



**Developing Learning Progressions for Maps, Geospatial Technology,  
and Spatial Thinking:  
A Researcher-Training Workshop**

October 9-12, 2014  
National Geographic Society: Washington, D.C.

**CALL FOR PARTICIPATION**

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The GeoProgressions project invites applications for a workshop designed to provide training and support for doing research on learning progressions for maps, geospatial technology and spatial thinking in K-12 education.

GeoProgressions is a project funded by the National Science Foundation to build capacity for learning progressions research in geography. The aim of learning progressions research is to uncover the increasingly sophisticated ways that students learn key principles and concepts of a discipline. Learning progressions researchers deploy a variety of methodologies in search of empirical evidence of students' thinking and how it develops over time in relation to a topic, concept, or practice. This type of research has considerable potential to inform improvements in instructional materials, standards, and assessments, but it has yet to be pursued systematically in the context of geography in K-12 education.

GeoProgressions is building the capacity of researchers to carry out learning progressions research in geography by developing a researcher-training handbook and providing training and mentoring support for faculty and graduate students. This workshop will focus on preparing researchers to develop learning progressions for the first three standards of *Geography for Life: National Geography Standards, Second Edition*. Those particular geography standards set goals for teaching and learning with maps, spatial thinking, geographic information systems (GIS) and other geospatial technologies.

**Audience:** This workshop is intended for faculty, postdoctoral researchers and graduate students from any discipline with interests in educational research, spatial thinking and applications of maps and geospatial technologies in K-12 education. This is an excellent opportunity for scholars who wish to build research skills and join an interdisciplinary community of learning progressions researchers in an exciting and emerging area of educational research.

**Agenda:** Participants will receive training and mentoring from geography, math, and science educators with expertise in learning progressions research planning and design. The workshop will feature paper presentations, panel discussions, and a variety of interactive breakout sessions for discussion, exchange of ideas, hands-on training, and research planning.

In advance of the workshop, participants will receive reading material including a copy of the researcher-training handbook created by the GeoProgressions project. Participants will also have an opportunity to interact, ask questions and share preliminary ideas in the GeoProgressions social networking website.

During the workshop, participants will be organized into small groups based on areas of research interest. The groups will consider and discuss ideas for planning and designing a research project to develop and test hypothesized learning progressions for maps, spatial thinking, GIS and other geospatial technologies. The workshop will end with individuals presenting their draft research plan in a plenary session. Participants may also wish to present ideas for collaborative research.

The workshop sessions will span the following topics:

- Definitions of learning progressions with examples from geography, math, and science education.
- Discussion of relevant research on spatial cognition, map learning, and GIS education.
- Materials and procedures that can be used to develop a hypothesized learning progression, for example:
  - Approaches to constructing samples and assessment items for quantitative studies.
  - Demonstration of how to perform validity tests of research instruments.
  - Demonstration and practice of qualitative methods, including clinical interviews.
  - Hands-on practice of various statistical techniques.
  - How to interpret quantitative and qualitative data.
- Common errors, issues, and obstacles in learning progressions research.
- Strategies for gaining research access to students in K-12 classrooms.

**Outcomes:** Participants will leave the workshop with an in-depth introduction to learning progressions research and how to use the knowledge gained from the training to plan and design a learning progressions research proposal and project related to standards 1-3 in *Geography for Life: National Geography Standards, Second Edition*.

In the weeks following the workshop, participants will formalize their research methods and timeline in a written research plan that will specify methods of data collection, analysis, and reporting. Participants will be invited to submit their research plans for publication in a special issue of the journal, *Research in Geographic Education*.

There will also be an opportunity for participants to join a broad-based research proposal that will seek funding for the full-scale implementation of the research plans emerging from the GeoProgressions workshop. This proposed project will be designed to coordinate the work of an interdisciplinary network of researchers in a collaborative effort to develop, test, and validate learning progressions for maps, geospatial technology, and spatial thinking. The proposal will be coordinated by the National Center for Research in Geography Education ([www.ncrge.org](http://www.ncrge.org)), a research consortium led by the Association of American Geographers (AAG) and Texas State University.

For additional information about the GeoProgressions project, visit:

<http://www.ncrge.org/projects/geoprocessions/>

**Funding:** The workshop grant will pay the following expenses for accepted participants:

- 1) Round-trip economy airfare to Washington, D.C.
- 2) Lodging (3-nights accommodation, arriving Thursday, October 9 and departing Sunday afternoon, October 12).
- 3) Meals (breakfast, lunch, and snack breaks), and local transportation during the workshop. A sponsored reception and dinner will be held on the evening of Thursday, October 9. Participants will be responsible for their own dinners on other evenings.

Details about travel and accommodation will be provided after applications have been reviewed and accepted. Please note that the workshop grant can only support the participation of U.S.-based scholars and students.

**Application:** The workshop grant will support 24 participants. To apply for consideration, complete the application form and submit it with the requested accompanying materials to arrive by June 30, 2014 at the latest. Early career scholars are especially encouraged to apply.

Participants will be notified of an acceptance decision by August 1, 2014. Final selections will be made to ensure diversity of institutional affiliations, research interests, and disciplinary expertise.

Applicants are advised not to make travel commitments until their participation has been confirmed by the AAG.

**Questions?** Contact the GeoProgressions project director, Dr. Michael Solem (msolem@aag.org, 202-234-1450).

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