

Working Together

2021 Year in Review
American Geosciences Institute

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





Earth Science Week 2021 Photography Contest winning entry by Peter Lee, from Montrose, California.

Cover image: From the back deck of the R/V Sikuliaq, scientists and crew members deploy a research mooring along the Washington Line of the Ocean Observatories Initiative Endurance Array. Credit: Issie Corvi, for AGI's 2017 Life as a Geoscientist contest.

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

LETTER TO OUR STAKEHOLDERS

Because our success is possible only in partnership with professionals like you, our message here is one of gratitude. Thank you for the important part you played in the advances made by the American Geosciences Institute (AGI) and the wider geoscience community in the uniquely challenging past year.

Our friends and supporters are too numerous to count, including AGI member societies, additional nonprofit leaders, government partners, private-sector collaborators, researchers, educators, students, and a variety of other geoscience community members. With your help, we achieved significant gains for the more than quarter-million geoscientists that AGI represents worldwide.

Even as the coronavirus pandemic raised barriers throughout the past fiscal year, from October 2020 through September 2021, we worked together to keep the geosciences moving forward:

- We strengthened the preparation of the next generation of geoscientists with the release of the National Science Foundation-sponsored *Vision and Change in the Geosciences: The Future of Undergraduate Geoscience Education*, incorporating inputs from more than 1,000 members of the geoscience community.
- Breathing new life into K–12 education and outreach, AGI expanded its use of virtual formats in professional development for educators such as the *AGI/ExxonMobil Geoscience and STEM Teacher Leadership Academy* and *Virtual Contexts for Environmental Exploration* workshops.
- We extended our National Science Foundation-sponsored *Geoscience COVID-19 Study* through March 2022, generating and disseminating findings on how the pandemic is changing geoscientists' work and shaping students' achievement and early-career trajectories.
- Addressing issues of diversity, equity, and inclusion through a collaborative approach, AGI released a new *Framework for Addressing Racial and Ethnic Equity in Geosciences Professional Societies*, crafted by representatives from AGI member societies and signed onto by more than a dozen organizations to date.

- We connected geoscience job seekers with employers through our new *Geoscience Job Center*, updated daily with opportunities across geoscientific disciplines and sectors.
- The 24th annual *Earth Science Week* explored the timely theme of "Water Today and for the Future" with innovations including the *Earth Science Week Online Toolkit*, an *Earth Science Week Webinar Series*, and a growing list of international opportunities.
- Despite challenges posed by the pandemic, AGI continued uninterrupted production of *GeoRef*, which now features references to more than 4.3 million publications in 44 languages.
- And we made a difference in the lives of aspiring geoscientists like Israel Jaramillo, recipient of the first *AGI Scholarship for Advancing Diversity in the Geoscience Profession*, who began his graduate studies at the Colorado School of Mines this past fall.

These are just a handful of the opportunities, resources, and benefits that your partnership with AGI has helped to make possible for geoscientists. Thanks to the strength of our federation, members of AGI member societies, associate organizations, and liaison organizations are first in line for many of these programs and services.

But AGI's work has never been only about looking back. Like you, we are focused on the future, and we look forward to events and transformative discussions this coming year about the vital role of sustainability as a unifying framework for the geosciences. We hope you will continue working with us to fortify the geoscience community, grow opportunities for geoscientists, and use geoscience to help build a more prosperous and sustainable world. Thank you again for your ongoing support.



Paul Weimer, Ph.D.
AGI President



Jonathan Arthur, Ph.D.
Executive Director

Image credits courtesy of pictured individuals, except as follows: Jon Arthur photo: AGI/Geoff Camphire

CHEERS

“The Paleontological Society has benefitted greatly by partnering with AGI in two important annual activities: participating in Geoscience Congressional Visits Day and offering a Summer Geoscience Policy internship. The science and policy knowledge, experience, and mentoring that AGI has provided to Paleontological Society student members in particular has been timely, practical, and extremely valuable. Strengthening collaborations between paleontology and the other geosciences is essential to foster vital interdisciplinary research and service. Encompassing so many diverse geoscience disciplines, AGI offers a welcome home for all Earth scientists.”

