

Building a Sustainable Geoscience Future

2022
Year in
Review



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

www.americangeosciences.org

 **AGI** american
geosciences
institute
connecting earth, science, and people



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Cover artwork: Earth Science Week 2022 Visual Arts Contest winning entry by Evelyn MacMichael.

LETTER TO OUR STAKEHOLDERS

Sustainability was the watchword of the American Geosciences Institute (AGI) in 2022. While this concept has important different meanings in different contexts, we sought to explore what the principle means for our planet, for our professional community, for our federation, and for our organization. The geosciences are vital to sustainability. By reinforcing sustainable practices and institutions in a variety of ways, we are helping to ensure a more sustainable world. 2022 marks the leading edge of AGI's focus on sustainability.

To inform our vision of what is needed to help our planet continue to thrive into the future, we looked to the United Nations' 17 [Sustainable Development Goals \(SDGs\)](#), which outline how issues such as energy, climate change, the environment, industry, agriculture, natural hazards, and economic opportunity would be addressed in a sustainable world. AGI's Earth Science Week 2022 activities made clear, for example, that the geosciences are critical to meeting the SDGs.

Meeting these goals, further, requires a geoscience community that is sustainable, evolving to take on the challenges and opportunities of the 21st century. To that end, AGI rolled out a series of programs, publications, and other offerings designed to help our affiliated societies and their individual members increase their capacity to thrive. From October 2021 through September 2022, we worked to strengthen the geosciences, for example, by:

- Continuing AGI's National Science Foundation-supported [Geoscience COVID-19 Study](#) (Award #2029570) and releasing vital resources including the [Directory of Geoscience Departments, 57th Edition](#) and the [Status of Recent Geoscience Graduates 2021](#).
- Providing educators with products and results from [Streams of Data](#), a National Science Foundation-funded (Award #1906286) initiative by AGI and partners that shows how students can effectively learn using the scientific data sets of federal agencies.
- Discussing sustainability in the context of the geoscience community and its federation of societies during the AGI Leadership Forum, which brought together early and mid-career geoscientists and society leaders for a thoughtful and future-driven conversation.

- Raising awareness of the theme "Earth Science for a Sustainable World" during [Earth Science Week](#) through the focused [educator kit](#), [calendar](#), [newsletter](#), [contests](#), and [webinar series](#) highlighting connections between geoscience and sustainability.
- Increasing the offerings of the [GeoRef](#) bibliographic database to cover references to more than 4.6 million geoscience publications in more than 60 languages.
- Launching our [Diversity, Equity & Inclusion \(DEI\) website](#), providing a host of resources — some developed by AGI, and some by AGI Federation affiliates — addressing DEI issues in the geoscience community.
- Creating the free-to-view [Geoscience Event Calendar](#), featuring events sponsored by AGI affiliates and offering one-stop-shopping for professionals attending events as well as organizers scheduling events.
- Kicking off our electronic newsletter, [AGI Connections](#), covering geoscience community news with an emphasis on the impact that AGI and federation members are making.

These are just a sampling of the many opportunities, resources, and advantages that AGI provided to engaged members of our community over the past year. And, of course, some of these may appear to be more obviously linked to *sustainability* than others.

AGI is dedicated to helping all geoscience professionals learn, connect, collaborate, contribute, and succeed in their endeavors. Doing so helps guarantee that the geoscience enterprise can continue to thrive, even as it faces new demands in education, workforce, public understanding, leadership, and other areas. Doing that, moreover, is how we help ensure that the geoscience community can continue playing its essential part in the sustainability of the planet.



Jonathan Price, Ph.D.
AGI President



Jonathan Arthur, Ph.D.
Executive Director

CHEERS

“The American Geosciences Institute plays a crucial role in uniting the voices of a broad array of geoscience organizations in a way that strengthens our overall response to the challenges that face our profession. Whether it’s workforce development, professional membership trends, climate change, or increased demand for raw materials as we transition to a lower carbon energy infrastructure, AGI provides a key unifying presence for the dozens of professional organizations in our field. The leadership AGI provides is critical to the future of our profession.”

