

A GEOSCIENCE COMMUNITY INITIATIVE FOR A THRIVING HUMANITY

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24 September 2024

Sustainability

- So much more than environmental action
- All actions to help humanity thrive have tradeoffs



adapted from: *Dilemmas in a General Theory of Planning*
Horst W.J. Rittel and Melvin M. Webber (*Policy Sciences*, June 1973)



Defining Sustainability



*Sustainable development requires an **integrated approach** that takes into consideration environmental concerns along with economic development.*

- United Nations Academic Impact



Sustainability

A Three Pillar Concept Simplification

Environment

Economy

People



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The Role of Geoscience in Sustainability

- Understand how to protect the environment
- Develop resources for economic growth
- Support critical needs for society, such as water, energy, and hazard mitigation
- Understand complex systems that drive feedback loops that can affect the next generation (e.g., empower, endanger)
- Provide evidence-based information that can be applied to addressing the “wicked problems” that humanity faces.



Challenges for Geoscience Engagement

- Contemplate how geoscience or the work of geoscientists enable each Sustainable Development Goal
- Move beyond the science, embrace the human and social impacts of work
- Design research to inform action about the environmental, economic, and social well-being of communities—and the interactions of those pillars
- Private sector is driven by economic returns
- Academia is saddled with reward structures focusing on pedigree actions

Taking Intellectual Ownership

Geoscientists are smart people.

It is time to bring forward audacious ideas and provide leadership to enact them.



Fostering Culture Change on Sustainability

Geoscience for sustainability

- Promoting the concept across the federation
- Leading by example in considering environment, economic, and social impacts of programs and activities
- Developing resources to identify exemplars and models for geoscience supporting across the environment, economics, and people
- Developing tools to support an integrated worldview by the next generation of geoscientists



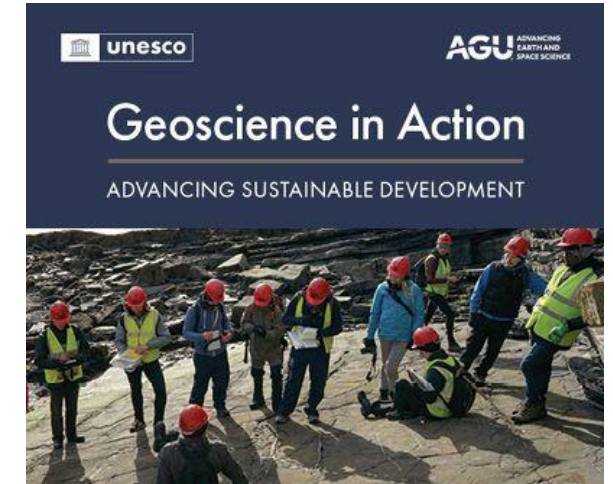
Geoscience for Sustainability (GfS) Initiative

- A vision by AGI leadership for promoting the Geoscience Enterprise to focus on its societal impacts
- Leveraging the federation of societies that is AGI to promulgate engagement of the geoscience community
- Foster a sustainability ethos in the next generation
- Align AGI program activities to the global sustainability initiative



Clearinghouse of Case Studies

- Building from initial efforts to showcase geoscience impacts in sustainable development
 - *Geoscience in Action*
 - *The Geophysical Sustainability Atlas*
- Showcase a wide variety of projects and activities in the geoscience enterprise that intersect with sustainability
 - Exemplars to help inspire and guide future project designs and actions
 - Establish a framework to guide investment in the geosciences (e.g., research, practice, education)



Research Literature Highlights

- GeoRef is currently in the process of tagging the geoscience literature for its association with each of the 17 SDGs.
- A supplemental way to discover the nexus between sustainability and research
- Positioning for sustainability to be a factor in promotion and tenure

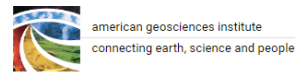


GfS in AGI's Education & Outreach Work

- The preceding discussion is based on geoscience being vital to sustainability
- This implies that **geoscience education** is also vital to sustainability
- AGI's Education & Outreach Department has undertaken efforts to:
 - Tag existing resources to highlight (and inventory) relationships to SDGs
 - Infuse SDGs into curriculum development and teacher professional development
 - Work with teachers to explore practicalities of SDGs in geoscience education

Career Explorer Website

- Encouraging students to discover how their interests relate to sustainability.
- Promoting consideration of geoscience occupations that connect interests with action for sustainability.