*Sandra J. Carlson,
Professor of Earth and
Planetary Sciences, The
University of California,
Davis, and Past-
President, The
Paleontological Society*



Sandra J. Carlson

“AGI for me represents the best of the geosciences community, bringing together all federated and allied scientific societies in our field with one voice. I have always appreciated the broad and inclusive reach of the AGI community, finding common purpose and common messages across all the disciplines and sectors of the Earth sciences. No other entity understands our collective workforce and educational needs as well or is as capable of being a strong messenger of our perspective and insights to policy makers, industry leaders, and the public. My time working with AGI remains one of the highlights of my career.”

*Eric M. Riggs, Dean and
Professor of Geology,
College of Natural
Resources and Sciences,
Cal Poly Humboldt*



Eric M. Riggs

“AGI is the premier voice for communicating the importance of geoscience and geoscientists in solving problems of Earth and its inhabitants. AGI’s collaborative leadership in science, communication, and leveling the playing field for all who would like to participate are important complements to the work of individual geoscientific societies, including the American Association of Petroleum Geologists. On a personal level, the publications and outreach of AGI provide unique value to my career, so I am grateful for AGI’s continuous focus on future needs.”

Gretchen Gillis, President, American Association of Petroleum Geologists



Gretchen Gillis

Image use courtesy of pictured individuals.



AGI BY THE NUMBERS

1,872 Participants in AGI's **Geoscience COVID-19 Study** gauging the pandemic's impact on geoscience

86,000 References added to the **GeoRef** bibliographic database in 2021, bringing the total to more than 4.3 million

22,359 Users of **Vision and Change in the Geosciences: The Future of Undergraduate Geoscience Education** website, including 3,296 downloads of the report from 55 countries

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

512,095 Page views on the **Earth Science Week** web site, providing learning resources for students and educators

22 Earth science teachers from 12 states who received professional development **AGI/ExxonMobil Geoscience and STEM Teacher Leadership Academy**

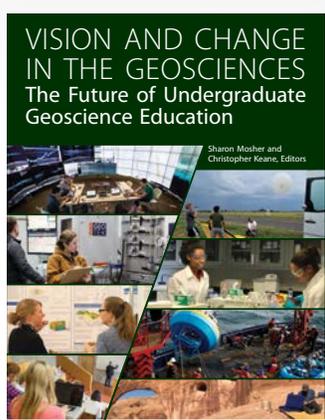
36 Organizational partners engaged directly with AGI in the 24th annual **Earth Science Week**, which included **four new webinars** on the theme of water

8 **New webinars** for geoscience educators 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, in a series that in six years has generated over 45 webinars



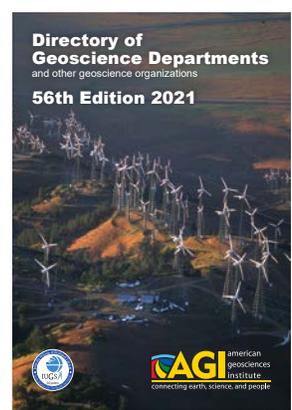
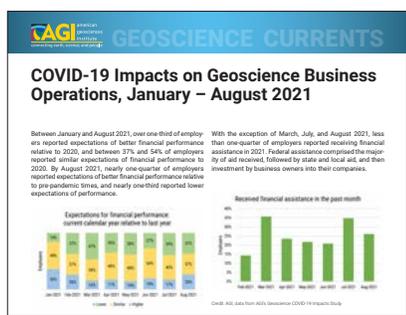
GEOSCIENCE PROFESSION AND HIGHER EDUCATION

- Published the National Science Foundation-supported report, *Vision and Change in the Geosciences: The Future of Undergraduate Geoscience Education*, incorporating input from more than 1,000 members of the geoscience community to develop a consensus on the drivers, needs, and strategies for preparing future generations of geoscientists, along with tools to support change in undergraduate geoscience education.
- Extended through March 2022 AGI's *Geoscience COVID-19 Study* focusing on how the pandemic is changing geoscientists' work and instructional environments, as well as impacts to educational pathways and early-career trajectories in the geosciences.



- Hosted an online *Critical Minerals Forum* titled "Advances in Critical Mineral Research: A Forum in Memory of Victor Labson," sponsored by the World Community of Geological Surveys and organized by the Geological Survey of Canada, Geoscience Australia, and the U.S. Geological Survey.
- Connected geoscience employers with those seeking opportunities by launching the *Geoscience Job Center*, with daily updated employment opportunities across the geoscientific disciplines and sectors, including positions in academia, research, government, nonprofits, and the private sector.