*Aaron W. Johnson,
Executive Director,
American Institute
of Professional
Geologists*



“As a proud member society, the American Rock Mechanics Association (ARMA) much appreciates the platforms and the resources AGI has provided. For example, thumbs up to the AGI Member Society Council, a network of the leaders from nearly 50 geoscience societies. While exchanging activities and plans, the society leaders also share challenges and explore collaborations. These are especially important as all geoscience communities are working hard in the new era of carbon neutrality and energy sustainability. In addition, AGI efforts in Diversity, Equity, Inclusion (DEI) have been inspiring because ARMA values DEI as a core commitment. In the New Year, we look forward to continuing being part of the vibrant AGI community.”

*Gang Han, President,
American Rock
Mechanics
Association*

Credit: Waleed Dashash/
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“The National Earth Science Teachers Association (NESTA) is grateful for the diverse network and ongoing support of AGI. Every year, members of the AGI community contribute instructional materials to the Earth Science Week packets compiled and distributed by AGI. These packets celebrate Earth science learning at all levels and in all settings. As a strong advocate for excellence in Earth science teaching, AGI sponsors educational sessions at professional meetings and works with NESTA and the National Association of Geoscience Teachers to co-sponsor the Next Generation Science Standards Earth Science Webinar Series. AGI’s research on the geoscience workforce continues to serve as baseline evidence for the importance of Earth science education for all people.”

*Cheryl L.B. Manning,
Past-President of
the National Earth
Science Teachers
Association*



*John A. Yellich,
Michigan
Geological Survey
Director and AASG
Past President*

“Outreach is the foundation of establishing the future of the geosciences. The state geologists appreciate AGI’s continued outreach support to all state surveys with not just Earth Science Week but all the programs that present the need for geoscientists. State geologists and the Association of American State Geologists (AASG) know that the geoscience community is aging, and we all need to be presenting science as the vehicle to understanding the impacts of climate change. A thank you to AGI for supporting state geologists — AASG members — in communicating the need for geoscientists. AGI underscores the need for understanding science among middle school and high school students as well as university students looking for a career addressing the need for science and the geosciences in today’s world.”

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AGI BY THE NUMBERS

312,000+ Surveys distributed over the three years of AGI's **Geoscience COVID-19 Study** gauging the pandemic's impact on geoscience

4,600,000+ References made available in the **GeoRef** bibliographic database and the GeoRef in Process database in 2022

38 **Geoscience Online Learning Initiative (GOLI)** on-demand online courses available

24 **Webinars** conducted for the geoscience community, including seven new webinars for geoscience educators offered as part of the Next Generation Science Standards in Earth and Space Science Working Group, an ongoing collaboration of AGI with the National Association of Geoscience Teachers and the National Earth Science Teachers Association

10 Issues of **Geoscience Currents** data briefs disseminated online

391,308 Page views on **Earth Science Week** website

25 Earth science teachers from 10 states who received professional development through the **AGI/ExxonMobil Geoscience and STEM Teacher Leadership Academy**

38 Organizational partners engaged directly with AGI in the 25th annual **Earth Science Week**, which **fostered many dynamic activities, including four new webinars** dealing with the theme of sustainability

AGI LEADERSHIP FORUM

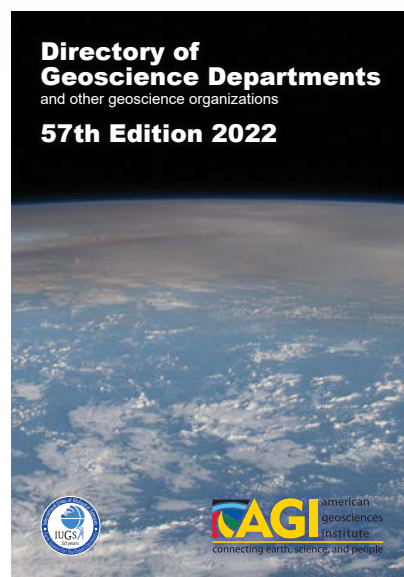
Today's geoscience society leaders are working to effectively address an array of emerging challenges, as demonstrated in "The Next Generation of Geoscience Societies: Views from Early- and Mid-Career Geoscientists and Leadership," the AGI Leadership Forum held on March 28–29, 2022. Discussion topics focused on areas such as membership, meetings, publications, governance, collaboration, inclusion, mentoring, skills development, and communicating value.

To help geoscience professionals and organization leaders explore the role of societies, the international forum allowed participants to engage in open and inclusive roundtable discussions with invited speakers. The Leadership Forum is an event hosted annually by AGI as a means of exploring challenges, sharing important information, and strengthening collaborative leadership within the AGI federation.

