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T. SCOTT BRYAN

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T. Scott Bryan

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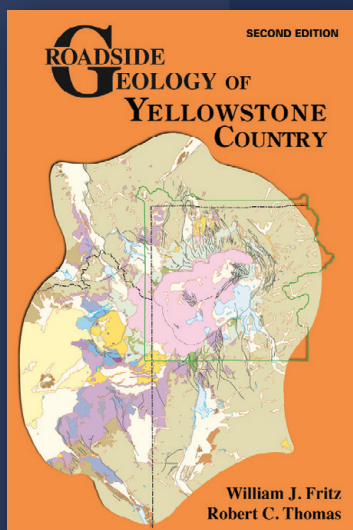
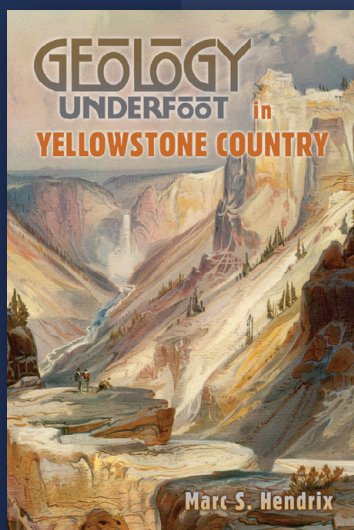
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Cover: Bedrock outcrop of the Mississippian Black Hand Sandstone in Hocking Hills State Park, Logan, Ohio. Bedrock exposures of Paleozoic strata, like the Black Hand, are common across the state, whereas Precambrian bedrock exposures are nonexistent. Photo taken by Zoe Molitor. See related article on p. 4–9.

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Water quality measurement during a visit to acid mine drainage near State College, Pennsylvania, USA, 2010, as part of the second China-U.S. geomicrobiology workshop.

Extreme Moho Relief Preserved in Ohio's Crust

Z. Molitor,^{*,1} F. Link,² M. Long,¹ and J. Ague¹

ABSTRACT

The average thickness of continental crust is ~30–40 km far-removed from plate boundaries and in the absence of significant topography. Nonetheless, there are many examples of anomalously thick crust (>40–50 km) that have been stable over hundreds to thousands of m.y. Here, we present new estimates of crustal thickness based on seismic data from the state of Ohio in the United States. This region is deep within the interior of the North American plate and is characterized by extremely low topographic relief; however, crustal thickness is ~60 km beneath the central part of the state. Anomalously thick crust, together with narrow, positive gravity anomalies, suggest that the lower crust beneath central Ohio is characterized by a mafic crustal root. Mafic material was intruded and underplated beneath the North American lithosphere during Midcontinent rifting at ~1109 Ma. Following rifting, the region experienced significant contraction and shortening during the collisional Grenville Orogeny. We propose that the combination of neutrally buoyant mafic material in the lower crust and short wavelength Moho relief is necessary for the long-term stability of thick crust beneath Ohio. This model reconciles seismic and gravity models of the crustal structure and geologic history of the region, suggesting that part of the Midcontinent Rift was deformed and imbricated within the Grenville Front in the Proterozoic Eon.

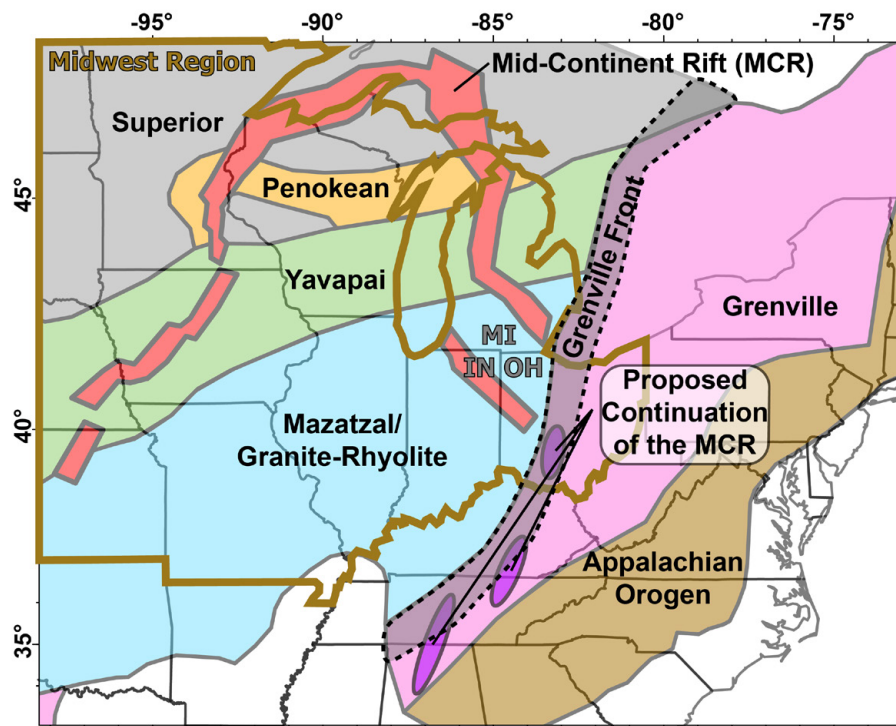


Figure 1. Simplified map of major tectonic provinces in the central United States, modified from Marshak et al. (2017). Notable features that transect central Ohio, such as the Grenville Front and Midcontinent Rift system, are also displayed, including the proposed eastern arm suggested by Stein et al. (2018) based on gravity anomalies. The Midwest region, mentioned throughout the text, is shown in brown. Three states mentioned in the text are labeled with gray abbreviations: Indiana—IN; Michigan—MI; Ohio—OH.

INTRODUCTION

Intraplate continental crustal thickness generally falls between ~30 and 40 km (e.g., Christensen and Mooney, 1995). Deviations from this norm are expected in active or recently active plate boundary regions, such as continental rifts or orogenic systems. On long timescales (>100 m.y.), the continental crust is expected to return to this average value through isostatic adjustment combined with processes such as erosion, delamination, and crustal or lithospheric mantle flow (e.g., Dewey et al., 1993).

However, there are many notable examples in which the continental crust has remained anomalously thick over long timescales of up to ~1 Ga (e.g., Fischer, 2002). Many of these examples are not associated with a commensurate topographic expression above the thick crust, as would be predicted by an Airy isostasy model. Variability in Moho topography, amounting to <10 km across tectonic provinces, is commonly observed in both Precambrian and Phanerozoic intraplate continental crust (e.g., Eaton et al., 2006; Luo et al., 2021). However, extreme variability of ≥10 km is rarely observed outside of plate boundaries. For many of these regions, we do not yet have a comprehensive understanding of the original driver(s) of crustal thickening, the subsequent mechanism(s) promoting long-term stability of the thick crust, or the precise three-dimensional geometry and structure of the present-day crustal root.

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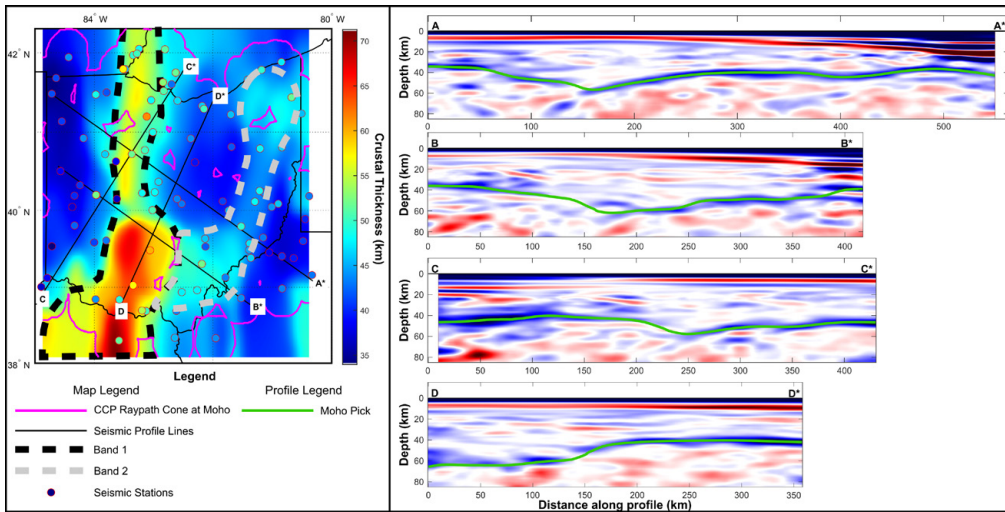


Figure 2. Map of seismic stations and crustal thickness beneath the state of Ohio. Four representative seismic sections are shown: two E-W sections (A and B) and two N-S sections (C and D). Cross sections of CCP-stack receiver functions are shown in representative NW–SE and NNE–SSW sections across Ohio. The fill color of the seismic stations corresponds to the crustal thickness determined by H-k stacking.

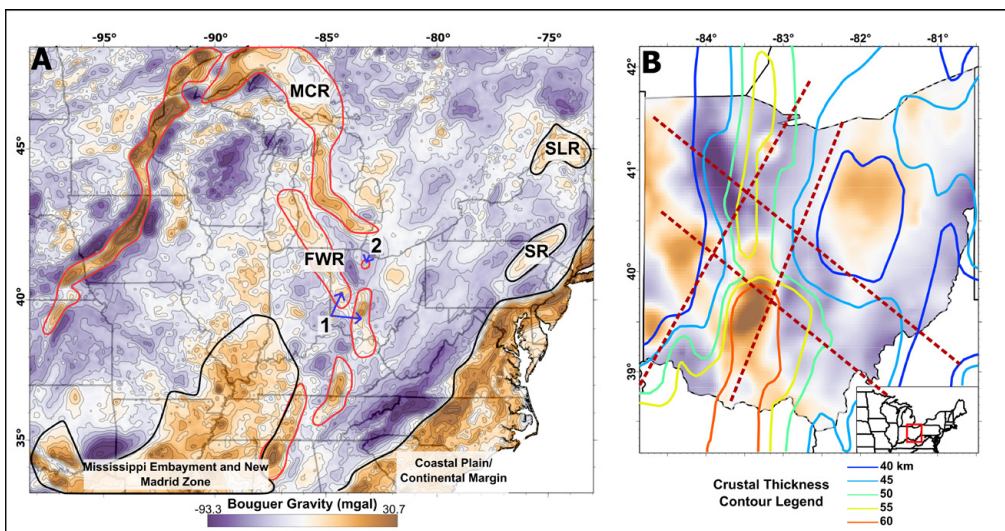


Figure 3. (A) Bouguer gravity anomaly map of the central and eastern United States from the national Bouguer gravity grid of Lyons and O’Hara (1999). Black lines correspond to high gravity anomalies mentioned in the text, but unrelated to the Midcontinent Rift. Red lines correspond to high gravity anomalies potentially related to the Midcontinent Rift. Two prominent gravity anomalies are labeled (1 and 2) within Ohio and referenced in the text. Fort Wayne Rift; MCR—Midcontinent Rift; SR—Scranton Rift; SLR—St. Lawrence Rift. (B) Map of Ohio with Bouguer gravity raster (Lyons and O’Hara, 1999) and contours of crustal thickness from Figure 2.

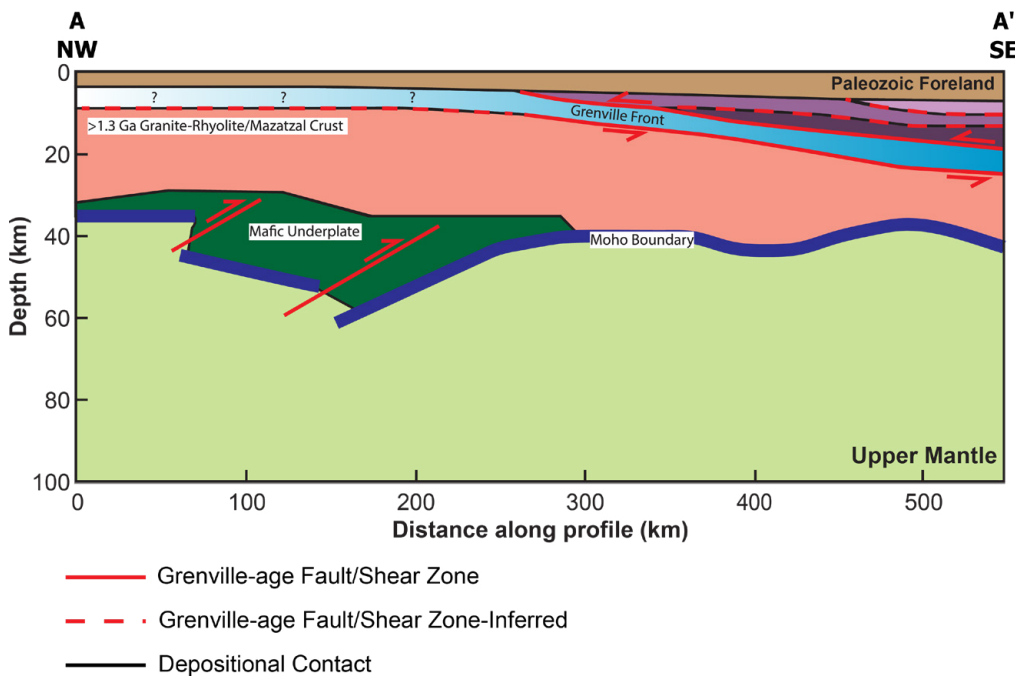


Figure 4. Interpretation of seismic line A-A', trending NW–SE across central Ohio. The location of profile A-A' is shown on Figure 2.

In this article, we address an understudied example of overthickened continental crust (~60 km) beneath the state of Ohio in the Midwest region of the United States (Long et al., 2019, 2020; Fig. 1). Overthickened crust is also observed elsewhere in the Midwest region of the central United States (Yang et al., 2017). This value is ~20 km thicker than adjacent regions, and it is not associated with significant topographic variations. The maximum topographic relief within Ohio is ~350 m, of which ~50–100 m is due to incision of Pleistocene rivers. The anomaly is spatially associated with the westward termination of the Grenville Front and with a Bouguer gravity anomaly high.

GEOLOGIC BACKGROUND

The tectonic history of the continental basement beneath the central (Midwest) United States spans much of the Proterozoic Eon (~1690–950 Ma). The basement of the Midwest region, including western Ohio, is composed of the Mazatzal and Granite–Rhyolite provinces; the Mazatzal province is the oldest (~1700–1600 Ma; Whitmeyer and Karlstrom, 2007). The juvenile crust of the Granite–Rhyolite province was created and accreted between ~1550 and 1350 Ma (Bickford and Van Schmus, 1985). This juvenile crust was subsequently intruded by A-type granites between 1480 and 1350 Ma (Karlstrom and Humphreys, 1998). Altogether, the Mazatzal and Granite–Rhyolite provinces and associated A-type granites compose much of the basement in the southwestern portion of the Midwest United States (Fig. 1).

The Grenville Orogeny followed the intrusion of A-type granites. Whitmeyer and Karlstrom (2007) define the Grenville as having occurred between 1300 and 900 Ma. The earliest phases of the Grenville (*sensu lato*), Elzevirian (~1250–1220 Ma), and Shawinigan orogenies (~1190–1160 Ma), are now distinguished from collision of the Grenville province with Laurentia and formation of Rodinia (“collisional Grenville Orogen,” Swanson-Hysell et al., 2023).

Following the Elzevirian and Shawinigan accretionary orogenic episodes, the Midcontinent Rift formed at ~1109 Ma (Swanson-Hysell et al., 2019). This rifting event crosscuts all pre-Grenville tectonic elements in the Midwest region, including the Mazatzal and Granite–Rhyolite provinces (Fig. 1). Although the easternmost arm of the Midcontinent Rift system was traditionally limited to the state of Michigan, comprehensive modeling of gravity anomalies led Stein et al. (2018) and Elling et al. (2020) to suggest that the rift likely extends to the south (Fig. 1).

After Midcontinent rifting, the collisional Grenville Orogeny began at ~1090 Ma (Swanson-Hysell et al., 2023). This orogeny, which culminated in the formation of the super-continent Rodinia, was the last major orogenic episode in this region prior to the onset of Paleozoic Appalachian orogenesis in the Ordovician Period (Karabinos et al., 2017).

SEISMIC OBSERVATIONS OF MOHO DEPTH UNDER OHIO

The MAGIC seismic experiment was conducted between 2013 and 2016 and extended from the central Appalachians through the Midwest region of the United States (Long et al., 2020). The anomalously thick (~60 km) crust beneath Ohio was documented in previous work based on MAGIC data (Long et al., 2019), but this observation warrants further discussion and study.

Long et al. (2019) determined that a mid-crustal seismic anomaly beneath the eastern United States was most likely related to a low-angle orogenic shear zone which developed during the Grenville Orogeny. This interpretation contrasted

with previously published hypotheses based mainly on gravity data (e.g., Stein et al., 2018), which postulated that the Grenville front was not present in the eastern United States, and that anomalously high crustal densities in the region may reflect processes associated with the Midcontinent Rift. Here, we carry out new investigations of Moho structure beneath Ohio and determine the spatial relationships among overthickened crust, positive gravity anomalies, and the east-dipping Grenville front interface identified by Long et al. (2019) from MAGIC data.

In addition to the MAGIC seismic line, we present new Moho picks from broadband seismic stations in Ohio based on Ps wave conversions (see Acknowledgments). Teleseismic events with magnitudes between 5.0 and 7.5 within the epicentral distance range from 20° to 155° were selected. To ensure the quality of the waveforms, we conducted a three-step control process based on the signal-to-noise (SNR) ratio of the waveform data and receiver functions as well as a subsequent visual inspection. We calculated receiver functions using the multi-taper-correlation (MTC) method (Park and Levin, 2016) with an upper limit cut-off frequency of 1 Hz.

In the first analysis step, we employed the H-k stacking approach (Zhu and Kanamori, 2000), which provides insights into the average crustal thickness beneath each individual station, as well as first order bulk crustal properties based on the P-wave over S-wave velocity ratio (V_p/V_s). By stacking receiver function amplitudes at times corresponding to a grid of trial crustal thicknesses (20–80 km) and V_p/V_s ratios (1.5–2.1), we identified the best-fitting crustal parameters at the resulting maximum. The uncertainties on the crustal thickness estimates vary between 0.5 and 8 km.

Although the H-k stacking only allows an estimate of the crustal thickness directly beneath a station, a migration of the receiver function amplitudes along their raypaths allows a much better resolution of crustal features. We therefore applied a common conversion point (CCP) stacking approach. For this, we assumed a smoothed 1-D velocity model (ak135; Kennett et al., 1995). The individual receiver functions were migrated based on this velocity model, the slowness, and the backazimuth of the individual events. The amplitudes were summed on a regular grid and then interpolated and smoothed to receive the final CCP-images. Here, we show four 2-D profiles cross-cutting the best resolved areas of the model. Subsequently, we picked the Moho manually from the CCP images and produced a highly resolved 2-D Moho map of the study area (Fig. 2). Given the structural complexity of the Moho on the profiles in Figure 2, the H-k approach may not yield the best fit for crustal thickness due to the assumption of horizontal continuity. This caveat may explain the observed misfits between H-k and CCP derived thickness estimates.

We delineate two major bands of overthickened crust beneath the state of Ohio (Fig. 2). Band 1, running beneath the central part of the state, is associated with ~60 km thick crust and trends broadly north to south. This band is roughly 150–200 km wide and contrasts with the 40–45 km thick crust in the surrounding regions. The amplitude of the impedance (velocity times density) contrast at the Moho in Band 1, as expressed in the amplitude of converted Ps phases, is highly variable compared with the eastern part of the state. Previous, national-scale seismic studies have not identified this thickened zone (e.g., Shen and Ritzwoller, 2016), but Moho doublets have been identified (Schulte-Pelkum et al., 2017).

Band 2 is characterized by ~45–50 km thick crust running beneath the eastern part of the state, delineating an arcuate northeast-southwest trend (Fig. 2). This band is ~50 km wide—much narrower than Band 1. Additionally, the crustal thickness in Band 2 is comparable to crustal thickness variations that are well documented throughout the Midwest region (Shen and

Ritzwoller, 2016). Lastly, there is no gravity anomaly associated with Band 2 (Fig. 2). As a result, we focus the following discussion solely on Band 1.

Both bands of overthickened crust appear to result from localized deformation in the deep crust that has perturbed the Moho. This is best shown in the CCP stacked receiver function profiles across central Ohio (Fig. 2). Band 1 is associated with relatively sharp Moho relief. Seismic profile A reveals a small (~50 km) piece of the Moho, which appears to be detached and imbricated between an ~40 km deep Moho to the west and an ~60 km deep Moho to the east (Fig. 2). We define imbrication to refer to localized deformation and stacking of large blocks along thrust faults.

DENSITY AND LITHOLOGIC CHARACTER OF THE LOWER CRUST BENEATH CENTRAL OHIO

Gravity anomalies are particularly sensitive to anomalous dense material in the crust and therefore may help delineate the relative roles of Midcontinent rifting and associated mafic underplating versus Grenville orogenesis in the creation and stability of Moho relief beneath Ohio. For our analysis, we utilize the national Bouguer gravity grid of Lyons and O'Hara (1999).

There are several positive gravity anomalies in Ohio, both in the central-western part of the state and in the eastern part (Fig. 3). Prominent curvilinear gravity highs in the central United States correspond to the Midcontinent Rift (Stein et al., 2018). Curvilinear, high-amplitude gravity highs are observed in the central and western part of Ohio. These anomalies follow from the Fort Wayne rift zone in northeastern Indiana and the well agreed upon eastern arm of the Midcontinent Rift in Michigan (Fig. 3).

Gravity anomalies in central Ohio (Anomaly 1, Fig. 3) were modeled by Elling et al. (2020), who suggested that they result from a combination of shallow mafic volcanics and a deep mafic underplate, emplaced during Midcontinent rifting. In addition, we note a small (<50 km diameter), positive, circular anomaly in the north-central part of Ohio (Anomaly 2, Fig. 3). Positive gravity anomalies may be associated with dense mafic intrusion into less dense intermediate-felsic crust, or alternatively, crustal thinning and mantle upwelling (e.g., Chappell and Kusznir, 2008; Elling et al., 2020). By comparing the prominent, near-linear gravity highs in the western part of the state to our new map of crustal thickness, we may delineate the relative role of Midcontinent rifting in generating and maintaining the thick crust beneath Ohio (Fig. 3).

First, we note that only the gravity highs in the central part of the state (Anomalies 1 and 2, Fig. 3) are associated with overthickened crust (Figs. 2 and 3). The extension of the Fort Wayne Rift through western Ohio is not associated with anomalous crustal thickness (Fig. 3). Hence, the presence of a gravity high does not uniquely predict the presence of overthickened crust. The gravity highs in central Ohio lie directly below the proposed Grenville deformation front (Fig. 1); indeed, they were previously utilized to delineate the Grenville Front in this region (McLaughlin, 1954; see also Stein et al., 2018). Notably, the gravity high associated with Band 1 is not continuous along the Grenville Front. As the magnitude of the gravity anomaly is most sensitive to shallow mafic volcanics (Elling et al., 2020), the north-south variations in the gravity anomaly may reflect a decrease in, or absence of, shallow volcanic material in the northern half of Band 1.

Models invoking Midcontinent rifting and Grenville orogenesis are not mutually exclusive in the context of the geologic history of the basement beneath Ohio. The positive gravity signatures and a large region of high seismic

impedance amplitudes in the lower crust likely result from mafic material emplaced during rifting and are not indicative of Grenville deformation (Elling et al., 2020). However, sharp Moho topography, possible imbrication, and evidence for seismic anisotropy within the crust (Long et al., 2019; Fig. 2) all suggest that deformation of the middle to lower crust beneath central Ohio, including displacement of the Moho itself, took place during the collisional Grenville Orogeny following Midcontinent rifting.

MOHO STRUCTURES AND TECTONIC HISTORY OF OHIO'S PRECAMBRIAN BASEMENT

The structure and tectonic history of the basement beneath the Midwest region is not well understood due to the lack of Precambrian exposure. Yang et al. (2017) proposed five models that may explain observed crustal root zones in the Midwest, including a preexisting (i.e., Mazatzal-age) root, thickening by homogeneous shortening or continental underthrusting, magmatic underplating, or relamination. As discussed above, both Midcontinent rifting and Grenville orogenesis are proposed to have significantly affected the Precambrian basement in the eastern Midwest region.

The thickest (~60 km) band of crust, Band 1, is spatially associated with high-amplitude, narrow gravity highs attributed to Midcontinent rifting (Figs. 2 and 3). However, the gravity highs associated with thickened crust are present only beneath the Grenville deformation front (Figs. 1 and 3). Furthermore, the lower crust and Moho are apparently imbricated in this band (Fig. 2). We interpret the Moho structure and gravity data of Band 1 as resulting from, first, rifting and mafic underplating associated with Midcontinent rifting, followed by deformation and crustal shortening during the Grenville Orogeny (Fig. 4). The dense and thick crustal root is located within the lower plate of the Grenville frontal thrust, within the Mazatzal or Granite-Rhyolite province. The root zone and associated dense material apparently truncate older layers within the crust, suggesting that the dense material was emplaced after formation and reworking of the Mazatzal/Granite-Rhyolite province, consistent with the significantly younger age of Midcontinent rifting (Fig. 2; Swanson-Hysell et al., 2019). After Midcontinent rifting, the dense lower crust was imbricated by west-over-east thrust faults, forming imbricate, duplex structures (e.g., Fig. 2).

