doi.org/10.3390/fi13020031.
Şengör, A.M.C., and Bach, T., 2025, Ernst Haeckel's present of the first two volumes of Das Antlitz der Erde by Eduard Suess to his friend Dr. Paul von Ritter: Why is it important?: International Journal of Earth Sciences, v. 114, p. 323–332, https://doi.org/10.1007/s00531-024-02478-8.
Steigerwald, E., Ramírez-Castañeda, V., Brandt, D.Y.C., Báldi, A., Shapiro, J.T., Bowker, L., and Tarvin, R.D., 2022, Overcoming language barriers in academia: Machine translation tools and a vision for a multilingual future: Bioscience, v. 72, no. 10, p. 988–998, https://doi.org/10.1093/biosci/biac062.
Suzina, A.C., 2021, English as lingua franca or the sterilisation of scientific work: Media Culture & Society, v. 43, no. 1, p. 171–179, https://doi.org/10.1177/0163443720957906.
UNESCO, 2021, UNESCO Recommendation on Open Science, 34 p., https://doi.org/10.54677/MNMH8546.
Vasconcelos, S.M.R., Sorenson, M.M., Leta, J., Sant'Ana, M.C., and Batista, P.D., 2008, Researchers' writing competence: a bottleneck in the publication of Latin-American science?: The EMBO Reports, v. 9, p. 700–702, https://doi.org/10.1038/embor.2008.143.
Wan, Y., Yang, B., Wong, D.F., Chao, L.S., Yao, L., Zhang, H., and Chen, B., 2022, Challenges of neural machine translation for short texts: Computational Linguistics, v. 48, no.2, p. 321–342, https://doi.org/10.1162/coli_a_00435.
Way, A., 2018, Chapter 3.3: Machine translation: Where are we at today, in Angelone, E., Ehrensberger-Dow, M., and Massey, G., eds., The Bloomsbury Companion to Language Industry Studies, New York, Bloomsbury, p. 311–332.
Yan, J., Yan, P., Chen, Y., Li, J., Zhu, X., and Zhang, Y., 2026, Benchmarking LLMs against human translators: A comprehensive evaluation across languages, domains, and expertise levels: IEEE Transactions on Big Data, v. 12, no. 3, pp. 801-813, https://doi.org/10.1109/TBDATA.2025.3644594.
Zenni, R.D., Barlow, J., Pettorelli, N., Stephens, P., Rader, R., Siqueira, T., Gordon, R., Pinfield, T., and Nuñez, M.A., 2023, Multi-lingual literature searches are needed to unveil global knowledge: Journal of Applied Ecology, v. 60, no. 3, p. 380–383, https://doi.org/10.1111/1365-2664.14370.

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The Geological Society of America
CONNECTS 26
Denver, Colorado, USA
11–14 October 2026

This October, the global geoscience community will gather to explore the themes *Celebrating a Century of Continental Drift: Understanding Earth in Motion, Riverscapes in Transition: Dynamics, Hazards, and Human Futures,* and *Innovations in Exploration from Deep Earth to Deep Space*, showcasing cutting-edge research, emerging challenges, and new frontiers across the Earth sciences. Submit your abstract today!

Important Dates

2 June – Registration Opens
6 August – Abstract Deadline
2 September – Non-Tech Space Request Deadline
27 August – Early Registration & Student Travel Grant Deadline
2 October – Standard registration Deadline

Hotels

Hotel	Single Room Rate	Double Room Rate
Hyatt Regency Denver at Colorado Convention Center	$269	$269
AC Hotel Denver Downtown	$279/$299	$279/$299
Embassy Suites Denver Downtown	$269	$269
Hyatt House Denver Downtown	$249	$249
Hyatt Place Denver Downtown	$239	$239
Sonesta Denver Downtown	$249	$249
The Westin Denver Downtown	$239	$249

Travel and Transportation

Located in the heart of downtown Denver, the Colorado Convention Center is easily accessible from Denver International Airport (DEN) via the RTD A Line commuter rail. This train runs regularly between the airport and Denver Union Station, a central transit hub about a mile from the convention center. From there, attendees can hop on the free 16th Street MallRide shuttle, take a quick taxi or rideshare, or walk to the venue. Numerous RTD light rail lines and bus routes also serve downtown, making it easy to travel from hotels and neighborhoods across the metro area.

Beyond public transportation, rideshare options like Uber and Lyft offer convenient door-to-door service throughout the city, and taxis are available at both the airport and around downtown. Rental cars can be picked up at DEN for those looking to explore beyond the city. Many hotels are located within walking distance of the convention center, and Denver's walkable downtown makes getting around on foot simple and efficient.

Location

Colorado Convention Center
700 14th St, Denver, CO 80202

Non-Tech Requests

https://connects.geosociety.org/networking/events/request-space

The submission portal for non-technical space is now open! Space is reserved on a first-come, first-served basis; in order to avoid increased fees, you must submit your request by 2 September 2026. The event space/event listing submissions should be used for business meetings, luncheons, receptions, town halls, etc.

Registration

Category	2026 Early Registration	2026 Standard Registration	2026 Late and Onsite Registration
Professional Member, Full	$ 680	$ 770	$ 870
Professional Member, One Day	$ 395	$ 445	$ 495
Professional Nonmember, Full	$ 940	$ 1,030	$ 1,110
Professional Nonmember, One Day	$ 550	$ 605	$ 655
Senior Professional Member, Full	$ 390	$ 395	$ 525
Senior Professional Member, One Day	$ 250	$ 270	$ 290
Lifetime Member, Full	$ 575	$ 655	$ 740
Lifetime Member, One Day	$ 335	$ 380	$ 420
Affiliate Member, Full	$ 680	$ 770	$ 870
Affiliate Member, One Day	$ 395	$ 445	$ 495
Early Career Professional Member, Full	$ 420	$ 460	$ 555
Early Career Professional NonMember, Full	$ 535	$ 575	$ 670
Early Career Professional Member, One Day	$ 275	$ 290	$ 365
Early Career Professional NonMember, One Day	$ 395	$ 415	$ 485
Student Member, Full	$ 205	$ 250	$ 315
Student Member, One Day	$ 130	$ 180	$ 225
Student Nonmember, Full	$ 270	$ 320	$ 450
Student Nonmember, One Day	$ 185	$ 230	$ 300
K-12 Teacher Member, Full	$ 95	$ 95	$ 95
K-12 Teacher Member, One Day	$ 65	$ 65	$ 65
K-12 Teacher Nonmember, Full	$ 165	$ 165	$ 165
K–12 Teacher Nonmember, One Day	$ 105	$ 105	$ 105
Guest/Spouse*	$ 130	$ 140	$ 150

* The guest or companion registration fee is for non-geologists accompanying either a professional or student meeting registrant. This fee does not include access to technical sessions. Any guest wishing to see a specific presentation should go to the on-site registration desk to request a special pass.

International Attendees

GSA offers a 75% discount on annual meeting registration fees for individuals from low- and lower-middle-income countries, and a 50% discount for those from upper-middle-income countries. The discounts do not apply to the K-12 Teacher or Guest/Spouse registration categories. Find more details on the International Attendee Information page.

GSA also provides a 15% discount on registration fees for members of GSA Associated Societies. Please refer to the list of GSA Associated Societies and contact your Society to obtain your discount code. The code can be applied during registration.

Note: The abstract submission fee does not constitute registration for Connects. Registration is required in addition to the abstract fee.

Cancellation Policy

A $50 processing fee will be charged for all registration cancellations received in writing by 11:59 p.m. MDT on 10 September 2026.

No refunds will be issued after the cancellation deadline for any registration type or ticketed events.