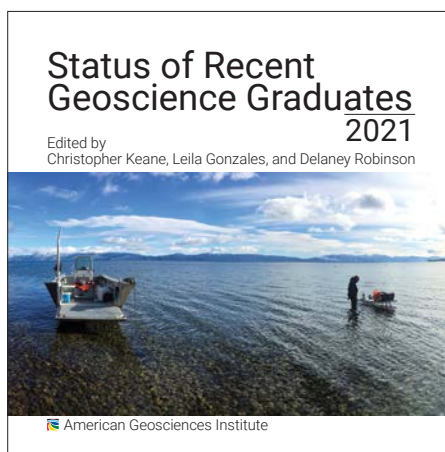


GEOSCIENCE PROFESSION AND HIGHER EDUCATION

- Extended into a third and final year AGI's **Geoscience COVID-19 Study**, supported by the National Science Foundation (NSF) (Award #2029570), focusing on permanent impacts to geoscience workforce and higher education as a result of the pandemic.
- Was awarded a three-year grant from NSF (Award #2223004) to conduct GRANDE: Geoscience Program Adaptation to Natural Disruptive Events, a project studying how U.S. higher education geoscience departments respond to disruptive events flowing from natural disasters and processes, particularly in an era when such disruptions are occurring with increasing frequency.
- Completed participation on the National Academies committee that produced **Foundations of a Healthy and Vital Research Community for NASA Science**, a report on the community of space science professionals that underpins the NASA enterprise.
- Collaborated with the **Association of American State Geologists** on a U.S. Geological Survey-sponsored study on the value of geologic mapping, including developing an economic model that illuminates ways the market values geologic maps within the U.S. economy.
- Published the **Directory of Geoscience Departments, 57th Edition**, the comprehensive source of information about geoscience departments and geoscience researchers, and the **Status of Recent Geoscience Graduates 2021**, a report on U.S. geoscience degree recipients in the 2020–21 academic year.



Credit: American Geosciences Institute

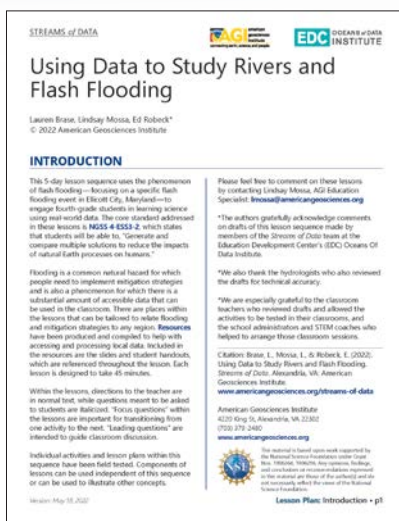


Credit: American Geosciences Institute



EDUCATION AND OUTREACH

- Disseminated information—including articles accepted for publication in the National Science Teaching Association's *Science & Children* magazine and the **National Earth Science Teachers Association** (NESTA) *The Earth Scientist*—from **Streams of Data**, a National Science Foundation-funded (Award #1906286) research initiative by AGI and partners that illuminates ways students currently use, and can more effectively use, scientific data sets of federal agencies and other organizations to learn science and mathematics.



Credit: American Geosciences Institute

- Advanced educators' effective use of the Next Generation Science Standards in Earth and Space Science (NGSS-ESS) by collaborating with the **National Association of Geoscience Teachers** (NAGT) and NESTA to produce and promote several **NGSS-ESS Working Group** webinars for Earth science teachers throughout the year.
- Enhanced Earth science educators' ability to teach the increasingly relevant concept of geoh heritage—the geological dimension of natural and cultural heritage—through various efforts, including conducting teacher workshops and presentations on creating lessons that integrate Earth science phenomena with place-based and geoh heritage frameworks at the **Geological Society of America's** GSA Connects 2022 Annual Conference.

- Continued collaboration with **SLB** (formerly Schlumberger) to develop lesson kits, known as SEEDKITS, that promote understanding of four of the United Nations' Sustainable Development Goals relating to clean water and sanitation, affordable and clean energy, responsible consumption and production, and climate action. The first of these is planned to be piloted in Ecuador.