Although there are no apparent cross-cutting relationships between the east-verging thrust faults in the root zone and the Grenville frontal thrust, the timing of these structures is likely the same. The only event that significantly deformed the basement in the region after Midcontinent rifting was the Grenville Orogeny. The absence of similarly thick crust in the neighboring Fort Wayne Rift (Figs. 2 and 3) supports a role for deformation along the Grenville Front in imbricating and thickening the crust of Band 1. The imbrication of the Moho is observed only within and adjacent to the mafic underplate (Fig. 2). Rift-related thermal weakening coupled with structural reactivation of preexisting rift structures likely facilitated localization of Grenville-age contraction within the mafic underplate in the foreland of the Grenville orogenic system. Alternatively, a change in the plate boundary stress state may have reactivated the rift structures in the foreland after initial Grenville convergence (e.g., Clark and Bilham, 2008).

Returning to the models proposed by Yang et al. (2017), we may immediately rule out relamination and subduction zone processes, as these predominately affect the upper, Grenvillian plate. A preexisting, Calymmian Period or Paleoproterozoic root is unlikely, given the apparent cross-cutting relationships of the dense root relative to the surrounding Mazatzal/Granite-

Rhyolite crust and the demonstrated age of Midcontinent Rift structures. Therefore, a combination of magmatic underplating during rifting, followed by Grenville-age contraction defines the structure and history of the root, indicating that two or three of the models presented by Yang et al. (2017) may be required to explain root generation and stability.

STABILITY OF DENSE OROGENIC ROOT ZONES IN DEEP TIME

We propose that two effects may play a major role in the long-term (~1 Gyr) stability of overthickened continental crust beneath Ohio. In general, we do not expect such extreme crustal thickness variations to persist on billion-year timescales; however, some previous work has proposed various mechanisms to preserve such high Moho relief.

First, the density of mafic (basaltic) lithologies at 40–60 km depth (~1–1.6 GPa) is ~3100–3250 kg/m³ (Hacker et al., 2015). Comparable densities are also associated with felsic eclogites; however, the published gravity models and extension of dense, high impedance material into the amphibolite facies lower crust (Fig. 2) favor a mafic root. A mafic lithology in the lower crust is at near neutral buoyancy relative to the underlying mantle (>3200–3300 kg/m³) and is relatively denser than a felsic lithology (<3000–3100 kg/m³) at similar depths. This would serve to lower the upward-directed buoyancy force introduced by a crustal root due to the isostatic balancing of the crust-lithosphere system (e.g., Fischer, 2002). Hacker et al. (2015) also presented instability timescales as a function of layer thickness and Moho temperature. The Moho temperature beneath the Midwest is ~600–700 °C (Shinevar et al., 2023). It is likely this temperature is characteristic of the region since the Neoproterozoic given the relative inactivity of the crust after the Grenville Orogeny. At those temperatures, for low density contrasts and a layer thickness of ~10–20 km, the layer would be stable for ~100–1000 m.y. (Hacker et al., 2015).

Second, sharp and narrow Moho relief, resulting from imbrication coupled with a strong crustal rheology, may not result in sufficiently strong buoyancy force for the crust and/or the mantle lithosphere to rebound. The timescale of crustal relaxation may be significantly longer for short-wavelength, as opposed to long-wavelength, crustal structures (Zhong, 1997). For example, the layer stability calculation from Behn et al. (2007) assumes a constant layer thickness, but if the layer is tapered, the stability of the layer would be greater than predicted by a layer of constant thickness. This effect, coupled with a mafic lower crust as discussed in the above paragraph, may account for long-term (>1000 Ma) persistence of a thick crustal root.

In summary, composite rift-related underplating and subsequent lower crustal deformation during orogeny were both essential steps for maintaining and generating the long-lived crustal root. Furthermore, the inferred chemical depletion of the mantle lithosphere during rifting and the subsequent orogenic thickening are consistent with models of continental or craton stabilization (e.g., Pearson et al., 2021).

CONCLUSIONS

We delineate the deep crustal structure, approximate density, and tectonic history of the lower crust beneath Ohio based on the analysis of newly processed seismic data combined with qualitative assessment of gravity anomalies. The crust beneath central Ohio is ~60 km thick. Both gravity and seismic data suggest that the composition of the lower crustal root beneath Ohio is mafic. The neutral density of the mafic root relative to the overlying felsic crust and underlying mantle suggests

that the root is long-lived and likely to have been present since the Proterozoic. Furthermore, the short wavelength (~100–150 km) and sharp nature of the Moho topography may have also effectively halted delamination or isostatic rebound on >100 m.y. timescales. We propose that the root formed from mafic underplating during formation of the Midcontinent Rift (~1109 Ma) and was subsequently imbricated during Grenville orogenesis (~1090 Ma).

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Hazard Mitigation Policy Lessons from My Two-Year Congressional Science Fellowship

Robby Goldman, 2023–2025 GSA–USGS Congressional Science Fellow, GPPC Chair-Elect

As natural disaster events become more frequent and costly, scientists play a critical role in ensuring that communities at risk of encountering natural hazards are equipped with the knowledge, tools, and support they need to reduce the risk of a serious disaster. Through studying the causes and patterns in how various Earth systems interact with each other and human societies, both earth and social scientists provide foundational knowledge that emergency managers and lawmakers rely on to shape and implement policies meant to mitigate disaster risk. While completing my PhD, I contributed to this knowledge by conducting research exploring the role of trust in facilitating hazard communications between USGS scientists and Hawaii residents during Kilauea Volcano's 2018 eruption.



Figure 1. Robby Goldman.

As the Geological Society of America (GSA)–U.S. Geological Survey (USGS) Congressional Science Fellow (CSF) from September 2023–August 2025, I had the rare opportunity to apply the scientific lessons I learned from my recently completed PhD research to help U.S. Senator Mazie K. Hirono (D-Hawaii) provide federal legislative support to communities impacted by the August 2023 Lahaina and Upcountry Maui wildfire disaster. This experience gave me an invaluable perspective into how policymakers and emergency managers use scientific knowledge to shape and implement federal disaster mitigation policies. It also allowed me, as a Native Hawaiian, to continue fulfilling my kuleana (personal sense of responsibility) in helping Hawaii communities recover from past disasters and receive the knowledge and support they need to mitigate future ones.

During my fellowship, I helped U.S. Senator Hirono write, introduce, and when possible, pass legislation increasing the ability of communities throughout the country to implement hazard mitigation strategies. These include the Wildfire Resilience Through Grazing Research Act (S. 602), which was introduced on the Senate floor in February 2025; a bill reauthorizing the National Volcano Early Warning System (NVEWS; S. 1052) that was introduced in March 2025; and a Senate resolution designating the

month of May as “National Wildfire Preparedness Month” (S. Res. 247), which was introduced in May 2025 and passed the Senate by unanimous consent in June 2025.

I learned several lessons from my fellowship that, even in this highly politically polarized time, are worthwhile for any scientist or science advocate to know. First, scientists, as stakeholders of lawmakers, play a vital role in helping their elected officials understand how recent developments in science, technology, engineering, or math can solve problems affecting their constituents. As a CSF, I used my geology and hazard communication expertise to assist Senator Hirono and her staff in developing a comprehensive plan for maintaining communications with key points of contact during natural disasters impacting Hawaii. In addition, I consulted with scientists working in federal agencies—including the USGS, National Oceanographic and Atmospheric Administration (NOAA), and the U.S.

Department of Agriculture (USDA)—the State of Hawaii government, and the University of Hawaii to assist Senator Hirono in writing and introducing wildfire and volcano hazard mitigation legislation.



Figure 2. Robby poses for a photo with U.S. Senator Mazie K. Hirono inside her main office.

The second lesson I learned from my fellowship is that bipartisanship is not only possible, but necessary for addressing the large, nationwide challenge of natural disasters. Each of the hazard mitigation bills that I helped Senator Hirono introduce were intentionally written to benefit stakeholders in both red and blue states, and thus are sponsored (i.e., co-written and co-introduced) by both Republican and Democratic senators. After all, natural hazards cross state lines and are not confined to red or blue states. That being said, the successful introduction, let alone passage, of bipartisan legislation requires each senator's policy staff and fellows to help them do the heavy lifting of building and maintaining positive working relationships across the political aisle to achieve shared policy goals.



Figure 3. Robby meets with Hawaiian Volcano Observatory (HVO) Scientist-in-Charge, Dr. Ken Hon, at the site of the new permanent HVO facility in Hilo, Hawaii, as part of his April 2025 visit to Hawaii on behalf of Senator Hirono.

The third lesson I learned from my time in the Senate is the virtue of patience, and I was fortunate in serving as a CSF for long enough to see this lesson pay off. Developing S. 602, which authorizes the USDA to award federal grants to land-grant universities supporting research, development, and community outreach demonstrations of livestock grazing techniques for wildfire mitigation, took half a year between its initial draft—which I helped Senator Hirono co-write with Senator Padilla (D-CA)—and its introduction in February 2025. The bill was introduced with a bipartisan coalition of cosponsors that also included Senators Moran (R-KS) and Lankford (R-OK) less than two months after the Senate and White House had both flipped from Democratic to Republican party control. This accomplishment is a testament to the power of patience when working toward shared policy goals that transcend our nation’s partisan divide.

My final lesson is that we scientists, as constituents each individually represented by two U.S. senators and one congressperson, play a critical role in encouraging our members of Congress to work across party lines to pass legislation supporting the science we do. As earth scientists especially, our work not only advances our understanding of the world, but also provides vital information for lawmakers, emergency managers, businesses, and government agencies to better serve their constituents and customers, whether by building more climate resilient infrastructure or helping communities fully prepare for future natural disasters.

Fortunately, there are plenty of resources and opportunities for you, as a GSA member, earth scientist, or science advocate to kickstart your policy outreach. GSA’s website includes a dedicated Science Policy page complete with an online advocacy toolkit, geoscience policy newsletter, and 28 position statements, which summarize GSA’s consensus

views on select issues of relevance to the geosciences community, ranging from U.S. flood risk management to the importance of teaching earth science in K–12 classes. In fact, your contribution to science policy could include submitting comments for newly written (or recently revised) position statements, which are updated every 4–5 years by the members of GSA’s Geology and Public Policy Committee (GPPC).

Moreover, each year GSA invites several member representatives to participate in annual Geosciences Congressional Visits Days (Geo-CVD), a two-day workshop bringing earth scientists from across the country together to receive a crash course in federal science policymaking and advocacy, including a full day of visits with members of Congress, their staff, or Congressional Fellows. As someone who made his very first trip to Washington, DC, to volunteer for the 2017 Geo-CVD as GSA’s North-Central Section representative, I cannot recommend this opportunity highly enough! It may even set you on the path to being awarded a GSA-USGS Congressional Science Fellowship (now in its 40th year) or volunteering on the GPPC (whose 55th anniversary is also this year).



Figure 4. Robby holds a framed copy of S. Res. 247—resolution designating May 2025 as “National Wildfire Preparedness Month”—inside Senator Hirono’s office.

Whether your contribution to science policy outreach is large or small, your role as an earth scientist or science supporter is vital to ensuring that communities throughout the United States, and around the world, can use the best geoscience knowledge available to identify and implement solutions to our society’s modern challenges, including natural hazard mitigation.



Get Ready for GSA Connects 2026 in Denver, Colorado, USA!

Letter from the General Chair

Greetings, geoscientists! You are all invited to gather here at the foot of the Colorado Rockies, GSA's home for the last 58 years, in Denver, Colorado, 11-14 October for GSA Connects 2026. October weather in Denver is (usually!) delightful, the revitalization project for the conference's 16th Street neighborhood has finally ended, so hospitality is back to its vibrant self, and the local geologic scenery will not disappoint. Most of all, GSA and the local organizing committee have put together an exciting program that will turbocharge your professional collaboration no matter your area of geoscience practice.

The meeting's three themes are **Celebrating a Century of Continental Drift, Innovations in Exploration from Deep Earth to Deep Space: From Al to Yttrium, and Riverscapes in Transition: Dynamics, Hazards, and Human Futures**. They are three tines on the same fork, separate but interrelated and working together to accomplish a goal—in this case, our shared goal of understanding and appreciating the workings of Earth and other planets.

What better place to celebrate the once heretical idea of continental drift and reflect on the stream of geologic thought it spawned than the Laramide Rockies, the subject of renowned Rocky Mountain geologist David Love's colorful quote about rabbits, horses, and plate tectonics (that I cannot repeat here!)? I spend many waking hours thinking about the geologic evolution of the Rockies; I'm not alone in considering them one of the world's most puzzling mountain ranges. At GSA Connects 2026 they beckon you to explore on one of the many organized field trips or on your own, with help from GSA's fabulous Colorado geosites map.

The 1860s gold prospectors who came to the Rockies seeking fortune had little use for geologists, trusting their empirical noses more than "egghead" theoreticians of the Earth. But history documents many fruits resulting from the happy marriage of theory and empiricism, and Colorado is now home to multiple professional societies, academic institutions, and some of the world's leading exploration companies. A Pardee Symposium will examine mining geoheritage and the geosites map will help you explore Colorado's rich mining legacy for yourself.

Human society has always needed Earth resources to thrive, and tomorrow's society will too. The many GSA Connects 2026 events tied to the "From Al to Yttrium" theme will illustrate how geoscientists are at the forefront of providing society with those resources, from the critical minerals that catalyze technological innovations to satisfying humanity's ever rising demand for water and energy – and doing so in a way that sustains Earth's ability to continue providing the resources our children's children's children will need for their societies to thrive.

Water is humanity's most critical resource of all, and the foot of the Colorado Rockies, where geoscientists work daily to address myriad water issues from drought to acid mine drainage to flash flooding, is a fitting place to hold the "Riverscapes in Transition" themed sessions that will probe the connection between humans and water.

I want to extend an extra special invitation to GSA Connects 2026 to my early career and international colleagues. Storm clouds are building on the scientific horizon, with growing numbers of citizens questioning the value of expertise and abrupt changes to research funding models. GSA has long been an international geoscience organization, as this year's Cordilleran Section meeting in Loreto, Mexico, and next year's GSA Connects 2027 meeting in Montreal, Canada, both illustrate. As students of the Earth, our growing expertise will shape Earth's habitability far into the future. The more of us who collaborate, the faster that expertise grows and the brighter our collective future becomes.



Lon D. Abbott
General Chair
University of Colorado Boulder



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 nongeologists 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.

GSA offers a 50% discount on annual meeting registration fees for individuals who are both residing in and are citizens of low and low-middle-income countries as classified by the World Bank. The 50% discount does not apply to the K-12 professional or Guest registration classes.

Important Dates

4 May – Non-Tech Space Request Submission Opens

5 May – Abstract Submission Opens

19 May – Early Action Deadline

2 June – Registration Opens

6 August – Abstract Deadline

Hotels

Hyatt Regency Denver at Colorado Convention Center
AC Hotel Denver Downtown
Embassy Suites Denver Downtown
Hyatt House Denver Downtown
Hyatt Place Denver Downtown
Sonesta Denver Downtown
The Westin Denver Downtown

Travel and Transportation

The Colorado Convention Center is centrally located in downtown Denver and is easy to reach from Denver International Airport (DEN) via the RTD A Line commuter rail. The A Line runs frequently between the airport and Denver Union Station, a major transit hub about a mile from the convention center; from there, attendees can transfer to the free 16th Street MallRide shuttle, take a short rideshare or taxi trip, or walk to the venue. Several RTD light rail and bus routes also serve the downtown area, making it simple to travel from hotels and neighborhoods throughout the metro region.

In addition to public transit, rideshare services such as Uber and Lyft operate widely in Denver and provide convenient door-to-door transportation to the convention center. Taxis are readily available at the airport and throughout downtown, and rental cars are offered at DEN for those planning to explore the region. Many nearby hotels are within walking distance of the venue, and downtown Denver's pedestrian-friendly streets make getting around on foot convenient.

Non-Tech Requests

The submission portal for non-technical space requests will open in early May.

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.

Meeting room assignments will be sent out mid-July.



Location

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

Cancellation Policy

A \$30 processing fee will be charged for the cancellation of a registration if received in writing prior to 11:59 p.m. MDT on 1 September 2026. No refunds will be given after the cancellation deadline for any registration type or events.

The Geological Society of America understands that unforeseen circumstances can prohibit attendance at the meeting. Refund requests for registration fees received after 1 September will be handled on a case-by-case basis. GSA will not accept any requests for refunds after 45 days from the end of the meeting.

Abstract Information

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

Abstract submission opens in early May! 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.
- This year, a new Early Action Abstract Deadline has been introduced: **19 May**. Authors who meet this deadline will receive a review and final decision on their abstract by mid-June.
- 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 free 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.

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Jacob Covault, Majie Fan, Jason A. Flaum, Andrew Leier, Joel Saylor

Soils and Soil Processes Division

Timothy M. Gallagher, Michael Howard Young

Structural Geology and Tectonics Division

Morgann Gwenva Perrot, Rebecca M. Flowers, Elena A. Miranda, Andrew Vincent Zuza

Representatives At-Large

GSA International

W. Berry Lyons

Paleoclimatology/Paleoceanography

Megan K. Fung

Traditional Ecological Knowledge

Kenneth D. Ridgeway

Associated Societies

Association of Earth Science Editors

Monica Gaiswinkler Easton

Council on Undergraduate Research Geosciences Division

Elizabeth Heise, Claire McLeod

Geochemical Society

Frank C. Ramos

Geoscience Information Society

Jenna Thomson

Mineralogical Society of America

Philip Brown

National Association of Geoscience Teachers

Meghan Lindsey Cook

Paleontological Society

David W. Bapst, Sarah M. Jacquet

GSA Connects 2026 Short Courses:

Hands-On Skills, Modern Tools, and Career-Ready Methods

GSA Connects 2026 in Denver will feature a strong lineup of short courses designed to build practical, transferable skills across the geosciences—spanning analytical methods, geoinformatics, modeling, mapping, and applied decision-making. Offerings include community-building workshops in microbeam geochronology (U–Th–Pb in common Pb-bearing minerals), training in near-surface geophysics with hands-on instrumentation, and earth surface process modeling through CSDMS tools such as Landlab and BMI. Participants can also strengthen GIS-based hazard skills through lidar- and orthoimagery-based landslide mapping, explore best practices in detrital geochronology analysis and mixture modeling, and learn river-profile inversion approaches for interpreting uplift histories and landscape response.

Several courses emphasize emerging workflows and data infrastructure, including contributing to Macrostrat and sedimentary geochemistry databases, using scientific ocean drilling datasets efficiently, and leveraging national-scale digital mapping resources like the new Cooperative National Geologic Map (with examples in web tools, GIS, and Python). Additional opportunities include advanced digital outcrop modeling and interpretation workflows, StraboField/StraboMicro training for building robust digital field-to-lab data pipelines, and field-based mapping technique exchange with professional mappers. The program also includes timely applied topics such as 3D subsurface characterization for resource security and hazard-informed decisions, practical geoconservation approaches grounded in global case studies, and a multi-day deep dive into lead in the environment—linking geochemistry, exposure pathways, and remediation.

Full course descriptions, schedules, and registration details will be published in the June issue once final arrangements are confirmed.

GSA Connects 2026 Field Trips:

From Snowball Earth to Urban Rivers

GSA Connects 2026 in Denver will offer an outstanding slate of field trips that showcase the breadth of Rocky Mountain geology and the many ways geoscientists investigate Earth systems, from deep-time stratigraphy and tectonics to geomorphology, geoheritage, hazards, and applied resource questions. Across pre- and post-meeting options, participants will have opportunities to step into classic Front Range and southern Rockies field areas, connect outcrops to active research questions, and experience destinations where geologic stories are written clearly on the landscape.

Several trips highlight the region's long and complex tectonic history, including excursions focused on Proterozoic crustal assembly and reworking in the Colorado Front Range, and trips examining the structural and magmatic evolution tied to the Ancestral Rocky Mountain and Laramide orogenies, Oligocene magmatism and metamorphism, and Rio Grande rift extension along the Sangre de Cristo Range. Participants interested in igneous and mineral systems can look forward to field-based investigations of enigmatic Mesoproterozoic magmatism and mineralization at the Laramie Anorthosite Complex and Sherman Batholith, as well as a visit to the Cripple Creek & Victor Gold Mine. Other trips bring process and method to the forefront, including opportunities to explore subduction complex clastic rocks and mélanges in the context of sedimentary recycling and subduction interface slip, and to build skills in digital field workflows through StraboField by learning data collection in the field through hands-on practice.

A strong geoheritage and paleontology thread runs through the program, with trips featuring world-class sites and stories that connect science, history, and public engagement. Options include Florissant Fossil Beds National Monument, an accessible introduction to Dinosaur Ridge and the paleontological history of the Denver area, and a field trip recognizing the legacy of Dr. Martin Lockley through selected Front Range and metropolitan Denver geoheritage localities. For those drawn to geomorphology and surface processes, trips will explore watershed dynamics from Pikes Peak to the Arkansas River corridor, examine changing flow and sediment dynamics in rivers influenced by beaver dams and dam removal, and trace longer-term landscape evolution across Colorado's High Plains and adjacent mountain front. Additional experiences offer a "geologic sampler" approach to the Pikes Peak region—combining multiple stops and themes, along with creative formats that expand how we engage with geology in place, including a geology-focused bike tour centered on the Table Mountain Shoshonite near Golden.

Beyond Colorado, the broader regional context is also represented, including a multi-day synthesis of geologic time through the Black Hills and Badlands of the northern Great Plains. Taken together, these trips emphasize both iconic field localities and emerging conversations in the discipline—linking fundamental geologic questions with practical observation, modern tools, and the shared experience of learning in the field. Full trip descriptions, schedules, and registration details will be published in the following issue once final logistics are confirmed.



GeoCareers at GSA Connects 2026

Your Path to Career Success!

Join us for GeoCareers Day, 1:1 mentoring, career development sessions, and networking gatherings.

GeoCareers Day

- Mentors and panelists share insights from government and industry at this half-day event.
- Résumé and USAJobs Workshop
- Mentor Roundtables
- Career Panel



The GeoCareers Corner

A dedicated space for student and early career professionals. Professional development opportunities, plus a casual space to relax and chat with peers. Open Sunday–Tuesday.

- Career Development Presentations
- 1:1 Résumé Review
- 1:1 Career Mentoring
- Early Career Professional Coffee
- Women in Geology Reception
- Geology Club Meet-Up
- Job Board to Post/View Job Listings

Become a Student Volunteer at GSA Connects 2026!

Are you a student looking to get involved with GSA and connect with geoscientists from across the country? Student volunteer opportunities will open when registration launches on 2 June 2026!

Student volunteers play a vital role in supporting technical sessions, registration, and overall meeting logistics—and in return, receive complimentary meeting registration in exchange for at least 8 hours of service. Volunteer positions are filled on a first-come, first-served basis, so be sure to watch for the June announcement and secure your spot early.

To participate, you must be a current GSA student member. Not a student member yet? Join today to take advantage of this opportunity and more! Student memberships are just \$25/year.

Questions? Email gsastudents@geosociety.org.

Apply for Student Travel Grants

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

Travel grant applications will open on 2 June 2026. 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.



Share Your Time and Expertise: Mentor at GSA Connects!

Do you enjoy connecting with students and early career professionals, and sharing insights, and experience to help them navigate their career paths? Then please consider mentoring at GSA Connects! You can mentor in a group setting as a table mentor at the GeoCareers Day program, offer 1:1 résumé review and/or general career mentoring, or provide informal mentoring at special events such as the Women in Geology Reception. So many options! Please get in touch via gsamentors@geosociety.org with your questions, and to be contacted once mentor sign-ups open this summer. Hope to see you in Denver!



Support Your Geoscience Journey with On To the Future!

GSA's On To the Future[®] (OTF) program supports geoscience students interested in attending GSA Connects by offering travel funding, meeting registration, and GSA membership, as well as mentorship, and special sessions with leadership during the meeting. OTF scholars benefit from a vibrant network, community, and opportunities to build social capital within the geosciences.

APPLY NOW

Visit <https://www.geosociety.org/OTF> to learn more about eligibility and the application process.

Interested in becoming a mentor? We are actively recruiting! Learn about mentor expectations and apply at <https://www.geosociety.org/OTF>.

Scholar and Mentor Application Deadline: 7 May 2026

Pardee Keynote Symposia



Geoheritage Values in a World of Resource Extraction: Sharing Domestic, International and Indigenous Perspectives

Categories: Geoheritage; Environmental Geoscience; Economic Geology

Advocates: Jack Matthews

GSA Connects 2026 coincides with AGI's Earth Science Week "Critical Minerals for a Thriving Society." This GSA-ProGEO Symposium explores the complex interplay of geoheritage and humanity's dependence on past, present and future resource extraction.

Endorsed by: GSA History, Philosophy, and Geoheritage Division; GSA International; GSA Geology and Society Division; ProGEO (International Association for the Conservation of Geological Heritage); American Geosciences Institute (AGI)

Mineral Resources and Society

Categories: Economic Geology; Geology and Society; Environmental Geoscience

Advocates: Simon Jowitt

This symposium focuses on the metal and mineral supply challenges of modern society and the balance between our need for metals and minerals and the societal and environmental challenges of mining.

Endorsed by: Society of Economic Geologists (SEG); GSA Geology and Society Division; Society for Mining, Metallurgy & Exploration (SME); GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division



From Deep Earth to Digital Twins: Artificial Intelligence and Predictive Groundwater in Earth System Science

Categories: Hydrogeology; Geochemistry; Geoinformatics and Data Science

Advocates: Abhijit Mukherjee

Artificial intelligence and digital twins are redefining subsurface exploration. This Pardee integrates predictive groundwater science with deep Earth processes and critical element dynamics to advance Earth system modeling and decision relevant forecasting.

