Geoscience Driving Innovation

Annual Report 2024
American Geosciences Institute

K. Aaron, Newark Center for Creative Learning

The American Geosciences Institute represents and serves the geoscience community by providing collaborative leadership and information to connect Earth, science, and people.

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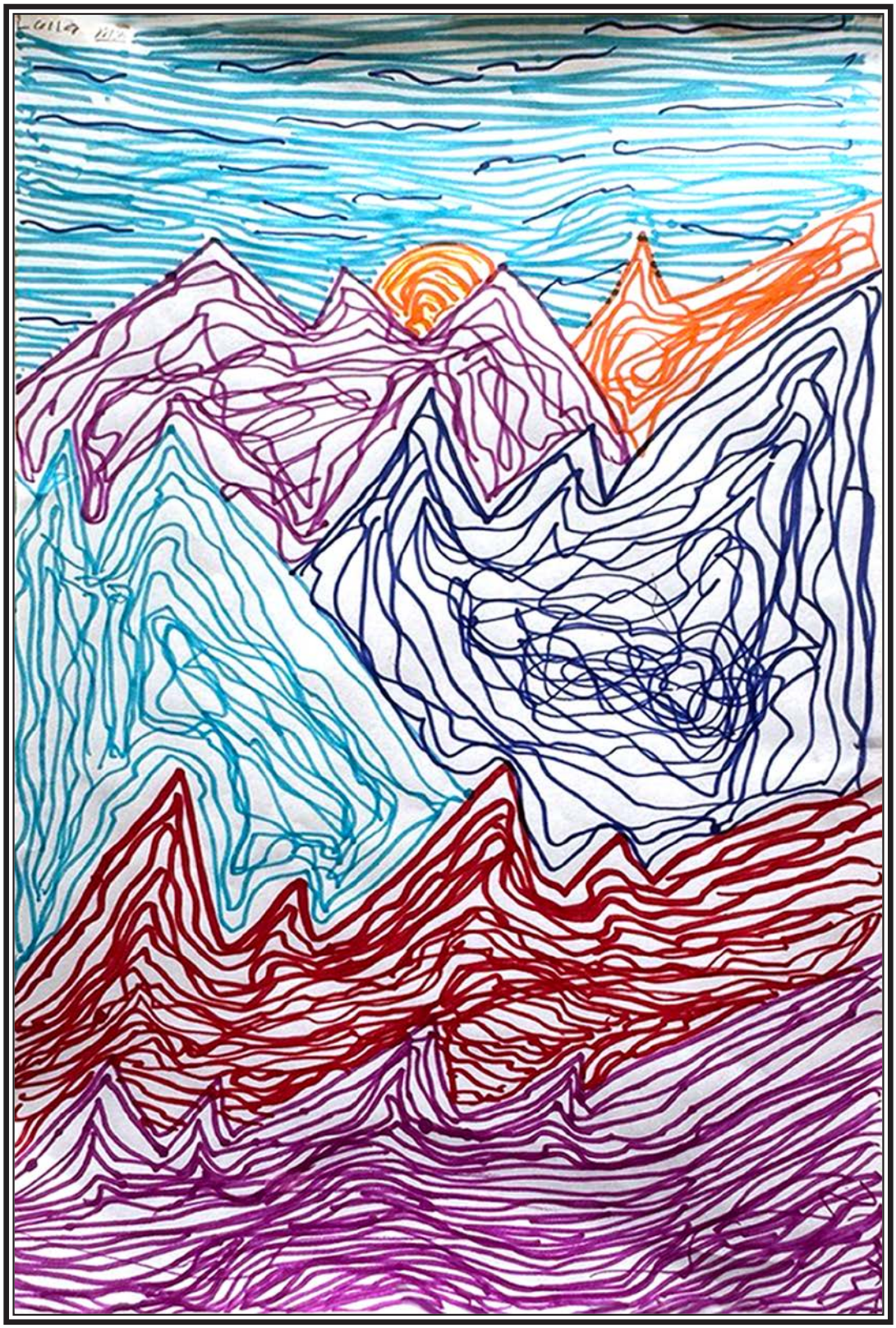
connecting earth, science, and people



Credit: Laila Martinez, for the 2024 ESW Visual Arts Contest

LETTER TO OUR VALUED STAKEHOLDERS

Meeting tomorrow's challenges requires innovation grounded in the knowledge, skills, and expertise of geoscientists today. Through collaborative leadership provided by the American Geosciences Institute (AGI), this important work continues as we work closely with partners across the geoscience community to innovate in areas ranging from education and research to workforce and professional development in 2024.

AGI continually enacts its mission to represent and serve the geoscience community through collaboration and providing information to connect Earth, science, and people. This work is vitally important today, perhaps now more than ever. Earth scientists across disciplines advance the discovery, development, and sustainable use of energy, mineral, and water resources. They track climate change and its effects on ecosystems and human well-being, establish environmental baselines, and monitor the health of the atmosphere, land, soil, rivers, and oceans. They also identify and help mitigate natural hazards, while advancing processes to manage the impacts of resource development and waste disposal.

The AGI team advanced innovative programs, publications, and other offerings in partnership with affiliated geoscience societies, government agencies, corporate partners, and higher education institutions during the past fiscal year. We forged these forward-looking solutions from October 2023 through September 2024:

- Continued the National Science Foundation-funded **GRANDE (Geoscience Program Adaptation to Natural Disruptive Events)** study (Award #2223004), which aims to identify institutional best practices in response to and while recovering from natural disasters, through surveys, oral histories, and focus groups, and we launched an innovative data-collection tool, the **Natural Hazards Impact on Job Choice Game**.

- Established, in cooperation with the **Natural Resources Conservation Service**, programs for **Soil Science Workshops and Teacher Field Experience** to enhance secondary educators' understanding of soil science and its ecosystem significance through immersive, hands-on field experiences.

- Expanded AGI's **GeoRef** global bibliographic database of the geoscience literature, including the **GeoRef Serials List** and **Open-Access Journals/Series**, which connects researchers and students with up-to-date scholarly information in over 40 languages.

- Updated **Education GeoSource**, a database that allows geoscience educators to search thousands of free, credible, and accurate resources from a variety of organizations, including curricula, classroom activities, professional development, science education standards, and virtual field trips.

- Expanded AGI's **Geoscience for Sustainability** initiative through a growing collection of projects and programs, including the sustainability-relevant **Earth Science Week Webinar Series**, the online **Geoscience Career Explorer** tool, and a **GeoRef** "tagging" feature that connects researchers and students with geoscientific data relating to sustainable development.

- Developed AGI's ***Critical Needs: Geosciences Meeting the Needs of the Nation*** document series with input from top geoscientists to inform government leaders about the myriad ways that the geosciences support policy solutions to meet society's needs, framed in terms policymakers readily understand.