Geoscience Career Explorer

[About the SDGs](#) [Career Explorer](#) [For Educators](#)

[Geoscience Career Explorer](#) > [Geoscience Career Exploration](#)

[PRINT SUMMARY](#)

Related Jobs

There are 55 occupations selected



[Select one or more icons](#)

U.N. Sustainable Development Goals



[Select one or more icons](#)

Things I Like to Do...



This work was supported by U.S. Geological Survey Award #G22AC00331

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<https://careerexplorer.americangeosciences.org>



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Hazards Career Game

- Part of the GRANDE Project
- Tests player's sensitivity to natural and social hazards relative to career, compensation, and location

<https://hazardgame.americangeosciences.org>

GRANDE Project: Geoscience Program Adaptation to Natural Disruptive Events

Natural Hazards Impact on Job Choice

30%

Choose Your New Job

These jobs have been chosen based on your educational background and preferred location.

Round 1

16 jobs left to consider this round

0 jobs chosen this round

I do not choose either job

Glaciology Teacher

Epsilon Peach School, South River, NJ

Salary: \$58,400

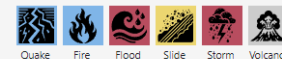
Crime & Hazard Risk

Crime



Crime rate: 12.2 crimes per 1,000 people

Hazards



High Medium Low None

Annual cost of living: \$52,980

Annual disposable income: \$5,420

Epsilon Peach is seeking a dedicated and knowledgeable Glaciology Teacher to join our team. In this role, you will be responsible for developing and delivering engaging lesson plans on glaciology to secondary school students, assessing student progress, and fostering a supportive learning environment. A bachelor's degree in Earth Science or related field, as well as teaching experience, is required.
(Job #04116)

Climatology Specialist

Sigma Inchworm LLP, Kenilworth, NJ

Salary: \$51,900

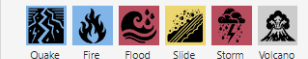
Crime & Hazard Risk

Crime



Crime rate: 19.9 crimes per 1,000 people

Hazards



High Medium Low None

Annual cost of living: \$50,040

Annual disposable income: \$1,860

Sigma Inchworm is seeking a Climatology Specialist to manage and monitor the environmental impact of our properties. The ideal candidate will have a strong understanding of climate trends and their impact on buildings and infrastructure. Responsibilities include conducting climate vulnerability assessments, recommending adaptation strategies, and working with our team to implement sustainable practices in our property management and operations.
(Job #09141)

[Read about our methodology](#)

This material is based upon work supported by the National Science Foundation under Grant #2223004. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation

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A Road to Culture Change

The planet's systems will evolve, but will humanity?

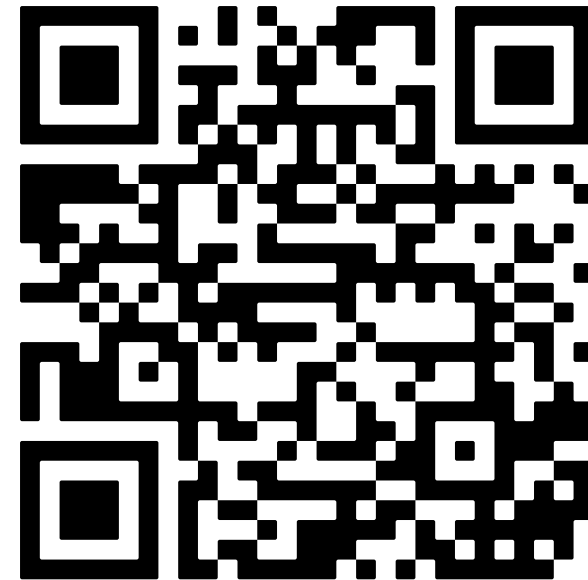
- The Geoscience Enterprise would be remiss to not bring its talents and gifts to address sustainable development for all.
- Our work inherently is impactful, but is it intentional?

Geoscience for Sustainability is a part of a needed effort to center our common purpose

Questions? Comments?

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More Information:



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