EarthConnections
Community Pathways to Geoscience Careers

serc.carleton.edu/earthconnections

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EarthConnections Pathways: Linking Geoscience Learning and Community Involvement to Develop Community Science Literacy

Cathryn Allen Manduca[1], Tahlia Bear[2], Kevin Bonine[2], Donna Charlevoix[3], Ellen Iverson[1], Barbara Nagle[4], Rajul Pandya[5], Karen Peterman[6], Margie Turrin[7], and John Taber[8]
[1]Science Education Resource Center, Carleton College; [2]University of Arizona; [3]UNAVCO; [4]University of California Berkeley; [5]American Geophysical Union, Thriving Earth Exchange; [6]Karen Peterman Consulting, Co.; [7]Lamont-Doherty Earth Observatory, Columbia University; [8]IRIS Consortium

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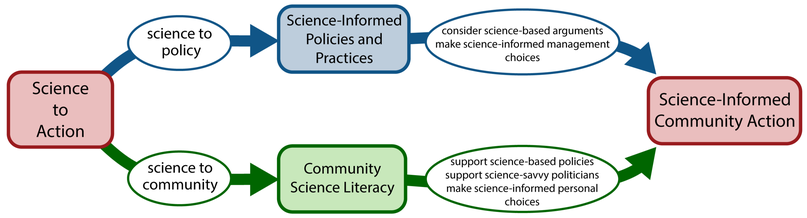
Community Science and Education

Building community science literacy is fundamental to the success of science informed policies and communities. Education and community science can join forces to build this literacy.

Community science is a collaboration between scientists and communities including their citizens and their leaders. In this collaboration, the scientists and communities together determine the questions to be studied, the approaches to be taken, and the interpretation of the results. Such a collaboration requires a foundation of scientific literacy within the community to enable both individuals and the community as a whole to access the needed scientific understanding and to participate in the scientific process. It also requires that scientists and educators learn about the knowledge, values, norms, and priorities of the communities in which they are working—a kind of scientific community literacy.

Citizen science (NAS, 2018 and service learning (NAS, 2017) provide mechanisms to support science learning as part of community science. Both formal and informal educational settings provide opportunities to build foundational knowledge to support this work.



Learning Through Citizen Science: Enhancing Opportunities by Design
A Consensus Study: National Academies Press, 2018 https://doi.org/10.17226/25183
Service-Learning in Undergraduate Geosciences: Proceedings of a Workshop National Academies Press, 2017 https://doi.org/10.17226/24621

EarthConnections Vision

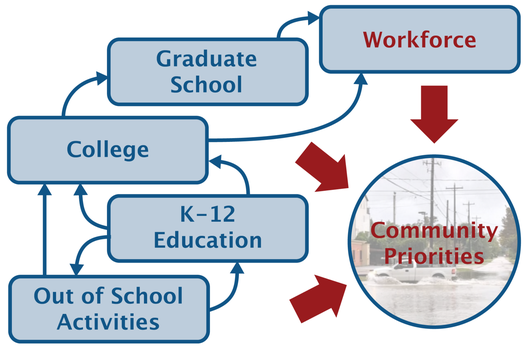
The EarthConnections Alliance supports the engagement of educational institutions and programs in community science while building community science literacy and scientific community literacy

The EarthConnections Alliance seeks to create a world in which all students in our country can travel along educational pathways toward meaningful careers while linking geoscience learning with opportunities to serve their local community. Individually, these pathways and the students who use them strengthen and diversify the geoscience workforce and enhance the ability of their communities to use science. Collectively, the EarthConnections Alliance links community leaders, scientists, and educators to advance sustainability, resilience, and environmental justice nationally while shifting the culture of geoscience toward more inclusiveness and relevance.

EarthConnections Pathways

- Connect opportunities to learn geoscience with opportunities to use this knowledge in service to the local community
- Link geoscience learning opportunities and learners across grade levels
- Use signposting and mentoring to guide and support students
- Lead to local employment opportunities and geoscience-related careers

Rooted in existing regional activities, pathways are developed using a process that engages regional stakeholders and community members. Drawing on EarthConnections program partners and resources, pathways connect, sequence, and create multiple learning opportunities that link geoscience education and community service to address one or more local geoscience issues.



Partnerships for Action

The EarthConnections Alliance is made up of national partners and regional alliances who work together to create strong educational pathways. EarthConnections provides a structure for this work; facilitates communication and sharing of resources, expertise, and experience, and supports project management and evaluation.

Program partners

Program partners have developed programs supporting aspects of Earth science education and community service.

Regional alliances

Regional alliances have had success in addressing local Earth-focused societal challenges; have extensive local networks; and represent and work well with their community.

Partnerships lead to innovation through sharing between national and regional partners. Regional alliances are making use of program elements from national partners while national partners are learning from local implementations.

Partnership and action resources

The EarthConnections website offers resources to support the development and growth of regional alliances and geoscience pathways in your own community.

Regional Alliance Examples
Examples from the pilot alliances show how others are creating pathways focused on communities.

Program Partners
Program Partners offer programming, expertise, or resources to strengthen your regional pathway.

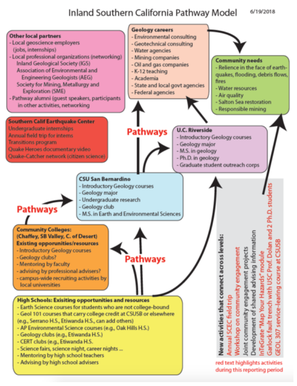
Planning Tools
Tools developed by the regional alliances help you engage stakeholders, stay on track, evaluate your pathway, and support communications.

Example Pathways

San Bernardino Alliance

This fast-growing region faces some of the highest possible shaking hazards from earthquakes on the San Andreas and other faults.

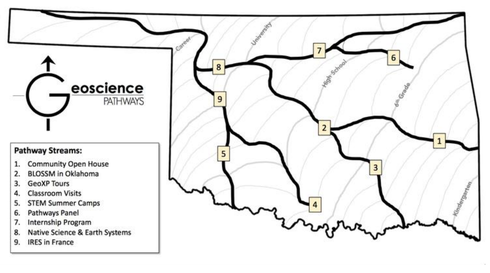
The alliance has worked with regional organizations to develop and disseminate accurate information about earthquakes. It is also using interventions (teaching workshops, student activities, and courses) to engage students with geoscience.



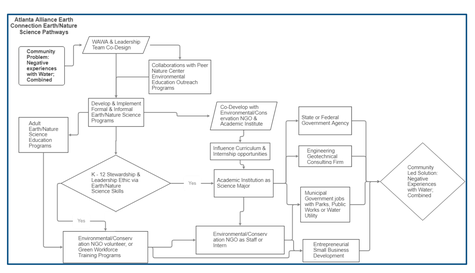
Oklahoma Tribal Nations Alliance

Understanding the relationship of earthquakes to energy industry practices, and the resulting implications for energy production and related jobs is an important issue for all Oklahoma residents, but especially Native Americans in the region.

The Oklahoma alliance is working with Tribal leaders, local schools and universities, and the OK Geological Survey (OGS) to to construct pathways and engage with students.



Atlanta Alliance

This densely populated, diverse region faces some of the highest possible shortages of available fresh water, as well as water contamination and flooding in West Atlanta.

The Atlanta alliance has embedded itself into the community through the West Atlanta Watershed Alliance, local universities, and other community organizations.