- Provided U.S.-based members of AGI Member Societies with free access to geoscience communication training, thanks to continued support from the **American Association of Petroleum Geologists Foundation** and the **Society of Exploration Geophysicists**, attracting 1,535 new enrollments. The acclaimed **Practical Geocommunication** course is produced by **Geologize LTD**.

- Supported emerging geoscience students professionals through the **William L. Fisher Congressional Geoscience Fellowship**, AGI Scholarship for Advancing Diversity in the Geoscience Profession, and Harriet Evelyn Wallace Scholarship for Women Geoscience Graduate Students.

- Welcomed the **SGEM World Science (SWS) Scholarly Society**, a nonprofit organization that provides a platform where science meets art, into the AGI federation of geoscience organizations as an International Associate.

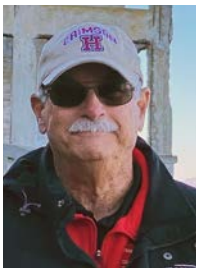
- Engaged, informed, and supported the geoscience community at events across the country and around the world, including the **37th International Geological Congress 2024** held in Busan, Republic of Korea, where member and partner organizations — **Association for Women Geoscientists**, **GeoScienceWorld**, **History of Earth Science Society**, **International Raw Materials Observatory**, and **SEPM (Society for Sedimentary Geology)** — collaborated with AGI to exhibit and network.

These are just a few examples of our work in 2024. Using geoscience to address important global challenges, these efforts likewise strengthen geoscience itself, demonstrating the relevance, practical applications, and indispensable value of geoscientists' work in the 21st century. We ask that you join us in the coming year in our ongoing efforts to ensure that geoscience drives the innovations necessary for all of us to live prosperous, healthy lives in a sustainable relationship with Earth's dynamic systems.

Anna C. Shaughnessy
AGI President

Jonathan Arthur, Ph.D.
Executive Director

CHEERS



"SEPM is a small- to middle-sized society and as such cannot take on as many activities as our membership would like. Being a member of AGI makes a great fit for us to support their work in areas such as K–12 education, work on the Hill, public education, and other large-scale areas that fall outside of our focus area on sedimentary research. Additionally, having meetings both online and in person with other AGI member organizations greatly enhances the exchange of ideas and often leads to the creation of joint initiatives with one or more of the other AGI members."

— Howard Harper, Executive Director, SEPM (Society for Sedimentary Geology)

"AGI understands the assignment. Misinformation and disinformation in the social media era are threats to the integrity of science. Scientists and their organizations cannot sit on the sidelines. Otherwise, people will fill voids that we leave behind with agendas and opinion. I am grateful to see AGI prosper and engage."

— J. Marshall Shepherd, Associate Dean for Research, Scholarship, and Partnership, University of Georgia

"As a founding member of GeoScienceWorld, AGI is a valued partner and helped advance our mission, contributing to our success over the past 20 years. Researchers the world over use our tools and resources together to tackle immense global challenges and to deliver new insights about our planet and beyond. We deeply value the work they do for our global community and for advancing geoscience research."

— Angie Anderson, Director of Society Services and Partnerships, GeoScienceWorld

Portrait credits: Jonathan Arthur: AGI/Geoff Camphire; J. Marshall Shepherd: Nancy Evelyn. All portraits appear courtesy of pictured individuals.

AGI BY THE NUMBERS

3,700+ Resources curated and provided in AGI's **Education GeoSource**, an interactive database promoting the distribution of geoscience education resources.

70+ Organizations that collaborated with AGI on **Earth Science Week** and other Education and Outreach programs.

500+ Submissions from over 10 countries to the **Earth Science Week Contests**, including essay, video, visual arts, and photography categories.

4,700,000+ References made available in the **GeoRef** bibliographic database and the GeoRef in Process database, with more than 2,000 subscribing institutions around the world.

32 Presentations made by AGI staff at professional geoscience conferences.

522 Active learners benefiting from the 39 professional development courses available through AGI's **Geoscience Online Learning Initiative** (GOLI) platform, with 217 CEU (Continuing Education Unit) certificates issued.

31 Webinars conducted for the geoscience community about topics ranging from seafloor mapping and field safety training to geoscience graduate education and skills required for geoscience employment.

1,535 New enrollments in the acclaimed **Practical Geocommunication** course, offered free to U.S.-based members of AGI Member Societies, from October 2023 to September 2024.

239,260 National Science Foundation Award project descriptions analyzed using in-house AI systems as part of AGI's **GRANDE (Geoscience Program Adaptation to Natural Disruptive Events)** study, funded by the National Science Foundation (Award #2223004), to identify funded projects between 2000–2020 that involved natural hazards and related disruptions.

149 Geoscience leaders, representing nearly all AGI Member Societies, attending the past year's six assemblies of the Geoscience Caucus, a forum for organization leaders to discuss challenges and solutions within the geoscience enterprise.

Credit: AGI/Brenna Tobler

AGI LEADERSHIP FORUM ANTICIPATES FUTURE NEEDS

Evolving demands on the geoscience profession are changing knowledge and skill requirements, leading dozens of geoscience leaders to discuss "The 21st Century Geoscientist" during the AGI Leadership Forum conducted virtually on March 28, 2024. Presentations and conversations probed the nature of geoscientists' work today, covering a wide range of topics including skills, accessibility, diversity, non-traditional students, non-academic careers, and recent changes in geoscience in higher education.

"Today's geoscientist is focused on the Earth as a whole and the application of geoscience across disciplines," said AGI President Keri Nutter. "The 21st century geoscientist desires to make an impact to help society and the environment." The Leadership Forum is hosted annually by AGI as a means of exploring challenges, sharing information, and strengthening collaborative leadership within the AGI federation.

Artwork by Arian Zamora for the 2024 ESW Visual Arts Contest

NEW FEDERATION MEMBER

AGI welcomed the **SGEM World Science (SWS) Scholarly Society** into its community of geoscience organizations as an International Associate organization in May 2024. The society, which is based in Vienna, Austria, is a nonprofit organization that endeavors to create a dynamic, vibrant platform where science meets art.

SGEM WORLD SCIENCE
AUSTRIA

SWS Scholarly Society fosters interdisciplinary collaboration, knowledge exchange, and innovation among scientists, researchers, artists, and others who collaborate on projects that address pressing global challenges. With the admission of this new International Associate, the **AGI Federation** in 2024 included 48 Member Societies, four International Associates, three Regional Associates, one Trade Associate, and 11 Liaison Organizations.