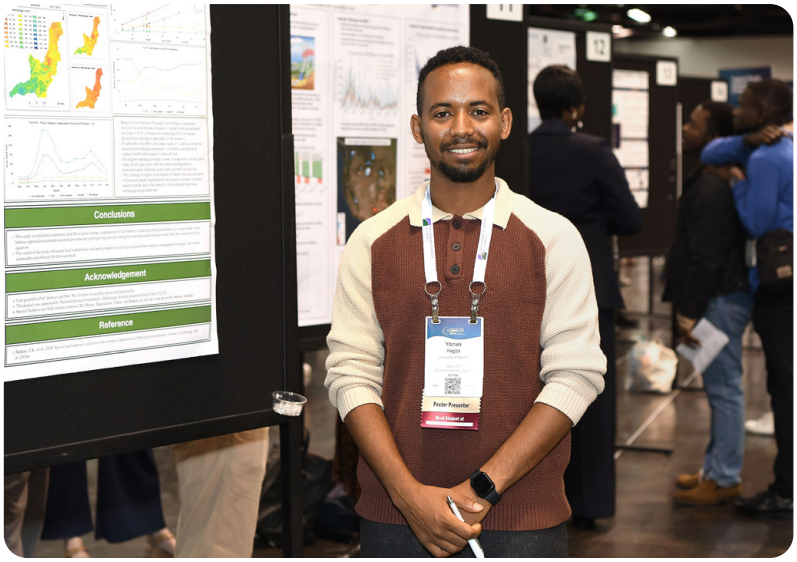
The Geological Society of America recognizes that unforeseen circumstances may prevent attendance. Refund requests submitted after 10 September 2026 may be considered on a case-by-case basis; however, approval is not guaranteed.

GSA will not accept any refund requests submitted more than 45 days after the conclusion of the meeting.

Abstract Information

What to expect when preparing and presenting your research at GSA Connects 2026

Abstract submission is open! Abstracts submissions related to the meeting themes *Celebrating a Century of Continental Drift: Understanding Earth in Motion, Riverscapes in Transition: Dynamics, Hazards, and Human Future,* and *Innovations in Exploration from Deep Earth to Deep Space* are encouraged.



Abstract FAQs

- The final abstract submission deadline is 6 August.
- Abstracts can be submitted to a fitting topical session, or to the discipline pool.
- Titles are limited to 250 characters, including spaces.
- Abstract body text is limited to 375 words.

Two Abstract Rule

- You can submit up to two abstracts as the presenting author if:
- One is for a poster presentation, and
- Both abstract submissions cover different content.
- Invited submissions to Pardee Keynote or topical sessions do not count against your abstract limit.
- Abstracts submitted in Spanish for a session conducted in Spanish do not count toward your abstract limit.

Fees

GSA Members: Professionals $60, Students $25
Non-Members: Professionals $80, Students $50

Poster Presenters

GSA provides one horizontal 8 feet x 4 feet (w x h) display board and Velcro to hang your poster.

Oral Presenters

- Presentation length: 12 minutes + 3 minutes for Q&A.
- Check in at the Speaker Ready Room 24 hours prior to your presentation time.
- Oral technical session rooms include a PC with Windows.
- Use a 16:9 screen ratio for presentations.

Know Before You Go

When you submit an abstract to GSA, it's more than just sharing your research—it's a promise to present your findings with integrity and respect. All our authors and presenters agree to:

Commit to Present: Submitting your abstract means you are planning to be there, ready to share and discuss your work.

Maintain Integrity in Research: Stay true to your abstract's content and conclusions as reviewed, ensuring high quality and honesty throughout.

Recognize All Efforts: Celebrate collaboration! Ensure any co-authors are acknowledged, have contributed significantly, are informed of, and consent to their inclusion.

Ensure Quality: Craft a presentation that reflects your dedication to excellence in research.

Join Geoscience Leaders as an Exhibitor or Sponsor!

Be part of GSA Connects 2026 as an exhibitor or sponsor! This premier event brings together the **global geoscience community** to share groundbreaking research, inspire innovation, and build meaningful connections.

Showcase your latest **technologies, services, and innovations** to:

- **Develop Partnerships** – 50% of attendees have **11+ years of experience**
- **Build Talent** – 40% of attendees are **students** seeking opportunities
- **Gain Global Recognition** – Attendees from **49 countries** in 2024

With our easy-to-use system, you can **purchase your booth in the Exhibit Hall**, amplify your brand through **sponsorship**, or **advertise** to approximately **34,000 geoscience professionals and students**.

Visit **https://s2.goeshow.com/gsa/connects/2026/become_an_exhibitor.cfm** or contact **exhibits@geosociety.org** to get started!

Mentor at GSA Connects

Did someone help you find your path when you were beginning your career? You can do the same for today's emerging geoscientists at GSA Connects in Denver this October! Please consider offering guidance and encouragement as a 1:1 career mentor, 1:1 résumé reviewer, table mentor, or event mentor. Whether you are an early career professional or established in your profession, there are many ways to get involved!

Questions?
Contact **gsamentors@geosociety.org**

Apply for Student Travel Grants

https://connects.geosociety.org/travel/grants

The Sections of the Geological Society of America are pleased to offer student travel grants to help offset the cost of attending GSA Connects 2026 in Denver, Colorado.

Eligibility guidelines and award amounts vary by Section. Please review the Section-specific requirements before applying.

View eligibility details and application information here: **https://www.geosociety.org/GSA/GSA/grants/travel.aspx**

Questions?
Contact **gsastudents@geosociety.org**

Become a Student Volunteer

https://connects.geosociety.org/register/volunteer

Are you a student looking to get involved with the Geological Society of America and connect with geoscientists from across the country? **Student volunteer opportunities for GSA Connects 2026 in Denver are now open!**

Student volunteers play a vital role in supporting technical sessions, registration, and meeting logistics at GSA Connects 2026 in Denver. In return for their service, volunteers receive complimentary meeting registration.

To participate:

- Complete a minimum of 8 hours of volunteer service during the meeting
- Be a current GSA student member
- Sign up early—spots are filled on a first-come, first-served basis

Questions? Contact **gsastudents@geosociety.org**.

Not a student member yet?

Join today to take advantage of this opportunity and more! Student memberships are just $25/year.

Geologic Time Scale Poster v. 6.0

Compiled by J.D. Walker and J.W. Geissman, 2022

Handy reference tool!

Use this colorful, poster-size version of GSA's Geologic Time Scale (v. 6.0) to decorate your office or classroom.

GTSPO6F | 20" × 25" — folded

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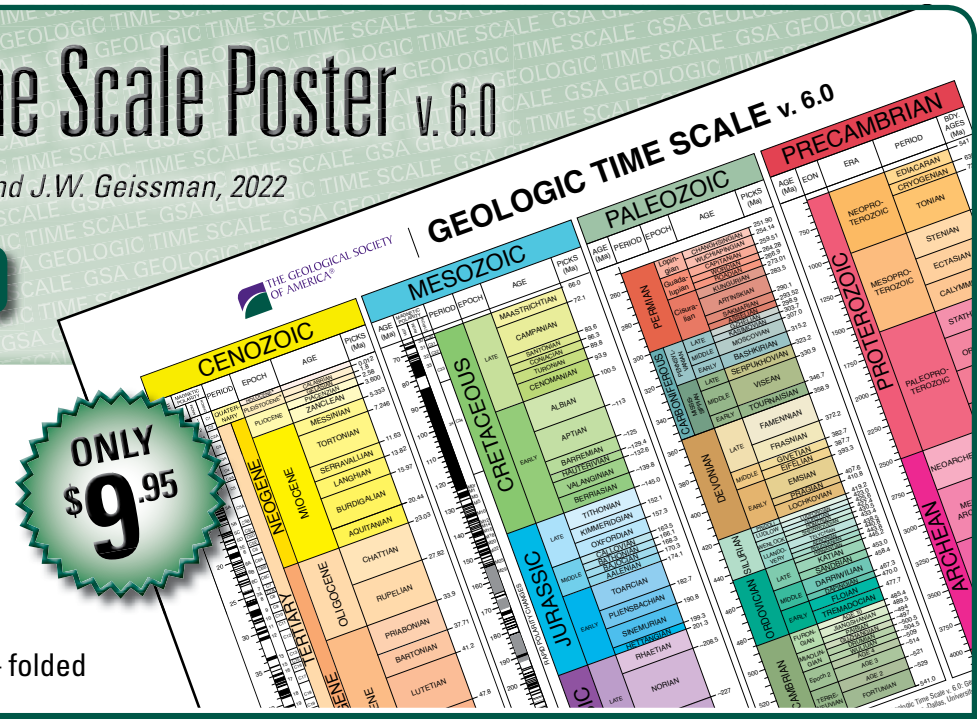

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The Geological Society of America®

GEOCAREERS

GeoCareers at GSA Connects 2026

https://connects.geosociety.org/networking/geocareers

Join us for GeoCareers Day, one-on-one mentoring, professional development sessions, and networking opportunities.