Endorsed by: GSA Hydrogeology Division; GSA Geoinformatics and Data Science Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA International; International Society of Groundwater for Sustainable Development (ISGSD)

Bottoms Up: Perspectives from "Bottom-Up" and "Top-Down" Approaches to Tectonic Reconstructions

Categories: Tectonics; Geophysics/Geodynamics; Structural Geology

Advocates: Jonny Wu

This symposium pairs invited speakers who use "top-down" (i.e., study of rocks at the surface) and "bottom-up" (i.e., geophysics and modeling techniques) approaches to address tectonic histories and processes. We emphasize topics where these perspectives yield both complementary and conflicting information, with the goal of fostering interdisciplinary dialogue toward more integrative tectonic frameworks.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division; GSA Sedimentary Geology Division; GSA Geochronology Division; GSA International

Technical Sessions

Developing and Assessing Workforce Skills in Geoscience Courses and Programs

Category: Geoscience Education

Advocates: Stacy Yager, Karen Viskupic

We invite abstracts from research studies aimed at understanding how best to develop and assess workforce skills in geoscience undergraduate and/or graduate students. Studies may focus on specific skills, interventions, industry sectors, or activities.

Endorsed by: GSA Geoscience Education Division; National Association of Geoscience Teachers (NAGT); NAGT Geoscience Education Research Division (GER); NAGT Geoscience Two-Year College Division (Geo2YC); NAGT Teacher Education Division (TED)

Granite-Related Mineral Systems: Advances in Understanding Their Genesis, Distribution, and Exploration Implications

Categories: Economic Geology; Petrology, Igneous; Geochemistry

Advocates: Sean Gaynor, Joshua Rosera, Adam Curry, Lawrence Carter

Granite formation drives crustal differentiation and is associated with a variety of important mineral deposits. This session aims to understand mineralization and alteration in granitic magma centers through multidisciplinary approaches, and applications to mineral exploration.

Endorsed by: Society of Economic Geologists (SEG); GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; Society for Mining, Metallurgy & Exploration (SME)

Happy 323 Millionth Birthday, Pennsylvanian Period: A Celebration of Everything Pennsylvania(n)

Categories: Geoscience Information/Communication; Paleontology, Biogeography/Biostratigraphy; Structural Geology

Advocates: Adam Ianno, Nicholas Sullivan, Ellen Fehrs, Christopher Oest, Lily Pfeifer

We're celebrating the birthday (within error) of the Pennsylvanian Period! This session welcomes global contributions that focus on either the Pennsylvanian Period or work focused in Pennsylvania, USA, regardless of geologic age.

Endorsed by: Association of American State Geologists (AASG); GSA Sedimentary Geology Division; GSA Geochronology Division; GSA History, Philosophy, and Geoheritage Division

Phantastic Phosphorus and Its Historical Biogeochemistry

Categories: Geochemistry; Geobiology and Geomicrobiology; Paleontology, Paleoecology/Taphonomy

Advocates: Cecilia Sanders, Madeline Marshall, Miquela Ingalls

This session is for all investigations related to the biogeochemical cycling of phosphorus—from today to earliest Earth, from the humble coprolite to the vast Phosphoria sea, from redox chemistry to micropaleontology.

Endorsed by: GSA Geobiology and Geomicrobiology Division; GSA Sedimentary Geology Division



Understanding and Facilitating River Corridor Resilience to Wildfire

Categories: Geomorphology; Environmental Geoscience; Geology and Society

Advocates: Sara Rathburn, Ellen Wohl, Charles Shobe

Increasing wildfire frequency and severity necessitates understanding river corridor resilience. We invite presentations spanning fundamental research to applied restoration practices that identify and quantify characteristics that create and maintain river corridor resilience to wildfire.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Environmental and Engineering Geology Division; GSA Geology and Society Division; International Association of Geomorphologists

Using Geophysics to Investigate Near Surface Geological Problems

Categories: Geophysics/Geodynamics; Engineering Geology; Environmental Geoscience

Advocates: Kevin Mickus, Luel Emishaw

Submissions are requested that use all methods of geophysics to study the near surface for engineering, hydrological, environmental, archaeological, soil and geological applications.

Endorsed by: GSA Geophysics and Geodynamics Division; GSA Environmental and Engineering Geology Division; GSA Geoarchaeology Division; GSA Hydrogeology Division; GSA Karst Division

Using Geophysics to Explore and Evaluate Mineral, Energy and Water Resources

Categories: Geophysics/Geodynamics; Economic Geology; Energy Geology

Advocate: Kevin Mickus

Abstracts are requested that use all methods of geophysics to investigate mineral, petroleum, coal, geothermal and water resources.

Endorsed by: GSA Geophysics and Geodynamics Division; GSA Energy Geology Division; GSA Hydrogeology Division; Society of Economic Geologists (SEG); Society of Exploration Geophysicists (SEG)

Geophysics and Tectonic Studies in Africa

Categories: Geophysics/Geodynamics; Tectonics; Economic Geology

Advocates: Kevin Mickus, Luel Emishaw

Abstracts are requested that involve geophysics and tectonics in Africa. Geophysical studies could additionally include economic, petroleum, geomorphological and geothermal investigations.

Endorsed by: GSA Geophysics and Geodynamics Division; GSA Structural Geology and Tectonics Division; GSA Energy Geology Division; Society of Economic Geologists (SEG); Geological Society of Africa (GSAf)

Maps, Metamorphic Cores, and Mentorship: A Session Honoring the Career Contributions of Jeff Lee

Categories: Structural Geology; Tectonics; Petrology, Metamorphic

Advocates: Andrew Hoxey, Kimberly Blisniuk, Daniel Mongovin

Geologic mapping and field data remain central to interpreting Cordilleran evolution, Basin and Range extension, and Indo-Asia collision. We invite contributions in structural geology, tectonics, and metamorphic petrology, integrating fieldwork, geochronology, and thermochronology.

Advance Ground Surface Modeling for Hydrological and Environmental Applications

Categories: Hydrogeology; Environmental Geoscience; Geophysics/Geodynamics

Advocates: Esther Oyedele, Oluwaseyi Dasho, Ramadan Abdelrehim

This session highlights advances in ground surface modeling for hydrological and environmental applications, emphasizing techniques and integration with remote sensing, GIS, geophysics, and models. We invite submissions on methodologies, case studies, challenges, and interdisciplinary approaches.

Endorsed by: GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; GSA Geophysics and Geodynamics Division; GSA Geoinformatics and Data Science Division; GSA Marine and Coastal Geoscience Division

Geologic Maps and Their Derivatives (Posters)

Categories: Geoinformatics and Data Science; Structural Geology; Quaternary Geology

Advocates: Richard Berg, Harvey Thorleifson

This poster session will highlight new geologic maps, mapping programs, and innovations in geological mapping, including data management, web accessibility, 3-D, and applications in water and land management.

Endorsed by: Association of American State Geologists (AASG)

Hydrothermal Ore Deposits: From Source to Sink

Categories: Economic Geology; Petrology, Igneous; Geochemistry

Advocates: Thomas Monecke, Lauren Terry, Ben Frieman
Hydrothermal processes result in the enrichment of a wide range of elements needed by modern society. This topical session focuses on mineral system science and the processes of metal enrichment in different deposit types.

Endorsed by: Society of Economic Geologists (SEG); Society for Mining, Metallurgy & Exploration (SME); Geological Association of Canada (GAC)

AI and Data-Driven Frontiers in Climate Resilience: Leveraging LLMs and Big Data for Urban Adaptation

Categories: Geoinformatics and Data Science; Geoscience and Public Policy; Geology and Society

Advocate: Dhanyasri Bolla

This session examines emerging technologies in climate science, specifically the use of Large Language Models (LLMs) and big data analytics to assess risks and optimize adaptation strategies in complex urban systems.



Cushman Foundation Symposium: Timescales, Rates, and Mechanisms of Climate and Ocean Change over the Last 250 Million Years: Insights from Foraminiferal Evidence

Categories: Paleontology, Biogeography/Biostratigraphy; Paleoclimatology/Paleoceanography; Paleontology, Diversity, Extinction, Origination

Advocates: Maria Rose Petrizzo, Brian Huber, Kenneth Miller

The Cushman Foundation Symposium will examine foraminiferal evidence of major ocean-climate events and long-term environmental change, using multidisciplinary tools to identify the drivers, thresholds, feedbacks, and ecosystem responses that shape past and future oceans.

Endorsed by: Cushman Foundation; Paleontological Society (PS); GSA Geochronology Division; GSA Marine and Coastal Geoscience Division; GSA International

Mineralogy in the Solar System

Categories: Planetary Geology; Mineralogy/Crystallography; Geoinformatics and Data Science

Advocates: Elizabeth Rampe, William Farrand

Planetary exploration across the Solar System has enabled determinations of surface mineralogy on multiple worlds. This session will highlight recent results on the mineralogical diversity of worlds targeted by planetary missions.

Endorsed by: GSA Planetary Geology Division

Mass Extinctions and the Current Biodiversity Crisis: Lessons from the Past to Inform the Future

Categories: Paleontology, Diversity, Extinction, Origination; Paleontology, Paleoecology/Taphonomy; Geobiology and Geomicrobiology

Advocates: David Bottjer, Priyanka Soni, Austin Hendy
Presentations will emphasize evidence from the fossil and stratigraphic record that can be used in managing the current extinction, actively linking this knowledge to modern-day biodiversity and climate research agendas.

Endorsed by: Paleontological Society (PS); SEPM (Society for Sedimentary Geology); Paleontological Research Institution (PRI); GSA Geobiology and Geomicrobiology Division

Recent Developments on the Tectonic Evolution of Alaska and Northwest Canada

Categories: Tectonics; Stratigraphy; Structural Geology

Advocates: Erin Donaghy, George Geier, Jared Gooley, Brandon Keough

This session invites submissions that inform our understanding of the tectonic evolution of Alaska, northwest Canada, and adjacent offshore regions, including stratigraphic, structural, geochronological, geochemical, and geophysical studies.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geochronology Division

Insights From Microfossils and Their Modern Analogs: From Traditional to Emerging Approaches

Categories: Paleoclimatology/Paleoceanography; Geochemistry; Paleontology, Biogeography/Biostratigraphy

Advocates: Fabiana de Almeida, Lizette Leon-Rodriguez, Samantha Bombard

Traditional applications of microfossils are central to many studies, while novel approaches (especially geochemistry) utilizing microfossils have expanded recently. This session highlights traditional and innovative microfossil applications in terrestrial and marine environments, including modern analogs.

Endorsed by: Cushman Foundation; Paleontological Society (PS); Geochemical Society (GS); Paleontological Research Institution (PRI); GSA Marine and Coastal Geoscience Division

Reading between the Layers with Stratigraphic Paleobiology: Innovations in Applying Stratigraphic Principles to the Fossil Record

Categories: Paleontology, Biogeography/Biostratigraphy; Stratigraphy; Geochemistry

Advocates: Heather McCandless, Kayla Irizarry, Kayli Stowe, Rory Sweedler

This session focuses on paleontological and complementary geochemical research employing stratigraphic context to investigate paleobiological trends. We invite abstracts using field-based and modeling approaches to explore lithology- and stratigraphy-dependent relationships with biodiversity and preservation.

Endorsed by: Paleontological Society (PS); SEPM (Society for Sedimentary Geology); Paleontological Research Institution (PRI); Association for Women Geoscientists (AWG)

Mineralogical Insights from Modern Spectroscopic Techniques

Category: Mineralogy/Crystallography

Advocates: Tyler Spano, Claire Marshall

This session highlights Raman, infrared, X-ray fluorescence, laser-induced breakdown, Mössbauer, neutron, and related spectroscopies in mineral sciences, welcoming papers on new techniques, analytical methods, interpretation, and crystallographic or physicochemical controls on spectral observations in minerals.

Endorsed by: Mineralogical Society of America (MSA); GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

New Approaches and Emerging Technologies for the Prevention, Control, and Remediation of Acidic Rock Drainage and Legacy Mine Waste

Categories: Environmental Geoscience; Economic Geology; Engineering Geology

Advocates: Mackenzie Best, Devin Castendyk, Virginia McLemore, Patricia Moran, P. J. Nolan, Daniel Jones

We invite submissions on management, remediation, and resource recovery from ARD and other critical mineral-bearing wastes, including legacy tailings and e-waste. We welcome novel technologies, interdisciplinary approaches, and case studies, especially from early career scientists.

Endorsed by: GSA Environmental and Engineering Geology Division; GSA Hydrogeology Division; Society for Mining, Metallurgy & Exploration (SME); GSA Geobiology and Geomicrobiology Division; GSA Energy Geology Division

Karst Sedimentary, Paleoclimate, and Historical Records

Categories: Karst; Paleoclimatology/Paleoceanography; Geoarchaeology

Advocates: Daniel Jones, Natasha Sekhon

Cave deposits (sediments, speleothems, tufa, etc.), karst environmental records (sedimentary, carbonate stratigraphy, etc.), and geoarchaeological and historical investigations to interpret past climates, landscapes, extreme events, and land-use histories, and to model or predict future changes.

Endorsed by: GSA Karst Division; GSA Geochronology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Quaternary Geology and Geomorphology Division; GSA Sedimentary Geology Division

Applications of 3-D Geological and Subsurface Modeling: From Energy to Environment

Categories: Energy Geology; Hydrogeology; Economic Geology

Advocates: Leland Spangler, Justin Birdwell, William Andrews, Donald Sweetkind

This session highlights applied 3-D geological and subsurface modeling efforts in industry, government, and academia, emphasizing transferable workflows, software capabilities, and innovative use of new data to address energy, environmental, and resource challenges.

Endorsed by: GSA Energy Geology Division; Society of Exploration Geophysicists (SEG); Society of Economic Geologists (SEG); Association of American State Geologists (AASG); GSA Geoinformatics and Data Science Division

Application of Information and Communication Technology and Data Science for Riverscapes in Transition: Considering Dynamics, Hazards, and Human Futures for Interlinking Rivers to End Water Scarcity

Categories: Geoscience Information/Communication; Environmental Justice; Geoinformatics and Data Science

Advocate: Kalpana Chaudhari

The main objective of the session on river linking project is to discuss the planning and management of water resources at river basin level with optimum and conjunctive use of water resources, integrating rainfall-runoff relation.

Endorsed by: GSA Geoinformatics and Data Science Division

Won't You Be My Neighbor? Quantifying Realized Niche Transitions through Time and Space

Categories: Paleontology, Biogeography/Biostratigraphy; Paleontology, Paleocology/Taphonomy; Geology and Society

Advocates: Ian Forsythe, Lilja Balaji

This session integrates research of realized niche expansion across time, environments, and taxonomic groups. This session will analyze how niche transitions altered biogeography, evolutionary patterns, and synecological patterns from the Cambrian to the Holocene.

Endorsed by: Paleontological Society (PS); Paleontological Research Institution (PRI); Society of Vertebrate Paleontology (SVP); GSA Geobiology and Geomicrobiology Division; Paleontological Society (PS)

Applied Science and Insights on Alluvial Fans

Categories: Geomorphology; Engineering Geology; Geology and Society

Advocates: Thad Wasklewicz, Caitlin Orem

Alluvial fans are complex and dynamic systems that may be difficult to characterize for hazard assessments. This session welcomes studies on alluvial fans with a focus on applied science and geohazard and risk assessments.

Endorsed by: GSA Environmental and Engineering Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division

Latest Research Advances in Structural Geology and Tectonics

Categories: Structural Geology; Tectonics

Advocates: Andrew Zuza, Elena Miranda, Devon Orme, Rebecca Flowers, Morgann Perrot

This session explores recent research in structural geology and tectonics, addressing deformation across spatial and temporal scales through novel approaches, emerging datasets, analytical techniques, computational advances, and interdisciplinary methods.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division

38th Annual Undergraduate Research Exhibition Sponsored by Sigma Gamma Epsilon

Categories: Geomorphology; Stratigraphy; Petrology, Igneous

Advocates: Alexander K Stewart, Richard Ford, Lee Potter, Norman Levine, Steve Baedke, Claire Marshall, Scott Beason
Students are invited to submit geoscience research to this poster session. Projects from any geoscience subdiscipline are welcome. Student members of the geoscience honorary society Sigma Gamma Epsilon are eligible for competitive awards.

Endorsed by: Sigma Gamma Epsilon (SGE); GSA Geoscience Education Division; GSA Quaternary Geology and Geomorphology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geobiology and Geomicrobiology Division

Metals in Motion: Trace Metal Heterogeneity, Speciation, Isotopes, and Cycling Across Varying Spatial and Temporal Scales

Categories: Geochemistry; Environmental Geoscience; Paleoclimatology/Paleoceanography

Advocates: Frances Meyer, Anna Lesko, Eleanor Spielman-Sun

Trace metals used to interpret past environments, fluid transport, and critical zone behavior. This session will highlight trace metal research in sedimentary systems from the past and present emphasizing system heterogeneity.

Endorsed by: GSA Sedimentary Geology Division; GSA Soils and Soil Processes Division; Geochemical Society (GS); International Association of GeoChemistry (IAGC)

Revisiting the Archives: New Discoveries from Existing Core Collections

Categories: Marine/Coastal Geoscience; Continental Scientific Drilling; Paleoclimatology/Paleoceanography

Advocate: Laurel Childress

Advances in analytical techniques and data integration allow for new questions to be asked from previously collected marine, lacustrine and continental cores. This session highlights recent studies that utilize existing archives stored in geologic repositories.

Endorsed by: GSA Marine and Coastal Geoscience Division; GSA Continental Scientific Drilling Division; Cushman Foundation

Geological Mapping: Geologic Maps Underpin Many Geological Interpretations and Add Significant Value. What Might the Future Hold and Who Will Be the Mappers?

Categories: Structural Geology; Stratigraphy; Geoscience Education

Advocate: David Converse

This session will explore the role of geological mapping and fieldwork in diverse geological, hydrological, environmental and engineering applications, will identify potential novel methodologies, and will consider the source and training of new geologic mappers.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Environmental and Engineering Geology Division; GSA Geoscience Education Division

AI-Driven Subsurface Geoscience for Future Energy Systems

Categories: Energy Geology; Geoinformatics and Data Science; Environmental Geoscience

Advocates: Adewale Amosu, Lianjie Huang

This session explores applications of artificial intelligence and machine learning to subsurface geological and geophysical data, highlighting real-world case studies and advances supporting geothermal energy, carbon capture and storage, hydrogen storage, and critical mineral resources.

Endorsed by: GSA Energy Geology Division; GSA Environmental and Engineering Geology Division; GSA Geoinformatics and Data Science Division; Society of Exploration Geophysicists (SEG)

Early Career Investigators in Mineralogy and Crystallography

Categories: Mineralogy/Crystallography

Advocates: Yihang Fang, Manuel Scharrer

This session provides a platform for early-career, postdoctoral, and students in mineralogy and crystallography to share fresh perspectives and new ideas. We also welcome talks on professional development and equal career advancement in mineral sciences.

Endorsed by: Mineralogical Society of America (MSA); Mineralogical Society of America (MSA); GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division.

Environmental Geochemistry and Health

Categories: Environmental Geoscience; Geology and Health; Geochemistry

Advocates: Sarah Hayes, Jean Morrison, Ann Ojeda, Peter Knappett

We invite presentations on contaminant fate and impacts on human and environmental health, emphasizing rock–soil–water–human linkages. Studies are on legacy and emerging contaminants (especially Pb), particularly those with strong outreach or societal impact, are welcome.

Endorsed by: GSA Geology and Health Division; GSA Environmental and Engineering Geology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geobiology and Geomicrobiology Division; GSA Geology and Society Division

Geological Processes and Metallogenesis at Plate Boundaries: Integrating Multiscale Mechanisms and Quantitative Approaches for Critical and Rare Metals

Categories: Tectonics; Economic Geology; Petrology, Igneous

Advocates: Lu Wang, Jianwei Li, Kunfeng Qiu, Richard Goldfarb, Adam Simon, Klaus Gessner

Plate boundary geological processes are vital to form critical and rare metal deposits (e.g., Au, Cu, Cr, Co, Li, Ni). We welcome studies including tectonic processes, multiscale cutting-edge quantitative methods to advance predictive metallogenic models.

Endorsed by: GSA Structural Geology and Tectonics Division; Society of Economic Geologists (SEG); GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geophysics and Geodynamics Division

Reflecting on the Past and Looking to the Future: The Ongoing Research Legacy of Dr. Randy Hunt

Category: Hydrogeology

Advocates: Michael Fiene, Kenneth Bradbury, Maureen Muldoon, Yu-Feng Lin

Dr. Randy Hunt made wide ranging contributions to hydrogeology, including wetlands hydrology, groundwater–surface water interactions, integrated modeling, uncertainty quantification, and parameter estimation. This session invites abstracts that build on, extend, or are inspired by these themes.

Endorsed by: GSA Hydrogeology Division

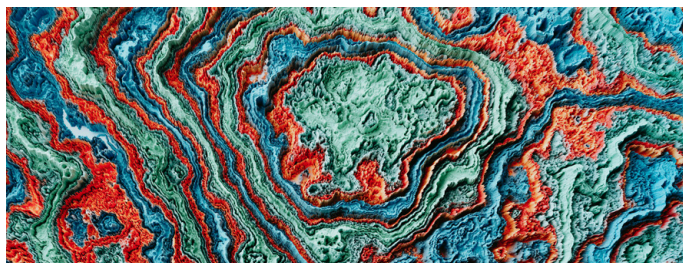
Sedimentary Geology Division/SEPM Student Research Poster Competition: Dynamics of Stratigraphy and Sedimentation

Categories: Sediments, Carbonates; Sediments, Clastic; Stratigraphy

Advocates: Jason Flaum, Majie Fan, Jacob Covault, Joel Saylor, Andrew Leier

Students (at any level) may present posters of original research on any topics within sedimentary geology: carbonates, clastics, chemical sediments, ancient and/or modern systems. Posters are judged for monetary awards distributed at the reception.

Endorsed by: GSA Sedimentary Geology Division

**Effective Science Communication in an Age of Information Overload and Misinformation**

Categories: Geoscience Information/Communication; Geoscience Education; Geology and Society

Advocate: Michael Micucci

Communicating research results and scientific advances is increasingly challenging in an online environment inundated with information. This session will explore shifting communication tactics and tools for connecting with different audiences.

Endorsed by: American Geophysical Union (AGU); GSA Geology and Society Division; GSA Geoscience Education Division

Geochronology Across Scales: Highlighting New Perspectives from Emerging Researchers.

Category: Geochronology

Advocates: John Cottle, Noah McLean, Mauricio Ibanez-Mejia, Tiffany Rivera, Elizabeth Niespolo, Robin Trayler, Jacqueline Giblin, Emma Hughes

This session highlights research, particularly from students and early career professionals, that explores a wide range of geochronologic and thermochronologic techniques and their applications to the rock record, from deep time to the Quaternary.

Endorsed by: GSA Geochronology Division

From Rodinia to Gondwana: Supercontinent Assembly, Breakup, and Earth System Change

Categories: Tectonics; Precambrian Geology; Geochronology

Advocates: Nicholas Swanson-Hysell, Francis Macdonald
Records of Neoproterozoic tectonics from orogens to basins enable reconstruction of Rodinia assembly and breakup that transitioned to Gondwana. This session seeks contributions drawing on such archives and those linking to climatic and paleoenvironmental change.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division; GSA Sedimentary Geology Division; GSA Geochronology Division

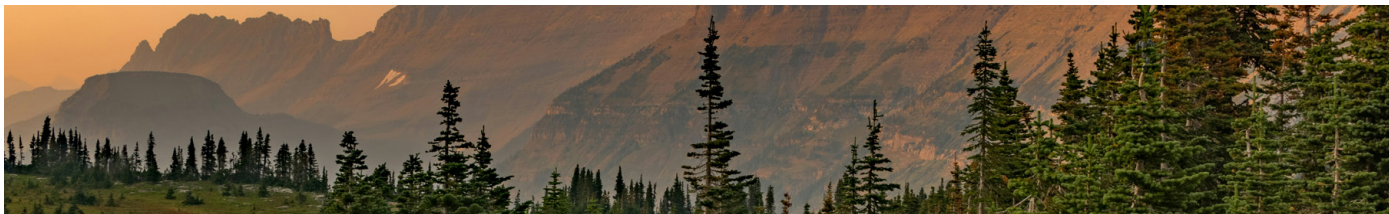
Urban Geochemistry

Categories: Environmental Geoscience; Geochemistry; Geology and Health

Advocates: W Berry Lyons, David Long, Elizabeth Hasenmueller

This session encourages presentations on the geochemistry and biogeochemistry of urban and suburban water, soil, and air, and their impacts on ecosystem and human health.

Endorsed by: GSA Geology and Health Division; International Association of GeoChemistry (IAGC); GSA Hydrogeology Division; GSA Soils and Soil Processes Division; GSA International



Best Student Geologic Map Competition

Categories: Structural Geology; Stratigraphy; Geomorphology

Advocates: Daniel Colwell, Michael Marketti, Kate Ritzel
Students will present their research through geologic mapping projects (with a significant fieldwork component) that address scientific or societal issues. The top three student-authored geologic maps will receive awards following this session.

Endorsed by: Association of American State Geologists (AASG); American Geosciences Institute (AGI); American Institute of Professional Geologists (AIPG); GSA Foundation

Casting a Line into Deep Time to Constrain Subduction and Crustal Evolution of the Western North American Plate Margin: Celebrating the Career of Marty Grove

Categories: Geochronology; Tectonics; Sediments, Clastic
Advocates: Nikki Seymour, Alan Chapman, Stacia Gordon, Starla Toto

This session celebrates Marty Grove's career by highlighting advances in geochronology, geochemistry, and tectonics that clarify the lithospheric processes responsible for construction of the western margin of North America.