Credits above: top: AGI/Midjourney; bottom: ©Getty Images/Unya MT. SGEM World Science logo courtesy of SGEM

AGI BRINGS GEOSCIENCE TO EARTH DAY 2024

AGI invited students, educators, geoscience professionals, and others to participate in an unprecedented Earth Day Webinar — illuminating important connections between geoscience and stewardship of the planet — on April 19, 2024. Titled "Breaking Down Microplastics," the free webinar provided insights into the challenges and solutions surrounding plastic pollution. Aimed at the public and educators, the webinar featured timely talks:

- "Kicking Off Earth Day 2024: Planet vs. Plastics," by Aidan Charron, End Plastics Initiative.
- "Plastic in the Ocean: What We Do and Do Not Know," by Dr. Maia McGuire, University of Florida.
- "Fate and Transport of Microplastics in the Subsurface and Groundwater," by Dr. Melissa Lenczewski, Northern Illinois University.
- "California's Adaptive Risk Management of Microplastics in Aquatic Ecosystems and Drinking Water," by Dr. Scott Coffin, California State Water Resources Control Board.
- "Moving from Monitoring to Advocacy: Reducing Single Use Promotes Prevention," by Dr. Shannon Gowans and Dr. Amy Suida, Eckerd College.
- "Ferrofluid: Revolutionizing the Battle Against Plastic Pollution," by Toby Leng, student, winning submission for the 2023 Earth Science Week Video Contest.

The webinar included presentations and a pre-recorded panel discussion. During the premiere, presenters engaged online with the audience, answering questions and participating in discussions in the chat. A recording of **Breaking Down Microplastics** is available online.

JOINT STATEMENT FOR EARTH DAY

To highlight the vital role that geoscience knowledge plays in fostering action toward sustainability, AGI joined the American Geophysical Union and 17 additional global partners in issuing a joint Earth Day 2024 statement:

As we celebrate Earth Day, our geoscience communities will continue to promote the conscientious applications of science and find innovative solutions that support sustainable human activities, including our own diverse work and across all sectors of society. The Global Earth Day 2024 theme, "Planet versus Plastics," reminds us that the products we use and the actions we take have significant impacts on the interconnected systems that make up our planet. Geoscience provides information that can guide our decisions in ways that support responsible, deliberate, and more sustainable uses of resources.

To this joint statement, AGI added:

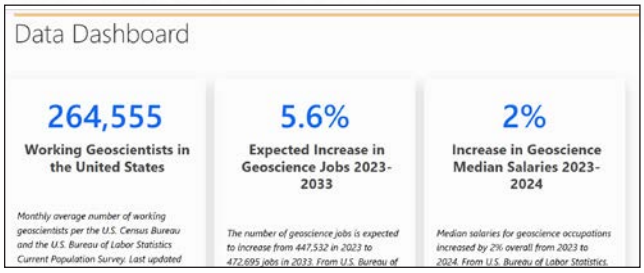
The American Geosciences Institute supports Earth Day as an important opportunity to raise geoscience awareness, which is also supported through Earth Science Week (October 13–19, 2024) and its theme of "Earth Science Everywhere."

In an AGI workshop at the spring 2024 NSTA meeting in Denver, teachers try a "Plastics in the Water Column" activity that demonstrates Sustainable Development Goal 12: Responsible consumption and production.
Photo credit: L. Mossa, AGI

Credit: ©iStock/JH Grigg

STRENGTHENING THE GEOSCIENCE PROFESSION AND HIGHER EDUCATION

- Launched its **Geoscience Workforce Data Dashboard** to provide a one-stop location for the key metrics of the geoscience enterprise. From tracking employment of geoscientists to the dynamics of academia, including enrollments, degrees, and faculty, the dashboard is the entry point into the rich data about the geosciences measured by the AGI Geoscience Profession and Higher Education Program.



- Continued the **GRANDE (Geoscience Program Adaptation to Natural Disruptive Events)** study, funded by the National Science Foundation (Award #2223004), which identifies best practices for U.S. geoscience academic institutions and organizations in responding to and recovering from natural disasters, by introducing the innovative and educational **Natural Hazards Impact on Job Choice Game**, to explore how individuals assess natural hazard risks when deciding where to live and work. The results of the game, which simulates real-life job scenarios, highlight factors influencing job acceptance and help illuminate whether geoscientists have a higher level of risk awareness and tolerance compared to non-geoscientists.

- Unveiled results of the **GRANDE study's fast-response survey** to help show how the geoscience community addresses natural hazards to enhance education and research, exploring themes such as interdisciplinary collaboration, technological integration in education and research, the necessity of effective communication, and the pressing need for geoscientific knowledge to inform societal decisions. The results underscore geoscience's evolving role in tackling challenges like climate change, resource scarcity, and natural hazards while emphasizing the need for greater public engagement and alignment with global sustainability priorities.

- Continued collaborating with the **American Geophysical Union** (AGU) on the AGU/AGI Heads and Chairs program, which brings together geoscience chairs monthly for webinars and discussion sessions hosted by AGI on issues critical to the success of geoscience programs around the United States. In addition, AGI participates in the annual in-person Heads and Chairs meeting at the AGU Annual meeting.

GRANDE graphic credit: AGI/Brenna Tobler; section from Geoscience Workforce Data Dashboard: AGI

Credit: Courtesy of the Jackson School of Geosciences, University of Texas at Austin

GRADUATE EDUCATION SPURS 'VISION AND CHANGE'

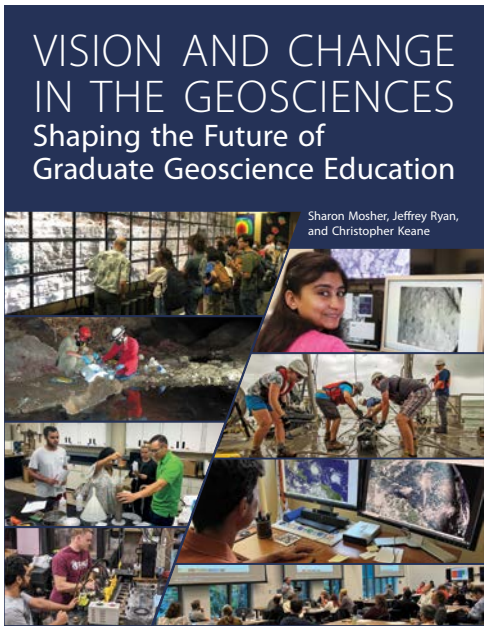
Vision and Change in the Geosciences: Shaping the Future of Graduate Geoscience Education, a landmark report published in late 2023, highlighted the promise of a bright tomorrow for higher-education geoscience programs that adapt effectively to evolving needs. By 2024, some departments already were realizing that promise by tapping into the report's recommended strategies for transformative change in geoscience graduate education, including earth, ocean, and atmospheric sciences.

"Perhaps one of the most adopted changes by graduate programs is the use of IDPs — Individual Development Plans — where graduate students with help from their advisors or mentors define a plan to guide their progress towards developing the skills and competencies needed for their preferred future careers," said Dr. Sharon Mosher, now retired from the **Jackson School of Geosciences, University of Texas at Austin** and the principal investigator of the project.