GeoCareers Day

Mentors and panelists share insights from their career paths at this ticketed event, held Sunday, 11 October, 9 a.m.–noon. Sign up when you register for Connects—lunch included.

- Résumé and USAJobs Workshop
- Mentor Roundtables
- Career Panel

GeoCareers Corner

A dedicated space for students and early career professionals. Open Sunday-Tuesday.

- 1:1 Résumé Review and Career Mentoring
- GeoCareers Sessions
- Job Board to post and view job listings
- Board games and art zone
- Casual space to relax and chat with peers

Networking Events

Networking opportunities, receptions, and meet-ups designed for all attendees to connect and engage.

- Early Career Professional Coffee
- Graduate Grant Recipient Networking Coffee
- Women in Geology Reception
- Night at the Museum (offsite)
- Geology Club Meet-Up
- Student Advisory Council Meet-Up

GeoCareers Sessions

GeoCareers Sessions provide interactive professional development opportunities to help attendees build skills and explore career pathways. Led by experienced professionals, these sessions are open to all attendees.

Careers in Mine Waste Geochemical Characterization and Management: Environmental Stewardship in Mine Development, Operation, and Closure
Patrick Thomas Williamson
Climate Psychology for Geoscience Professionals
Dr. Linda Barnum

Communicating Geoscience: A Workshop led by Social Media Geoscience Communicators
Rachel Phillips, Cate Larsen, Bryan Castillo, Cameron Fetter, Luisa Hendry

Explaining Anthropogenic Climate Change to the Public
Daniel J. Soeder

Input without Advocacy: Scientific Refereeing in Public Arenas
Lauren Haygood, Todd Halihan

Lessons from Four Years of "Tree Time": Building Your Own Science Outreach Activity
Owen Madsen, Cody Kirkpatrick

The Publication Process from Writing to Reviewing: Practical Advice from Journal Editors
Nancy Riggs, Robinson Cecil

What Do You Do When You're Stuck? From Writer's Block to Research Roadblocks—Practical Ideas for Graduate Students
Ester Sztein

Workshop: How to Share Your Science and Craft Outreach Activities that Inspire Others
Luke Howard, Lilja Balaji, Dr. Margaret Yacobucci

Your Guide to GSA Research Grant Programs: Undergraduate and Graduate
Macie Schiller

Field Trips

FT26CN401. Black Hills and Badlands: A Synopsis of Geological Time
Thurs.–Sat., 8–10 Oct.
Price: US$665 for non-members; US$555 for professional members; US$335 for student members; US$465 for early career professional members. CEUs: 2.4. Led by Spencer Cody and Jill Cody.

FT26CN402. Warren Hamilton: New Insights into the Ancestral Rocky Mountain and Laramide Orogenies, Oligocene Magmatism and Metamorphism, and Rio Grande Rift Extension along the Western Flank of the Sangre De Cristo Range, Southern Colorado
Thurs.–Sat., 8–10 Oct.
Price: US$397 for non-members; US$335 for professional members; US$199 for student members; US$280 for early career professional members. CEUs: 2.4. Led by John Singleton, Samantha Malavarca, and Michelle Gevedon.

FT26CN403. Sedimentary Recycling of High-Pressure Rocks in Subduction Complex Clastic Rocks, Including Mélanges, and Localization of Subduction Interface Slip
Thurs.–Sat., 8–10 Oct.
Price: US$$320 for non-members; US$265 for professional members; US$160 for student members; US$225 for early career professional members. CEUs: 2.0. Led by John Wakabayashi, Ron Rubin, and David Shimabukuro.

FT26CN404. The Laramie Anorthosite Complex and Sherman Batholith: Enigmatic Magmatism and Mineralization in the Mesoproterozoic, Southern Wyoming **Thurs.–Sat., 8–10 Oct.**
Price: US$700 for non-members; US$585 for professional members; US$350 for student members; US$490 for early career professional members. CEUs: 2.0. Led by Madeline Lewis, Ron Frost, Carol Frost, and Phoebe Futcher.

FT26CN405. Exploring Cryogenian Snowball Earth Deposits along the Colorado Front Range
Fri.–Sat., 9–10 Oct.
Price: US$45 for non-members; US$35 for professional members; US$25 for student members; US$30 for early career professional members. CEUs: 1.2. Led by Christine Siddoway, Liam Courtney-Davies, Rebecca Flowers, and Anthony Fuentes.

FT26CN407. A Bike Tour: Geology, Geochronology, and Geochemistry of the Table Mountain Shoshonite, Golden, Colorado
Fri., 9 Oct.
Price: US$150 for non-members; US$125 for professional members; US$75 for student members; US$105 for early career professional members. CEUs: 0.65. Led by Leah Morgan and Lexie Millikin.

FT26CN408. Kirk Bryan Field Trip: Drying Streams, Beaver Dams, and Dam Removal: Changing Streamflow and Sediment Dynamics in Rivers of the Southern Colorado Rockies
Sat., 10 Oct.
Price: US$144 for non-members; US$120 for professional members; US$0 for student members*; US$98 for early career professional members. CEUs: 1.20. Led by Charles Shobe, Katherine Lininger, and Sara Warix. *For the first 10 students who register.

FT26CN409. Florissant Fossil Beds National Monument: Geoheritage, History, and Paleontology
Sat., 10 Oct.
Price: US$165 for non-members; US$140 for professional members; US$85 for student members; US$115 for early career professional members. CEUs: 1.20. Led by Herbert Meyer, Thomas Casadevall, and Gabriella Harris.

FT26CN410. Friable Fins, Fizzy Water, Fragile Fossils, and Fine Gold: A Geologic Sampler of the Pikes Peak Region **Sat., 10 Oct.**
Price: US$160 for non-members; US$130 for professional members; US$80 for student members; US$115 for early career professional members. CEUs: 0.95. Led by Barbara EchoHawk and Uwe Richard Kackstaetter.

FT26CN411. Field Trip Dedicated to the Life and Contributions of Dr. Martin Lockley to Understanding Front Range Geology and Paleontology: Selected Special Metropolitan Denver, Colorado Area World-Class Geologic Heritage Sites (Pre-Meeting)

Sat., 10 Oct.
Price: US$85 for non-members; US$70 for professional members; US$45 for student members; US$60 for early career professional members. CEUs: 0.90. Led by Tim Connors.

FT26CN412. Proterozoic Metamorphism and Deformation of the Colorado Front Range: Crustal Assembly to Intracontinental Reworking

Sat., 10 Oct.
Price: US$85 for non-members; US$75 for professional members; US$45 for student members; US$60 for early career professional members. CEUs: 1.0. Led by Ian Hillenbrand, Amy Gilmer, and Alexander Lusk.

FT26CN413. StraboField: Learning about Digital Collection of Field Data by Doing It

Wed–Sat., 14–17 Oct.
Price: US$320 for non-members; US$265 for professional members; US$160 for student members; US$225 for early career professional members. CEUs: 2.4. Led by Doug Walker and Claire Martin.

FT26CN414. Field Trip Dedicated to the Life and Contributions of Dr. Martin Lockley to Understanding Front Range Geology and Paleontology: Selected Special Metropolitan Denver, Colorado Area World Class Geologic Heritage Sites (Post-Meeting)

Thurs., 15 Oct.
Price: US$85 for non-members; US$70 for professional members; US$45 for student members; US$60 for early career professional members. CEUs: 0.90. Led by Tim Connors.