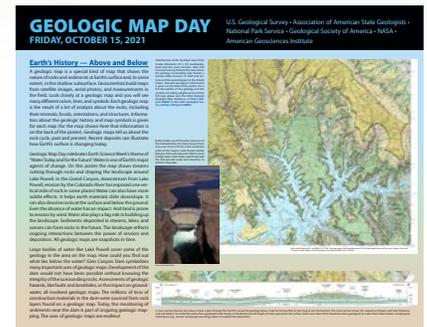
- Hosted the six-part UNESCO webinars series "Earth Materials for a Sustainable and Thriving Society" in collaboration with the International Union of Geological Sciences and the Irish Centre for Research in Applied Geoscience.
- Published the *Directory of Geoscience Departments, 56th Edition*, the most comprehensive source of information about geoscience departments and researchers available, containing a state- and country-sorted global listing of nearly 2,000 geoscience departments, research departments, and institutes, as well as over 18,000 faculty and staff.





EDUCATION AND OUTREACH

- Extended the use of virtual formats in professional development conducted for Earth science educators, including the annual **AGI/Exxon-Mobil Geoscience and STEM Teacher Leadership Academy** and four sets of **Virtual Contexts for Environmental Exploration** workshops in association with Somerset County (Maryland) Public Schools, ShoreRivers, and the Maryland Department of Natural Resources to enable environmental educators to share place-based environmental exploration techniques using virtual platforms.
- Built on connections generated through the annual **Geologic Map Day** celebration to enhance the relationship between AGI and the U.S. Geological Survey's National Cooperative Geologic Mapping Program, especially by providing advisement to the EDMAP program and diversity, equity, and inclusion initiatives.
- In collaboration with the Education Development Center and the Groundwater Foundation, provided over 400 **Awesome Aquifer Kits**, an educational tool for hands-on investigations focusing on groundwater science, to schools in Maryland and Virginia where children were learning remotely due to restrictions from COVID-19.
- Promoted the emerging concept of geoheritage, which explores the connection between geology and human experience, with multi-organizational teams through presentations at the **National Science Teaching Association annual conference**, the **Earth Educators Rendezvous**, webinars, and more.
- Developed techniques and tools for online data collection as a result of pandemic-related limitations as part of **Streams of Data**, a three-year, National Science Foundation-funded collaborative research project illuminating approaches to scaffolding the instructional uses of scientific data sets made



available by federal agencies and other organizations.

- Organized **eight new webinars** for geoscience educators (in a series that in more than six years has generated over 45 webinars) as part of the **Next Generation Science Standards in Earth and Space Science Working Group**, an ongoing collaboration with the National Association of Geoscience Teachers and the National Earth Science Teachers Association.





EARTH SCIENCE WEEK

- In collaboration with 24th annual **Earth Science Week** partner organizations, generated a wide range of online resources, printed media, events, and activities across the country and around the world.



- Collaborated with the National Earth Science Teachers Association to solicit authors for a water-themed issue of *The Earth Scientist* to highlight aspects of the 2021 Earth Science Week theme, "Water Today and for the Future."



Credit: Earth Science Week 2021 Visual Arts Contest entry by Benjamin Kwack.

- Introduced the **Earth Science Week Online Toolkit**, a rapidly growing, searchable compendium of 45 highly visual resources, including more than a dozen items dealing with the Earth Science Week 2021 theme of "Water Today and for the Future."

- Developed an **Earth Science Week Webinar Series** for the general public covering an array of thought-provoking, timely topics, including groundwater exploration in response to humanitarian crises, water supply issues in the Delaware River system, the importance and vulnerability of water supplies, and the geoscience of caves and karst.
- Expanded international opportunities for program partners and participants, such as through a new video contest for American Association of Petroleum Geologists student chapters in the Asia-Pacific region, and facilitated cross-promotion in dozens of countries worldwide through information and resources on the program website, including the program logo and suggestions for local program development.

- Generated new Earth Science Week classroom media with staff of the Society for Exploration Geophysicists to show connections between the work of the Geoscientists Without Borders® program and the United Nations Sustainable Development Goals.