Endorsed by: GSA Geochronology Division; GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Sedimentary Geology Division

From Abandonment to Opportunity: Identifying, Monitoring, Mitigating, and Repurposing Oil and Gas Wells

Categories: Environmental Geoscience; Hydrogeology; Geoinformatics and Data Science

Advocates: Tao Wen, Isabelle Cozzarelli, Gianni Micucci, Ruta Basijokaite, Gregory Lackey, Katie Smye, Deron Zierer, Margaret Coleman, Jean-Philippe Nicot

We welcome abstracts using field, laboratory, remote sensing, and modeling approaches to identify, monitor, mitigate, and repurpose oil and gas wells, including studies of leakage, wastewater reuse, and environmental or health impacts across well types.

Endorsed by: GSA Hydrogeology Division; GSA Energy Geology Division; GSA Environmental and Engineering Geology Division; GSA Geoinformatics and Data Science Division; GSA Geology and Health Division

Moving Away from Erroneous Map Projections and Pioneering a New Era of Earth Science.

Categories: Geology and Society; Structural Geology; Tectonics

Advocate: Hong Wu

Map projections have troubled human beings for thousands of years. The starting point of this study is to seek a continuous flat earth can be organically combined to avoid unnecessary projections.

Endorsed by: Geological Society of China (GSC); GSA Structural Geology and Tectonics Division

Cenozoic History of the Southern Rocky Mountains: Transtended, Intruded and Deeply Incised Laramide Geology, Celebrating 50 years of New Data and Improved Understanding

Categories: Tectonics; Volcanology; Geomorphology

Advocates: Cal Ruleman, Karl Karlstrom, Matthew Morgan
In 1975, GSA published the first novel collection of work related to and titled Cenozoic History of the Southern Rocky Mountains. We seek papers building upon the original themes, concepts and interpretations proposed therein.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Quaternary Geology and Geomorphology Division; GSA Geochronology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Phylogenetic and Computational Approaches in Paleobiology and Paleoecology

Categories: Paleontology, Phylogenetic/Morphological Patterns; Paleontology, Diversity, Extinction, Origination; Paleontology, Paleoecology/Taphonomy

Advocates: Mark Nikolic, Katherine Jordan-Burmeister
We showcase the advances in computational and phylogenetic approaches that continue to push the frontier of what the fossil and rock record can tell us about the evolutionary and ecological history of life on Earth.

Endorsed by: Paleontological Society (PS); Paleontological Research Institution (PRI); GSA Geobiology and Geomicrobiology Division

Using Mafic and Ultramafic Deposits to Decipher Volcanic and Magmatic Processes

Categories: Volcanology; Petrology, Igneous; Geomorphology

Advocates: Alison Graettinger, Ingrid Ukstins, Alan Whittington

This session invites contributions on the petrogenesis, eruption and emplacement mechanisms of mafic to ultramafic magmatic systems. We welcome insights from field and experimental volcanology, petrology, geochemistry, and economic geology, ranging from landform to nanoscale.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Mining Heritage in the United States: Linking Historical Use with Geoconservation Practices

Categories: Geoheritage; Economic Geology; History and Philosophy of Geology

Advocate: Thomas Casadevall

This session welcomes discussion of scientific discoveries and examination of historical mining practices. These discoveries and practices underpin mining heritage and the application of geoconservation methods to recovery, restoration, and reclamation of mined landscapes.

Endorsed by: GSA History, Philosophy, and Geoheritage Division

Lake Systems through Space and Time—Sediment and Geological Archives of Climate, Water, Environmental Change and Economic Resources

Categories: Limnogeology; Paleoclimatology/Paleoceanography; Stratigraphy

Advocates: Lesleigh Anderson, David Finkelstein, Elana Leithold, Godspower Ubit, Scott Starratt

This session highlights research on global lake systems covering historical to geological time scales that investigate changing climate, hydrology, paleoenvironments, natural hazards, human impacts, and economic resources.

Interdisciplinary presentations and student research are encouraged.

Endorsed by: GSA Limnogeology Division; GSA Sedimentary Geology Division; GSA Marine and Coastal Geoscience Division; GSA Continental Scientific Drilling Division; GSA Quaternary Geology and Geomorphology Division

Trace Elements Trace Processes: Using Mineral Chemistry to Track Geologic Change in Igneous, Metamorphic, and Sedimentary Systems

Categories: Petrology, Igneous; Petrology, Metamorphic; Tectonics

Advocates: Madeline Lewis, Sarah George, Margo Odum, Amy Moser, Eirini Poulaki

Mineral chemistry, zoning textures, and petrochronology record evolving geologic conditions. This session highlights how mineral chemistry tracks the evolution of igneous, metamorphic, and sedimentary processes, including magma evolution, source fingerprinting, fluid-rock reactions, and crustal evolution.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Structural Geology and Tectonics Division; GSA Geochronology Division; Mineralogical Society of America (MSA)

Paleontology, Bryozoans, Dinosaurs, Reefs, Stratigraphy, and Military Geology: In Honor of Roger Cuffey and His Eclectic Career

Categories: Paleontology, Biogeography/Biostratigraphy; Paleontology, Paleoecology/Taphonomy; Stratigraphy

Advocates: Carl Simpson, Stephen Leslie, Clifford Cuffey
Session in honor of six decades of impact that Roger Cuffey (formerly Penn State University) had on paleontology and geology. Topics will include paleontology (especially bryozoans), dinosaurs, reefs, stratigraphy, and military geology.

Endorsed by: Paleontological Society (PS)

Lakes and Natural Hazards: Impacts and Archives of Past Events

Categories: Limnogeology; Geomorphology; Sediments, Clastic

Advocates: Elana Leithold, Karl Wegmann, Lesleigh Anderson

Lakes record extreme events, including earthquakes, landslides, storms, and catastrophic drainage. This session invites presentations on event deposits in lake stratigraphy across all ages, and on the role of hazards in lake formation and evolution.

Endorsed by: GSA Limnogeology Division; GSA Quaternary Geology and Geomorphology Division; GSA Sedimentary Geology Division

Hydrologic Extremes: Hydrogeologic Perspective on Trends and Drivers of Flooding and Drought

Categories: Hydrogeology; Geology and Society; Geoscience and Public Policy

Advocates: Carleton Bern, David Rey

Geology and hydrogeology play roles in extreme hydrologic events like droughts and flooding. This session seeks innovative perspectives on how extreme events in the hydrosphere are influenced by properties and antecedent conditions in the geosphere.

Endorsed by: GSA Hydrogeology Division

Interdisciplinary Perspectives on Caribbean Subduction and Arc Evolution

Categories: Petrology, Igneous; Tectonics; Geophysics/Geodynamics

Advocates: Liannie Velázquez Santana, Wilnelly Ventura Valentín, Daniel Laó Dávila

This session highlights interdisciplinary studies integrating petrology, geochemistry, tectonics, and geophysics techniques to investigate the formation, evolution, and active processes of Caribbean subduction systems, including the Antilles and Central American plate boundary.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division

New Voices in Geobiology

Categories: Geobiology and Geomicrobiology; Limnogeology; Paleontology, Paleoecology/Taphonomy

Advocates: Trinity Hamilton, David Gold, Dylan Wilmeth, Ana Gonzalez-Nayeck, Katie Maloney, Lydia Tackett, Brandt Gibson, Diana Velazquez, Joseph Hoberg, Caden Williams

This session will bring together new research focusing on the interplay between geologic and biologic processes with a special emphasis on work by early-career scientists exploring geobiological questions.

New Advances in Geobiology

Categories: Geobiology and Geomicrobiology; Limnogeology; Paleontology, Phylogenetic/Morphological Patterns

Advocates: Trinity Hamilton, David Gold, Dylan Wilmeth, Ana Gonzalez-Nayeck, Katie Maloney, Lydia Tackett, Brandt Gibson, Diana Velazquez, Joseph Hoberg, Caden Williams

This session will focus on new research at the intersection between geologic and biologic processes with special emphasis on novel materials and methods, new field sites, and advances at the intersections of scientific fields.

A Showcase of Undergraduate Research in Hydrogeology

Category: Hydrogeology

Advocates: Riliwan Abioye, Ayobami Oladapo, Ifeanyi Anyanwu, Carrie Faucett Wisdom, Miguel Valencia

This session is designed for undergraduates presenting research and senior theses in the field of hydrogeology. Prizes will be awarded for top presentations. Employers and graduate advisors are encouraged to attend.

Endorsed by: GSA Hydrogeology Division



What Is Old Is New Again: Using Traditional and Novel Geochemical Proxies to Reconstruct Past Environments and Their Links to Changes in the Phanerozoic Biosphere

Categories: Geochemistry; Paleoclimatology/Paleoceanography; Paleontology, Diversity, Extinction, Origination

Advocates: Cole Edwards, Benjamin Gill, Jeremy Owens, Theodore Them, Seth Young

This session is focused on sharing recent advancements using new and traditional geochemical proxies to reconstruct paleoenvironmental conditions in order to better understand and constrain Earth–Life interactions throughout the Phanerozoic.

Endorsed by: GSA Sedimentary Geology Division

Uranium in Groundwater

Categories: Hydrogeology; Environmental Geoscience; Geochemistry

Advocates: Doc Richardson, Emma Jones, Raymond Johnson
Multiple presentation topics are encouraged, including uranium in groundwater that is naturally occurring, related to ore formation or to mining and milling environmental impacts, including uranium transport and geochemistry with in-situ recovery or remediation techniques.

Endorsed by: GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; GSA Geology and Health Division; GSA Energy Geology Division

Biological and Environmental Change during Earth's Middle Age

Categories: Paleontology, Paleoecology/Taphonomy; Geobiology and Geomicrobiology; Precambrian Geology

Advocates: Wentao Zheng, Qing Tang, Shuhai Xiao, Susannah Porter, Carol Dehler, Benjamin Gill

This session aims to boost interdisciplinary collaboration on the ecological expansion of marine eukaryotes on a changing early-middle Proterozoic planet. We welcome contributions from paleontologists, geochemists, geochronologists, stratigraphers, sedimentologists, Earth system modelers and more.

Shake and Bake: Volcanism and Tectonism across the Solar System

Categories: Planetary Geology; Tectonics; Volcanology

Advocates: Tracy Gregg, Kelsey Crane

We welcome submissions that deepen our understanding of volcanism and tectonism across the Solar System. Comparative planetology, landform studies, process analysis, mapping, and modeling studies from Earth and beyond are welcome.

Endorsed by: GSA Planetary Geology Division; GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

What's New in the Neoproterozoic: Advancing Geochronology, Geochemistry, Geobiology and Climate Records

Categories: Geochronology; Precambrian Geology; Geobiology and Geomicrobiology

Advocates: Liam Courtney–Davies, Barra Peak, Adrian Tasistro–Hart, Julia Wilcots, Anthony Fuentes

The Neoproterozoic Era (1000–541 Ma) spans major transitions in climate, tectonics, and biological evolution. We welcome contributions investigating this Era through the lenses of geochronology, thermochronology, geochemistry, paleomagnetism, sedimentology, geobiology, and related fields.

Endorsed by: GSA Geochronology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geobiology and Geomicrobiology Division; GSA Sedimentary Geology Division; Geochemical Society (GS)

Following the Fluids: Characterizing Hydrous and Fluid-Absent Processes in Orogenesis and Critical Mineral Development

Categories: Structural Geology; Petrology, Metamorphic; Tectonics

Advocates: Corey Flynn, Tyler Grambling

Fluid–rock interactions are a key control on strain localization, strain partitioning, and the seismic cycle during crustal deformation. We invite submissions that address the role that fluid–rock interactions exert on active and ancient orogenic systems.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division

Cenozoic Celebration: Honoring Roger Portell and His Service to Paleontology

Categories: Paleontology, Diversity, Extinction, Origination; Paleontology, Paleoecology/Taphonomy; Geoinformatics and Data Science

Advocates: Jonathan Hendricks, Adiel Klompmaker, Michal Kowalewski

This session honors the career and interests of paleontologist Roger Portell by showcasing research and outreach that advances scientific and public understanding of Cenozoic life through fieldwork, museum collections, curation, digitization, and exhibits.

Endorsed by: Paleontological Society (PS); Paleontological Research Institution (PRI); GSA Geoinformatics and Data Science Division; Society for the Preservation of Natural History Collections (SPNHC)

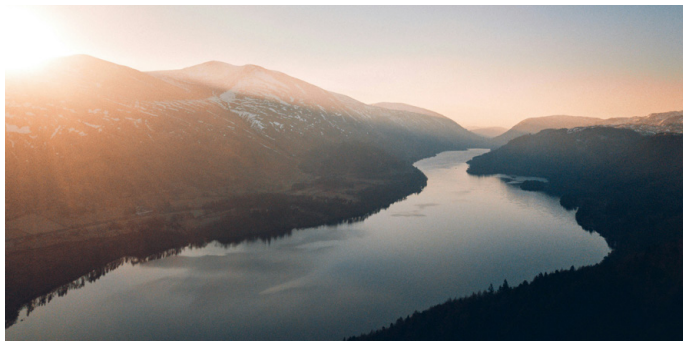
Research to Accelerate Recovery of Critical Minerals from Primary and Unconventional Resources

Categories: Energy Geology; Geochemistry; Economic Geology

Advocates: Guangping Xu, Dawn Wellman, Mengling Stuckman, Hongyou Fan

Innovative technology is needed for critical minerals to meet unprecedented demand. This session invites research in characterization, extraction, separation, in-situ recovery, and related areas that accelerate recovery of critical minerals from traditional and unconventional resources.

Endorsed by: GSA Energy Geology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Energy Geology Division



International Riverscapes in Transition: Intersection of Water, Climate, Landscape, Time, and Society

Categories: Geomorphology; Hydrogeology; Geology and Society

Advocates: Thomas McKenna, Ester Sztejn, W. Berry Lyons

The session encourages submissions of riverscape research and policy at US borders and beyond that focus on geology, water, climate, landscape, time, and/or society.

Endorsed by: GSA International; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division; GSA Hydrogeology Division; GSA Sedimentary Geology Division

The Data That Define the Strata: Advances in Applying Geochemistry and Geochronology to Geologic Mapping and Stratigraphic Correlation

Categories: Geochronology; Geochemistry

Advocates: Harrison Gray, Adam Hudson, Kate Souders

We seek submissions on innovative field and lab approaches, and large dataset compilations for enhancing unit correlation and characterization in geologic mapping and stratigraphy at all spatial and temporal scales.

Endorsed by: GSA Geochronology Division

Recent Advances in Soil and Paleosol Science

Categories: Soils and Soil Processes; Hydrogeology; Geomorphology

Advocates: Michael Young, Timothy Gallagher

This session highlights recent research in soil and paleosol science. We invite submissions from field, laboratory, and modeling studies that leverage or examine pedogenic processes and archives from deep-time through modern systems.

Endorsed by: GSA Soils and Soil Processes Division

Boxwork and Fracture Halos: Changes in Mineralogy and Erosion Resistance Around Fracture Features on Earth, Mars, and Across the Solar System

Categories: Planetary Geology; Economic Geology; Sediments, Clastic

Advocates: Kirsten Siebach, Christina Seeger, Claire Mondro

The Mars rover Curiosity has recently studied large-scale boxwork deposits interpreted as erosion-resistant fracture halos/alteration zones. We seek proposals considering physical, chemical, and mineralogical changes in rock adjacent to fractures on Earth and beyond.

Endorsed by: GSA Planetary Geology Division; GSA Sedimentary Geology Division; GSA Energy Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Structural Geology and Tectonics Division

Enhancing Aquifer Recharge Across Scales: From Large Managed Systems to Distributed Solutions

Categories: Hydrogeology; Engineering Geology; Karst

Advocates: Michael Cardiff, Helen Dahlke

This interdisciplinary session will highlight studies of enhanced aquifer recharge strategies, examined through the lenses of hydrologic and biogeochemical impacts, as well as through socio-economic, policy, and governance issues for communities.

Endorsed by: GSA Hydrogeology Division; National Ground Water Association (NGWA); International Association of Hydrogeologists (IAH); Association of Environmental & Engineering Geologists (AEG); GSA Environmental and Engineering Geology Division

Cold-Regions Hydrology and Hydrogeology

Categories: Hydrogeology; Environmental Geoscience; Geophysics/Geodynamics

Advocates: Barret Kurylyk, Michelle Walvoord, Sara Warix, David Rudolph, Cansu Demir, Neelarun Mukherjee, Amelia Grose, Jeffrey McKenzie

Ongoing amplified climate change in cold regions is driving hydro(geo)logic regime shifts by transforming snow-rain partitioning, snowmelt timing, and frozen ground distribution. This session welcomes all cold-region (mountain and high-latitude) surface and subsurface hydrology studies.

Endorsed by: GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; International Association of Hydrogeologists (IAH)

Big Science from Small Worlds

Categories: Planetary Geology; Geomorphology

Advocates: Jennifer Scully, Debra Buczkowski, Kynan Hughson, Danielle Wyrick

We encourage geologic, geochemical and geophysical analyses of small planetary bodies: asteroids, comets, dwarf planets, and more! Remote sensing, laboratory- or modeling-based, resource potential, planetary defense, analog, field and other studies are all welcome.

Endorsed by: GSA Planetary Geology Division

Investigating Earth's Past, Present, and Future with Continental Scientific Drilling

Categories: Continental Scientific Drilling; Limnogeology; Geophysics/Geodynamics

Advocates: Catherine Beck, Lisa Park Boush, Anders Noren, Alexander Wilk, Michael McGlue

This session highlights research spanning multiple disciplines exploring Earth using continental scientific drilling, including drill and sediment cores, and other subsurface data. This session is a venue for experienced, early career, and student researchers.

Endorsed by: GSA Continental Scientific Drilling Division; GSA Geophysics and Geodynamics Division; GSA Limnogeology Division; GSA Energy Geology Division; GSA Sedimentary Geology Division

Tectonic Evolution of Orogenic Belts and Their Hinterland Plateaus: From Formation, Growth, to Collapse

Categories: Tectonics; Structural Geology; Geochronology

Advocates: Terry Lee, Cole Jacobs, Thomas Lamont, Ryan Eden

This session welcomes contributions that examine the tectonic evolution of orogenic belts and their associated hinterland plateaus by integrating structural, metamorphic, magmatic, and sedimentological perspectives, providing new understanding into their formation, growth, and subsequent collapse.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geochronology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Sedimentary Geology Division

Linking Tectonics, Climate, and Evolution Across the Late Cenozoic

Categories: Paleoclimatology/Paleoceanography; Tectonics; Paleontology, Biogeography/Biostratigraphy

Advocates: Amber Treadway, Ruth Tweedy, Rachel Havranek
How did tectonics and climate shape terrestrial ecosystem evolution during the Neogene? Can their intertwined contributions be deconvolved? We invite global perspectives that integrate geological, paleoenvironmental, and fossil records to better understand Earth-life system dynamics.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Sedimentary Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Geophysics and Geodynamics Division

Unraveling Earth's Stories in Extreme Environments through Field Geology and Isotope Geochemistry: A Session in Honor of Jay Quade

Categories: Geochemistry; Quaternary Geology; Paleoclimatology/Paleoceanography

Advocates: Jason Rech, Adam Hudson, Naomi Levin, Jeff Pigati, Claudio Latorre

This session honors the legacy of Jay Quade, highlighting current research in extreme environments as well as applications and advances in isotopic methods he helped develop and refine.

Morphodynamics and Preservation of Bedforms across Scales and Environments

Categories: Sediments, Clastic; Geomorphology; Quaternary Geology

Advocates: Robert Mahon, Julia Cisneros, Sarah Preston, Alana Archbold

This session invites contributions on bedform morphodynamics and resultant depositional products across scales, environments, and methods. We welcome contributions bridging across earth and planetary surfaces, and between bedform transporting systems such as fluvial-aolian interactions.

Endorsed by: GSA Sedimentary Geology Division; GSA Quaternary Geology and Geomorphology Division; International Association of Sedimentologist (IAS); SEPM (Society for Sedimentary Geology); International Society for Aeolian Research (ISAR)

Undergraduate and Graduate Geoscience Student Research Showcase

Categories: Geoscience Education; Petrology, Igneous; Geochemistry

Advocates: Ken Brown, Claire McLeod, James MacDonald
This hybrid session offers undergraduate and graduate students the opportunity to present research findings in an oral lightning presentation (morning) and a poster presentation

(afternoon). This session promotes science communication skills through multiple formats.

Endorsed by: Council on Undergraduate Research Geosciences Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geoscience Education Division; Mineralogical Society of America (MSA)

Deciphering the Sedimentological Mechanisms Governing Preservation of Vertebrate Tracks across Diverse Depositional Environments

Categories: Paleontology, Paleoecology/Taphonomy; Sediments, Clastic; Sediments, Carbonates

Advocate: Kevin Nick

This session explores diverse taphonomic pathways and sedimentological mechanisms governing vertebrate track preservation. Presentations will evaluate experimental, geochemical, and stratigraphic evidence to better understand the conditions that facilitate the lithification and long-term fossilization of footprints.

Endorsed by: GSA Sedimentary Geology Division

Soils and Paleosols Techniques for Interdisciplinary Advancements

Categories: Soils and Soil Processes; Quaternary Geology; Sediments, Clastic

Advocates: Jarred Asselta, Dan Breecker, Samantha Krause, Lauren Michel, Timothy Gallagher

This session focuses on the range of analytical and theoretical approaches used to understand the complex processes controlling the physical constituents of soils and paleosols. We aim to bring together various disciplines across natural sciences.

Endorsed by: GSA Soils and Soil Processes Division; GSA Sedimentary Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Geoarchaeology Division; Soil Science Society of America (SSSA)

Advances in Hydrologic Modeling

Categories: Hydrogeology; Environmental Geoscience; Geology and Society

Advocates: Anna Fehling, Andrew Leaf

Recent advances in hydrologic modeling; especially practical applications for decision support. Topics of interest include getting the most out of sparse data, the "right" level of model complexity, addressing uncertainty, communicating with stakeholders, and more!

Endorsed by: GSA Hydrogeology Division

Deciphering Tectonic and Geomorphic Drivers of Andean Topography

Categories: Tectonics; Structural Geology; Geomorphology

Advocates: Martin Reyes, Nicolas Perez-Consuegra

The topography of the Andes results from a complex interaction between tectonics and surface processes. This session invites contributions from tectonics, structural geology, geo-thermochronology, basin-analysis, and geomorphology to advance quantitative understanding of Andean topographic evolution.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Quaternary Geology and Geomorphology Division; GSA Geochronology Division; GSA Sedimentary Geology Division; American Association of Petroleum Geologists (AAPG)



Planetary Exploration and Education: How We Learn about Our Solar System and Beyond

Categories: Planetary Geology; Geoscience Education; Geoscience Information/Communication

Advocates: Nicholas Lang

This session links how we teach and learn about the solar system to how we have gained that information (i.e., space missions). Descriptions of teaching activities/courses, and strategies for working with students are encouraged.

Endorsed by: GSA Planetary Geology Division; GSA Geoscience Education Division; National Association of Geoscience Teachers (NAGT)

Learning to Be a Geoscientist: Professional Exposure, Agency, and Transferable Skills in Undergraduate Education.

Category: Geoscience Education

Advocates: Miriam Barquero Molina, Angie Van Boening

This session explores how intentional exposure to professional settings, such as conferences, field programs, and workplace-style courses, supports the development of transferable skills, workforce dispositions, and professional identity among undergraduate geoscience students.

Endorsed by: GSA Geoscience Education Division; GSA Geoscience Education Division; GSA Geology and Society Division

Magmatic Processes from Arc to Mineral Scales and From Field to Lab: A Session in Honor of Calvin G. Barnes, MGPV Distinguished Career Award Recipient

Categories: Petrology, Igneous; Geochronology; Tectonics

Advocates: Carol Frost, Aaron Yoshinobu, Charlotte Allen, Katie Ardill

We solicit presentations on pluton-forming processes at all scales that emphasize the importance of combined field-based and laboratory-based inquiry in understanding the physical and chemical evolution of plutons.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Structural Geology and Tectonics Division; Mineralogical Society of America (MSA)

What the Facies? Carbonate Sedimentology and Paleoenvironmental Proxies

Categories: Sediments, Carbonates; Paleoclimatology/Paleoceanography; Geochemistry

Advocates: Alexie Millikin, Anne Fetrow, Mary Lonsdale

This session brings together scientists investigating paleoenvironments and paleoclimates using carbonate sedimentology and carbonate-based proxies, such as petrography, geochemistry, and paleontology. We welcome submissions from the Precambrian to modern environments in terrestrial and marine settings.

Endorsed by: GSA Sedimentary Geology Division; Geochemical Society (GS); SEPM (Society for Sedimentary Geology); GSA Geobiology and Geomicrobiology Division; GSA Limnogeology Division

Rock Fishing the Americas: Celebrating the Multifaceted Career of John Garver from Baja to Alaska and Elsewhere, from Thermochronology-Raman Advances, Hydrology, Geoscience-Outreach, Geo-Health, to Global Tectonics Processes and Beyond

Categories: Geochronology; Tectonics; Stratigraphy

Advocates: Ann Blythe, Cameron Davidson, Terry Pavlis, Mark Brandon, Darrel Cowan, Jeffrey Benowitz

John Gaver's continuing 30-year career has advanced our understanding of principal thermochronology-Raman applications and the tectonic history of western North America. This session honors John's guidance, mentorship, leadership, and tectonic career with global contributions.