FT26CN415. Diachronous Exhumation on Colorado's High Plains and Rocky Mountains

Thurs.–Sat., 15–17 Oct.
Price: US$580 for non-members; US$485 for professional members; US$290 for student members; US$405 for early career professional members. CEUs: 2.40. Led by Lon D. Abbott, Sabrina Kainz, Taran Renfrow, James R. Metcalf, and Rebecca M. Flowers.

FT26CN416. Deposition, Magmatism, Metamorphism, and Deformation of the Proterozoic Poudre Basin in the Northern Colorado Front Range

Thurs., 15 Oct.
Price: US$100 for non-members; US$85 for professional members; US$50 for student members; US$70 for early career professional members.
CEUs: 1.20. Led by Graham Baird, Kevin Mahan, and Timothy Grover.

FT26CN417. Denver's Urban Riverscapes: Improving Resilience, Improving Connections

Thurs., 15 Oct.
Price: US$105 for non-members; US$90 for professional members; US$55 for student members; US$75 for early career professional members. CEUs: 1.20. Led by Anne MacDonald and David Skuodas.

FT26CN418. The Central City Gravel, Nussbaum Gravel, and Rocky Flats Alluvium: Stemming Over 100 Years of Research and Establishing 1.5 Million Years of Southern Rocky Mountain–Laurentide Geomorphology

Thurs., 15 Oct.
Price: US$85 for non-members; US$75 for professional members; US$45 for student members; US$60 for early career professional members. CEUs: 1.15. Led by Cal Ruleman, Marith Reheis, Adam Hudson, William Odom, Ralph Shroba, Brent Goehring, and Marc Caffee.

Denver Field Trip Funding Opportunities

Are you a geology student or early career professional with a passion for exploration?

Apply for funding for all GSA field trips and for the GSA/Chevron Field Trip Grant via the link below. Unleash your inner explorer on a field trip associated with GSA Connects 2026!

GSA's field trips provide valuable hands-on learning experiences, networking opportunities, and exposure to cutting-edge research in the geosciences in a variety of key geological settings.

Grants will be provided on a rolling basis through September, with those applying early having the greatest opportunity for funding. This portal will enable you to apply for all available Field Trip funds including Chevron, Warren Hamilton, and Kirk Bryan.

Apply here: **https://forms.gle/YqderQ7ybtFhZR4h7**

FT26CN419. Tracks, Trails, and Traces: An Accessible Introduction to Dinosaur Ridge and the Paleontological History of Denver
Thurs., 15 Oct.
Price: US$0**. CEUs: 1.15. Led by Ian Castro, Taormina Lepore, Nancy Riggs, and Christopher Atchison.
https://forms.gle/U2SWcWh2FV3fLX8J6

FT26CN420. Fourmile Creek: Exploring Mountain Watershed Dynamics from Pikes Peak to Canon City
Thurs., 15 Oct.
Price: US$125 for non-members; US$105 for professional members; US$65 for student members; US$90 for early career professional members. CEUs: 1.20. Led by Randy Stotler and Marcia Schulmeister.

Short Courses

SC26CN01. ASBOG FG and PG Exam Prep: By Reg Review
Sat. and Sun., 10 and 11 Oct., 8 a.m.–2 p.m.
Price: US$625. CEUs: 1.2. Led by Reg Review.

SC26CN02A. Lead in the Environment Geochemistry, Sources, and Remediation (In-Person)
Wed.–Fri., 7–9 Oct.
Price: US$530 for non-members; US$450 for professional members; US$260 for student members; US$350 for early career professional members. CEUs: 2.4. Led by Sarah M. Hayes, Charles N. Alpers, Tyler D. Sowers, Daniel Brabander, and Robert A. Root.

SC26CN02B. Lead in the Environment Geochemistry, Sources, and Remediation (Online)
Wed.–Fri., 7–9 Oct.
Price: US$135. CEUs: 2.4. Led by Sarah M. Hayes, Charles N. Alpers, Tyler D. Sowers, Daniel Brabander, and Robert A. Root.

SC26CN03. Methods and Geological Applications in Geo-Thermo-Petro-Chronology I
Fri., 9 Oct., 8 a.m.–5 p.m.
Price: US$45 for non-members; US$35 for professional members; US$25 for student members; US$30 for early career professional members. CEUs: 0.80. Led by Mauricio Ibanez-Mejia, Michelle Foley, Martin Senger, and Manuela Botero.

SC26CN04. Landslide Mapping Using Lidar and Orthoimagery in a GIS: Building Fundamental Mapping Skills for the Next Generation of Landslide Scientists
Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$90 for non-members; US$75 for professional members; US$45 for student members; US$62 for early career professional members. CEUs: 0.80. Led by Stephen L. Slaughter, Matthew Crawford, and William Burns.

SC26CN05. Fundamentals and Geoscience Applications of Time-of-Flight Mass Spectrometry
Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$15. CEUs: 0.80. Led by John Cottle, Andrew Kylander-Clark, and Morgan Adamson.

SC26CN06A. U-Th-Pb Geochronology of Common Pb-Bearing Minerals for Microbeam Analysis: Community Building and Reference Material Development (In-Person)
Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$130 for non-members; US$105 for professional members; US$65 for student members; US$90 for early career professional members. CEUs: 0.80. Led by Kate Souders and Paul Sylvester.

SC26CN06B. U-Th-Pb Geochronology of Common Pb-Bearing Minerals for Microbeam Analysis: Community Building and Reference Material Development (Online)
Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$45. CEUs: 0.80. Led by Kate Souders and Paul Sylvester.

SC26CN07. Quantitative Analysis, Visualization, and Modelling of Detrital Geochronology Data
Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$90 for non-members; US$75 for professional members; US$45 for student members; US$60 for early career professional members. CEUs: 0.80. Led by Joel Saylor, Kurt Sundell, Glenn Sharman, Ryan Nielsen, and Chance Ronemus.

SC26CN08. Methods and Geological Applications in Geo-Thermo-Petro-Chronology II
Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$45 for non-members; US$35 for professional members; US$25 for student members; US$30 for early career professional members. CEUs: 0.80. Led by Mauricio Ibanez-Mejia, Kendra Murray, and Leah E Morgan.

SC26CN09. Preserving Geology: Advanced Digital Outcrop Modeling and Interpretation

Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$180 for non-members; US$150 for professional members; US$90 for student members; US$125 for early career professional members. CEUs: 0.80. Led by William Brown Hawkins, David Hodgetts, and Brian S Burnham.

SC26CN10. 3-D Numerical Modeling of Poly-phase Sedimentary Basins in Matlab Evaluating Subsidence, Heat Flow, and Thermal Histories of Tectonic Basins

Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$15. CEUs: 0.80. Led by Magdalena Ellis Curry, Sarah Gelman, Teddie Hall, and Lingxiao Gong.

SC26CN11. Compiling Digital Stratigraphic Models for Sedimentary Geochemistry, Earth History, and Paleobiology

Sat., 10 Oct., 9 a.m.–5 p.m.
Price: US$45. CEUs: 0.80. Led by Erik Sperling, Daven Quinn, Shanan Peters, and Una Farrell.

SC26CN12. StraboField and StraboMicro for Early Career Professionals

Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$25. CEUs: 0.80. Led by Doug Walker, Julie Newman, Basil Tikoff, and Ellen Nelson.

SC26CN13. Introduction to Luminescence and Electron Spin Resonance Dating and Thermochronology Techniques

Sat., 10 Oct., 9 a.m.–3:30 p.m.
Price: US$100 for non-members; US$85 for professional members; US$50 for student members; US$70 for early career professional members. CEUs: 0.65. Led by Nathan Brown, Kathleen Rodrigues, and Caleb K. Walcott-George.

SC26CN14. Inverting Bedrock River Profiles: Theory, Practice, and Applications

Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$15. CEUs: 0.80. Led by Sean F Gallen and Frank J. Pazzaglia.