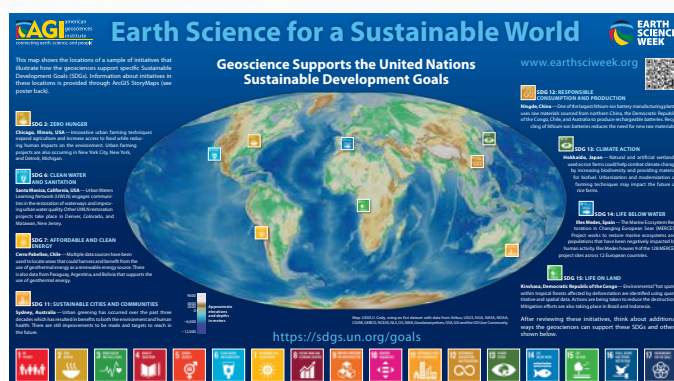


Credit: American Geosciences Institute

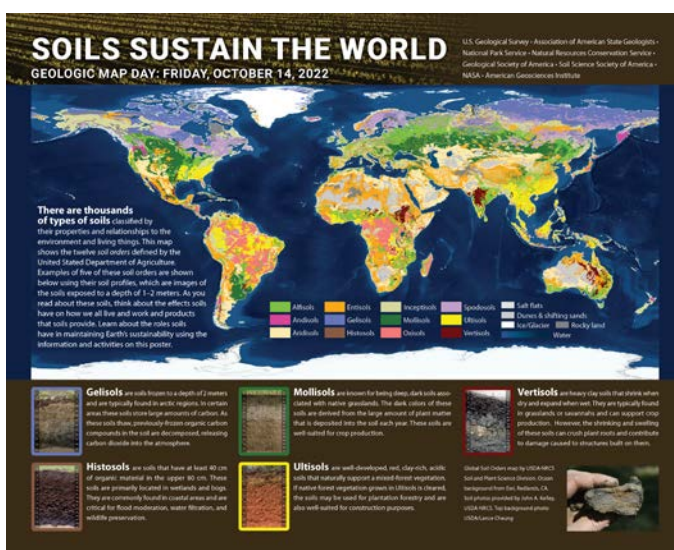


EARTH SCIENCE WEEK

- Collaborated with 25th annual **Earth Science Week** partner organizations and generated a wide range of online resources, printed media, events, and activities across the country and around the world, celebrating the sustainability geoscience theme of “Earth Science for a Sustainable World.”
- Raised awareness of geoscience education connections to the United Nations’ 17 **Sustainable Development Goals** (SDGs) — a call to action for global sustainability — through Earth Science Week’s **educator kit**, **calendar**, **newsletter**, and **essay, photo, video, and art contests**. The program poster featured a learning activity with a StoryMaps approach to exploring relevant Earth science topics.
- Developed an **Earth Science Week 2022 Webinar Series** offering presentations on sustainability science such as geoscience projects related to the SDGs, Earth materials, and soils. The series featured over a dozen speakers and several new partners, including the Japanese Geoscience Union.
- Worked with partners including the Soil Science Society of America and the U.S. Department of Agriculture’s Natural Resources Conservation Service to produce the 2022 **Geologic Map Day** poster, painting a detailed picture of how “Soils Sustain the World” and including learning activities that explore soil classifications, profiles, textures, and related SDGs.



Credit: American Geosciences Institute



Credit: American Geosciences Institute

SCHOLARLY INFORMATION



- Continued expansion of **GeoRef**, the primary bibliographic database covering the geoscience literature, which in combination with GeoRef in Process (this database includes references to new publications not edited for inclusion in GeoRef and references to older materials from international geoscience organizations) brings the total in both databases to more than 4.6 million references to publications in more than 60 languages and published in more than 140 countries, with over 2,000 geoscience organization subscribers worldwide.



GeoScienceWorld

- Collaborated with **GeoScienceWorld** to add references for the Earth Sciences History journal, including 680 references to journal articles published from 1982 to 2022.
- Added 101 journals and series to AGI's collection of **Open-Access Journals/Series**, established in 2019, bringing the current total to 450.

- Launched a new version of the **Midwest Regional Carbon Initiative (MRCI) and Related Projects Research Publications Database**, which provides increased flexibility to search by map and project. The database is funded by the U.S. Department of Energy (award #DE-FOA-0002000, OPP209041).