The report encompasses the efforts of more than 300 geoscientists in the academic and employer communities who worked together to develop a shared vision for the future of geoscience graduate education. A range of challenges and issues are addressed in the report, including the skills and competencies needed for graduate students to be successful in the workforce, the best means of developing these skills and competencies in graduate programs nationally, and the implementation strategies that leaders can use to integrate these skills and competencies into graduate programs.

"Graduate programs overall have not kept up with the changes needed to prepare geoscientists to address global and societal geoscience-related challenges," said Mosher. "This report not only discusses the skills and competencies needed and how to implement them into graduate education, but also how to better mentor students, interact with external stakeholders, and create transformative change."

The **report website**, supported by funding from the National Science Foundation (Award ICER 1740844), features full text and a freely downloadable PDF version, plus a collection of recommendations to academic departments and references to works cited in the report.



Vision and Change cover credit: AGI/Brenna Tobler

Credit: L. Brase, AGI

IMPROVING EARTH SCIENCE EDUCATION AND OUTREACH

- Established the **Soil Science Workshop** program in collaboration with the **Natural Resources Conservation Service** (NRCS), engaging middle and high school teachers in field work with soil science experts and exploring practical techniques that can be adapted in teaching strategies. The workshop is designed to deepen educators' understanding of soil science and integrate those insights into the curriculum in alignment with science standards.

- Launched the **Teacher Field Experience** program, funded by the **Foundation of the American Institute of Professional Geologists**, to enable educators to work with NRCS scientists and explore the critical role of soil in maintaining Earth's systems through activities including soil sampling at a field site, soil health analyses, and discussions on connecting soil science to secondary education. Following these experiences, teachers develop curriculum materials to bring their newfound knowledge into the classroom.

- Conducted in partnership with ExxonMobil the 2024 Geoscience and STEM Teaching and Learning Academy (TLA), a program designed to support K–8 educators new to teaching earth sciences by providing hands-on, interactive professional development. The **Elementary School Level TLA** and **Middle School Level TLA**, held in Denver in July 2024, provided tailored sessions for grades K–4 and grades 5–8 educators respectively, ongoing webinar support, and financial assistance, aiming to empower teachers with knowledge, tools, and a professional network to inspire students and excel in their careers.

- Advanced **geoscience education innovation for sustainable development** in several ways (see also "Advances in Geoscience for Sustainability' on **page 15**), including through the June 2024 **Fulbright Specialist** assignment of Dr. Ed Robeck, AGI's Director of Education and Outreach. At the invitation of Asia Pacific University of Technology and Innovation in Malaysia, he traveled to Kuala Lumpur to share expertise on integrating United Nations Sustainable Development Goals (SDGs) into earth science instruction through teaching, curriculum design, and collaboration with Malaysian educators and officials.

Credits: above left: L. Brase, AGI; above right: L. Mossa, AGI

Credit: Tim Fulton, IODP JRSO

IODP PARTNERSHIP BOOSTS EARTH SCIENCE EDUCATION

AGI has forged a powerful educational partnership with the **International Ocean Discovery Program** (IODP), an international marine research effort that collects cores from the sea and runs the School of Rock (SOR) program, which has enabled educators to enrich their practice while living on the scientific drilling vessel *JOIDES Resolution* (JR). In fact, AGI Education and Outreach Department staff voyaged to sea in 2024 with teachers, scientists, and crew of the JR during an SOR session designed to undertake reviews and revisions of several of the more than 100 geoscience lessons generated for earth science educators.

Emphasizing the use of real-world data from sub-seafloor cores collected on the JR to explore earth science concepts and careers, these lessons address questions about fundamental geoscience topics such as plate tectonics, climate change, natural hazards, asteroid impacts, and the diversity of life forms found in Earth's oceans. "To really address such questions, we have to have data that help us travel back through time to those periods in early Earth history to reconstruct conditions, processes, and events underlying these ideas," said AGI Education and Outreach Director Ed Robeck.

"IODP has been generating lessons using scientific ocean data for 20 years, and over time some of those lessons have gotten out of date," said Sharon Cooper, one of the leaders of the Education and Outreach team at IODP. "We realized that we needed to update those lessons, but we just didn't have the capacity in-house. So we've partnered with Ed and his team, who are taking the lead on revising some of these activities."

A major part of the work is revising lessons to provide alignment with the **Next Generation Science Standards** (NGSS) as well as for consistency, scientific accuracy, up-to-date pedagogy, and effectiveness. Available on the JR website's **For Educators** page are numerous education activities and additional resources. The **Cores for Kids** activity, for example, enables students to look at data from drill-core samples to explore sediment types, microfossils, and what they tell us about Earth's history.

The JR, retired in 2024, was one of just a handful of vessels designed specifically to drill into the ocean floor for scientific research. Drill cores recovered from the ocean floor for scientific research can also be used by educators and students to look back in time and uncover secrets from Earth's past. In an **NGSS Earth and Space Science Working Group webinar**, participants learned how to incorporate free JR resources including lessons, slides, videos, and more into their curricula to make science more real for their students. "It's amazing to work with AGI, because the team has great connections, background, and expertise," said Cooper.

Credit above right: L. Mossa, AGI

Credit: AGI/Midjourney

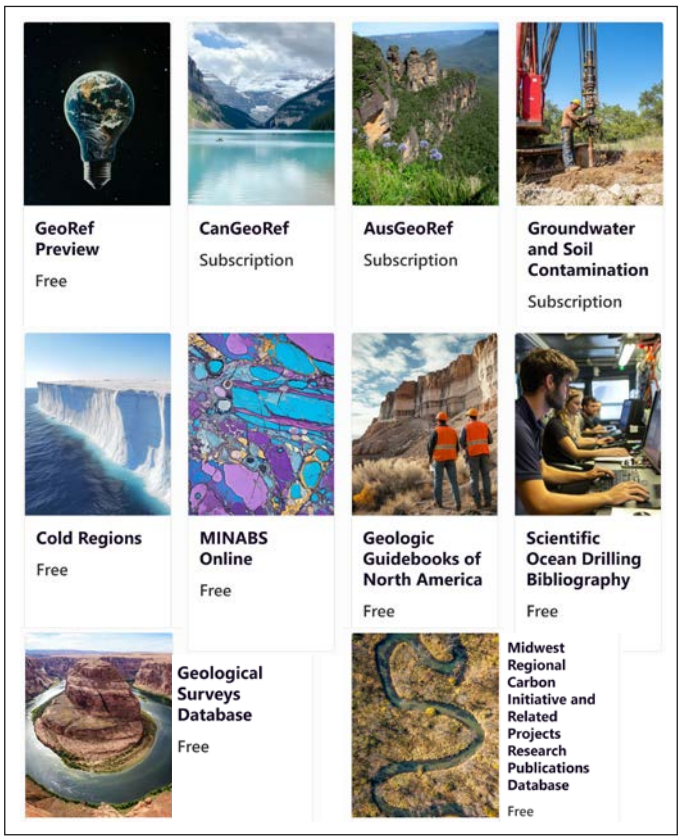
ADVANCING SCHOLARLY INFORMATION IN THE GEOSCIENCES

- Increased the offerings of **GeoRef**, the primary bibliographic database of the geoscience literature, to nearly 4.8 million references to publications in more than 60 languages and published in more than 140 countries, with over 2,000 geoscience organization subscribers worldwide, including academic institutions, government agencies, and industry.