Endorsed by: GSA Geochronology Division; GSA Sedimentary Geology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geology and Health Division; GSA Hydrogeology Division

From Peaks to Channels: Mountain Hydrology and Landscape Change

Categories: Geomorphology; Hydrogeology; Geoscience and Public Policy

Advocates: Olivia Stanley, Glenn Thackray

Session on cryosphere controls on mountain hydrology: snowpack processes, glacier melt, rock glacier/permafrost storage, bedrock-talus aquifers, headwater connectivity, sediment/solute export, hazards, and implications for downstream water supply.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division; American Water Resources Association (AWRA)

Microfossil Con Queso: Conodont Questions of Importance—North American Pander Society Meeting

Categories: Paleontology, Biogeography/Biostratigraphy; Paleontology, Paleocology/Taphonomy

Advocates: D Over, Nicholas Hogancamp, F. Peavy, Steven Roscoe

This theme session addresses current research and applications of conodont studies to astrochronological, biostratigraphic, paleoecological, and geochemical investigations, welcoming contributions on all things conodont related.

Endorsed by: Paleontological Society (PS)

Advances in Understanding Landslides Processes and Risks: Monitoring, Societal Impacts, and Mitigation Strategies

Categories: Engineering Geology; Geomorphology; Geoscience Information/Communication

Advocates: Kelli Baxstrom, Skye Corbett, Yuankun Xu

This session brings together research on landslide monitoring, risk, mitigation, and response, including ground-based and remote monitoring; event characterization; regional susceptibility and risk analyses; material properties; and seismic and hydroclimatic triggering.

Endorsed by: GSA Environmental and Engineering Geology Division Landslide Committee

Integrated Stratigraphic, Geochemical, and Paleobiologic Perspectives on Earth System Evolution: A Session in Honor of the Contributions of Bradley B. Sageman

Categories: Stratigraphy; Paleoclimatology/ Paleooceanography; Geochronology

Advocates: Stephen Meyers, Matthew Hurtgen

This session celebrates the scientific contributions of Bradley B. Sageman, featuring presentations in the spirit of his integrated quantitative stratigraphic approach for evaluating the ancient Earth System: from the carbon cycle, to state-of-the-art geological timescales.

Endorsed by: GSA Sedimentary Geology Division; SEPM (Society for Sedimentary Geology); GSA Geochronology Division; Cushman Foundation

Planetary Sample Science: Unlocking the History of Lunar, Martian, and Asteroidal Materials

Categories: Planetary Geology; Geochronology; Geochemistry

Advocates: Connor Antonio Diaz, Bidong Zhang, Thomas Sharp, Kelsey Prissel

This session highlights advances in planetary samples science relevant to understanding Earth's planetary neighbors. Investigations of impact, thermal, and magmatic histories of meteorites and returned samples, as well as experimental and modeling studies, are encouraged.

Changing Flow and Sediment Dynamics in Mountain Rivers

Categories: Geomorphology; Hydrogeology; Environmental Geoscience

Advocates: Charles Shobe, Katherine Lininger, Sara Warix

This session welcomes work using any method to investigate how water and sediment dynamics in mountain rivers respond to environmental factors (e.g., geology, climate, ecosystem composition) and management decisions (e.g., dam building/removal, water diversion, restoration).

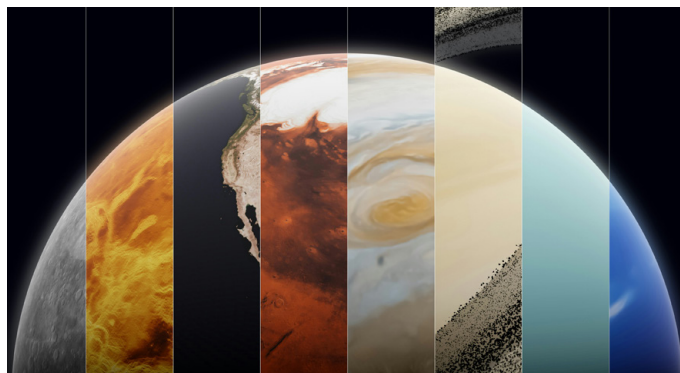
Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division

Myths and Misrepresentations surrounding Cosmic Impact claims in Paleoclimatology, Paleontology, Paleoecology, Geoarchaeology, and Quaternary Research

Categories: Planetary Geology; Quaternary Geology; Geoarchaeology

Advocates: Mark Boslough, Christian Koeberl, Vance Holliday
Sensationalized but unfounded claims about cosmic impacts and environmental catastrophes receive extensive media coverage, contributing to public misunderstanding. Speakers will share their experiences in responding to such myths and misrepresentations in their areas of expertise.

Endorsed by: GSA Planetary Geology Division



Geoinformatics and Data Science: A Showcase in Undergraduate and Graduate Student Research (Posters)

Category: Geoinformatics and Data Science

Advocates: Anirudh Prabhu, Daven Quinn, Tao Wen, Samuel Shaheen, Mir Md Tasnim Alam, Jarrod Burges, Kate Hendrickson

Undergraduate and Graduate students are invited to present original research posters relevant to Geoinformatics and Data Science, including geospatial analysis, machine learning, big data, modeling, and visualization. Student presenters will be judged for divisional awards.

Endorsed by: GSA Geoinformatics and Data Science Division

SGT Career Contribution Award Winner Session

Categories: Structural Geology; Tectonics

Advocates: Andrew Zuza, James Kirkpatrick

Endorsed by: GSA Structural Geology and Tectonics Division

High Mountain Headwaters: Snow, Ice and Alpine Hydrology

Categories: Environmental Geoscience; Geomorphology; Hydrogeology

Advocates: Tyler Meng, Suzanne Anderson, Ashlesha Khatiwada

This session invites multi-disciplinary research connecting hydrological systems across mountainous regions using near-surface geophysics, geochemistry, and geomorphology. We seek contributions linking the atmosphere, cryosphere, and hydrosphere through paleoclimate studies, present-day hazard characterization, future projections.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; American Quaternary Association (AMQUA); American Geophysical Union (AGU)

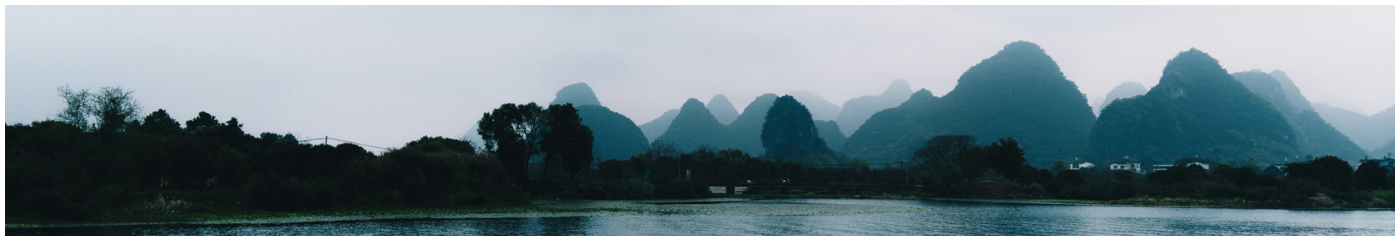
Diversifying Geoscience Education Across the Academic Playing Field: Using Creative Methods to Foster the Current and Next Generations of Geoscience Professionals

Categories: Geoscience Education; Geology and Society; Geoscience Information/Communication

Advocates: Leonard Melzer, Steven Jaret, Erin Potter

A wide range of geoscience educators across several disciplines will share a multitude of diverse and innovative ideas regarding lesson plans, projects, and pedagogical techniques best suited for today's ever-changing classrooms.

Endorsed by: GSA Geoscience Education Division; NAGT Teacher Education Division (TED)



Iris Moreno Totten Research in Geoscience Education Session

Category: Geoscience Education

Advocates: Nicholas Soltis, Elizabeth Kenderes

This session will highlight empirical research being done in the field of geoscience education. Early career and student presenters will be considered for the Geoscience Education Division's Totten Award.

Endorsed by: GSA Geoscience Education Division; National Association of Geoscience Teachers (NAGT)

From Flame to Flood: Wildfire Effects on Landscapes, Riverscapes, and Society

Categories: Geomorphology; Engineering Geology; Environmental Geoscience

Advocates: Andrew Graber, Natalie Collar, Alexander Gorr, Luke McGuire, Ann Youberg

This session will consider the effects of wildfire on the landscape across an array of disciplines, such as hydrology, water source protection, water quality, post-fire hazard prediction, and recovery of ecosystems, soils, and communities.

Endorsed by: GSA Environmental and Engineering Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division Landslide Committee

Geomorphology and Surface Processes across the Solar System

Categories: Geomorphology; Planetary Geology; Quaternary Geology

Advocates: Alexander Morgan, Marisa Palucis, Abdallah Zaki

This session welcomes abstracts on any aspect of planetary geomorphology and surface processes, including but not restricted to: Earth analogues, laboratory experiments, numerical models, planetary comparison, mapping, in situ data, or remote sensing studies.

Endorsed by: GSA Quaternary Geology and Geomorphology Division

Impact Cratering: From the Earth into the Solar System

Categories: Planetary Geology; Continental Scientific Drilling; Geochemistry

Advocates: Christian Koeberl, Steven Jaret, Jeffrey Plescia

Session focuses on impact craters and their influence on planetary evolution. Contributions on all aspects are solicited: field investigations, ejecta, structure, shock processes, geochemical-mineralogical signatures, modeling, geologic and climatic implications and comparisons among planetary bodies.

Endorsed by: GSA Planetary Geology Division; GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Continental Scientific Drilling Division; GSA Geophysics and Geodynamics Division

Karst Hydrology and Hydrogeology

Categories: Karst; Hydrogeology

Advocates: Jeanne Lambert Sumrall, Kashif Mahmud, Patricia Kambesis, Daniel Jones

This session covers fundamental aspects of fluid-rock interactions within karst landscapes, including geologic, hydrogeologic, and hydrologic investigations. Appropriate topics range from dye tracing and aquifer processes to surface-subsurface hydrologic interactions and quantitative modeling.

Endorsed by: GSA Karst Division; GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; Karst Waters Institute (KWI); National Cave and Karst Research Institute (NCKRI)

Old Collections, New Tricks

Categories: History and Philosophy of Geology; Geoheritage; Geology and Society

Advocates: Lauren Neitzke Adamo, Carol McCarty

This session highlights how re-examination and contemporary analysis of geoscience collections (i.e., rock, fossil, and archival collections, or geologic maps) can advance science, rewrite historical narratives, and contribute to discussions on social justice.

Endorsed by: GSA History, Philosophy, and Geoheritage Division; Association for Women Geoscientists (AWG); Paleontological Society (PS); National Association of Black Geoscientists (NABG); International Association for Geoscience Diversity (IAGD)

Urban Groundwater, Geochemistry and Pollution

Categories: Hydrogeology; Geochemistry

Advocates: Kevin Befus, Joel Moore, Clare Robinson

The session includes presentations addressing groundwater, geochemistry, and pollution in urban areas, including the impacts of human activities and climate change.

Endorsed by: GSA Hydrogeology Division; GSA Hydrogeology Division

More Than Just Wet Feldspar: Developments on the Origin, Properties and Evolution of Continental Lower Crust

Categories: Petrology, Metamorphic; Tectonics; Geochemistry

Advocates: Gregory Dumond, Caleb Holyoke, Kevin Mahan, Andrew Smye, Michael Williams

A paradigm shift is ongoing in our understanding of continental lower crust and its properties. We invite contributions on lower crustal evolution via field studies, modeling and experiments in geochemistry, structure, petrology, geochronology, and geophysics.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geophysics and Geodynamics Division; GSA Geochronology Division

From Mantle to Mountains: Understanding Interactions Between Deep Earth and Surface Processes from Geologic Data and Modeling

Categories: Tectonics; Geophysics/Geodynamics; Geochronology

Advocates: Velda Muller, Chelsea Mackman-Lofland, Alex Tye, Mitchell McMillan

This session aims to foster dialogue between observational and modeling communities to advance understanding of coupled deep Earth–surface processes through new frameworks for interpreting stratigraphic, structural, geo-thermochronologic, and geophysical records within fully integrated geodynamic systems.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division; GSA Geochronology Division; GSA Sedimentary Geology Division; GSA Quaternary Geology and Geomorphology Division

Critical Zone and Soil Geomorphology: Intersection of Processes Linked to Climate, Ecology, Fire and Landscape Evolution

Categories: Geomorphology; Soils and Soil Processes; Quaternary Geology

Advocates: Nora Vaughan, Lyman Persico, Jennifer Aldred
Exploring soil geomorphology within the Critical Zone, this session welcomes studies investigating rates and processes of soil development, regolith formation, erosion, carbon storage, and ecohydrologic feedbacks shaping landscape evolution across Quaternary and longer timescales.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Soils and Soil Processes Division

Tectonics on Tap: Raising a Glass to the Enthusiastic Contributions of John Wakabayashi to Field and Applied Geology

Categories: Tectonics; Engineering Geology; Geomorphology

Advocates: David Shimabukuro, Jessie Shields, Ron Rubin, Tatsuki Tsujimori, Nikki Seymour, Jonny Wu

This session honors John Wakabayashi for field-based research spanning subduction complexes, ophiolites and soles, metamorphic petrology, transform fault systems, landscape evolution, and engineering geology, linking plate-boundary processes with surface evolution and applied geology across scales.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA International; GSA Environmental and Engineering Geology Division

Laser-Ablation Advances in Geochronology and Thermochronology: From Technique Development to Innovative Applications

Categories: Geochronology; Geochemistry

Advocates: James Metcalf, Cullen Kortyna, Rebecca Flowers

This session highlights advances in laser-ablation based sampling methods in geochronology and thermochronology, including but not limited to LA-ICP-MS, noble gas mass spectrometry, LIBS, and RIMS analysis with emphasis on technique development and novel applications.

Endorsed by: GSA Geochronology Division



The State of Headwaters

Categories: Hydrogeology; Environmental Geoscience

Advocates: Abraham Springer, Alan Fryar

Headwater streams are significant for riverscapes, but descriptions and understanding of their source waters are limited. Research advancing knowledge about the sources of headwaters, changes brought by stressors, and effects on resources is encouraged.

Endorsed by: GSA Hydrogeology Division

Hydrogeology of Geothermal Resources: From Shallow Systems to Deep Reservoirs

Categories: Energy Geology; Hydrogeology; Engineering Geology

Advocates: Jeff Pepin, Jonathon Stautberg, Stanley Mordensky

Hydrogeology governs geothermal resources through coupled characteristics including groundwater flow, heat transport, permeability, and geochemistry. This session explores all types of geothermal energy across spatial and temporal scales, emphasizing exploration, performance, environmental impacts, and sustainability.

Endorsed by: GSA Energy Geology Division; GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; Association of Environmental & Engineering Geologists (AEG)

Friends of Hoth, Rogue Moons: Icy Ocean Worlds

Category: Planetary Geology

Advocates: Emily Martin, Erin Leonard, Sierra Ferguson, Alex Patthoff

This session relates to surface, structural, and tectonic processes; interior, and thermal evolution; geochemistry and astrobiology; and planetary analogs to icy satellites in the outer solar system. This includes experimental, observational, and theoretical approaches.

Endorsed by: GSA Planetary Geology Division

Pre-Neogene Tectonic evolution of South America

Categories: Tectonics; Structural Geology; Geophysics/Geodynamics

Advocates: Chance Ronemus, Caden Howlett, Lucas Fennell, Chelsea Mackaman-Lofland, María Rodríguez, Kurt Sundell

This session explores pre-Neogene tectonic evolution across South America, integrating diverse disciplines to build holistic understanding of the events and inherited architecture that preconditioned the development of the Andes.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division; GSA Geochronology Division; GSA Sedimentary Geology Division; GSA International

Session in Honor of the Career of Rolfe Mandel Especially in Geomorphology, Soils, and Geomorphology

Categories: Geomorphology; Geomorphology; Soils and Soil Processes

Advocates: Timothy Beach, Sheryl Luzzadder-Beach, Samantha Krause

This session brings together papers in honor of the distinguished career of Professor Rolfe Mandel. These include research he has inspired, considerations of his far-ranging contributions, and his influence as a leader and director.

Endorsed by: GSA Geomorphology Division; GSA Quaternary Geology and Geomorphology Division; GSA Soils and Soil Processes Division; Society for American Archaeology (SAA); GSA International

Advancing Understanding of Regional Groundwater Flow Systems and Groundwater Sustainability through Environmental Tracers

Categories: Hydrogeology; Geochemistry; Environmental Geoscience

Advocates: Xiao-Wei JIANG, Yi-Peng Zhang, John Molson
This session focuses on using environmental tracers to reveal the flowpaths and timescales of groundwater circulation, enhancing our understanding of regional groundwater flow systems and groundwater sustainability.

Endorsed by: GSA Hydrogeology Division; International Association of Hydrogeologists (IAH)

Linking Mineral Resources and the Geologic Framework of North America: The USGS Earth Mapping Resources Initiative (Earth MRI) and Related Activities

Categories: Economic Geology; Geophysics/Geodynamics; Geology and Society

Advocates: Anjana Shah, James Jones, Benjamin Drenth, Douglas Kreiner, Chelsea Amaral, Daniel Scheirer

Knowledge of geologic frameworks and mineral resources is improving through new geologic mapping, airborne geophysics, geochemistry, lidar, and mine waste studies, especially through Earth MRI. We welcome submissions of Earth MRI research and similar studies.

Endorsed by: GSA Geophysics and Geodynamics Division; Association of American State Geologists (AASG); Society of Economic Geologists (SEG); Society for Mining, Metallurgy & Exploration (SME); GSA Geology and Society Division

Continental Magmatic-Volcanic Flare-Ups: Multidisciplinary Investigations on Their Causes and Consequences

Categories: Petrology, Igneous; Geochemistry; Volcanology

Advocates: Casey Tierney, Dale Burns

We invite multidisciplinary contributions focused on the processes, timescales, mineral resources, and potential hazards associated with continental magmatic-volcanic flare-ups in arc and intra-plate settings.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Innovations in Geological Mapping

Categories: Geoscience Information/Communication; Hydrogeology; Structural Geology

Advocates: Richard Berg, Harvey Thorleifson

This session will highlight exciting research outcomes based on geologic mapping, new geologic maps, mapping programs, and innovations in geological mapping methods, including data management, 3-D, AI/ML, and applications in water and land management.

Endorsed by: Association of American State Geologists (AASG)

Hot Topics in Silicic Volcanism: From Nanolites to Ignimbrites

Categories: Volcanology; Petrology, Igneous; Geochemistry

Advocates: Kurt Knesel, Kelly McCartney, Alan Whittington

This session will address recent ideas in silicic volcanism, including: explosive-effusive transitions; the effect of nanolites on magma rheology; the extent of fragmentation and sintering within the conduit and more.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

New Frontiers in Cave and Karst Science

Categories: Karst; Environmental Geoscience; Hydrogeology

Advocates: Jeanne Lambert Sumrall, Josh Sebree, Sierra Heimel, Natasha Sekhon, Patricia Kambesis, Marissa Loftus, Mykah Carden, Daniel Jones

We encourage submissions in any field of cave and karst science, with special emphasis on novel techniques, interdisciplinary approaches, and contributions from diverse early career researchers (students, postdocs, and faculty).

Endorsed by: GSA Karst Division; GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; GSA Geobiology and Geomicrobiology Division; GSA Quaternary Geology and Geomorphology Division

GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division Awards Session

Categories: Petrology, Igneous; Mineralogy/Crystallography; Geochemistry

Advocates: Jade Star Lackey, Gary Michelfelder

The GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division honors their 2026 student research, Distinguished Geological Career (DGCA) and Early Geological Career (EGCA) awardees.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Biogeochemistry and Astrobiology of Caves and Karst

Categories: Karst; Geobiology and Geomicrobiology; Planetary Geology

Advocates: Daniel Jones, Josh Sebree

This session seeks abstracts on cave and karst ecosystems, biogeochemistry, and astrobiology, including but not limited to microbe-mineral interactions, subsurface habitability, subterranean ecosystems, microbial ecology, planetary analog studies, and extraterrestrial cave and karst features.

Endorsed by: GSA Karst Division; GSA Geobiology and Geomicrobiology Division; GSA Environmental and Engineering Geology Division; GSA Hydrogeology Division; GSA Planetary Geology Division

Nature-Based Solutions Research for Water Security in Peri-Urban Africa

Categories: Environmental Geoscience; Geology and Society; Hydrogeology

Advocates: Joseph Hoover, Michael Kerwin

This poster session features the field-based research of U.S. students participating in an NSF-funded International Research Experiences for Students (IRES) project at the Water Hub living laboratory in Franschhoek, South Africa.

Endorsed by: GSA Geology and Society Division; GSA Hydrogeology Division; GSA International; GSA Geoscience Education Division

Karst Hazards and Monitoring

Categories: Karst; Engineering Geology

Advocates: Patricia Kambesis, Daniel Jones, Jeanne Lambert Sumrall

Hazards (e.g., sinkholes, pollution, radon, development) and monitoring approaches (e.g., GIS applications, historical data analyses) in karst landscapes, including technical applications (e.g., LiDAR, 3-D scanning, geodatabase development) and management implications (resource management, education, policy, regulation).

Endorsed by: GSA Karst Division; GSA Environmental and Engineering Geology Division; GSA Geophysics and Geodynamics Division; National Cave and Karst Research Institute (NCKRI); Karst Waters Institute (KWI)

Data in Geochronology: Advances in the Production, Reduction, Integration, and Sharing of Geochronologic Data

Categories: Geochronology; Geoinformatics and Data Science

Advocates: Cameron Mercer, Kelly Thomson, Daven Quinn, Noah McLean

Geochronology data provide essential constraints on the timing and duration of geologic processes. We welcome presentations showcasing techniques to produce, reduce, and share geochronology data to enhance interoperability and the scope of analysis or intercomparison.

Endorsed by: GSA Geochronology Division; GSA Geoinformatics and Data Science Division

Climate, Ocean, and Environmental Changes through Earth History: From Marine and Terrestrial Proxies to Model Assessments (Posters)

Categories: Paleoclimatology/Paleoceanography; Geochemistry; Paleontology, Diversity, Extinction, Origination

Advocates: Megan Fung, Natalia Szymanska, Miriam Katz

This session brings together marine and terrestrial proxies and modelling to reconstruct rapid ocean, environment, and climate events, and shifts between long-term climate/ocean/environment states, within the context of normal variability throughout Earth history.

Endorsed by: Cushman Foundation; GSA Marine and Coastal Geoscience Division; SEPM (Society for Sedimentary Geology); Paleontological Society (PS); Geochemical Society (GS)

Finding Minerals: Framing Exploration and Recovery in the History of the Geosciences

Categories: History and Philosophy of Geology; Energy Geology; Economic Geology

Advocates: Francesco Gerali, Katelyn Callahan

How have mineral exploration and extraction shaped geological knowledge, field practices, and institutional frameworks? This session promotes new research into the development of industrial geology, geophysics, mapping, and state/corporate expertise in subsurface discovery.

Endorsed by: GSA History, Philosophy, and Geoheritage Division; GSA Energy Geology Division; History of Earth Sciences Society (HESS); American Geosciences Institute (AGI); Society for Mining, Metallurgy & Exploration (SME)

Emerging Research into the Impacts of Hurricane Helene in the Southern Appalachians

Categories: Quaternary Geology; Engineering Geology; Geomorphology

Advocates: Ryan Thigpen, Summer Brown, Sarah Johnson, Karl Wegmann, Arthur Mersch, Benjamin Mirus, Lisa Davis
This session highlights emerging geomorphic, geologic, and hydrologic research on Hurricane Helene's impacts across the southern Appalachians, spanning flooding, debris flows, landslides, landscape response, infrastructure vulnerability, and implications for hazard assessment and resilience.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Environmental and Engineering Geology Division; GSA Environmental and Engineering Geology Division Landslide Committee; GSA Geology and Society Division

Reconstructing Base Level Fall Histories, Crustal Deformation, and Drainage Network Reorganizations from Rivers, Coastlines, and Topography

Categories: Geomorphology; Tectonics; Quaternary Geology

Advocates: Frank Pazzaglia, Sean Gallen

We seek novel approaches, with particular interest in inversion methods, to reconstruct histories of base level change in the context of processes that uplift and deform rocks, drive erosion, reorganize drainage networks, and sculpt landscapes.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division; GSA International; American Geophysical Union (AGU)

Urban Riverscapes: Improving Resilience, Improving Connections

Categories: Geomorphology; Engineering Geology; Geology and Society

Advocates: Anne MacDonald, David Skuodas

Increasingly, urban streams are seen as potential providers of robust ecosystem support. This session addresses strategies for increasing resilience of urban stream corridors such that they can function as refuges for humans and biota alike.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Environmental and Engineering Geology Division; GSA Geology and Society Division; GSA Geoscience Education Division

Geochronology of Ore Deposits Containing Critical Minerals: Analytical Advances and Applications

Categories: Geochronology; Economic Geology; Mineralogy/Crystallography

Advocates: Kate Souders, Paul Sylvester

Submissions discussing analytical aspects of radiometric dating methods such as U-Th-Pb, Ar-Ar, Rb-Sr, Re-Os, Sm-Nd used for dating ore deposits and/or studies applying radiometric dates for ore genesis research or critical mineral resource evaluation.

Endorsed by: GSA Geochronology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; Society of Economic Geologists (SEG); Mineralogical Society of America (MSA); Geochemical Society (GS)

Topography, Erosion, and Land-Surface Hazards Along Subduction Zones: Geomorphic Records from Alaska to Chile

Categories: Geomorphology; Tectonics; Geophysics/Geodynamics

Advocates: Will Hefner, Eric Kirby, Kristin Morell, Tamara Aranguiz-Rago

This session explores how tectonics and climate shape topography, erosion, and land-surface hazards along subduction zones. Contributions examine geomorphic records of uplift, sediment flux, and landscape responses to tectonics and climate along subduction margins.