Credit: American Geosciences Institute

GEOSCIENCE POLICY

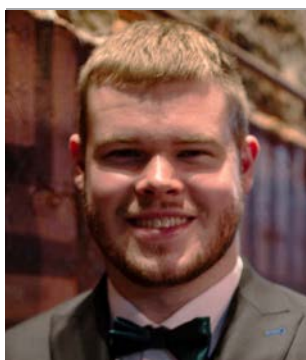
- Named Oliver Stephenson, who recently completed his Ph.D. at the California Institute of Technology (Caltech), as the 2022–2023 recipient of the **William L. Fisher Congressional Geoscience Fellowship**, which is enabling Stephenson to work as a staff member in the office of Senator Edward Markey, learning about the legislative process and contributing geoscience expertise for a year.
- Hosted two **geoscience policy interns sponsored by the Paleontological Society** (PS), Zachary Quirk of the University of Michigan and Peter Bellocq of Rutgers University, who spent the summer in Washington, D.C., developing a guidebook identifying where the National Science Foundation funds paleontology research.

Critical Needs Document

In 2022, AGI began the process of developing the 2024 Critical Needs Document. This document aims to highlight the ways in which geosciences can tackle society's policy challenges. Every presidential election cycle, AGI member societies join forces to create a comprehensive statement on how geoscience can meet critical societal needs and then distributes it among the presidential and congressional campaigns. This year's document will be organized around five primary policy areas, showcasing various ways the geosciences contribute to solutions for these challenges. The structuring of the document is guided by input from active policymakers. The crucial themes identified by AGI member society representatives focus on the economy, hazards and wellbeing, infrastructure, national security, and innovation.



Oliver Stephenson, the 2022-2023 recipient of the William L. Fisher Congressional Geoscience Fellowship.



Zachary Quirk, intern



Peter Bellocq, intern

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RECOGNITION OF EXCELLENCE

- Awarded Dr. Jean M. Bahr, Professor Emerita in the Department of Geoscience at the University of Wisconsin-Madison, the 2022 **AGI Medal in Memory of Ian Campbell for Superlative Service to the Geosciences**, an AGI high honor.



Credit: Syracuse University
Photo by Stephen Sartori

- Recognized Dr. Lucile M. Jones, Founder and Chief Scientist of the Dr. Lucy Jones Center for Science and Society in Pasadena, California, as the 2022 recipient of the **AGI Award for Outstanding Contribution to the Public Understanding of the Geosciences**.



- Honored Dr. Donald I. Siegel, Professor Emeritus at the Department of Earth and Environmental Sciences of Syracuse University, as the recipient of the 2022 **Marcus Milling Legendary Geoscientist Medal**.



- Celebrated Dr. Sharon Mosher, Dean Emeritus in the Department of Geological Sciences at the Jackson School of Geosciences at the University of Texas at Austin, as the 2021 recipient of the **William B. Heroy Jr. Award for Distinguished Service to AGI**.



- Presented David Amidon, a science teacher at LaFayette Junior/Senior High School in LaFayette, New York, with the 2022 **Edward C. Roy Jr. Award for Excellence in K-8 Earth Science Teaching**.

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DIVERSITY, EQUITY, AND INCLUSION (DEI)

- Launched a **Diversity, Equity & Inclusion** website providing the geoscience community with a host of resources — some developed by AGI, some by federation affiliates — including information on and ways to engage with **DEI initiatives and statements** of AGI federation affiliates, a **framework** that geoscience societies can use to cultivate DEI, a **National Science Foundation-supported report** and related resources on strengthening diversity in geoscience higher education (**supported by EAR-1347209, EAR-1725289, ICER-1740386, ICER-1740844, and ICER-1748780**), a **website promoting girls and women in science**, and much more.
- Hosted nearly monthly meetings of the **Intersociety Committee on Diversity, Equity, and Inclusion** and participated in numerous DEI-related panels and activities across the geoscience community.
- Advanced the work of an **internal committee** on diversity to coordinate geoscience community efforts to improve diversity, equity, and inclusion and to support active engagement at all levels of the profession in promoting these values.
- Awarded one \$5,000 **AGI Scholarship for Advancing Diversity in the Geoscience Profession** to Ph.D. student Selena Martinez and one \$5,000 **Harriet Evelyn Wallace Scholarship for Women Geoscience Graduate Students** each to master's student Cissy Ming and doctoral student Behnaz Hosseini.



Selena Martinez, winner of AGI's 2022 Scholarship for Advancing Diversity in the Geoscience Profession.