SCHOLARLY INFORMATION

- Continued uninterrupted production of **GeoRef**, the primary bibliographic database covering the geoscience literature, currently containing references to more than 4.3 million publications in 44 languages and published in more than 100 countries, with over 2,000 geoscience organization subscribers worldwide.
- Added more than 800 new records to the nearly 39,000 total now featured in the **Scientific Ocean Drilling Bibliographic Database**, which covers publications in 20 languages, including journals, conference papers, technical reports and theses and is freely available to researchers worldwide.
- Extended updates within AGI's 10 **Online Database Products**, such as CanGeoRef and the Cold Regions Bibliography Project, as well as its six **Open Geoscience Information Collections**, including the Cold Regions Collection and the Geological Surveys Database.
- Increased coverage in GeoRef of open-access journal literature to more than 350 journals, each providing openly available articles including geoscience and general science journals, government report series, newsletters, and conference proceedings.





GEOSCIENCE POLICY



Sarah Swiersz

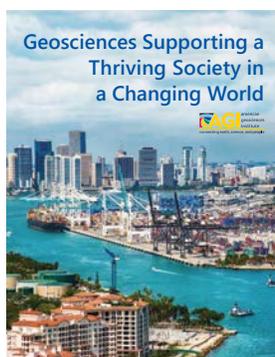
- Hosted three policy interns virtually, including Sarah Swiersz from the University of Central Florida, who helped develop the parameters of a new geoscience legislation database, as well as two **geoscience policy interns sponsored by the Paleontological Society**, Hannah Kempf of the University of California, Davis, and Hunter Olson, recently graduated from Montana State University, who developed policy analyses and papers looking at issues and best practices for conducting science with and on tribal lands.



Hannah Kempf

- Named Laura Szymanski as the 2021–2022 recipient of the **William L. Fisher Congressional Geoscience Fellowship**, enabling the recent doctorate recipient from the University of Wisconsin-Madison to work as a congressional staff member, learn about the legislative process, and contribute geoscience expertise for a year.

- Published ***Geosciences Supporting a Thriving Society in a Changing World*** — the quadrennial “critical needs” document authored by AGI member society representatives to recommend ways that geoscience can address national priorities — and disseminated the publication widely, including to the incoming administration and over 50 geoscience-related congressional committee leaders.



Hunter Olson

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RECOGNITION OF EXCELLENCE

- Awarded Dr. Marcia K. McNutt, geophysicist and president of the National Academy of Sciences, the 2021 **AGI Medal in Memory of Ian Campbell for Superlative Service to the Geosciences**, AGI's highest award.



- Honored Dr. Franklin W. Schwartz, Ohio Eminent Scholar at the School of Earth Sciences of The Ohio State University, as the 2021 recipient of the 2021 **Marcus Milling Legendary Geoscientist Medal**.



Credit: Ohio State University/Jay LaPrete

- Recognized Dr. J. Marshall Shepherd, Georgia Athletic Association Distinguished Professor of Atmospheric Sciences and Geography at the University of Georgia, as the 2021 recipient of the **AGI Award for Outstanding Contribution to the Public Understanding of the Geosciences**.



Credit: Image by Nancy Evelyn/ use courtesy of Marshall Shepherd.

- Presented Darcie Fregoe, a sixth-grade Earth science and social studies teacher at Madison Elementary School in Massena, New York, with the 2021 **Edward C. Roy Jr. Award for Excellence in K-8 Earth Science Teaching**.



- Celebrated Aida Awad, Adjunct Professor at American Intercontinental University, as the 2021 recipient of the **William B. Heroy Jr. Award for Distinguished Service to AGI**.



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DIVERSITY, EQUITY, AND INCLUSION (DEI)

- Released the **Framework for Addressing Racial and Ethnic Equity in Geosciences Professional Societies** — crafted by representatives from AGI member societies and signed onto by more than a dozen geoscience organizations to date — which sets a framework for geoscience societies to proactively cultivate an inclusive profession that both addresses systemic issues and sets priorities aimed at increasing equity for Black, Indigenous, and People of Color (BIPOC) geoscientists and addressing issues of intersectionality among race, class, disability status and gender.
- Established the new **AGI Scholarship for Advancing Diversity in the Geoscience Profession**, naming Israel Jaramillo as the first recipient of this one-time \$5,000 award supporting geoscience graduate studies by a U.S. citizen or permanent resident who self-identifies as a member of an underrepresented minority (Black, Indigenous, or Person of Color) and is within two semesters of completing a recognized geoscience program.
- Awarded one \$5,000 AGI Scholarship for Advancing Diversity in the Geoscience Profession to master’s student Israel Jaramillo and one \$5,000 **Harriet Evelyn Wallace Scholarship for Women Geoscience Graduate Students** each to master’s student Hannah Field and doctoral student Mikaela Pulsipher.