Endorsed by: GSA Quaternary Geology and Geomorphology Division

Advances in Understanding and Predicting the Geochemical and Microbiological Conversion and Transport of Hydrogen in Deep Geological Repositories

Categories: Energy Geology; Engineering Geology; Environmental Geoscience

Advocates: Javier Vilcaez

This session aims to bring together researchers and practitioners developing new knowledge and technologies to better predict the flow-transport, and the geochemical-microbiological interactions that determine the fate of hydrogen in deep geological repositories.

Endorsed by: GSA Energy Geology Division

50th Friends of the Cephalopods: Advances in Evolution, Biogeography, and Ecology

Categories: Paleontology, Biogeography/Biostratigraphy; Paleontology, Paleoecology/Taphonomy; Paleontology, Phylogenetic/Morphological Patterns

Advocates: Esteban Lopez-Murillo, Noel Hernández Gómez
Celebrating 50 years of cephalopod paleobiology research, focusing on their role in paleobiogeography, while acknowledging their evolution and ecological importance. We encourage novel research utilizing analytical approaches to assess their role in the biosphere.

Endorsed by: Paleontological Society (PS); Paleontological Research Institution (PRI); SEPM (Society for Sedimentary Geology); GSA Diversity in the Geosciences Committee; GSA Sedimentary Geology Division

Recent Advances and New Voices in Marine and Coastal Geoscience

Categories: Marine/Coastal Geoscience; Paleoclimatology/Paleoceanography; Environmental Geoscience

Advocates: Nicole Khan, Joshua Bregy, Joseph Carlin, Shannon Conner, Mohammad Imanan, Ramadan Abdelrehim, Emma Hughes

We seek abstracts on physical oceanography, marine geology, geomorphology, sediment transport, geophysics, tectonic processes, climate change, paleobiology, or any aspect of oceans and coasts, past and present. We encourage students to participate in this session.

Endorsed by: GSA Marine and Coastal Geoscience Division; GSA Limnogeology Division; GSA Hydrogeology Division; GSA Sedimentary Geology Division; GSA Environmental and Engineering Geology Division

Arsenic and Associated Geogenic Contaminants in Groundwater: Hydrogeochemical Processes, Co-mobilization, and Predictive Risk and Resource Management

Categories: Hydrogeology; Environmental Geoscience; Geoinformatics and Data Science

Advocates: Prosun Bhattacharya, Abhijit Mukherjee, Saugatta Datta, Madhumita Chakraborty, Marsha Monestersky, Richard Olsson, Mohammad Ayaz Alam, Desiderius Chapewa, Julian Magezi Ijumulana

This session advances coupled hydrogeochemical processes controlling the mobilization and distribution of arsenic and associated geogenic contaminants in groundwater systems, emphasizing multi-element co-mobilization, basin-scale heterogeneity, predictive modeling, and sustainable risk and resource management.

Endorsed by: GSA Hydrogeology Division; GSA Geology and Health Division; GSA International; International Society of Groundwater for Sustainable Development (ISGSD); Sociedad Geológica de Chile

Coastal Hydrogeology in an Age of Rising Seas

Categories: Hydrogeology; Marine/Coastal Geoscience; Environmental Geoscience

Advocates: Shellie Habel, Alicia Wilson, Christopher Russoniello, Miguel Valencia, Tara Root, Michael Sukop, Barret Kurylyk, Rachel Housego

Rising sea levels affect coastal hydrogeology in multiple ways, including salinization of fresh groundwater resources and damage to infrastructure from rising water tables. Rising sea levels also affect coastal ecosystems and submarine groundwater discharge.

Endorsed by: GSA Hydrogeology Division; GSA Environmental and Engineering Geology Division; National Ground Water Association (NGWA); GSA Marine and Coastal Geoscience Division; GSA Karst Division



“All Creatures Great and Small”: Macro to Micro Approaches and Perspectives in Stratigraphic Paleobiology

Categories: Paleontology, Paleoecology/Taphonomy; Stratigraphy; Paleontology, Biogeography/Biostratigraphy

Advocates: Annaka Clement, Katharine Loughney, Madeline Marshall, Pedro Monarrez

The fossil record is linked to the structure of the stratigraphic record from basins down to microfacies. This session welcomes stratigraphic paleobiology that describes the record of life manifesting differently across spatiotemporal scales of analysis.

Endorsed by: Paleontological Society (PS); GSA Sedimentary Geology Division; GSA Geobiology and Geomicrobiology Division; SEPM (Society for Sedimentary Geology); Paleontological Research Institution (PRI)

Volcano–Climate Interactions

Categories: Petrology, Igneous; Volcanology; Geophysics/Geodynamics

Advocates: Tamara Carley, Tenley Banik, Meredith Townsend, Benjamin Edwards

Magmatic degassing and volcanic emissions can have short- and long-term climate impacts. Climate changes may also impact volcanic eruptions. This session offers a multidisciplinary discussion of past, present, and future volcano-climate interactions on Earth.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Progress in Paleoecology: Reconstructing Life–History, Behavior, Physiology, and Ecological Interactions in the Fossil Record

Categories: Paleontology, Paleoecology/Taphonomy; Paleontology, Diversity, Extinction, Origination

Advocates: Sarah Leventhal, Maya Samuels–Fair, Katherine Turk

This session highlights new methods for inferring non-morphological traits in fossil organisms, including metabolic, isotopic, quantitative, and phylogenetic approaches. These advances uncover how life-history, behavior, physiology, and ecological interactions have evolved in deep time.

U-series Disequilibrium Geochronology: Advances, Applications, and Emerging Frontiers

Categories: Geochemistry; Geochronology

Advocates: Frank Pavia, Elizabeth Niespolo, Kathleen Wendth, Oana Dumitru

U-series disequilibrium geochronology (^{238}U and ^{235}U decay chains) constrains Earth processes from years to 10^5 years. We invite advances and applications spanning novel archives, paleoenvironmental reconstructions, magmatic processes, nuclear forensics, and applied isotope studies.

Endorsed by: GSA Geochronology Division; Geochemical Society (GS); GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Formation, Distribution, and Preservation of Critical Mineral Resources: Advancing Our Understanding through Petrology, Geochemistry, Structure, and Geodynamics

Categories: Economic Geology; Petrology, Igneous; Geochemistry

Advocates: Pamela Kempton, Brice Lacroix, Matthew Brueseke

This session aims to integrate current research on magmatic, metamorphic, sedimentary, and hydrothermal systems relevant to mineral resources. We invite contributions covering all scales-- individual crystals to deposits to whole lithosphere. Student participation is encouraged.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Technology and Tools For 3-D Visualization of Field and Lab Data in Teaching and Research

Categories: Geoscience Education; Structural Geology

Advocates: Alyssa Abbey, Andrew Laskowski, Hannah Blatchford, Rory McFadden

We invite abstracts from educators and researchers who use innovative tools and apps (e.g., Visible Geology, Touch GIS, StraboSpot, FieldMove, MTEX, SketchFab) for 3-D visualization of field or lab data and strengthening spatial thinking skills.

Endorsed by: GSA Geoscience Education Division; GSA Structural Geology and Tectonics Division; National Association of Geoscience Teachers (NAGT)

Managed Aquifer Recharge and Groundwater Security

Categories: Hydrogeology; Environmental Geoscience; Engineering Geology

Advocates: Chris Lowry, Arianna Gregg, Rachel Kozloski

This session invites researchers and water managers to explore the spatiotemporal dynamics of managed aquifer recharge, including traditional and emerging methods, water quality, clogging, characterization, and modeling, fostering collaboration to advance groundwater resilience and security.

Endorsed by: GSA Hydrogeology Division; National Ground Water Association (NGWA); International Association of Hydrogeologists (IAH); GSA Environmental and Engineering Geology Division

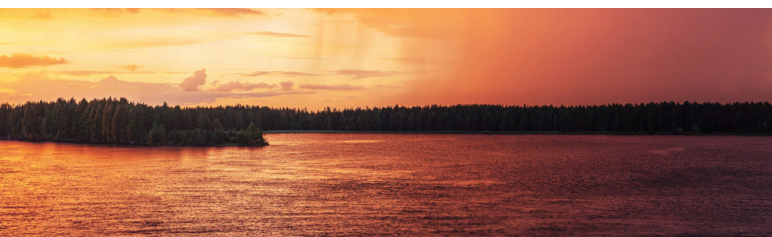
Geoinformatics Advances Scientific Discoveries: Machine Learning, Cyberinfrastructure, and Open Data in the Digital Geological Era

Categories: Geoinformatics and Data Science

Advocates: Anirudh Prabhu, Daven Quinn, Tao Wen, Samuel Shaheen, Mir Md Tasnim Alam, Jarrod Burges

As digital geoscience archives expand in scale and complexity, data-driven techniques are transforming research. This session highlights advances in data collection, sharing, and analysis, and innovative applications of computational methods (artificial intelligence) toward scientific discovery.

Endorsed by: GSA Geoinformatics and Data Science Division



Coordinated Geoscience Outreach Efforts to Broaden Participation

Categories: Geoscience Education; Environmental Geoscience; Geoscience Information/Communication

Advocates: Nazrul Khandaker, Taufique Mahmood
Undergraduate, high school, and faculty-led research outcomes on a variety of current and emerging geoscience-related topics with interdisciplinary focus are sought for this session.

Endorsed by: GSA Geoscience Education Division; GSA Environmental and Engineering Geology Division; GSA Geology and Society Division; GSA International; GSA Diversity in the Geosciences Committee

Joint SGD-SEPM-IAS Session: The Sedimentary Record of Climate Change

Categories: Sediments, Clastic; Sediments, Carbonates; Paleoclimatology/Paleoceanography

Advocates: Joanna Pszonka, Bosiljka Glumac, Jason Flaum
This session explores how sedimentary archives record climate history and environmental change. It integrates advanced proxies, high-resolution stratigraphy, and emerging technologies to reconstruct past climate dynamics and improve predictions of future Earth system responses.

Endorsed by: International Association of Sedimentologist (IAS); SEPM (Society for Sedimentary Geology); GSA Sedimentary Geology Division

Geologic and Tectonic Evolution of the Sierra Nevada, California

Categories: Tectonics; Petrology, Igneous; Geochronology

Advocates: Rebecca Flowers, Robinson Cecil, Elizabeth Cassel

The Sierra Nevada are the archetypal example of a Cordilleran arc system. We welcome contributions from various perspectives that yield insights into the magmatic, tectonic, geodynamic, and topographic evolution of this classic region.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division

Proterozoic Tectonics of Western Laurentia: New Perspectives on Crustal Growth, Orogenesis, Mineralization, and Intracontinental Reworking

Categories: Precambrian Geology; Structural Geology; Geochronology

Advocates: Ian Hillenbrand, Alexander Lusk, Amy Gilmer
This session explores Proterozoic crustal growth, orogenesis, and intracontinental reworking across western Laurentia. We welcome contributions addressing terrane assembly, province boundaries, polyphase deformation, magmatism, structural reactivation, and connections to mineralization.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geochronology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; Colorado Scientific Society

International Collaborations in the Geosciences: Celebrating Science Without Borders

Categories: Geology and Society; Geoscience Education; Geoscience Information/Communication

Advocates: Sharon Locke, Watsawan Chanchai, Ester Sztejn, W. Lyons

This session invites presentations on successful international collaborations in geoscience research and education, including how effective collaborations develop, how such partnerships are sustained, and scientific advancements made possible by international programs and networks in geosciences.

Endorsed by: GSA International; European Geosciences Union (EGU); International Association for Promoting Geoethics (IAPG); Association of Geoscientists for International Development; International Society of Groundwater for Sustainable Development (ISGSD)

From Anode to Cathode: Mineral Systems of Battery Commodities

Categories: Economic Geology; Energy Geology; Geochemistry

Advocates: Andrew Masterson, Rebecca Stokes, George Case, Katie Harrison, Aaron Jubb

This session will focus on mineral system genesis, characterization, mining, and processing of the mineral commodities required to meet the increasing demands for batteries and battery energy storage systems.

The National Landslide Hazard Reduction Program (NLHRP): Advancing Landslide Hazard Reduction in the U.S. through Working Groups and Landslide Risk Reduction Grants

Categories: Engineering Geology; Geomorphology; Environmental Geoscience

Advocates: William Burns, Stephen Slaughter, Anne Witt, Matthew Crawford, Sarah Hall

This session will showcase NLHRP working group collaborations, projects completed with NLHRP grants, and other advancements in landslide risk reduction in the U.S.

Endorsed by: GSA Environmental and Engineering Geology Division; GSA Environmental and Engineering Geology Division Landslide Committee

Laws of the Grave: Advances in Taphonomy across the Paleontologic Record

Categories: Paleontology, Paleoecology/Taphonomy; Geobiology and Geomicrobiology; Stratigraphy

Advocates: Broc Kokesh, Rachel Laker

This session emphasizes the interdisciplinary and ubiquitous nature of taphonomy for analysis of the fossil record. We welcome submissions focused on understanding taphonomic processes or its impacts across any paleontologic subdiscipline, taxon, or geologic era.

Endorsed by: Paleontological Society (PS); GSA Geobiology and Geomicrobiology Division; Paleontological Research Institution (PRI); Society of Vertebrate Paleontology (SVP); SEPM (Society for Sedimentary Geology)

Impactful Indigenous Geoscience: STEM, Data Science, and Education

Categories: Geoinformatics and Data Science; Geoscience Education; Geology and Society

Advocates: Darryl Reano, Wai Allen, Darlene Wilson, Aiyesha Ghani-Rivera

This session will discuss how geoscience has impacted local communities, especially Indigenous communities in the United States. We invite abstracts from discipline-based education researchers and STEM practitioners and data scientists whose work impacts local communities.

Endorsed by: GSA Geoscience Education Division; GSA Geology and Society Division; International Association for Geoscience Diversity (IAGD); GSA Sedimentary Geology Division; GSA Diversity in the Geosciences Committee

Dynamics of Natural and Built Environments

Categories: Engineering Geology; Environmental Geoscience

Advocates: William Burgess, Luke McGuire, Ben Leshchinsky, Kate Mickelson

Our communities depend on interactions between natural and built environments. Engineered systems (e.g. earthworks, structures, utilities) must be resilient to evolving natural forcings, and similarly engineered systems must also minimize negative effects on the natural environment.

Endorsed by: GSA Environmental and Engineering Geology Division; GSA Environmental and Engineering Geology Division Landslide Committee; GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division

Showcasing Student Research in Environmental and Engineering Geology

Categories: Engineering Geology; Environmental Geoscience; Hydrogeology

Advocates: Luke McGuire, Ben Leshchinsky, Kate Mickelson, WILLIAM BURGESS

This session will highlight undergraduate and graduate student research in environmental and engineering geology, broadly defined. Presenters will be entered into the student presentation competition organized by the Environmental and Engineering Geology Division.

Endorsed by: GSA Environmental and Engineering Geology Division; GSA Environmental and Engineering Geology Division Landslide Committee; GSA Hydrogeology Division; GSA Quaternary Geology and Geomorphology Division

Mineralogy, Geochemistry, Petrology, and Volcanology Student Session

Categories: Geochemistry; Mineralogy/Crystallography; Petrology, Metamorphic

Advocates: Madeline Murchland, Claire Alley, Emily Fischer
MGPV's student representatives invite the division's graduate and undergraduate students to present their research. We encourage abstracts from any subdiscipline within the division with hopes of stimulating a multi-disciplinary, early career researcher community.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; Council on Undergraduate Research Geosciences Division; Mineralogical Society of America (MSA)

Quantifying Geomorphic Processes and Rates of Landscape Evolution

Categories: Geomorphology; Soils and Soil Processes; Tectonics

Advocates: Arjun Heimsath, Veronica Prush, Jennifer Pierce, Brad Sion

Numerous techniques have revolutionized our ability to constrain timescales of geologic processes. We invite submissions that highlight novel techniques/applications across Quaternary timescales in the expanding fields of soils, tectonics, climate, and erosion.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Soils and Soil Processes Division

The Astro-Geoheritage of the Solar System: Past Explorations and Future Considerations

Categories: History and Philosophy of Geology; Planetary Geology; Geoscience Education

Advocates: Eric Pyle, Nicholas Lang

Geoheritage is a construct that embeds geoscience within historical, educational, and aesthetic contexts. Astro-geoheritage extends this to the development of planetary geologic mapping, terrestrial analogues, and how people are prepared to interact with non-terrestrial environments.

Endorsed by: GSA History, Philosophy, and Geoheritage Division; GSA Planetary Geology Division; GSA Geoscience Education Division; GSA Geology and Society Division; National Association of Geoscience Teachers (NAGT)

Generative Artificial Intelligence and Other AI-Assistants in Geosciences: Today and in the Near Future

Categories: Geoinformatics and Data Science; Geoscience Education

Advocates: James Ogg, Harvey Thorleifson, Yitian Xiao, Michael Stephenson

Generative artificial intelligence and other AI assistants are rapidly reshaping how geoscientific information is represented, analyzed, and integrated with traditional Earth-science methodologies. Contributions are invited that explore theoretical foundations, practical applications and what is on the horizon.

Endorsed by: GSA Geoinformatics and Data Science Division; SEPM (Society for Sedimentary Geology); Geoscience Information Society (GSIS); GSA Geoscience Education Division

Contemporary Research in Geomorphological Hazards

Categories: Geomorphology; Engineering Geology; Geology and Society

Advocates: Takashi Oguchi, Sunil De, Karen Gran, Lisa Ely
Contemporary research into geomorphological hazards such as floods, landslides, coastal hazards, riverbank erosion, river migration and shifting, and soil erosion. We particularly encourage research that explores the role of human activities in geomorphological hazards.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; International Association of Geomorphologists; GSA Geology and Society Division; GSA Environmental and Engineering Geology Division Landslide Committee

Reconstructing the Extent and Timing of Late Quaternary Glaciations

Categories: Quaternary Geology; Geomorphology; Stratigraphy

Advocates: Benjamin Laabs, Joseph Licciardi, Yingkui Li, Leif Anderson

Quaternary geologic and geomorphic records afford reconstructions of glacier dynamics before, during, and since the Late Pleistocene. This session welcomes new developments of Quaternary glacial records through applications in geomorphology, stratigraphy, geochronology, and paleoclimate.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Sedimentary Geology Division

Venus and Earth: Separated at Birth

Categories: Planetary Geology; Volcanology; Tectonics

Advocates: Debra Buczkowski, Nicholas Lang

This session solicits abstracts on volcanism, tectonism, impact cratering, weathering, and surface-atmosphere interactions. It encompasses surface geology, interior evolution, and comparative planetary studies with observational, experimental, or theoretical approaches.

Endorsed by: GSA Planetary Geology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Cretaceous Mudstones of the Western Interior Seaway: New Insights into Sedimentary Inputs and Processes Impacting Geologic Resources Potential

Categories: Sediments, Clastic; Energy Geology; Stratigraphy

Advocates: Jason Flaum, Katherine Whidden, Justin Birdwell, Richard Lease, Jenny Lagesse

This session invites submissions that evaluate the characteristics of and processes that resulted in the accumulation of mudstone lithologies and associated geologic resources across the Cretaceous Western Interior Seaway of North America.

Endorsed by: GSA Sedimentary Geology Division; GSA Energy Geology Division

Geomorphology and Landscape Evolution of Mars

Categories: Planetary Geology; Geomorphology; Stratigraphy

Advocates: Sharon Wilson, Rebecca Williams, Matthew Chojnacki

This session focuses on aeolian, fluvial, glacial, lacustrine, and crater degradation processes to investigate the geomorphology and landscape evolution of Mars. We welcome research using Martian orbital and rover data, as well as terrestrial analogues.

Endorsed by: GSA Planetary Geology Division

Mineral-Scale Archives of Magma System Dynamics

Categories: Volcanology; Petrology, Igneous; Geochemistry

Advocates: Gary Michelfelder, Melissa Scruggs

This session explores mineral-scale and melt records of magma storage, thermal rejuvenation, and mobilization. We welcome studies integrating petrochronology, diffusion chronometry, and geochemistry to quantify magma fluxes, storage, mush dynamics, and eruptibility across volcanic systems.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; Geochemical Society (GS); Mineralogical Society of America (MSA)

Glacial Landscapes in Transition: Understanding the Complex Interactions Between Glaciers, Mountain Hydrology, and Landscape-Scale Change in the Western United States

Categories: Geomorphology; Quaternary Geology; Hydrogeology

Advocates: Scott Beason, Claire Todd

This session explores how glacier retreat in the western United States reshapes mountain hydrology, sediment transport, geomorphic hazards, and infrastructure vulnerability, inviting interdisciplinary perspectives on coupled glacier-river-landscape systems.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; American Quaternary Association (AMQUA); International Association of Geomorphologists; GSA Environmental and Engineering Geology Division

Integrated and Novel Approaches to Reconstructing Bioevent Records in Epicontinental Basins

Categories: Geochemistry; Paleontology, Diversity, Extinction, Origination; Stratigraphy

Advocates: Madeline Marshall, Patrick McLaughlin, James Zambito

Global biogeochemical event records are complex and variably expressed across separate depocenters. This session highlights progress on integrating paleobiology, geochemistry, sedimentology, and geochronology to deconvolute chain-of-events records in epicontinental basins.

Endorsed by: GSA Sedimentary Geology Division; Paleontological Society (PS); GSA Continental Scientific Drilling Division

Coupled Redox–Organic Interactions in the Critical Zone: From Pore Scale Reactions to Landscape Scale Processes

Categories: Hydrogeology; Geology and Health; Geobiology and Geomicrobiology

Advocates: Harshad Kulkarni, Indrayudh Mondal, Bibhash Nath, Joe Yelderian, Saugata Datta

Session explores how coupled redox processes and natural organic matter interactions regulate biogeochemical transformations across the critical zone, linking mechanistic pathway to predictive models of nutrient fluxes and trace-element mobility in soil, sediment, groundwater systems.

Endorsed by: GSA Hydrogeology Division; GSA Geology and Health Division; GSA Soils and Soil Processes Division

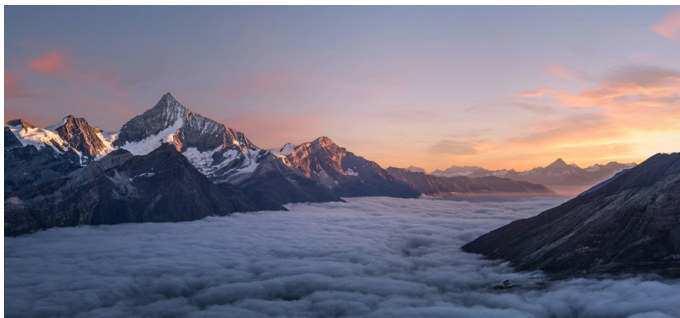
Advances in Landslide Inventory Mapping and Landslide Hazard Assessment

Categories: Engineering Geology; Geomorphology; Environmental Geoscience

Advocates: Stephen Slaughter, Matthew Crawford, Anne Witt, William Burns

This session will showcase approaches to landslide inventory mapping, landslide susceptibility, debris flow modeling, risk assessments, and hazard data implementation at many stakeholder levels.

Endorsed by: GSA Environmental and Engineering Geology Division; GSA Environmental and Engineering Geology Division Landslide Committee; GSA Quaternary Geology and Geomorphology Division; Association of Environmental & Engineering Geologists (AEG)



One Orogeny Is Not Like the Other: Changes in Orogenic Styles through the Proterozoic

Category: Tectonics

Advocates: Cristina Accotto, Yvette Kuiper, Christopher Daniel, Chris Spencer, Aphrodite Indares

We welcome contributions on Proterozoic orogens, in particular those with unique characteristic (ex. hot/thin and large/hot) that attest to global variations in orogenic styles with time. How and why are they different?

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Geophysics and Geodynamics Division; Geological Association of Canada (GAC)

The G.K. Gilbert Award

Category: Planetary Geology

Advocates: Jennifer Piatek, Lauren Jozwiak, Alexander Morgan, Ronald Daly, Claire Mondro

Speakers in this session highlight the work of the G. K. Gilbert Award winner, selected by the Planetary Geology Division for outstanding contributions to the solution of fundamental problems within the broad topic of planetary geology.

Endorsed by: GSA Planetary Geology Division

Peaks, Plains, and Plateaus: 150 Years of Colorado Science Discoveries

Categories: Precambrian Geology; Quaternary Geology; Energy Geology

Advocates: Shannon Mahan, Amy Atwater, Patrick Sullivan, James Paces, Lewis Kleinhans

We invite new discoveries of energy projects, geologic mapping, tectonic research, paleontology, and geochronological or geomorphic observations to this session celebrating Colorado geology, geomorphology, and geochronology and the long-lived science societies that preserve these traditions.

Endorsed by: GSA Quaternary Geology and Geomorphology Division; GSA Energy Geology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division; GSA Soils and Soil Processes Division

Land Surface Subsidence: Processes, Impacts, and Ongoing Challenges

Categories: Hydrogeology; Marine/Coastal Geoscience; Environmental Geoscience

Advocates: John Ellis, James Borchers, Ashley Greuter

This session explores the diverse causes, impacts, and monitoring of land subsidence, including the relationship with sea-level rise, to advance subsidence understanding and mitigation strategies.

Endorsed by: GSA Hydrogeology Division

From Outcrop to Orogen: Field-Based Perspectives on Stratigraphy, Structural Geology, and Mineral Resources in the Rocky Mountain Region—A Session in Honor of David A. Lindsey

Categories: Stratigraphy; Structural Geology; Economic Geology

Advocates: Jonathan Caine, John Singleton, Samantha Malavarca

This session honors the career of David A. Lindsey, who made major contributions to understanding Rocky Mountain geology through pioneering U.S. Geological Survey field studies integrating stratigraphic, structural geologic, and mineral deposit research.