2022 Harriet Evelyn Wallace Scholars Cissy Ming (left) and Behnaz Hosseini (right).

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>



AUDITED FINANCIAL STATEMENTS

American Geosciences Institute, Fiscal Year 2022 (Oct. 2021–Sept. 2022)

ASSETS	2020	2021	2022
Current Assets			
Cash and cash equivalents*	\$1,756,193	\$2,605,347	\$7,141,063
Accounts receivable	\$706,039	\$671,488	\$641,231
Prepaid expenses and advances	\$10,290	\$36,385	\$31,222
Inventory of publications	\$20,937	\$9,097	\$5,981
Total current assets	\$2,493,459	\$3,322,317	\$7,819,497
Property and Equipment			
Building and improvements	\$2,702,404	\$2,568,593	\$2,434,782
Furniture and equipment	\$626,219	\$481,226	\$353,027
Land	\$525,032	\$525,032	\$525,032
Net property and equipment	\$3,853,655	\$3,574,851	\$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	\$10,969,017	\$11,519,071	\$15,754,241
LIABILITIES AND NET ASSETS	2020	2021	2022
Liabilities			
Accounts payable and accrued expenses	\$537,473	\$464,990	\$483,068
Deferred revenue	\$147,367	\$80,210	\$2,167
Long-term loans	\$2,263,968	\$1,366,043	\$1,329,859
Total liabilities	\$2,948,808	\$1,911,243	\$1,815,094
Net Assets			
Unrestricted – fund balance	\$7,857,991	\$9,441,258	\$9,375,249
Temporarily restricted*	\$162,218	\$166,570	\$1,833,338
Permanently restricted*	\$0	\$0	\$2,730,560
Total net assets	\$8,020,209	\$9,607,828	\$13,939,147
Total liabilities and net assets	\$10,969,017	\$11,519,071	\$15,754,241

* Cash and cash equivalents, and restricted assets in FY2022 include gifted funds from AGIF to AGI as a result of the Foundation's dissolution.

Dissolution of the American Geosciences Institute Foundation and Formation of the Geoscience Development Roundtable

When the AGI Foundation dissolved in May 2022, foundation assets were transferred to AGI and are reflected in Cash and Permanently Restricted lines of the Financial Statement. A new AGI committee, the Geoscience Development Roundtable, was established to continue fundraising efforts that support vital geoscience programs and initiatives.

Most of the funds transferred to AGI are permanently restricted per donors' wishes, and proceeds from these investments support AGI programs, awards, and operations.

AGI thanks all former AGI Foundation Trustees for their generosity and service in supporting the Institute's efforts to advance the geosciences, especially those who now continue to serve as ambassadors for fundraising and development.

AGI BOARD OF DIRECTORS, 2021–2022



Paul Weimer
President



Jonathan G. Price
President-Elect



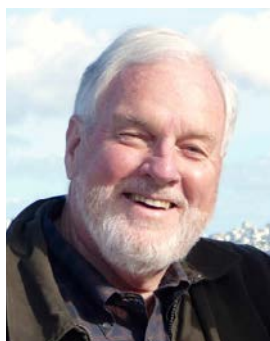
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Past-President



Ronald J. Wallace
Treasurer



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Secretary



Gordon E. Brown Jr.
Member at Large



Keri A. Nutter
Member at Large



Aida Farough
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AGI Foundation Chair



Jonathan D. Arthur
Executive Director

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2022 AGI FEDERATION

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
Geo-Institute of the American Society of Civil Engineers
Geochemical Society
Geological Association of Canada
Geological Society of America
Geological Society of London
Geoscience Information Society
History of Earth Sciences Society
International Association of Hydrogeologists/
U.S. National Chapter
International Medical Geology Association
Karst Waters Institute
Mineralogical Society of America
Mineralogical Society of Great Britain 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
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 Independent Professional Earth Scientists
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 Geoscience Diversity
International Association for Promoting Geoethics (IAPG)
PMUG (Japanese Society of Geo-Pollution Science, Medical Geology and Urban Geology)