- Added 68 new series to the **GeoRef Serials List**, which now exceeds 26,000 publications. Of the new additions, 62 percent are open-access.

- Added 84 titles to AGI's collection of **Open-Access Journals/Series**, including both new series as well as older series that recently have become open-access. Among these are 19 geological journals, 55 related-disciplines publications, and eight geological survey series.

- Continued updates within AGI's 10 **Online Database Products**, which provide discoverability of the literature on a host of special topics.



GeoRef logo and database webpages credits: AGI

Credit: Khyber Jones & IODP

SCIENTIFIC OCEAN DRILLING DATABASE MAKES IMPACT

Collaborating with the **International Ocean Discovery Program** (IODP), AGI's **Scientific Ocean Drilling Bibliographic Database** empowers researchers, students, and others to search bibliographic records from IODP, **Deep Sea Drilling Project**, **Ocean Drilling Program**, and **Integrated Ocean Drilling Program** research spanning from 1969 to the present, as well as additional sources. While the database is a valuable resource for users, it has proved vital to partners such as IODP.

"The Scientific Ocean Drilling Bibliographic Database has been essential to IODP and its predecessor programs in making program-related publications easily accessible," said IODP Editor and Report Coordinator Ginny Lowe. "The IODP Publications Department participated in reviewing and testing the database when it was revamped in 2016 and had considerable input into its final appearance and content. IODP regularly sends requests to AGI with lists of program-related publications that are not yet available in the database and also supplements IODP program publication records with keywords, providing another search mechanism."

The partnership, Lowe added, helps IODP serve its constituency. "The database is used by IODP member organizations who need program-related citation information for their annual reports, and IODP scientists have used the database to generate publication lists for various purposes," said Lowe.

In addition, she continued, IODP Publications exported content from the database in 2022 to populate the new IODP EndNote library, which is used to generate reference lists for program publications. Content from the Scientific Ocean Drilling Bibliographic Database is useful in documenting the impact of IODP through expedition-related book chapters, journal articles, theses, and conference abstracts.

The success of the database stems from its broad reach and continual upkeep. While roughly 30 percent of the database's bibliographic records come from publications produced by IODP and its predecessors listed above, about 70 percent are from products such as serial publications, abstracts, conference proceedings, and maps. The database, hosted by AGI, is updated weekly from entries made to the **GeoRef** database.

Credits: above left: Renata G. Lucchi & IODP; above right: Jens Gruetzner & IODP

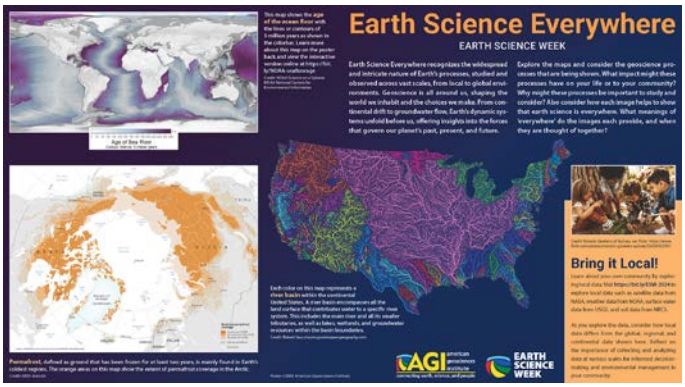
Credit: Kathy Yang, for the 2024 ESW Photography Contest

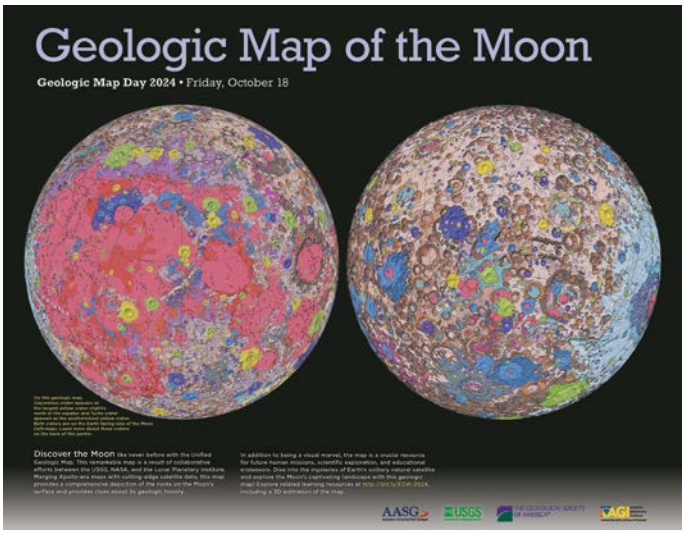
EARTH SCIENCE WEEK EXPLORES 'EARTH SCIENCE EVERYWHERE'

- Collaborated with dozens of partner organizations for the 27th annual Earth Science Week, celebrating the theme of "**Earth Science Everywhere**" and exploring how geoscience impacts daily life, from buildings and transportation to understanding environmental changes. Materials, resources, and activities highlighted interdisciplinary connections across STEM, humanities, and the economy to raise global awareness of geoscience's critical role in addressing societal and planetary challenges.

- Invited geoscience students, educators, and enthusiasts to participate in the **Earth Science Week 2024 Webinar Series**, featuring five information-packed sessions on Earth observation for sustainability, plastic pollution, geologic mapping of craters, polar region dynamics, and regenerative agriculture. Speakers offered insights, expert discussions, and classroom resources to highlight ways that geoscience is meeting global challenges and fostering sustainability.

- Provided a host of original **educational resources** including the 2024 Earth Science Week Poster (**front**/**back**), the Geologic Map Day Poster (**front**/**back**), **Calendar Activities**, and many additional materials.





2024 Earth Science Week and Geologic Map Day posters by AGI

Credit: AGI/Midjourney

ENRICHING POLICY WITH GEOSCIENCE EXPERTISE

- Researched and drafted, in cooperation with federation members, the six-part ***Critical Needs: Geosciences Meeting the Needs of the Nation,*** which details how geoscience expertise can support solutions for our nation's most urgent challenges, framing issues in terms that policymakers frequently address, including the economy, infrastructure, innovation, national security, public safety, and diplomacy. The draft developed in 2024 (and released online in January 2025) includes exemplars of geoscience connections to policy challenges, case studies, related National Academy of Sciences reports, examples of relevant policy, and nonprofit organizations providing non-partisan expertise.