Endorsed by: GSA Sedimentary Geology Division; GSA Structural Geology and Tectonics Division; Society of Economic Geologists (SEG); Colorado Scientific Society

Course-Based Undergraduate Research Experiences (CUREs) in Geoscience: Outcomes, Projects, and Training Strategies for a Successful Experience

Category: Geoscience Education

Advocates: Joseph Panzik, Jonathan Schmitkons, Megan Fegley

Participants will listen to a range of geoscience CURE educators and students across several disciplines. Presenters—educators and students—will share their experiences about successful outcomes, projects, and training from their CURE courses, labs, or programs.

Endorsed by: GSA Geoscience Education Division

New Approaches to Old Fossil Collections

Categories: Paleontology, Paleocology/Taphonomy; Paleoclimatology/Paleoceanography; Geobiology and Geomicrobiology

Advocates: William Matthaeus, Scott Wing, Jonathan Wilson, Ingrid Romero, Bryton Smith

Material collected during the early history of paleontology conserves deep time ecosystems and remains available for study. We invite new analyses and interpretations of well-studied collections in the context of the broader history of the discipline.

Endorsed by: Paleontological Society (PS); AASP - The Palynological Society; Geobiological Society (GBS); Society of Vertebrate Paleontology (SVP)

Geoscience Research Poster Showcase by 2YC and 4YCU Undergraduate Students

Category: Geoscience Education

Advocates: Adrienne Leinbach, Gretchen Miller, Stephanie Rollins, Kelsey Druce, Rebecca Schmeisser McKean

This session is designed for two-year college (2YC) and four-year college and university (4YCU) students presenting research posters in any sub-discipline of geoscience.

Endorsed by: GSA Geoscience Education Division; National Association of Geoscience Teachers (NAGT); American Geophysical Union (AGU); Seismological Society of America (SSA); NAGT Geoscience Two-Year College Division (Geo2YC)

Integrating Geoscience History, Philosophy, and Geoheritage: The Past Illuminates the Future

Categories: History and Philosophy of Geology; Geoheritage; Geology and Society

Advocates: William Andrews, Roy Plotnick

Presentations will address the history or philosophy of geosciences or the associated geoheritage connections; and potentially explore the meeting themes of plate tectonics, fluvial landscapes, or innovations in the geosciences.

Endorsed by: GSA History, Philosophy, and Geoheritage Division

New Voices in Paleontology

Categories: Paleontology, Diversity, Extinction, Origination; Paleontology, Paleoecology/Taphonomy; Paleontology, Phylogenetic/Morphological Patterns

Advocate: John Huntley

The Paleontological Society is pleased to organize the “New Voices in Paleontology” topical session at GSA Connects 2026 to showcase the outstanding work of our student and early career members in a high-profile oral session.

Endorsed by: Paleontological Society (PS)

Geology and Society Beyond 250

Category: Geology and Society

Advocates: Sinjini Sinha, James Heller, Shreya Arora, M. Harris, Bernardo Hevia Garrido

Geology and Society Beyond 250 explores the evolving relationship between geosciences and society in the coming decades and beyond. This session invites forward-looking perspectives on sustainability, climate, resources, hazards, fostering interdisciplinary dialogue and policy-relevant discussions.

Endorsed by: GSA Geology and Society Division

The Mission of Geology in Society

Categories: Environmental Geoscience; Economic Geology; Hydrogeology

Advocate: Bernardo Hevia Garrido

What is the mission of geology in society? Identify geological hazards. Map local, regional, national and global geology. Explore natural resources. Advise on the exploitation of natural resources. Provide geological advice on projects.

Endorsed by: GSA Geology and Society Division

Earthquake Signatures in the Landscape

Categories: Tectonics; Geomorphology; Geology and Society

Advocates: Nadine Reitman, Jessica Thompson Jobe, Michael Cline, Randy Williams, Sean Gallen, Shreya Arora

Large earthquakes exhibit varied landscape impacts and complex deformation patterns. We encourage submissions highlighting advances and unique approaches in tectonic geomorphology to better understand strain accumulation, release, and landscape response over coseismic to geologic timescales.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division

Secured and Safe Groundwater for a Sustainable Planet

Categories: Hydrogeology; Geology and Society; Environmental Geoscience

Advocates: Abhijit Mukherjee, Prosun Bhattacharya, David Kremer

We encourage multidisciplinary research that explores ways to translate groundwater information into governance and policy, from science to policy, from technology to clean water and food, and from groundwater resource understanding to solutions and sustainability.

Endorsed by: GSA Hydrogeology Division; International Society of Groundwater for Sustainable Development (ISGSD); International Association of Hydrogeologists (IAH)

Paleogeography and Tectonics of Deformed Continental Margins

Categories: Tectonics; Geophysics/Geodynamics

Advocates: Bernard Housen, Ellen Nelson, Sean Mulcahy, Cristina Garcia-Lasanta

Session focuses on understanding paleogeography of continental margins using modern tools including mantle dynamics, paleomagnetism, geochronology, geochemistry, structural geology, paleontology, and sedimentology to test tectonic models within the mobilist paradigms first established by Continental Drift.

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division

New Advances in Geomicrobiology

Category: Geobiology and Geomicrobiology

Advocates: David Gold, Trinity Hamilton, Dylan Wilmeth, Ana Gonzalez-Nayek, Katie Maloney, Lydia Tackett, Brandt Gibson, Diana Velazquez, Joseph Hoberg, Caden Williams

This session will bring together new research focusing on the interplay between geologic and biologic processes with a special emphasis on work by early-career scientists exploring new questions and hypotheses targeting the microbial world.

Endorsed by: GSA Geobiology and Geomicrobiology Division

Aeolian Environments and Drylands

Categories: Geomorphology; Quaternary Geology; Sediments, Clastic

Advocates: Mark Sweeney, Phillip Larson, Spencer Staley

This session will explore research focused on aeolian processes and landforms including dunes, dust, loess and aeolian influences on drylands in modern and ancient systems.

Endorsed by: GSA Quaternary Geology and Geomorphology Division

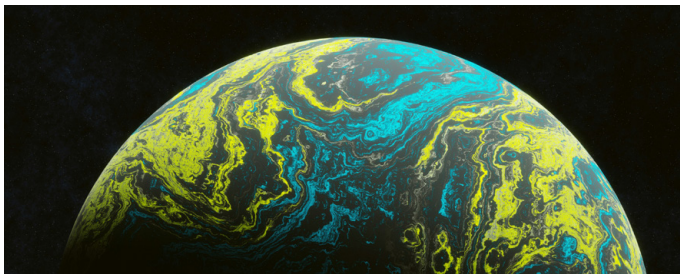
GTS2030: Toward an Open Science Geologic Time Scale

Categories: Geochronology; Stratigraphy; Geoinformatics and Data Science

Advocates: Mark Schmitz, Bradley Cramer, Courtney Sprain

The Geologic Time Scale (GTS) is one of earth sciences' most demanding collaborative efforts. This session welcomes contributions in chronostratigraphy, radioisotopic dating, astrochronological tuning, and age modeling that will create the next open science GTS.

Endorsed by: GSA Geochronology Division; GSA Geoinformatics and Data Science Division; GSA Sedimentary Geology Division



Hydrothermal Processes across the Solar System

Categories: Geochemistry; Planetary Geology; Geobiology and Geomicrobiology

Advocates: Everett Shock, Kenneth Sims

Hydrothermal processes transfer energy and matter from planetary interiors to their surfaces and create complex thermal and geochemical environments that influence habitability, resources, biological processes, and the compositions of crusts, mantles, atmospheres and oceans.

Endorsed by: Geochemical Society (GS); GSA Planetary Geology Division; GSA Geobiology and Geomicrobiology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; American Geophysical Union (AGU)

Data-Driven Approaches for Aligning Geologic Information in Time

Categories: Geoinformatics and Data Science; Geochronology; Stratigraphy

Advocates: Robin Traylor, Daven Quinn, Jennifer Kasbohm

We seek to explore data-driven and statistical correlation techniques to reconstruct past Earth system processes and seek diverse contributions that apply new methods for stratigraphic and temporal correlation, proxy-record alignment, and paleoenvironmental reconstructions.

Endorsed by: GSA Geoinformatics and Data Science Division; GSA Geochronology Division; GSA Sedimentary Geology Division

Joint SGD-SEPM-IAS Session: Advances in Sedimentology

Categories: Sediments, Carbonates; Sediments, Clastic; Marine/Coastal Geoscience

Advocates: Dustin Sweet, Chelsea Pederson, Peter Flaig

Advances in Sedimentology highlights innovative research and technology shaping sedimentary science. We welcome contributions across clastic, carbonate, and mixed systems integrating field, laboratory, and modeling approaches to advance understanding of sedimentary processes and stratigraphic evolution.

Endorsed by: SEPM (Society for Sedimentary Geology); International Association of Sedimentologist (IAS); GSA Sedimentary Geology Division

Biogeochemical Analysis of Organic Matter Preserved in Geoarchaeological and Paleontological Materials

Categories: Geoarchaeology; Paleontology, Paleoecology/Taphonomy; Paleoclimatology/Paleoceanography

Advocates: C. Fred Andrus, Chelsea Comans

Analysis of organic matter preserved in ancient shell, teeth, bone, and sediment can provide insight into past climate, ecology, and environmental conditions. This session aims to explore novel techniques and applications of such biogeochemical investigations.

Endorsed by: GSA Geoarchaeology Division; Paleontological Society (PS)

New Advances in Mesozoic Paleontology, Stratigraphy, and Paleogeography of the Western Interior of North America

Categories: Paleontology, Biogeography/Biostratigraphy; Paleontology, Diversity, Extinction, Origination; Stratigraphy

Advocates: Joshua Slattery, Zachary Tenney, Keith Minor, Kelli Trujillo, David Lovelace, Peter Harries, Neil Landman, Jesse Easterwood

This session highlights recent advancements in marine and nonmarine paleontology, stratigraphy, and paleogeography of the Mesozoic Western Interior. We invite contributions that showcase new insights into Triassic, Jurassic, and Cretaceous faunas, depositional systems, and paleogeography.

Endorsed by: Paleontological Society (PS); Society of Vertebrate Paleontology (SVP); Western Interior Paleontological Society (WIPS); GSA Sedimentary Geology Division

Advancing Geologic Analysis with Digital Outcrops and Close-Range Remote Sensing Data

Categories: Structural Geology; Energy Geology; Geoscience Education

Advocates: Adam Cawood, Zachariah Fleming, Terry Pavlis, Paul Nesbit

This session highlights close-range remote sensing techniques (e.g., photogrammetry, LiDAR, hyperspectral imaging) in geologic analysis, focusing on innovative methodologies, workflows, case studies, and applications in structural geology, sedimentology, paleobiology, and critical mineral exploration.

Endorsed by: GSA Geoinformatics and Data Science Division; GSA Structural Geology and Tectonics Division

Faults, Fractures, and Geomechanics in Subsurface Energy and Mineral Systems

Categories: Structural Geology; Tectonics; Economic Geology

Advocates: Adam Cawood, Benjamin Surpluss, Elizabeth Horne

This session explores fault and fracture controls on fluid flow in critical mineral systems, emphasizing structural geology and geomechanics with applications to mineralization, geothermal energy, CO₂ sequestration, and subsurface energy resources.

Endorsed by: GSA Structural Geology and Tectonics Division; Society of Economic Geologists (SEG); GSA Energy Geology Division

Recurrence of What?

Categories: Tectonics; Geomorphology; Volcanology

Advocates: Alexandra Hatem, Richard Briggs, Christopher DuRoss, Mark Zellman

Event recurrence data are collected at points and then are extrapolated to lineal or areal extents in conceptual models and forecasts. How to best assign magnitudes to paleoevents, such as paleoearthquakes, remains a vexing question.

Endorsed by: GSA Structural Geology and Tectonics Division; American Geophysical Union (AGU); GSA Quaternary Geology and Geomorphology Division

Imaging, Measuring, and Characterizing the Earth's Changing Surface through Remote Sensing

Categories: Geophysics/Geodynamics; Tectonics; Geomorphology

Advocates: Catherine Hanagan, Stephen DeLong, Harriet Yin, Kathryn Materna

We invite presentations from a variety of sub-disciplines that focus on methodological or scientific advances in imaging and characterizing the Earth's changing surface.

Geoscience Educators as Academic Leaders: Habits of Mind as Preparation for Leading Institutional Growth and Change

Category: Geoscience Education

Advocates: Eric Riggs, Carl Drummond

Geoscience Educators represent a niche specialization within the Geosciences, yet are fully represented in the ranks of Deans, Provosts and Presidents. This session will explore that representation and what GER scholars bring to university leadership.

Endorsed by: GSA Geoscience Education Division; National Association of Geoscience Teachers (NAGT)

Presentaciones de Geociencias en Español: Continuamos con la Experiencia en la GSA 2026 / Geoscience Presentations in Spanish: Continuing the Experience at GSA 2026

Categories: Tectonics; Geochemistry; Geochronology

Advocates: Alexander Iriando, Gabriela Mora-Klepeis, Elisa Fitz, Arturo Barrón-Díaz, Daniel Laó-Dávila, Gerardo Suárez

This session invites geosciences presentations in Spanish at all proficiency levels; abstracts can be submitted in English or Spanish, and they do not count toward the GSA's limit of one abstract presentation per person.

Endorsed by: GSA International; GSA Geochronology Division; GSA Structural Geology and Tectonics Division; GSA Structural Geology and Tectonics Division; Sociedad Geológica Mexicana, A.C. (SGM)

Fault Zones and Fluid Flow, from Outcrops to Algorithms

Categories: Structural Geology; Tectonics; Energy Geology

Advocates: Christie Rogers, Lluís Saló Salgado

With a focus on impacts to subsurface fluid flow, what are advancements in our understanding and predictive modeling of fault zone core and near fault architecture/fabrics?

Endorsed by: GSA Structural Geology and Tectonics Division; GSA Energy Geology Division; American Association of Petroleum Geologists (AAPG)

Crustal Petrology: From Subduction Zones to Orogenic Systems

Categories: Petrology, Igneous; Petrology, Metamorphic; Economic Geology

Advocates: David Hernández Uribe, Chris Yakymchuk, Juan Hernández Montenegro, Shane Houchin

This session explores igneous and metamorphic processes shaping Earth's crust. We welcome contributions from all fields investigating crustal genesis and evolution, from field- to laboratory- to modeling-based studies across all scales.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Advances in the Study of Magmatic and Volcanic Systems

Categories: Volcanology; Petrology, Igneous; Mineralogy/Crystallography

Advocates: Elisabeth Widom, Gary Michelfelder, Jade Star Lackey

The Mineralogy, Geochemistry, Petrology, and Volcanology (MGPV) Division invites contributions exploring magmatic sources, processes, and timescales leading to volcanic eruptions, and controls on eruptive mechanisms and styles.

Endorsed by: GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; International Association of GeoChemistry (IAGC)

Beyond Ores: Characterization and Extraction of Critical Minerals from Unconventional and Secondary Resources

Categories: Energy Geology; Economic Geology

Advocate: Anna Littlefield

This session will explore critical minerals in unconventional and secondary resources from exploration and characterization to extraction and processing. We invite contributions not limited to sedimentary and brine-hosted resources, e-waste, tailings, and other secondary feedstocks.

Endorsed by: GSA Energy Geology Division

Scaling Next-Generation Geothermal: Learning Curves from Early Exploration to Deployment

Category: Energy Geology

Advocate: Anna Littlefield

This session aims to accelerate the path from innovation to deployment by sharing practical knowledge that informs better decision-making for next-generation geothermal development, including case studies, comparative analyses across plays and technologies, and lessons learned.

Endorsed by: GSA Energy Geology Division

From Characterization to Class VI: Translating Subsurface Models for Carbon Capture and Storage to Permitting and Operations

Category: Energy Geology

Advocate: Anna Littlefield

This session examines how subsurface geoscience translates into defensible permitting packages and operational plans for Class VI CO₂ storage projects. Contributions highlighting decision points, lessons learned, and transferable templates for characterization through operations are especially welcome.

Endorsed by: GSA Energy Geology Division

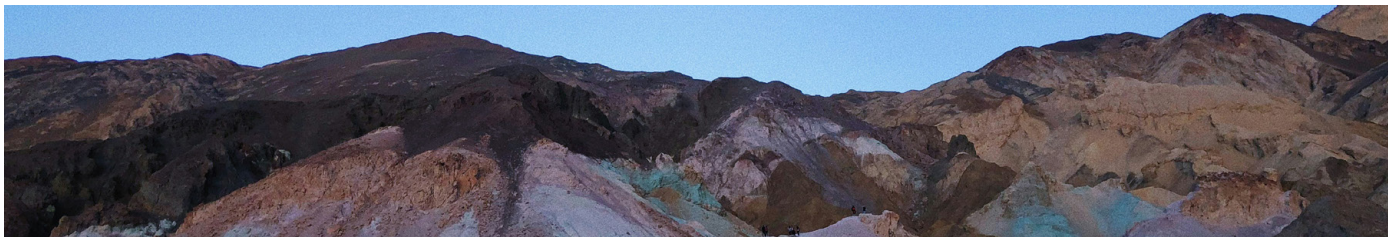
Geoarchaeology of the Land-Sea Interface: Processes, Preservation, and Palaeolandscape Reconstruction

Categories: Geoarchaeology; Marine/Coastal Geoscience; Geomorphology

Advocates: Alyssa Pietraszek, Fred Andrus

This session explores interdisciplinary geoarchaeological research at the land-sea interface, emphasizing coastal geomorphology, sedimentology, sea-level reconstruction, site formation and preservation processes, geophysical detection, and modeling of submerged and marginal marine cultural landscapes.

Endorsed by: GSA Geoarchaeology Division



Current Advances in Geoscience Education Research

Category: Geoscience Education

Advocates: Larry Collins, Victor Ricchezza

This session will highlight empirical research being done in geoscience education. We welcome submissions from geoscience education researchers at all career stages to showcase projects that highlight current areas of interest in the discipline.

Endorsed by: GSA Geoscience Education Division

Making Sense of Methodologies and Theoretical Frameworks in Geoscience Education Research

Category: Geoscience Education

Advocates: Katherine Ryker, Caitlin Callahan

Methods and theoretical frameworks from within and outside of GER shape our field. Presenters are encouraged to highlight their decision-making process in research studies. New approaches and applications of established methods/frameworks are also welcome.

Endorsed by: National Association of Geoscience Teachers (NAGT)

From Rodinia to Pangea: Evolution of the Appalachian-Caledonides Orogen

Categories: Tectonics; Structural Geology; Stratigraphy

Advocates: Morgann Perrot, Jamie Levine, James Thigpen, Laura Webb, Paul Karabinos

This session invites contributions exploring the evolution of the Appalachian-Caledonides orogen from the Neoproterozoic breakup of Rodinia to the Mesozoic breakup of Pangea. We welcome multi-disciplinary approaches on the development of this circum-Atlantic mountain chain.

Endorsed by: GSA Structural Geology and Tectonics Division

AI and Machine Learning in Predictive Groundwater Science: Integrating Hydrogeology, Geochemistry, and Geospatial Modeling

Categories: Hydrogeology; Geoinformatics and Data Science; Geology and Health

Advocates: Courtney Killian, Prosun Bhattacharya, Kenneth Carroll, Reza Soltanian, Tao WEN, Abhijit Mukherjee, Zhenxue Dai, Benjamin Rostron, Asif Javed, Madhumita Chakraborty
Artificial intelligence and machine learning enhance predictive groundwater science by integrating hydrogeologic modeling, basin scale processes, multi element geochemistry, and geospatial analysis to better characterize subsurface structure, flow and transport, contaminant dynamics, and environmental risk.

Endorsed by: GSA Hydrogeology Division; GSA Geoinformatics and Data Science Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; International Society of Groundwater for Sustainable Development (ISGSD); GSA International

Tectonics, Geology, and Geophysics of Mineral Systems and Controls on the Localization of Mineral Deposits

Categories: Economic Geology; Tectonics; Geophysics/Geodynamics

Advocates: Patricia MacQueen, George Case, Sean Gaynor, Christopher Holm-Denoma

Tectonic controls on the spatiotemporal distribution of mineral systems remain enigmatic. This session seeks multidisciplinary and multiscale research from surface and subsurface data for advancing understanding of key transcrustal processes and their interactions in localization of critical and non-critical mineral deposits.

Endorsed by: Society of Exploration Geophysicists (SEG); GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division; GSA Geochronology Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division

Emerging Contaminants in Water and Earth Systems: Fate and Transport Processes, Decision Support, and Regulatory Implications

Categories: Hydrogeology; Environmental Geoscience; Soils and Soil Processes

Advocates: Rakesh Kumar, Bo Guo, Dengjun Wang, Prosun Bhattacharya, Srimanti Duttagupta, Andrea Tokranov, Paromita Chakraborty, Mitchell Olson

Emerging contaminants, including microplastics, PFAS, pharmaceuticals, and pesticides, pose growing challenges for groundwater and Earth systems. This session explores contaminant fate, transport, transformation, and modeling approaches to advance risk assessment, remediation strategies, decision support, and One Health perspectives.

Endorsed by:

Riverscapes in Transition: Advances in Fluvial Geomorphology, Sediment Transport, Deposition, and River Health

Categories: Geomorphology; Quaternary Geology; Sediments, Clastic

Advocates: Kory Konsoer, Md Muzahidul Islam, Sunil De, Karen Gran, Douglas Edmonds, José Constantine

Research into fluvial processes, sediment transport, deposition, and river health using field, modeling, and/or remote sensing approaches, including how rivers interact with and are impacted by society.

Innovations in Research of Groundwater-Surface Water Interactions

Category: Hydrogeology

Advocates: Lynn Watts, Andrea Brookfield, Zachary Johnson, Anner Paldor, David Rey

This session will focus on fluxes of water and solutes between groundwater and surface water that drive key physical, chemical, and biological interactions across temporal and spatial scales.

Science Has No Borders

A Journey from Rural China to International Geoscience

Prof. Hailiang Dong
China University of Geosciences–Beijing

2025 Arthur L. Day Medal Awardee

When I was growing up in a small town near Ningbo City, Zhejiang Province, China, I never dreamed of becoming a scientist in the United States. As a child of three in a farmer's family, I, like many kids of my age, stopped education after high school. Because of my low family income, I started working in a silk manufacturing factory at the age of 17. However, based on my previous college entrance examination score, I was offered an opportunity to study at a night school. That was a tough year because I was working full time and studying part time.

Many times, I was working at night (night shift) while studying at the same time in a noisy environment. Through persistence and diligence, in 1984 I was admitted to Wuhan College of Geology, which was later renamed China University of Geosciences (Wuhan).



Figure 1. Hailiang Dong, 2025 GSA Day Medalist.

My major was mineralogy and petrology. I truly appreciated the rare opportunity to study on a college campus and spent most of my time in classrooms and libraries. Fascinated by the beautiful colors and amazing physical/chemical properties of minerals, I continued my master's degree at China University of Geosciences (Beijing) under the mentorship of mineralogist Zhaolu Pan, where I studied the spectroscopic properties of beryls and used heat treatment to improve their gem quality. In 1990, I was fortunate to meet a visiting professor from the University of Minnesota, Tibor Zoltai. During his week-long visit, I served as an English translator for his lectures and personal conversations. That unexpected experience opened my eyes and taught me the importance of communication and cultural exchange. Prof. Zoltai encouraged me to pursue a PhD in the U.S. After much consideration, I chose the University of Michigan for my PhD.

I arrived in the town of Ann Arbor in August 1992. It was a cultural shock for someone like me who had never travelled overseas. But I was pretty quick adapting to it, thanks to my prior communication skills. Academically, I was lucky enough to have three advisors: Don Peacor, Alex Halliday,



Figure 2. Water quality measurement during a visit to acid mine drainage near State College, Pennsylvania, USA, 2010, as part of the second China-U.S. geomicrobiology workshop.

and Chris Hall. Don introduced me to the field of clay mineralogy and the wonderful tool of transmission electron microscopy, an essential technique that I am still using today. At the same time, Chris and Alex introduced me to radiogenic isotope geochemistry, first on Rb/Sr and Sm/Nd isotopes, and subsequently on ^{40}Ar - ^{39}Ar dating of clay diagenesis. Again, I valued these rare opportunities and spent day and night in multiple labs. My first paper was published in *Science* in 1995, and in 1996, I was selected as a pre-doctoral fellow by the university. My PhD thesis was a good combination of all these research areas. It was not until 1996 that I went back to China for the first time to attend an International Geological Congress in Beijing. I only had a few days to see my parents after being away for four years, and felt the distance was indeed long.

Upon graduation from Michigan in 1997 and with five first-author papers, I was offered a postdoctoral position at Princeton University, initially to continue the ^{40}Ar - ^{39}Ar research. However, during this time, Tullis Onstott, my postdoctoral advisor, was transitioning to geomicrobiology. Inspired by brilliant colleagues around me, I quickly became immersed in this exciting new and multidisciplinary field. Through projects such as bacterial transport and mineral-microbe interactions, I had the good fortune of working with microbiologists, geochemists, and hydrologists, from whom I greatly expanded my knowledge base. But the transition from radiogenic isotope geochemistry to geomicrobiology was not that easy.



Figure 3. A field trip to Tengchong hot springs, sampling spring water and sediment, as well as performing in situ experiments in 2013, as part of the PIRE project.

In 2000, I accepted a faculty position at Miami University in Ohio and started my own research program. I was lucky to receive funding to acquire electron microscopes and to build molecular microbiology laboratories. My one-month visit to Pacific Northwest National Laboratory in the summer of 2001 was an eye-opening experience, as I not only established life-long relationships with top-notch scientists Jim Fredrickson, Ravi Kukkadapu, John Zachara, Chongxuan Liu, and others, but also learned essential techniques for studying mineral-microbe interactions and geomicrobiology.

