

# NATIONAL SCIENCE FOUNDATION GEOGRAPHY AND SPATIAL SCIENCES (GSS) PROGRAM STRATEGIC PLAN 2017-2021

## VISION

The Geography and Spatial Sciences (GSS) Program of the National Science Foundation (NSF) seeks to *advance discovery, basic understanding, education, and societal contributions in geography and spatial science.*

## MISSION

The mission of the NSF Geography and Spatial Sciences Program is to promote:

- *Basic scientific research in geography and spatial science that advances theory, fundamental understanding, and scientific approaches and addresses the challenges facing society;*
- *The education and training of geographers and spatial scientists in order to enhance the capabilities of current and future generations of researchers; and*
- *The involvement of geographers and spatial scientists in interdisciplinary research.*

## CORE VALUES

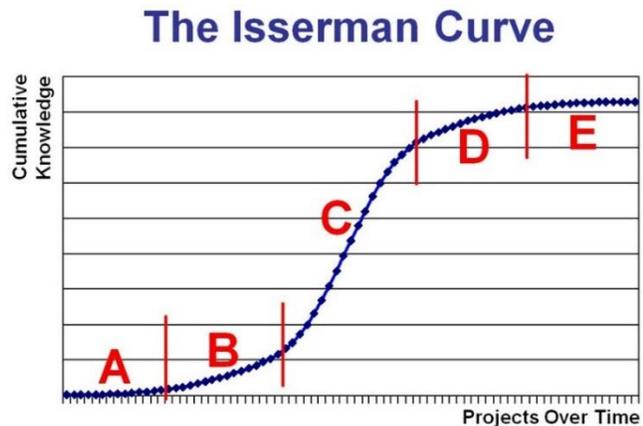
As core values to guide their work, program directors and those who serve on advisory panels or assist as staff members associated with the NSF Geography and Spatial Sciences Program strive to be:

- *Forward-looking* -- anticipating and facilitating advances in basic scientific knowledge and methods in geography, spatial sciences, and related fields.
- *Open* -- encouraging and supporting innovative approaches that provide new perspectives and insights.
- *Integrative* -- fostering connectivity among geographic subfields and across disciplines in ways that enhance basic scientific knowledge and methodologies that benefit all participating scholarly communities.
- *Inclusive* -- seeking and accommodating participation by the broadest possible range of investigators, institutions, and scientific research approaches.
- *Accountable* -- conducting programmatic operations with integrity and transparency.

The Geography and Spatial Sciences (GSS) Program of the U.S. National Science Foundation (NSF) seeks to advance basic understanding and methods in geography, spatial science, and related fields to enhance fundamental knowledge and address societal problems. The GSS Program explicitly embraces the broader range of overlapping research communities that it serves, and supports interdisciplinary research involving geographers and other spatial scientists.

In alignment with the National Science Foundation's strategic plan 2014-2018 (NSF 14-043), GSS expects that the research it supports will draw upon and enhance fundamental theory in geography and spatial science. GSS also will continue to encourage and support research that is potentially transformative research and will benefit society.

GSS views potentially transformative research (PTR) as research that involves ideas, discoveries, and methods that dramatically change understanding of scientific concepts and approaches and that extend or lead to productive new lines of inquiry. In order to identify potentially transformative research, the GSS program continues to employ the "Isserman Curve," a representation of a conceptual model that GSS has used regularly for discussion of the potential of proposals.<sup>1</sup> The Isserman Curve adapts traditional innovation-adoption curves by considering a productive line of scientific inquiry. Projects over time are represented sequentially on the horizontal axis, while the cumulative knowledge resulting from each project is represented on the vertical axis. GSS aims to fund research in its most productive and innovative phases (Phases B and C).



Supporting potentially transformative research will remain a major focus of the GSS Program. GSS will strive to identify research projects that may potentially transform geography, spatial science, and related fields by trying to assess the long-term potential as well as the more immediate significance of research projects. The program will continue to experiment with ways to elicit better information from reviewers and advisory panel members regarding the potential larger-scope, longer-term significance of projects that are separate from assessments of the likelihood of a project's success.

The GSS Program will continue to emphasize the broader impacts of the research it supports by fostering a better understanding of and communicating more effectively in outreach efforts what NSF means by broader impacts. The program will be open to novel and creative examples of broader impacts, and will emphasize the communication of research results and insights to individuals, groups, and organizations beyond traditional scholarly audiences.

## GOALS AND STRATEGIES

### ***A. Support research through the Geography and Spatial Sciences Program that has the highest intellectual merit and positive broader impacts***

Support will be provided for projects that are most effective in grounding research in relevant theoretical frameworks in geography and spatial science, that focus on questions that emanate from the theoretical discussions, and that use scientifically sound methods to explore the viability of answers to those questions. GSS-supported projects are expected to yield results that will enhance, expand, and transform fundamental theory and methods and that will have positive broader impacts that benefit society. For projects conducted outside the United States, GSS encourages the development of true collaborations between U.S.-based researchers and researchers in other countries, their students, and their organizations.

<sup>1</sup> The concept was first presented by the late regional scientist Andrew Isserman (Baerwald, T.J. 2013. The Legacy of Andrew Isserman at the US National Science Foundation. *Journal of Regional Science* 36(1): 29-35, DOI: 10.1177/0160017612441202).

- 1. GSS will support research projects in geography and spatial science for investigators at all stages of professional development through a variety of mechanisms, including regular research projects, doctoral dissertation research improvement (DDRI), and faculty early-career development (CAREER) awards.**
- 2. GSS will continue to emphasize potentially transformative research.**
- 3. GSS will continue to emphasize the importance of positive broader impacts.**

***B. Support research for community development***

GSS will provide support for research community-building activities that strengthen geography and other spatial sciences and that lead to collaborative interactions with other fields.

- 1. GSS will encourage and support activities that diversify the composition of the geographic and spatial scientific workforce.**
- 2. GSS will support activities that foster and expand collaboration across geography and spatial scientific communities as well as between geographers/spatial scientists and researchers in other fields.**

***C. Support research through wide-ranging interdisciplinary competitions***

GSS will support interdisciplinary research and related education and training that involves geography, and spatial science, and related fields.

- 1. GSS program directors will inform and involve members of the geography and spatial science research communities in interdisciplinary research opportunities at NSF.**
- 2. GSS program directors will participate in interdisciplinary competitions that span NSF divisions and directorates and assume leadership roles in the conduct of competitions when appropriate.**

***D. Engage in outreach and communications***

GSS will actively engage in outreach activities designed to communicate information about GSS and other NSF funding opportunities among researchers in geography, the spatial sciences, and related communities.

- 1. GSS program directors will disseminate information about funding opportunities and other relevant issues through various media.**
- 2. GSS program directors will engage in outreach activities in a variety of settings.**
- 3. GSS program directors will work with NSF staff members to communicate information about research contributions made by geographers and spatial scientists.**

***E. Operate with integrity, commitment, and accountability***

In accordance with the core values specified previously, GSS program directors will strive to maintain high levels of responsiveness to investigators, reviewers, panelists, and others outside NSF.

- 1. GSS program directors will conduct proposal evaluation and award management in timely, fair, transparent, and effective ways.**
- 2. GSS program directors will strive to demonstrate the highest standards of integrity and accountability.**

For more information about the NSF Geography and Spatial Sciences Program, contact the GSS program directors at [gss-info@nsf.gov](mailto:gss-info@nsf.gov)