AGI Regional Associates

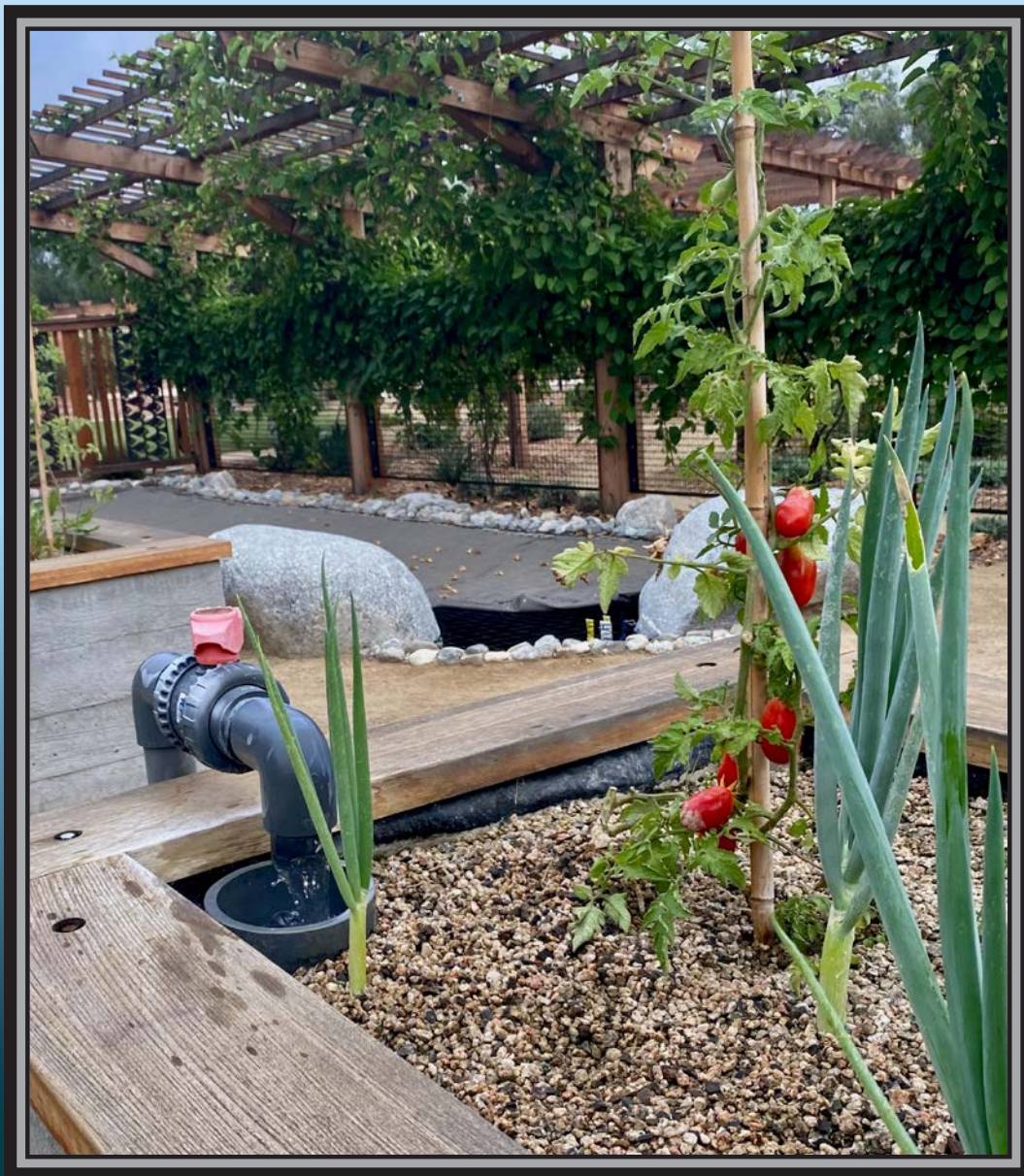
Geological Society of Connecticut
Geological Society of Washington
Western Water Assessment

AGI Trade Associates

National Groundwater Association

AGI Liaison Organizations

Australian Institute of Geoscientists (AIG)
The National Academies - Board on Earth Sciences and Resources (BESR)
Canadian Federation of Earth Sciences (CFES)
Center for Ocean Leadership (COL)
Earth Science Information Partners (ESIP)
Energistics (Energistics)
GeoScienceWorld (GSW)
International Union of Geological Sciences
U.S. Dept. of Energy (Geothermal Technologies Office)
U.S. Geological Survey (USGS)



Earth Science Week 2022 Photography Contest entry by Taia Saurer. (Cropped portion of original photo shown above.)



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For direct links to more information on the many programs, opportunities, resources, and initiatives mentioned here, see the report online at www.americangeosciences.org/annual-report.