In 2001, five years after my last trip, I made a second trip back to China. This time, I gave several lectures. That visit turned out to be fruitful as I re-established lost connections with my old classmates and colleagues. In the years following, I was invited to participate in a deep drilling project to look for microbes in high-pressure metamorphic rocks, a crazy idea at the time. With the help of my capable graduate students, along with meticulous lab work, we discovered microbes from deep rocks (down to a few kilometers) in 2005. Around that time, I started hosting visitors from China and other countries.

Those early experiences strongly convinced me of the importance of international exchange and collaboration to the development of science and friendship between the two great countries. In 2007, I developed an NSF proposal to hold workshops between the U.S. and China. In 2008, I organized the first successful geomicrobiology workshop in Beijing, with emphasis on microbial life in extreme environments, followed by a field trip to Tengchong hot springs in Yunnan Province. Inspired by the great success and enthusiastic response from attendees, we subsequently organized the second workshop in 2010 at Penn State University, the third in 2012 at China University of Geosciences (Wuhan), and the fourth in 2015 at Peking University. These workshops greatly promoted research collaborations between the two countries. Over the years, I have facilitated reciprocal visits of not only scientists but also program directors of the National Science Foundations of both countries. As a result, numerous joint projects have been initiated, including a decade-long project for a Partnership for International

Research and Education (PIRE) toward a holistic and global understanding of hot springs ecosystems. This project brought dozens of professors, postdocs, and students together to work in the same field and in the lab. These projects not only created academic collaborations and developed personal friendships but also promoted cultural exchange.

In the last 25 years, I have been extremely fortunate to have talented students and colleagues from both the U.S. and China who have allowed me to share the joy of their discoveries. It is through their work and enthusiasm that I developed diverse research interests, including mineral-microbe interactions, environmental remediation of organic and heavy contaminations, medical mineralogy, and life in extreme environments (subsurface, saline lakes, hot springs, desert). If there is a single most valuable thing in my career, it is the international friendship that I have helped to create and sustain.

In closing, I strongly believe that science has no borders and international collaboration is always fruitful, despite cultural challenges at times. It is a great honor for me to receive the Arthur L. Day Medal from the Geological Society of America. It is not only my personal honor, but also a recognition of all my former students, postdocs, colleagues, and visitors that I have hosted. It is their discoveries that made my academic career truly enjoyable.



The U.S. Geological Survey (USGS)
National Cooperative Geologic Mapping Program (NCGMP)
announces the 2026 winners of the
BEST STUDENT GEOLOGIC MAP COMPETITION



1st place: Terri Zach, University of Kentucky
2nd place: Terry Lee, University of Nevada, Reno
3rd place: David Canova, University of Barcelona

Many thanks to the **Association of American State Geologists**, who made this year's competition possible. Additional thanks to **GSA, GSA Foundation, AIPG, AGI, and Journal of Maps** for their continued sponsorship of the competition.

Check out the EDMAP website for updates on the next competition at GSA Connects 2026 in Denver, CO!



2025 Exceptional Reviewers

GSA appreciates the many people who make its peer-reviewed journals possible: the authors, science editors, editorial board members, associate editors, and most of all, the reviewers. Peer review of papers is the cornerstone of scientific publishing, but reviewing papers is all-too-often a thankless task. For all those who complete timely, thorough, and even-handed reviews, GSA thanks you. GSA's journal science editors have selected the following people for special recognition of the many prompt, insightful, meticulous, and tactful reviews they completed. (Photos of these reviewers are posted at https://www.geosociety.org/GSA/Publications/GSA/Pubs/exceptional_reviewers.aspx.)

GSA Bulletin

Benjamin Klein, University of Lausanne

Weimin Li, Jilin University

Chenyue Liang, Jilin University

Penglei Liu, China University of Geosciences (Wuhan)

Brandon Lutz, Appalachian State University

Chen Wu, Institute of Tibetan Plateau Research, Chinese Academy of Sciences

Jinlong Yao, Northwest University

Jianping Zhou, Ocean University of China



Geology

Gilby Jepson, University of Oklahoma

Francis A. Macdonald, University of California, Berkeley

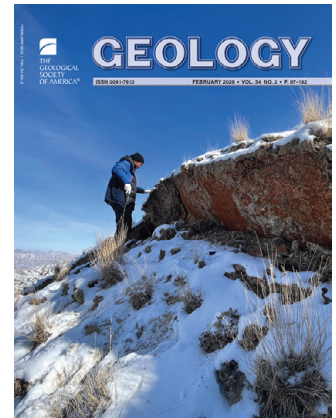
Matthijs Smit, University of British Columbia

Christopher J. Spencer, Queen's University

Erik A. Sperling, Stanford University

Douwe J. Van Hinsbergen, Utrecht University

Paul B. Wignall, University of Leeds



Geosphere

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Guihua Chen, Institute of Geology, China Earthquake Administration

Michael Eddy, Purdue University

Allen F. Glazner, University of North Carolina at Chapel Hill

Peng Guo, Institute of Geology, China Earthquake Administration

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Special Paper 563



The Virtue of Fieldwork in Volcanology, Sedimentology, Structural Geology, and Tectonics

Celebrating the Career of Cathy Busby

Edited by Nancy Riggs, Keith Putirka, and John Wakabayashi



The Virtue of Fieldwork in Volcanology, Sedimentology, Structural Geology, and Tectonics— Celebrating the Career of Cathy Busby

*Edited by Nancy Riggs, Keith Putirka,
and John Wakabayashi*

Cathy Busby was awarded GSA's Division of Mineralogy, Geochemistry, Petrology, and Volcanology Distinguished Geological Career Award in 2020. In 2022, the editors of this volume convened a session at the GSA Connects meeting to honor her and then encouraged session participants to contribute to this volume. The papers range in scope from petrology to facies analysis to sedimentation, and they span time from Permian to Holocene, and space from Mexico and California to Taiwan and Izu-Bonin. Many are focused on parts of the North American Cordillera, and they are ordered from north to south (from Lassen Peak, California, to Michoacán, México). Papers from the western Pacific Ocean follow these, and this final section also includes process and textural studies. All of the papers celebrate Busby's dedication to fieldwork as the foundation for geological studies.

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THE GEOLOGICAL SOCIETY
OF AMERICA®

Call for Nominations GSA Division Awards

CONTINENTAL SCIENTIFIC DRILLING DIVISION

Early Career Research Support Grants

Nominations due: 21 July

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

The Continental Scientific Drilling (CSD) Division of the Geological Society of America 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 USA 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: field-work-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: Scott Harris (HarrisS@cofc.edu) or 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 nongeoscientists 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>



KARST DIVISION

Karst Division Meritorious Contribution Award

Nominations due: 10 May

Submit to: awards.gsakarst@gmail.com; CC Josh Sebree, joshsebree@gmail.com

Awarded to the author of a published paper or body of work of distinction that has significantly influenced the intellectual direction of karst or broadly enhanced the knowledge of the discipline. If you are submitting a self-nomination, please include a letter of recommendation from a karst professional that can attest to your qualifications. Nominees do not need to be Karst Division members to be eligible for these awards, but it does add merit to the nomination.

More information: <https://geosociety.co/4paQWa7>

Karst Division Early Career Award

Nominations due: 10 May

Submit to: awards.gsakarst@gmail.com; CC Josh Sebree, joshsebree@gmail.com

Awarded to a distinguished scientist (35 or younger throughout the year in which the award is to be presented, or within 5 years of their highest degree or diploma) for outstanding achievement in contributing to the karst profession through original research and service, and for the demonstrated potential for continued excellence throughout their career. If you are submitting a self-nomination, please include a letter of recommendation from a karst professional that can attest to your qualifications. Nominees do not need to be Karst Division members to be eligible for these awards, but it does add merit to the nomination.

More information: <https://geosociety.co/4paQWa7>

Karst Division Distinguished Service Award

Nominations due: 10 May

Submit to: awards.gsakarst@gmail.com; CC Josh Sebree, joshsebree@gmail.com

Awarded as a highly esteemed award in recognition of distinguished personal service to the karst profession and to the Karst Division. If you are submitting a self-nomination, please include a letter of recommendation from a karst professional that can attest to your qualifications. Nominees do not need to be Karst Division members to be eligible for these awards, but it does add merit to the nomination.

More information: <https://geosociety.co/4paQWa7>

PLANETARY GEOLOGY DIVISION

The Pete Mouginis-Mark Prize in Planetary Volcanology Nominations due: 8 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, as well as 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>

Ronald Greeley Award for Distinguished Service

Nominations due: 15 August

Submit to: Lauren Jozwiak, Lauren.Jozwiak@jhuapl.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>

Eugene and Carolyn Shoemaker Impact Cratering Award

Nominations due: 4 September

Submit to: <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>

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>

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Call for GSA Leadership and Committee Service

Make an Impact—Volunteer!

Deadline: 15 June 2026

Terms begin: 1 July 2027
(unless otherwise indicated)

Nomination Portal:

<https://rock.geosociety.org/forms/viewopenpositions.asp>

GSA Headquarters Contact:

Darlene Williams,
+1-303-357-1060;
dwilliams@geosociety.org

Listed positions are open to all member types unless noted (e.g., Early Career, Professional, Teacher).

Self-nomination is preferred as it guarantees that the nominee is interested and willing and makes it easier to provide the requested information.

Further information about GSA can be found on the Who We Are page (https://www.geosociety.org/GSA/about/Who_We_Are).

Why Volunteer?

Serving on a GSA committee allows you to:

- Contribute to strengthening GSA
- Grow your professional network
- Gain skills and knowledge that enhance your career

Which GSA committees are you interested in?

“Serving on GSA committees has been a great way to meet highly motivated and dedicated scientists and staff. I would definitely recommend it to early career individuals who want to interact with the broader community.”

—Sarah George, Chair, Publications Committee

“Throughout my continuing career, GSA has always been my professional home. I started out volunteering at the Division level with the Hydrogeology Division. I served as Hydrogeology Division Treasurer for six years. That encouraged me to volunteer for the Research Grants Committee, which I did for three years. This volunteer assignment inspired me to set up an endowment fund with the GSA Foundation to provide research grants for graduate students doing environmental geochemistry research. I have been very active in proposing, organizing, and chairing many sessions at GSA meetings. I enjoyed my six years as GSA Editor for the journal Environmental and Engineering Geoscience. Recently, I’ve been serving as GSA Treasurer for the past three years. My responsibilities include serving on several committees (Audit, Finance, Investment, Council, Executive). It’s been a lot of work and meetings, but very rewarding to be able to provide input regarding the future of GSA in these difficult times for geoscientists.”

—Brian Katz, GSA Council, Treasurer

Committee, Section, and Division Volunteers:



Council Thanks You!

GSA Council acknowledges the many member-volunteers who, over the years, have contributed to the Society and to our science through involvement in the affairs of the GSA. Your time, talent, and expertise help build a solid and lasting Society.

B Meets in Boulder or elsewhere;
E Communicates electronically
M Meets at Connects ;
T Extensive time commitment required during application review period

GSA COUNCIL

**(2) Councilor (4-year term; E, M);
 President-Elect (3-year term; E, M)**

The GSA Council is the Society’s governing body, responsible for setting strategy, ensuring fiscal stewardship, and aligning programs with GSA’s mission and values. Council members play a pivotal leadership role in guiding the direction of geoscience and advancing the needs of our dynamic community. Requirements: Candidates with a geoscience background and experience in governance and financial oversight are highly valued. These qualifications support sound decision-making, strategic growth, and accountability across the Society. Time Commitment: The Council meets quarterly, primarily in a virtual format, with in-person meetings held at GSA Connects (the Society’s annual meeting). Members also serve on committees, Scientific Divisions, and task forces, where their expertise strengthens all aspects of the Society. Bring your leadership, insight, and strategic perspective to the GSA Council—your impact will be felt across the entire community.

ACADEMIC AND APPLIED GEOSCIENCE RELATIONS COMMITTEE

Member-at-Large, Industry (3-year term; E, M)

This committee is charged with strengthening and expanding relations between GSA members in applied and academic geosciences. As such, it proactively coordinates the Society’s effort to facilitate greater cooperation between academia, industry, and government geoscientists. **Qualifications:** Committee members must work in industry, or government and be committed to developing a better integration of applied and academic science in GSA meetings, publications, short courses, field trips, and education and outreach programs. Members must also be active in one or more GSA Divisions.

Professional Interests: Environmental and Engineering Geology, Hydrogeology, Karst, Quaternary Geology and Geomorphology, Structural Geology and Tectonics, Sedimentary Geology

ANNUAL PROGRAM COMMITTEE

**(2) Member-at-Large (4-year term; E, M);
 Member-at-Large, Student (2-year term; E, M)**

This committee is charged with developing a plan for increasing the quality of the annual and other society-sponsored meetings in terms of science, education, and outreach; evaluating the technical and scientific programs annually to identify modifications necessary for accomplishing the Society’s long-range goals; conducting short- and long-range planning for the Society meetings as a whole; and developing a long-term logistical plan/strategy for the technical programs of all GSA meetings and other Society-sponsored meetings. One member-at-large should have previous meeting experience.

ARTHUR L. DAY MEDAL AWARD

(2) Member-at-Large (3-year term; E, T)

This committee selects candidates for the Arthur L. Day Medal. **Qualifications:** Members should have knowledge of those who have made “distinct contributions to geologic knowledge through the application of physics and chemistry to the solution of geologic problems.” All the committee’s work will be accomplished during the months of February and March. All committee decisions must be made by 1 April.

BASCOM MAPPING AWARD COMMITTEE

Member-at-Large (3-year term; E, T)

This committee selects candidates for the Florence Bascom Geologic Mapping Award. This award acknowledges contributions in published high-quality geologic mapping that led the recipient to publish significant new scientific or economic-resource discoveries, and to contribute greater understanding of fundamental geologic processes and concepts. **Qualifications:** Members should be knowledgeable in the field of mapping.

DIVERSITY IN THE GEOSCIENCES COMMITTEE

(3) Member-at-Large (3-year term; E, M)

This committee provides advice and support to GSA Council, raises awareness, and initiates activities and programs that will increase opportunities for diverse groups in the geosciences, particularly in the dimensions of race, ethnicity, gender, and physical abilities. The committee is also charged with stimulating recruitment and promoting positive career development.

Qualifications: Members of this committee must have professional or experiential knowledge of issues relevant to the goals of the committee. GSA strongly encourages nominations of members who are from the communities for which this committee is expected to serve.

DORIS M. CURTIS OUTSTANDING WOMAN IN SCIENCE AWARD COMMITTEE **Member-at-Large (2-year term; E, T)**

The purpose of this committee is to generate, receive, and evaluate candidates for the Outstanding Woman in Science Award. The award was established as a means to encourage women in the geosciences. Women are eligible for the first five years following their degree.

Qualifications: Members should have the ability to assess the contributions of those women who have made a major impact in the geosciences based on their PhD work.

EDUCATION COMMITTEE **Four-Year College Faculty Representative (4-year term; B, E, M); Member-at-Large (4-year term; B, E, M); Graduate Student Representative (2-year term; E, M)**

This committee works with GSA members representing a wide range of education sectors to develop informal, pre-college (K–12), undergraduate, and graduate earth science education and outreach objectives and initiatives.

Qualifications: Members of this committee must have the ability to work with other interested scientific organizations and science teachers' groups.

GEOLOGY AND PUBLIC POLICY COMMITTEE **(2) Member-at-Large (3-year term; B, E, M)**

This committee provides advice on public policy matters to Council and GSA leadership by monitoring and assessing international, national, and regional science policy; formulating and recommending position statements; and sponsoring topical white papers. This committee also encourages active engagement in geoscience policy by GSA members.

Qualifications: Members should have experience with public policy issues involving the geosciences; ability to develop, disseminate, and translate information from the geologic sciences into useful forms for the public and for GSA members; and familiarity with appropriate techniques for the dissemination of information.

GSA INTERNATIONAL **Chair (4-year term; E, M); International IIG Chair (4-year term; E, M); Secretary (4-year term; E, M)**

GSA's coordination and communication resource seeking to promote, create, and enhance opportunities for international cooperation related to the scientific, educational, and outreach missions shared by GSA and like-minded professional societies, educational institutions, and government agencies. Build collaborative relationships with Divisions and Associated Societies in international issues and serve as a channel for member-generated proposals on international themes.

FELLOWSHIP COMMITTEE **Member-at-Large, Industry (3-year term; E, T)**

To serve a vital role in the review of GSA fellowship nominations and selection of newly elected Fellows, ensuring that the nomination process is thorough and inclusive, reflecting the diverse and global nature of the geosciences. Committee members will evaluate Society fellowship nominations with a comprehensive understanding of earth and related sciences. Assess nominations based on merits such as publications, applied research, teaching, administration of geological programs, contributing to the public awareness of geology, leadership of professional organizations, and editorial, bibliographic, and library activities. The Committee will also ensure the selection process is fair, transparent, and consistent with GSA's goals and values.

Qualifications: Members should have a well-rounded knowledge of earth and related sciences, including but not limited to publications, geoscience applications, and diversity and inclusion initiatives.

NOMINATIONS COMMITTEE **(2) Member-at-Large (3-year term; B, E, T)**

This committee recommends nominees to GSA Council for the positions of GSA Officers and Councilors, committee members, and Society

representatives to other permanent groups.

Qualifications: Members must be familiar with a broad range of well-known and highly respected geoscientists.

NORTH AMERICAN COMMISSION ON STRATIGRAPHIC NOMENCLATURE GSA Representative (3-year term; B, E)

This committee develops statements on stratigraphic principles, recommends procedures applicable to classification and nomenclature of stratigraphic and related units, reviews problems in classifying and naming stratigraphic and related units, and formulates expressions of judgment on these matters.

Qualifications: Members must be familiar with the fields of paleontology, biostratigraphy, and stratigraphy. Term commences 1 December 2026.

PENROSE CONFERENCES AND THOMPSON FIELD FORUMS COMMITTEE (2) Member-at-Large (3-year term; E); Member-at-Large, Early Career Professional (3-year term; E)

This committee reviews and approves Penrose Conference and Thompson Field Forum proposals and recommends and implements guidelines for the success of these meetings.

Qualifications: Committee members must be early career scientists or professionals.

PENROSE MEDAL AWARD COMMITTEE (2) Member-at-Large (3-year term; E, T)

Members of this committee select candidates for the Penrose Medal Award. Emphasis is placed on “eminent research in pure geology, which marks a major advance in the science of geology.” **Qualifications:** Members should be familiar with outstanding achievers in the geosciences worthy of consideration for the honor. All of the committee’s work will be accomplished during the months of February and March. All committee decisions must be made by 1 April.

PROFESSIONAL DEVELOPMENT COMMITTEE Member-at-Large (3-year term; E)

This committee directs, advises, and monitors GSA’s professional development program; reviews and approves proposals; recommends and implements guideline changes; and monitors

the scientific quality of courses offered.

Qualifications: Members must be familiar with professional development programs or have adult education teaching experience.

PUBLICATIONS COMMITTEE Member-at-Large (4-year term; E, M)

The primary responsibilities of the committee are nominating candidates for editors when positions become vacant, reviewing the quality and health of each Society publication, and presenting an annual report to Council that shall include recommendations for changes in page charges, subsidies, or any other publishing matter on which Council must make a decision. To carry out this charge, headquarters will provide the committee with all necessary financial information.

RESEARCH GRANTS COMMITTEE (15) Member-at-Large (3-year term; T)

The primary function of this committee is to evaluate approximately 800 graduate student research grant applications and award specific grants to chosen recipients, including some named grants supported by funds within the GSA Foundation.

Qualifications: Members may come from any sector (academia, government, industry, etc.) and should have experience in directing research projects and in evaluating research grant applications. GSA strongly encourages nominations of geoscientists from diverse backgrounds and institutions, particularly from minority serving institutions. Extensive time commitment required 15 February–15 April; each member reviews approximately 20 applications.

More Information: www.geosociety.org/gradgrants

YOUNG SCIENTIST AWARD (DONATH MEDAL) COMMITTEE Member-at-Large (3-year term; E, T)

Committee members investigate the achievements of young scientists who should be considered for this award and make recommendations to GSA Council.

Qualifications: Members should have knowledge of young scientists with “outstanding achievement(s) in contributing to geologic knowledge through original research which marks a major advance in the earth sciences.” All the committee’s work will be accomplished during the months of February and March. All committee decisions must be made by 1 April.



Generosity Moves Mountains: How GSA Donors Are Shaping Geoscience for Generations

Geoscientists have rare perspectives on time. The field encourages deep reflection about change, permanence, and how beauty emerges from both cataclysm and endurance.

Of course, geoscientists are also driven to delve beyond surface beauty. Rather than merely encountering the terrains and waterways that surround us, they seek to understand the forces that led to their creation—how the past shapes the present, how geoscience processes drive vast transformations over time, and what this means for the future. Many geologists want to leave legacies that empower the next generation of geoscience students, professionals, and enthusiasts to continue this work.

This month, the GSA Foundation highlights some GSA community members who made such commitments. They established new endowments in 2025 and 2026 aligned with their geoscience passions and designed with an eye to the future. These awards will have a deep impact over time. Year after year, they will spur new findings, recognize outstanding geoscientists, and support the next generation of investigators.

After a long career as a scholar and administrator, most recently at Texas A&M University, Dr. John “Jack” Vitek created the John D. Vitek Periglacial and Alpine Geomorphology Award in early 2026. This fund finances graduate student research or field activities of periglacial and alpine geomorphology within the Quaternary Geology and Geomorphology Division (QG&G).

He says, “I gave to GSA and the GSA Foundation because I trust them. I’ve worked at different universities over the years, and I didn’t want to give to a college where I wasn’t sure how my gift would be

used. With GSA, I know my research interests will be furthered and that students will be supported in doing the kind of work I care about. The people in charge of QG&G will change, but they all share the same values. The bottom line is, they’re there for students—helping them learn how to develop and defend a finished project. Students need resources like this to further their research and potentially expand it beyond what they originally envisioned. This award will give students an opportunity they might not find anywhere else.”

Dr. Ben van der Pluijm, Professor Emeritus at the University of Michigan and GSA Foundation Treasurer, created the Ben van der Pluijm Graduate Student Research Grant Award in late 2025 to further graduate student research in the fields of structural geology and tectonics.

Ben says, “I received a GSA research grant in 1981 for my first field summer working on the structure of New World Island in the Newfoundland Appalachians. That early encouragement made a lasting impression on my subsequent professional career, during which I mentored about 40 students, most of whom received their own GSA graduate research grants. In that spirit, I initiated the Ben van der Pluijm Graduate Student Research Fund to continue giving back to subsequent generations.”



Figure 1. Norway’s Svalbard Coast, taken and provided by Jack Vitek.



Figure 2. Ben van der Pluijm in Patagonia.

As long as there are geoscientists—exploring far-flung terrains, analyzing results, and letting the world know how the world works—we will strive to ensure that GSA is there for them. We raise funds to support research, share discoveries, honor excellence, and sustain an inclusive, dedicated GSA community.

All donations make a difference.

Scan the QR code to donate now, or contact GSA Foundation Executive Director Sean O’Brien, PhD, at sean.obrien@gsa-foundation.org to discuss how you can plan an enduring geoscience legacy. Thank you for being part of this tradition.

Gifts to the GSA Foundation are fully tax-deductible under U.S. law.

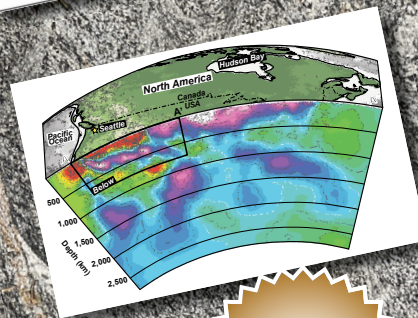
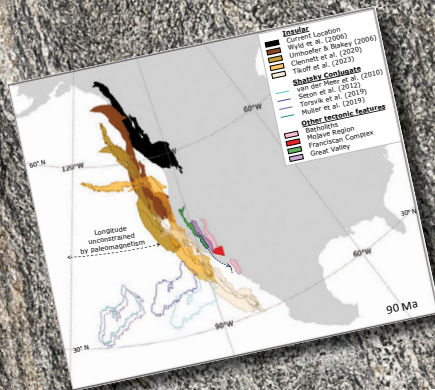
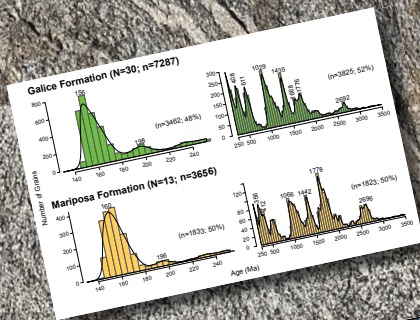


Special Paper 565



Jurassic–Paleogene Tectonic Evolution of the North American Cordillera

Edited by Stacia M. Gordon, Robert B. Miller, Margaret E. Rusmore, and Basil Tikoff



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Jurassic–Paleogene Tectonic Evolution of the North American Cordillera

Edited by Stacia M. Gordon, Robert B. Miller,
Margaret E. Rusmore, and Basil Tikoff

This volume contains recent data and models pertaining to the Jurassic–Paleogene tectonic evolution of the North American Cordillera. It provides open discussion of a range of tectonic models, such as oblique convergence and terrane translation, flat-slab subduction, native versus allochthonous arcs, and the new data that support and/or refute them. The chapters reflect the diversity of scientists addressing the complex tectonic history of the North American Cordillera using a variety of methods (e.g., tomography to field geology) that are applied to either the entire system or specific locations from Alaska to Mexico.

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