SC26CN15. AI Tools and Databases for Geoscience

Sat., 10 Oct., 8 a.m.–noon.
Price: US$75 for non-members; US$60 for professional members; US$40 for student members; US$50 for early career professional members. CEUs: 0.40. Led by James G. Ogg, Grant M. Boquet, Yitian Xiao, and Michael Stephenson.

SC26CN16. Scientific Ocean Drilling: Where Is the Data and How to Use It

Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$125 for non-members; US$105 for professional members; US$60 for student members; US$85 for early career professional members. CEUs: 0.80. Led by Beth A. Christensen and Laurel B. Childress.

SC26CN17. Analyzing the Nation's Geology with the Cooperative National Geologic Map

Sat., 10 Oct., 8 a.m.–5 p.m.
Price: US$115 for non-members; US$95 for professional members; US$60 for student members; US$80 for early career professional members. CEUs: 0.80. Led by Sam Johnstone and Joe Colgan.

SC26CN18. Practical Geoconservation: Global Perspectives on the Protection and Promotion of Geological Sites

Wed., 14 Oct., 1–5 p.m.
Price: US$105 for non-members; US$90 for professional members; US$50 for student members; US$75 for early career professional members. CEUs: 0.40.

SC26CN19. AASG Geologic Mapping Field Techniques Exchange

Thu., 15 Oct., 8 a.m.–5 p.m.
Price: US$115 for non-members; US$95 for professional members; US$60 for student members; US$80 for early career professional members. CEUs: 0.80. Led by William Andrews, Joanna Redwine, Adam Ianno, Katie Luciano, and Stefan Kirby.

Groundwater, Arsenic, and the Value of Staying with a Challenge

Prosun Bhattacharya, GSA International Distinguished Career Awardee 2025

I grew up in India, where groundwater is both lifeline and liability. Long before I had the language of geology to describe it, I understood what it meant for families to depend on handpumps and shallow wells. My formal education in geology and geochemistry at the University of Delhi provided a strong foundation in mineralogy, petrology, and geochemical processes. Doctoral work on the petrology and geochemistry of Proterozoic clastic metasediments from the Aravalli Supergroup deepened my interest in element mobility within geological systems, an interest that later translated naturally into groundwater chemistry. At KTH Royal Institute of Technology, this transition marked a shift from solid earth geochemistry to subsurface environmental systems, while retaining a strong emphasis on mineral water interaction and geochemical mechanisms. Within this setting, the work developed in a broader international framework through the coordination of the KTH International Groundwater Arsenic Research Group.

Moving to Sweden broadened my scientific perspective. Working in a setting where environmental research is closely linked to societal needs sharpened my interest in questions of public relevance. Water emerged as a central theme, not only as a geochemical system, but as a resource embedded in policy, infrastructure, and health.

My involvement with groundwater arsenic coincided with the emergence of the arsenic crisis in eastern India. During the late 1980s and early 1990s, elevated arsenic concentrations were identified in groundwater from the alluvial aquifers of West Bengal, overturning long-held assumptions about the safety of shallow tubewells. Investigations revealed the scale and complexity of the problem, linking arsenic occurrence to sedimentary geology and redox driven geochemical processes. Soon thereafter, arsenic contamination was also discovered across large parts of Bangladesh, with an even wider areal extent. The transboundary nature of the crisis underscored the need for sustained groundwater research and collaboration.

A decisive step came in late 1995, when a visit by Professor Debashis Chatterjee from the University of Kalyani brought the emerging groundwater arsenic problem directly to KTH. This encounter catalyzed systematic work on the geochemical mechanisms controlling arsenic mobilization in sedimentary aquifers. At the same time, we were investigating arsenic contaminated soils associated with wood preservation industries in Sweden, including soil washing methods for remediation. The coupling of industrial contamination studies with natural groundwater systems proved formative, allowing insights from engineered settings to inform process-based understanding under natural conditions.

Figure 1. Commissioning of an arsenic-safe community tubewell under the SASMIT program in rural Bangladesh, illustrating the translation of groundwater science into sustainable drinking-water solutions with local partners and Sida support high-altitude basins.

An important element in this phase was the integration of graduate research across multiple levels. Early Master's thesis projects, supported through the Sida-funded Minor Field Studies program, including work by Maria Larsson and Andrea Leiss, enabled focused investigations in arsenic affected regions. This foundation was strengthened through doctoral research at KTH, including the PhD thesis of Mattias von Bromssen, which linked groundwater arsenic processes, sustainable aquifer use, and the emerging SASMIT framework. Parallel doctoral work by Professor M. Jakariya and Professor M. Aziz Hasan further reinforced this effort, advancing understanding of groundwater sustainability, arsenic mobilization, and mitigation pathways in sedimentary aquifer systems and helping to bridge process-based science with long-term sustainability goals. Complementary doctoral research at Wageningen University and research in the Netherlands extended this trajectory into treatment and control by addressing arsenic removal to concentrations below 1 microgram per liter.

As engagement in Bangladesh deepened, it became clear that arsenic mitigation could not rely on technology alone. Groundwater arsenic occurrence was spatially heterogeneous, socially embedded, and constrained by what communities were willing and able to adopt. This realization shaped the development of the Sustainable Arsenic Mitigation (SASMIT) approach, launched in 2008 as a Sida-supported action research initiative in Matlab, southeastern Bangladesh. A central scientific contribution of SASMIT was the validation of sediment characteristics, particularly sediment color, as indicators of aquifer redox conditions and arsenic risk. By linking simplified sediment color classes to groundwater chemistry, SASMIT translated tacit field knowledge into an operational tool for targeting arsenic safe aquifers.

Hydrogeological investigations further showed that, in specific geological settings, intermediate depth aquifers could provide water with low arsenic and low manganese concentrations. These intermediate deep tube wells, typically drilled to depths of around 120 m, offered a viable alternative to deeper tubewells, reducing costs while maintaining water quality. Their effectiveness depended on careful social and spatial planning using community

Figure 2. Communicating groundwater quality investigations to the public during field-based arsenic studies, highlighting the role of geoscience in informing society.

surveys and social mapping. Together, these innovations provided arsenic safe drinking water to approximately 24,000 people at relatively low per capita cost.

From the outset, SASMIT was designed to inform policy and scale up. Collaboration with the Department of Geology at the University of Dhaka and national partners enabled translation of research outcomes into implementation pathways, culminating in a results-based management seminar in Dhaka in 2012. Subsequent partnerships with UNICEF and later engagements focused on capacity building, monitoring, and institutional uptake reinforced a central lesson that groundwater problems of this magnitude require continuity, trust, and long-term commitment.

Across these phases, long-term support from the Swedish International Development Cooperation Agency (Sida) played a decisive role. Sida's sustained commitment to research, capacity building, and international collaboration enabled continuity across projects, institutions, and generations of students, making much of this work possible.

As arsenic research expanded across regions and disciplines, it became evident that no single field could address the problem in isolation. This recognition led to the establishment of the International Congress on Arsenic in the Environment in 2006 as a deliberate venture to create a sustained interdisciplinary forum for arsenic research and mitigation. Developed in close partnership with Professor Jochen Bundschuh, the Congress created a global platform linking geoscience with chemistry, engineering, health, and policy, and consolidating fragmented research into a coherent international dialogue.

In parallel, sustained engagement with GSA provided a disciplinary home for advancing arsenic research within the geoscience community. Over nearly two decades, topical sessions at GSA Connects served as forums for unraveling arsenic occurrence, mobilization, mitigation, governance, and emerging data driven approaches, while supporting early career researchers from affected regions.

Beyond South Asia, work in East Africa and Latin America provided important contrasts. In Tanzania and Rwanda, studies in volcanic and basement aquifer systems highlighted widespread fluoride contamination and health implications. In Bolivia, investigations in high-altitude semi-arid basins revealed arsenic mobilization controlled by salinity, evaporation, and hydroclimatic extremes. Across these settings, a consistent lesson emerged that sustainable groundwater solutions depend on integrating process-based geoscience with health considerations, local capacity, and long-term monitoring.