- Named Natasha Dacic, who earned her Ph.D. in Climate and Space Sciences and Engineering in 2024 at the University of Michigan, as the 2024–2025 recipient of the **William L. Fisher Congressional Geoscience Fellowship,** which has enabled Dacic to work as a legislative fellow in the office of Senator Martin Heinrich, concentrating on issues pertaining to natural resources and conservation.

- Participated in development of ***The World of Raw Materials 2050*** scenarios — entailing implications for society, technology, economy, and policy across a range of future scenarios — with the **International Raw Materials Observatory** and **SAFE**.

Critical Needs publications covers by AGI. Natasha Dacic portrait credit: Hamza Ahmed

RECOGNIZING AND PROMOTING EXCELLENCE IN GEOSCIENCE

- Awarded Dr. David R. Wunsch, State Geologist and Director of the Delaware Geological Survey, the 2024 **AGI Medal in Memory of Ian Campbell for Superlative Service to the Geosciences**.

- Presented Lesley Urasky, a science teacher at Saratoga Middle/High School in Saratoga, Wyoming, with the 2024 **Edward C. Roy Jr. Award for Excellence in K–8 Earth Science Teaching**.

- Honored Dr. Kevin Bohacs, a trailblazing sedimentologist and stratigrapher now retired from ExxonMobil in Houston, Texas, with the 2024 **Marcus Milling Legendary Geoscientist Medal**.

- Recognized two outstanding individuals — David Curtiss (below left) of the American Association of Petroleum Geologists (AAPG) and Susan Sullivan (below right) of the Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, Boulder — as recipients of the 2024 **William B. Heroy Jr. Award for Distinguished Service to AGI**.

- Celebrated Dr. Marjorie Chan, Distinguished Professor Emeritus at the Department of Geology and Geophysics at the University of Utah, as the 2024 recipient of the **AGI Award for Outstanding Contribution to the Public Understanding of the Geosciences**.

SUPPORTING FUTURE GEOSCIENTISTS

- Awarded one $5,000 **AGI Scholarship for Advancing Diversity in the Geoscience Profession** to master's student KeMia Smith (below).

- Presented one $5,000 **Harriet Evelyn Wallace Scholarship for Women Geoscience Graduate Students** each to master's student Autumn Vandehey (below left) and doctoral student Molly O'Halloran (below right).

Portrait credits: David R. Wunsch: Delaware Geological Survey/Ambre Alexander; David Curtiss: David Leiva. All portraits appear courtesy of pictured individuals.

ADVANCES IN GEOSCIENCE FOR SUSTAINABILITY

AGI's **Geoscience for Sustainability** initiative, launched in late 2023, made strides in 2024 in marshalling geoscience expertise and understanding to drive action for sustainable change. The effort — rooted in internationally recognized **Sustainable Development Goals** (SDGs) and examples outlined in the 2023 ***Geoscience in Action*** report — geared up in 2024 with a growing number of projects spanning policy guidance, education, research, and more. AGI is grateful for the financial support of this initiative from the **American Association of Petroleum Geologists Foundation**.

AGI's ***Critical Needs: Geosciences Meeting the Needs of the Nation*** document, for example, was developed throughout 2024 with input from leading geoscientists to help guide government decisionmakers in ways the geosciences can advance sustainable development and address critical needs. "Geoscientists have a keen understanding of Earth's systems, and the knowledge we can share is needed more than ever to allow policy makers and planners to make wise choices for developing sustainable agriculture, water, and energy supplies, as well as planning proactively to meet future societal needs," said Delaware State Geologist David Wunsch, who chairs the Critical Needs Document Committee.

In 2024, AGI continued creating sustainability-focused K–12 education materials that align with the SDGs and the **Next Generation Science Standards**, building educators' knowledge of sustainable development through real-world examples, and promoting Geoscience for Sustainability in education settings. Examples of such efforts emerged in the **Earth Science Week Webinar Series**, the **Earth Science Week Online Toolkit and Poster**, and an expanding slate of **education sustainability partnerships**.

For K–12, higher education, and professional audiences, AGI developed the innovative online **Geoscience Career Explorer**, empowering young people to identify geoscience careers that align with their interests and personal priorities. The site invites users to identify issues they would like to focus on professionally and connects these issues to SDGs. Additionally, a page breaks down each SDG and lists the top five related geoscience topics.

And AGI's **GeoRef**, the premier bibliographic database for the earth sciences, launched an ongoing "tagging" process to link researchers and students with up-to-date geoscientific data relating to sustainable development. While each tag illuminates a data point relevant to sustainability, this vast collection of tags collectively represents a powerful argument for the integral relevance of geoscience to sustainable development.

Geoscience for Sustainability, beginning with these efforts, is laying the groundwork for a large-scale, multi-year initiative. In 2024, geoscientists were invited to visit online to learn about the initiative and how they can engage. AGI has made sustainability a key component of its **2023–2026 Vision Statement and Strategic Plan**, and major efforts are planned for the coming years.

Credits: left: S. McGee, AGI; right: L. Mossa, AGI

Credit: Tiffany Rivera, for AGI's 2015 Life as a Geoscientist contest

GEOSCIENCE COMMUNICATION TRAINING EXTENDED

With an announcement in in April 2024, AGI guaranteed that U.S.-based members of AGI Member Societies would continue to be able to access free training in geoscience communication into the following year, thanks to generous support from the **American Association of Petroleum Geologists Foundation** and the **Society of Exploration Geophysicists**. The opportunity attracted 1,535 enrollments from October 2023 through September 2024.

Endorsed globally by numerous geoscience organizations, the acclaimed **Practical Geocommunication** course, developed by **Geologize LTD**, remained accessible free of charge to members of AGI Member Societies. The initiative underscored AGI's commitment to empowering geoscientists with the skills necessary to effectively communicate complex scientific concepts to the public and key stakeholders.

Participants in the course gain access to a rich curriculum, including interactive lessons, challenging quizzes, and practical assignments, all facilitated by course instructor Dr. Haydon Mort. Forums for direct engagement with Dr. Mort enhance the learning experience, allowing for personalized feedback and discussion.

Valued at $400 per participant, this course not only enhances personal and professional development but also contributes nine hours towards Continuing Professional Development (CPD) credits. Upon completion, participants receive a certificate underscoring their enhanced capabilities in geoscience communication.