Israel Jaramillo



Hannah Field



Mikaela Pulsipher

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>



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STATEMENT OF FINANCIAL POSITION

American Geosciences Institute
Fiscal Year 2021 (Oct. 2020-Sept. 2021)

<u>ASSETS</u>	<u>2019</u>	<u>2020</u>	<u>2021*</u>
Current Assets			
Cash and cash equivalents	\$870,133	\$1,756,193	\$2,605,347
Accounts receivable	\$638,159	\$706,039	\$640,069
Prepaid expenses and advances	\$16,069	\$10,290	\$14,854
Inventory of publications	\$17,073	\$20,937	\$20,937
Total current assets	<u>\$1,541,434</u>	<u>\$2,493,459</u>	<u>\$3,281,207</u>
Property and Equipment			
Building and improvements	\$2,861,576	\$2,702,404	\$2,568,593
Furniture and equipment	\$771,212	\$626,219	\$481,226
Land	\$525,032	\$525,032	\$525,032
Net property and equipment	<u>\$4,157,820</u>	<u>\$3,853,655</u>	<u>\$3,574,851</u>
Other Assets			
Long-term securities	\$192,207	\$0	\$0
Trademark	\$108,540	\$108,540	\$108,540
GeoRef database	\$4,500,000	\$4,500,000	\$4,500,000
Software net amortization	\$11,479	\$0	\$19,306
Mineral displays	\$13,363	\$13,363	\$13,363
Total other assets	<u>\$4,825,590</u>	<u>\$4,621,903</u>	<u>\$4,641,209</u>
Total assets	<u>\$10,524,843</u>	<u>\$10,969,017</u>	<u>\$11,497,267</u>
LIABILITIES AND NET ASSETS			
Liabilities			
Accounts payable and accrued expenses	\$763,432	\$537,473	\$386,025
Deferred revenue	\$206,053	\$147,367	\$150,673
Long-term loans	\$1,785,137	\$2,263,968	\$1,366,043
Total liabilities	<u>\$2,754,622</u>	<u>\$2,948,808</u>	<u>\$1,902,741</u>
Net Assets			
Unrestricted – fund balance	\$7,608,003	\$7,857,991	\$9,438,401
Temporarily restricted	\$162,218	\$162,218	\$156,125
Total net assets	<u>\$7,770,221</u>	<u>\$8,020,209</u>	<u>\$9,594,526</u>
Total liabilities and net assets	<u>\$10,524,843</u>	<u>\$10,969,017</u>	<u>\$11,497,267</u>

*Unaudited

AGI BOARD OF DIRECTORS, 2020–2021



David R. Wunsch
President



Paul Weimer
President-Elect



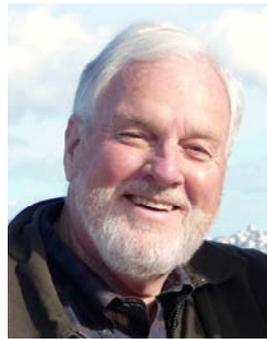
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Past-President



Dennis J. Anderson
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Nancy J. House
Secretary



Gordon E. Brown Jr.
Member at Large



Keri A. Nutter
Member at Large



Susan M. Sullivan
Member at Large

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AGI Foundation Chair



Jonathan D. Arthur
Executive Director



Sharon N. Tahirkheli
Interim Executive Director

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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 (The IAGD)
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)
Consortium for Ocean Leadership (COL)
Earth Science Information Partners (ESIP)
Energistics (Energistics)
GeoScienceWorld (GSW)
U.S. Dept. of Energy (Geothermal Technologies Office)
U.S. Geological Survey (USGS)



Earth Science Week 2021 Visual Arts Contest finalist entry by Justin Xu, from Sugar Hill, Georgia.



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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 <https://www.americangeosciences.org/annual-report>.