Receiving the GSA International Distinguished Career Award has prompted reflection rather than closure. If there is one lesson I would share, it is the value of staying with a challenge. Groundwater systems evolve slowly, and so does understanding. Progress emerges through persistence, by returning to the field, revisiting assumptions, and working alongside students and partners over decades.

Groundwater teaches patience. It integrates history, geology, and human action beneath the surface. As geoscientists, our responsibility is to make these hidden systems visible, understandable, and relevant to society. I am grateful to GSA for fostering an international community committed to science in service of the public good, and I am honored to share my story within that tradition.

AUTHOR BIO

Prosun Bhattacharya is professor of groundwater chemistry at KTH Royal Institute of Technology, Stockholm, Sweden, and a member of the KTH Digital Futures Faculty. He is Founder and Coordinator of the KTH International Groundwater Arsenic Research Group. His research focuses on the hydrogeochemistry of geogenic contaminants such as arsenic and fluoride, sustainable drinking-water treatment, and integrated groundwater quality management, with growing emphasis on geospatial analytics, AI-driven modelling, and digital twin approaches for groundwater decision support. He is engaged in Sida-supported capacity building and digital data management for groundwater monitoring and governance. Bhattacharya is a co-founder of the International Congress on Arsenic in the Environment and Founder and Executive Secretary of the International Society of Groundwater for Sustainable Development (ISGSD). He is a Fellow of the Geological Society of America and the International Water Association, and recipient of the GSA International Distinguished Career Award (2025) and the George Burke Maxey Distinguished Service Award (2021). He has served as Founding Editor-in-Chief of *Groundwater for Sustainable Development* and is an Associate Editor of the *Journal of Hydrology*. He served as Member-at-Large on the GSA International Committee (2021–2025) and as the standing International Section representative to the GSA Hydrogeology Division.

Figure 3. Field investigation of arsenic-rich surface and groundwater systems near Oruro, Bolivia, illustrating arsenic mobilization under arid and saline hydrogeological conditions in high-altitude basins.

From Presentation to Publication

Share Your Science with GSA

Did you present at a GSA Section Meeting this spring? Why stop there? Submit your paper to a highly acclaimed GSA journal!

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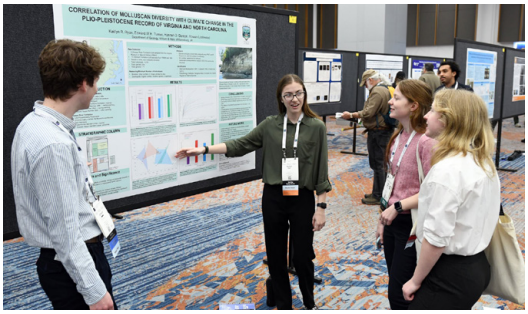

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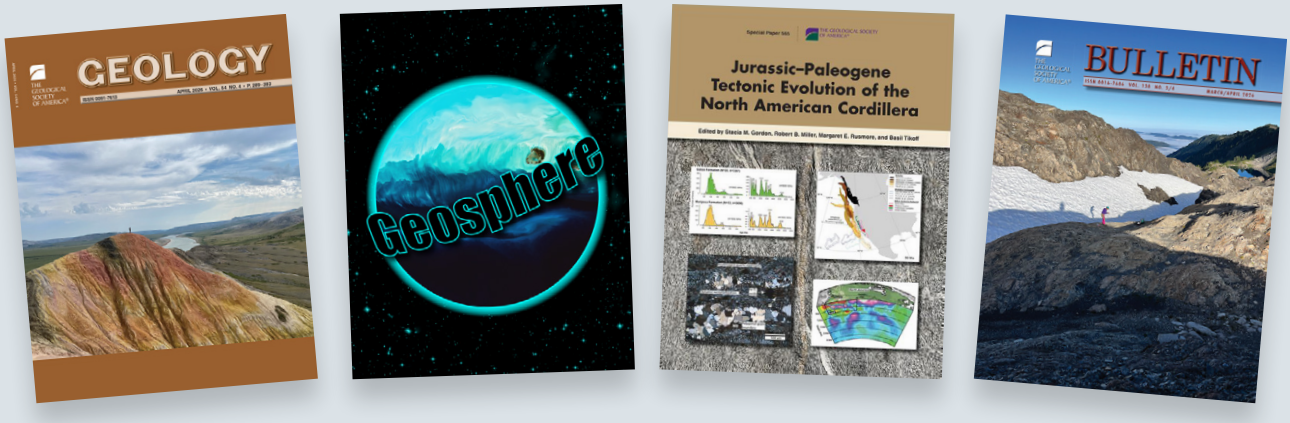

From Plate Convergence to Oblique Rifting: Geologic Excursions in Baja California Sur, México

Edited by Scott E.K. Bennett, Michael H. Darin, and Genaro Martínez Gutiérrez

The five geologic excursions described in this volume provide field-based perspectives on the long-term evolution of the Baja California peninsula and adjacent Gulf of California. By integrating observations across multiple disciplines and time scales, these trips illustrate how tectonics, magmatism, sedimentation, and climate have interacted to shape the landscapes and ecosystems of northwestern México. Together, the excursions highlight the scientific value of southern Baja California as a key region for understanding plate-boundary evolution, landscape evolution, and links between geology and ecosystems. This volume serves as a resource for amateur and professional geologists who are interested in visiting key geologic sites in southern Baja California, and will inspire future interest and ideas in geologic research along the peninsula.

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CONTINENTAL SCIENTIFIC DRILLING DIVISION

Early Career Research Support Grants

Nominations due: 21 July

Submit to: Mike McGlue, michael.mcglue@uky.edu

The GSA Continental Scientific Drilling (CSD) Division will offer a new grant-making program designed specifically to support early career scientists conducting research in areas that touch the CSD mission (scientific drilling, coring, subsurface investigation, etc.). The Division aims to provide bridge support for postdoctoral scholars and pre-tenure faculty at institutions of higher education in the U.S. to bolster scholarship and expand opportunities in an otherwise challenging federal funding ecosystem. Each grant will be valued at US$12,500. Grants will be awarded competitively through an application process. Funds are reserved for research activities and may include costs associated with: fieldwork-related travel, fieldwork permitting, laboratory-related travel, laboratory analyses, student/technician salary support, field or lab consumables/supplies, conference/workshop travel, or similar.

More information: https://geosociety.co/4jckcMp

GEOARCHAEOLOGY DIVISION

Richard Hay Student Paper/Poster Award

Nominations due: 29 August

Submit to: gsa.agd@gmail.com

Hay was a long-standing member of the Division and had a long and distinguished career in sedimentary geology, mineralogy, and archaeological geology. He is particularly well known for his work on the Olduvai Gorge and Laetoli Hominid-bearing sites and was awarded the Division's Rip Rapp Award in 2000. The Division is proud to have our student travel award bear his name.

The award is a travel grant for a student (undergraduate or graduate) presenting a paper or poster at GSA Connects. The grant is competitive and will be awarded based on the evaluation of the scientific merit of the research topic and the clarity of an expanded abstract for the paper or poster prepared by a student for presentation in the Division's technical session at the meeting.

More information: https://geosociety.co/496CfyP

GEOLOGY AND SOCIETY DIVISION

E-an Zen Fund for Geoscience Outreach Grant

Applications due: 30 June

Submit to: Dr. Scott Harris (HarrisS@cofc.edu) or Dr. Alan Benimoff (alan.benimoff@csi.cuny.edu)

This is a grant opportunity for Geology and Society Division members interested in developing innovative methods to bring geoscience knowledge to public audiences. Two grants of US$1,500 each will be awarded to fund projects designed by the applicants to communicate geoscience information to a lay audience with the goal of increasing the understanding of geoscience and its impact on society among non-geoscientists and decision-makers. Applicants may apply as individuals or as groups, depending on the best fit for their project design. While the grant application requirements are intentionally broad to encourage creative thinking and innovation, review of applications will emphasize the potential for impacting communities that traditionally have not had significant exposure to the geosciences.