Making the announcement, AGI Executive Director Dr. Jonathan Arthur emphasized the importance of the initiative: "In an era of pressing global challenges, including mineral and water resources, climate, energy, and geohazards, equipping our professionals with the ability to communicate effectively is more crucial than ever. This course directly supports our collective need to address vital societal issues through more effective science communication."

Credits: logo: Geologize Ltd; online learning: Pexels.com/ChristinaMorillo

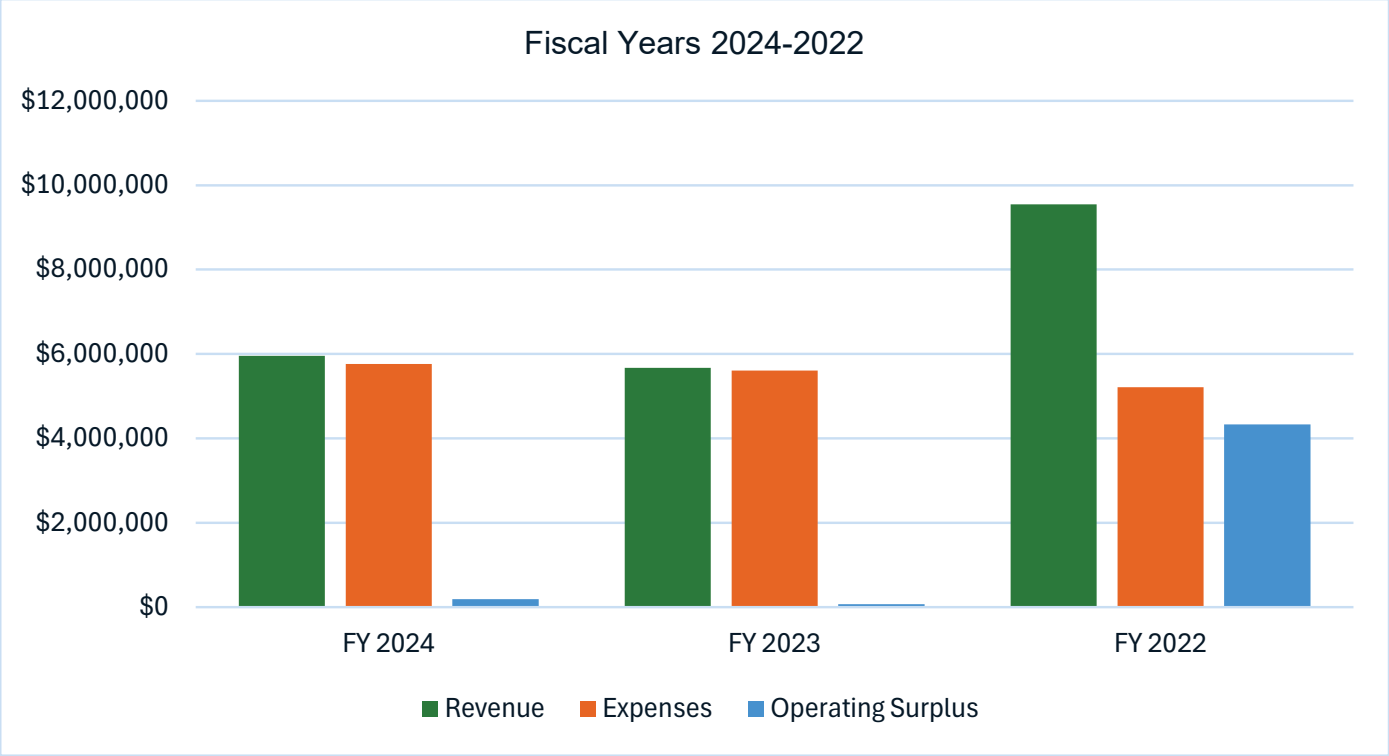
AUDITED FINANCIAL STATEMENTS

American Geosciences Institute, Fiscal Year 2024 (Oct. 2023–Sept. 2024) Audited

ASSETS	2024	2023	2022
Current Assets			
Cash cash equivalents, and investments	6,901,622	7,426,815	7,141,063
Accounts receivable	1,028,062	613,377	641,231
Prepaid expenses and advances	26,035	58,343	31,222
Inventory of publications	4,410	6,990	5,981
Total current assets	7,960,129	8,105,525	7,819,497
Property and Equipment			
Building and improvements	2,167,160	2,300,971	2,434,782
Furniture and equipment	93,190	204,232	353,027
Land	525,031	525,032	525,032
Net property and equipment	2,785,381	3,030,235	3,312,841
Other Assets			
Trademark	108,540	108,540	108,540
GeoRef database	4,500,000	4,500,000	4,500,000
Mineral displays	13,363	13,363	13,363
Total other assets	4,621,903	4,621,903	4,621,903
Total assets	**15,367,413**	**15,757,663**	**15,754,241**

LIABILITIES AND NET ASSETS	2024	2023	2022
Liabilities			
Accounts payable and accrued expenses	431,451	455,488	483,068
Deferred revenue			2,167
Long-term loans	731,345	1,291,606	1,329,859
Total liabilities	1,162,796	1,747,094	1,815,094
Net Assets			
Unrestricted – fund balance	8,952,650	9,294,796	9,375,249
Temporarily restricted	2,521,407	1,985,213	1,833,338
Permanently restricted	2,730,560	2,730,560	2,730,560
Total net assets	14,204,617	14,010,569	13,939,147
Total liabilities and net assets	**15,367,413**	**15,757,663**	**15,754,241**

Chart: AGI Comparative Statement of Activities



Details for Statement of Activities chart:

	FY 2024	FY 2023	FY 2022
Revenue	$5,953,217	$5,674,996	$9,548,284*
Expenses	$5,759,168	$5,603,575	$5,216,965
Operating Surplus	$194,049	$71,421	$4,331,319

*Reflects gifted funds as a result of the dissolution of the AGI Foundation.

SUPPORT THE GEOSCIENCES

Be a champion for AGI partnerships that enrich geoscience education, workforce, policy, scholarly information, recognition of excellence, and related efforts. Join us in this vital work. Please give at https://www.americangeosciences.org/donate.

Earth system artwork ©AGI/Brenna Tobler

2023–2024 BOARD OF DIRECTORS

Keri A. Nutter
President
Keri A. Nutter is a Geoscience Manager at DOWL, a firm specializing in planning, surveying, engineering, environmental, and related services. A Certified Professional Geologist, Nutter is a firm owner and manager of a team of engineers and geologists. Nutter has served on the American Institute of Professional Geologists' National Executive Committee since 2014, progressing from Advisory Board Representative to President. She previously served as Secretary on the AGI Executive Committee as well as on the dues restructuring committee and the Wallace Scholarship committee. Since earning her Bachelor's in Geology at Washington State University in 2004, Nutter has gained over 16 years of experience in service and leadership for professional groups, including two national geoscience organizations and the University of Alaska Anchorage Geological Sciences Community Advisory Board.