More information: https://geosociety.co/3YGixVI

HISTORY, PHILOSOPHY, AND GEOHERITAGE DIVISION

History and Philosophy of Geology Student Award

Nominations due: 31 August

Submit to: Christopher Hill, chill2@boisestate.edu

The History, Philosophy, and Geoheritage Division provides a student award in the amount of US$1,000 for a paper to be given at GSA Connects. Awards may also be given for second place. Oral presentations are preferred. Faculty advisors may be listed as second author, but not as the lead author of the paper. The proposed paper may be (1) a paper in the history or philosophy of geology; (2) a literature review of ideas for a technical work or thesis/dissertation; or (3) some imaginative aspect of the history or philosophy of geology we have not thought of before. Students should submit an abstract of their proposed talk and a 1,500–2,000-word prospectus for consideration. The Awards Committee will assist the winner(s) with review of abstracts facilitating presentation according to GSA standards.

Currently enrolled undergraduates and graduate students are eligible as are students who received their degrees at the end of the fall or spring terms immediately preceding GSA Connects. The award is open to all students regardless of discipline, provided the proposed paper is related to the history or philosophy of a geological idea/person. The award is made possible by a bequest from the estate of Mary C. Rabbitt.

More information: https://geosociety.co/3YFX0fV

PLANETARY GEOLOGY DIVISION

Eugene and Carolyn Shoemaker Impact Cratering Award

Nominations due: 4 September

Apply at: https://www.lpi.usra.edu/Awards/shoemaker/

The Eugene and Carolyn Shoemaker Impact Cratering Award is for undergraduate or graduate students, of any nationality, working in any country, in the disciplines of geology, geophysics, geochemistry, astronomy, or biology. The award, which will include US$2,500, is to be applied to the study of impact craters, either on Earth or on the other solid bodies in the solar system. Areas of study may include but shall not necessarily be limited to impact cratering processes; the bodies (asteroidal or cometary) that make the impacts; or the geological, chemical, or biological results of impact cratering.

More information: https://geosociety.co/3KXRS3J

Ronald Greeley Award for Distinguished Service

Nominations due: 15 August

Submit to: Jennifer Piatek, piatekjel@ccsu.edu

In 2011, the Planetary Geology Division (PGD) established the Ronald Greeley Award for Distinguished Service. This award may be given to those members of the PGD, and those outside of the Division and GSA, who have rendered exceptional service to the PGD for a multi-year period. The award is not open to currently serving members of the management board but may be awarded to past members of the management board who have provided exceptional service to the PGD after their term on the management board has ended. Nominations for the award, which should include a description of what the nominee has given to the PGD community, may be made by any PGD member to the management board.

More information: https://geosociety.co/4srB466

The Pete Mouginis-Mark Prize in Planetary Volcanology

Nominations due: 6 August

Submit to: Lauren Jozwiak, lauren.jozwiak@jhuapl.edu

The Pete Mouginis-Mark Prize in planetary volcanology recognizes outstanding undergraduate and graduate student presentations in planetary volcanology (talks or posters) at GSA Connects. Planetary volcanology, for the purpose of this prize, is defined as research into volcanoes and volcanic processes on the planets (Mercury, Venus, Mars, Moon), asteroids, or the moons of the outer planets. Volcano studies may include the geomorphology and tectonics of summit craters, the lava flows on their flanks, and the deformation of the flanks. Volcanic processes may include numerical modeling of eruptions, as well as petrologic studies of samples from known volcanic areas of the Moon, Mars or asteroids. Remote sensing (spectral, radar, gravity) of volcanoes and their products is also appropriate. Studies of terrestrial volcanoes and volcanic processes are only eligible if the primary focus is on extraterrestrial volcanism.

More information: https://geosociety.co/499E5iv

SOILS AND SOIL PROCESSES DIVISION

Peter W. Birkeland Distinguished Career Award

Nominations due: 1 June

Submit to: Dan Breecker, breecker@jsg.utexas.edu

The Peter W. Birkeland Distinguished Career Award recognizes individuals who have made outstanding contributions to the general field of soil or paleosol (buried or fossilized soil) science. Dr. Birkeland's main area of research was soil geomorphology, and his steady stream of publications, often with his students, demonstrated the application of pedology to address landform and landscape evolution.

More information: https://geosociety.co/499EbGT

Distinguished Service Award

Nominations due: 1 June

Submit to: Dan Breecker, breecker@jsg.utexas.edu

The Soil and Soil Processes Division Distinguished Service Award recognizes individuals who have contributed significantly to the advancement of the Division either through service as an officer, service as a chair or member of a committee (or committees), or any other service-related activities (e.g., sponsorship of symposia or topical sessions, field trips, workshops, etc.) that draw positive attention to the research aims and activities of the Division. It includes lifetime membership in the Division.

More information: https://geosociety.co/3YJsSjM

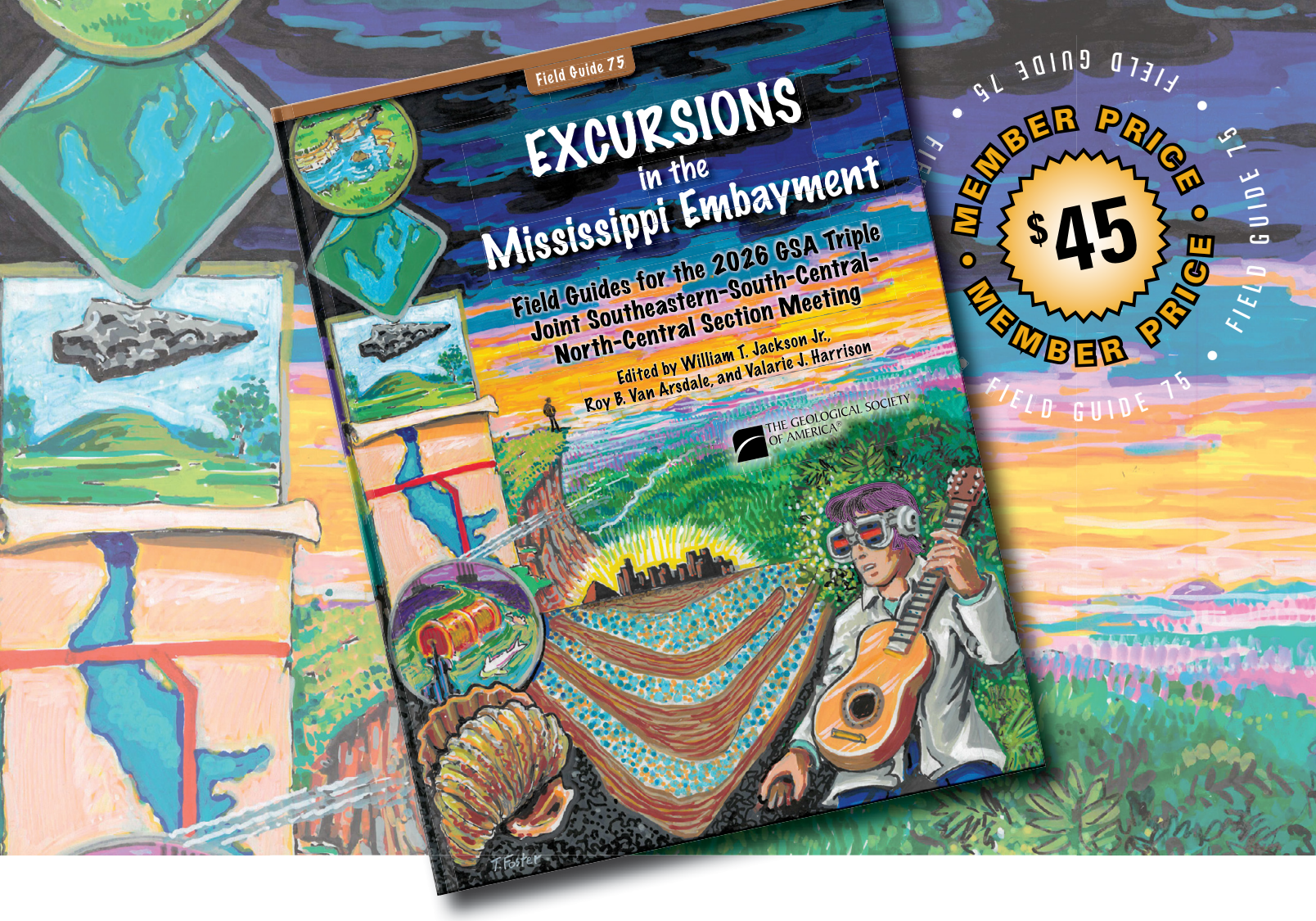
Gregory Retallack Young Scientist Annual Award

Nominations due: 1 June

Submit to: Dan Breecker, breecker@jsg.utexas.edu

The award will cover any research within the scope of soil and soil processes section, including but not limited to pedogenesis, paleosols, ichnology, paleontology, astropedology, archeology, and remote sensing. The award is for research and publications by a scientist younger than 40 in the year of the award and comes with an honorarium of US$1,000.

More information: https://geosociety.co/4t1iod1



Excursions in the Mississippi Embayment: Field Guides for the 2026 GSA Triple Joint Southeastern–South-Central–North-Central Section Meeting

Edited by William T. Jackson Jr., Roy B. Van Arsdale, and Valarie J. Harrison

The six guides in this volume explore the geology of the Mississippi Embayment and surrounding regions with emphases on seismic hazard, mining economics, groundwater resources, community education and outreach, mapping conventions, and regional tectonics. The first guide investigates the New Madrid seismic zone through surficial features resulting from the 1811–1812 New Madrid earthquakes. The second chapter focuses on mining economics of ball clay, heavy mineral sand, and sand and gravel deposits. The third guide examines the recharge zone of the Eocene Memphis Sand Aquifer. The fourth guide explores an Upper Cretaceous Lagerstätte fossil site, while the fifth guide examines regional Upper Cretaceous stratigraphic correlations based on geologic mapping. Presented through virtual reality, the final guide explores the tectonic development of the southern Appalachians; a road log is also provided for a traditional trip.

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THE GEOLOGICAL SOCIETY OF AMERICA®

Geological Society of America Foundation

The GSA Foundation, which raises funds on behalf of The Geological Society of America, has seen immense changes over the past year—transformations that strengthen GSA's work and impact. In May 2025, after a national search, the GSA Foundation welcomed Sean O'Brien, PhD, as Executive Director. Becky Priest Santavicca subsequently joined the GSA Foundation as its Development and Communications Officer in September.

Before Sean and Becky joined the team, the GSA Foundation staff and board provided steady continuity and leadership. The dedication and ongoing contributions of GSA Foundation Board Members, all of whom are GSA members, ensured awareness of, and alignment with, GSA's priorities and needs. The GSA Foundation also benefited from the expertise of longtime staff A.J. Villa, Stewardship Coordinator, and Jeff Tyler, Operations Manager. Together with Interim Executive Director Neil Fishman and the Board of Trustees, Jeff and A.J. kept the Foundation strong and growing in a transitional period.

Now that the GSA Foundation is fully staffed, the team is excited to do even more to build connections with the GSA community. We love to hear about GSA and its impact from those who know it best—its members and longtime supporters. Toward that end, GSA Foundation staff attend all GSA Section Meetings and GSA Connects each year. There, we are impressed by the research and knowledge that sustain the community. We also learn how GSA has shaped your trajectories and inspired you across education and career stages. Your stories inspire us to do more and work harder to support GSA's excellence.

In 2025, thanks to the generosity of the community, the GSA Foundation was able to provide more than $2 million in funding to GSA. These resources have a huge impact. Some awards enable geology students and young professionals to engage in research, go to summer field camps, and attend conferences; others recognize trailblazers who make groundbreaking discoveries, share the role of geoscience with lawmakers, and foster international collaboration.

Our impact—and capacity—continues to grow. We are on track to raise more than $700,000 in new endowed funds in fiscal year 2026.

All of these funds further the mission of GSA, now and in perpetuity. These new resources will enable GSA to nurture current and future geoscientists and take a leading role in addressing the challenges the Earth sciences are uniquely poised to address.

Figure 1. L-R, GSA Foundation Stewardship Coordinator A.J. Villa and Operations Manager Jeff Tyler at the 2025 joint NE/NC Section Meeting.

Figure 2. L-R, GSA Foundation Development and Communications Officer Becky Priest Santavicca, Shankhadeep Baul, Sayantan Saha, and GSA Council Treasurer and GSA Fellow Brian Katz at GSA Connects 2025.

Figure 3. L-R, GSA Foundation Executive Director Sean O'Brien, longtime GSA member Robert Blodgett, and GSA Science Communication Fellow & Marketing Coordinator Rachel Phillips at the 2026 NE Section Meeting.

You are part of this story.

The geoscience community is one that knows that small changes over time can create enormous impact. By supporting the GSA Foundation, you are keeping GSA at the forefront of discovery and leadership.

Please scan the QR code below to donate today, or contact Sean O'Brien at sean.obrien@gsa-foundation.org to share your vision and shape the future.

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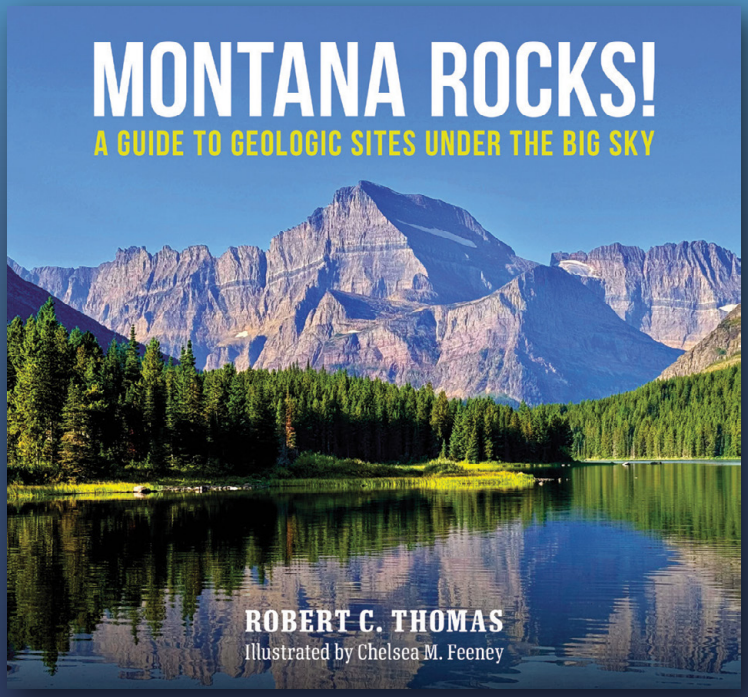

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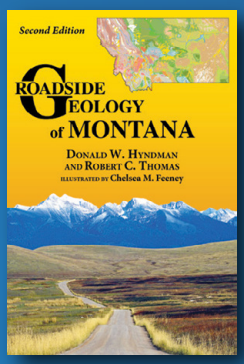

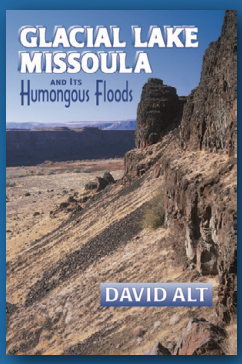

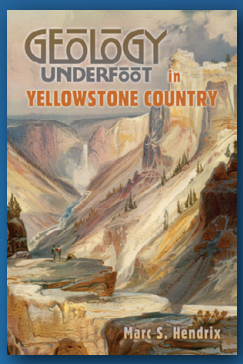

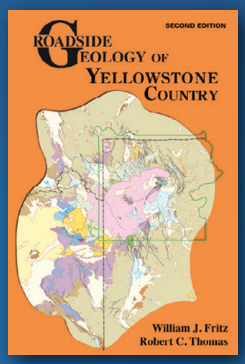

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