Anna C. Shaughnessy
President-Elect
Anna C. Shaughnessy received her BSc from the University of Gothenburg, Sweden and her MSc from Massachusetts Institute of Technology (MIT). She started her career as an interpreter geophysicist with Mobil Oil and has worked in the energy industry for thirty years, primarily in exploration, technology development and deployment. During her energy industry career, she has held leadership roles at Mobil, Saudi Aramco, Texaco and Kerr-McGee. Shaughnessy transferred to the academic sector in 2011 and became the Executive Director of the Earth Resources Laboratory (ERL), at MIT. She retired in 2018.

Jonathan G. Price, Ph.D.
Past-President
Jonathan Price is a consulting geologist and the Nevada State Geologist Emeritus. He served as Director of the Nevada Bureau of Mines and Geology and was on loan from the University of Nevada, Reno, as staff director of the Board on Earth Sciences and Resources of the National Research Council. With a B.A. from Lehigh University and a Ph.D. from the University of California, Berkeley, his career has included experience with industry, education, research, and government. Price has worked in mining, taught undergraduate and graduate geology courses, and directed research at state geological surveys. He has been President of four AGI Member Societies, has served on the Board of Directors of another, and is a member of three.

Douglas Bartlett
Treasurer
Doug Bartlett is principal hydrogeologist and co-founder of Clear Creek Associates, a subsidiary of Geo-Logic Associates. Bartlett has more than 45 years of experience as a geologist and hydrogeologist with diverse experience in groundwater computer modeling, hydrogeologic investigations, and mining-related hydrogeologic services. He is also former National President and Treasurer of the American Institute of Professional Geologists.

Rebecca Caldwell
Secretary
Rebecca Caldwell, a Research Geoscientist and Basin Analyst with Chevron Corporation, has extensive experience maintaining records for geoscience organizations. She is active in the geoscience community through technical contributions, leadership roles, mentoring, and promoting diversity and inclusion in the geosciences.

Portrait credits: Keri Nutter: © Scott Slone. All portraits appear courtesy of pictured individuals.

Shirley Jackson
Member at Large

Shirley Jackson is a faculty member at York College/City University of New York in New York City and serves on the Executive Board of Directors of the Association for Women Geoscientists. She was selected for the "2072 Justice in Geoscience Writing Team," served as a speaker and mentor for professional development workshops for Geological Society of America (GSA) On To the Future (OTF) program at GSA Connects 2022, and is an active member of the AGI Intersociety Diversity, Equity, and Inclusion Committee.

Sandra J. Carlson, Ph.D.
Member at Large

Sandy Carlson is an Emeritus Professor, following 36 years in the Department of Earth and Planetary Sciences, University of California, Davis. She has served in leadership roles with the Paleontological Society, constituting that society's six-year cycle as President Elect, President, and Past President, and is a Centennial Fellow of the Paleontological Society. She received the Association for Women Geoscientists Encourage Award in 2016 and the Gilbert Harris Award from the Paleontological Research Institution in 2019.

Aida Farough, Ph.D.
Member at Large

Aida Farough is a consultant and former Teaching Assistant Professor at Kansas State University Manhattan, Kansas. She has a wide range of AGI Member Society affiliations.

Ex Officio member:

Jonathan D. Arthur, Ph.D.
Executive Director
Jonathan Arthur, P.G., served as Director of the Florida Geological Survey and State Geologist from 2009 to 2021. His research in aquifer vulnerability and metals mobilization during artificial recharge has informed environmental management and policy. He is a strong advocate for geoscientists to engage with the public and policy makers, emphasizing the importance of making earth science research accessible and relevant to broad audiences. Arthur is a Fellow of the Geological Society of America, and recipient of national awards for public and distinguished service. He has given congressional testimonies, numerous invited presentations, keynotes, and international workshops, and has served in several leadership roles in the geoscience community. He served two terms on National Academies Water Science and Technology Board, committees related to aquifer system dynamics and habitat conservation, and as liaison to the U.S. National Committee for Geological Sciences. He earned his Ph.D. in geology from Florida State University.

Portrait credits: Jonathan D. Arthur: AGI/Geoff Camphire; Aida Farough: Mahfam Braithwaite. All portraits appear courtesy of pictured individuals.

2024 FEDERATION OF LEADING GEOSCIENCE ORGANIZATIONS

AGI Member Societies

AASP - The Palynological Society
American Association of Geographers
American Association of Petroleum Geologists
American Geophysical Union
American Institute of Hydrology
American Institute of Professional Geologists
American Meteorological Society
American Rock Mechanics Association
Association for the Sciences of Limnology and Oceanography
Association for Women Geoscientists
Association of American State Geologists
Association of Earth Science Editors
Association of Environmental & Engineering Geologists
Clay Minerals Society
Council on Undergraduate Research
Environmental and Engineering Geophysical Society
Geo-Institute of the American Society of Civil Engineers
Geochemical Society
Geological Association of Canada
The Geological Society of America
Geological Society of London
Geoscience Information Society
History of Earth Sciences Society
International Association for Geoscience Diversity
International Association of Hydrogeologists/ U.S. National Chapter
International Medical Geology Association
Karst Waters Institute
Mineralogical Society of America
Mineralogical Society of the United Kingdom and Ireland
National Association of Black Geoscientists
National Association of Geoscience Teachers
National Association of State Boards of Geology
National Cave and Karst Research Institute
National Earth Science Teachers Association
National Speleological Society
North American Commission on Stratigraphic Nomenclature
Paleontological Research Institution
Paleontological Society
Petroleum History Institute
Seismological Society of America
SEPM (Society for Sedimentary Geology)
Society for Mining, Metallurgy & Exploration
Society of Economic Geologists
Society of Exploration Geophysicists
Society of Mineral Museum Professionals
Society of Vertebrate Paleontology
Soil Science Society of America
United States Permafrost Association

AGI International Associates

Geological Society of Africa (GSAf)
International Association for Promoting Geoethics (IAPG)
PMUG (Japanese Society of Geo-Pollution Science, Medical Geology and Urban Geology)
SGEM World Science (SWS) Scholarly Society

AGI Regional Associates

Geological Society of Connecticut
Geological Society of Washington
Western Water Assessment

AGI Trade Associate

National Groundwater Association

AGI Liaison Organizations

Australian Institute of Geoscientists
The National Academies - Board on Earth Sciences and Resources
Canadian Federation of Earth Sciences
Center for Ocean Leadership
Earth Science Information Partners
Energistics
GeoScienceWorld
International Union of Geological Sciences
U.S. Dept. of Energy (Geothermal Technologies Office)
U.S. Geological Survey
University Consortium of Geographic Information Science

Earth Science Week 2024 Visual Arts Contest entry by Adeline Kong.

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