Dr. Maria Carmen Lemos leads the study focused on science usability and help the NSC team to design and evaluate funding competitions. Maria Carmen Lemos is Professor of Natural Resources and Environment at the University of Michigan, Ann Arbor and Senior Policy Scholar at the Udall Center for the Study of Public Policy at the University of Arizona. She is a co-founder of Icarus (Initiative on Climate Adaptation Research and Understanding through the Social Sciences), which seeks to foster collaboration and exchange between scholars focusing on vulnerability and adaptation to climate change. She was a lead author of the Intergovernmental Panel on Climate Change (IPCC-AR5) and has served in a number of the US National Research Council of the National Academies of Sciences committees, including Restructuring Federal Climate Research to Meet the Challenges of Climate Change (2009), America Climate Choice Science Panel (2010) and the Board on Environmental Change and Society (2008-present). She has MSc and PhD degrees in Political Science from the Massachusetts Institute of Technology, MIT.

James Arnott supports Dr. Maria Carmen Lemos in researching drivers of science and technology usability and the NSC team in developing survey and evaluation materials. He also supports Dr. Susanne Moser in the Successful Adaptation Indicators and Metrics project. James is the associate director of the Aspen Global Change Institute and is a Ph.D. candidate at the University of Michigan. His expertise is on the interface between science, policy, and practice with a focus on climate change impacts, adaptation, vulnerability, and resilience. At AGCI, James manages the Institute's suite of global change science and outreach activities, including an annual interdisciplinary workshop series and various place-based and collaborative research projects. At the University of Michigan, James is completing a dissertation entitled, ***Accelerating the Usability of Global Change Research***. In 2011, James was awarded the McCloy Fellowship in Environmental Policy. James received a B.A. in Political Science and Economics from Principia College.

Science Usability

The science usability team is learning about strategies that best support the generation of usable science for coastal and estuarine resource management from the NERR System. The team is studying how the design of competitive funding programs influence whether/how research project results will be utilized. They are doing this by examining a variety of different data sets beginning with the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) through the NERRS Science Collaborative (NSC). They analyzed 120 final project reports from 1998 – 2014 and interviewed a total of 40 research project team members and end users. Their work provides evidence-based guidance to the NSC, and potentially to other funding programs, about how best to nurture the production of usable science and technology.

This team, University of Michigan PhD candidate James Arnott, Rachel Neuenfeldt, and Stefania Almazan under the leadership of Dr. Maria Carmen Lemos, has enjoyed strong support from NOAA program staff who provided access to multiple types of documents and NERRS staff who agreed to participate in interviews for the project. This combined effort has enabled very rich findings.

Why this work?

Scientists, practitioners, politicians, and citizens are increasingly calling for research cultures and outcomes that directly serve societal needs. However, it remains unclear what factors are most important in supporting the generation of more usable or actionable science. The unique dataset afforded by NERR System provides a significant foundation for analysis of both research funding program design and necessary program support to benefit successful collaborative research efforts.

Outputs and Impacts to Date

- Increased understanding of the impacts of collaborative research supported by the NSC:
  - NERRS demonstrates the possibility of big, system-wide changes in research practice;
  - Sponsor requirements—and additional support—can instigate lasting change;
  - Researcher-practitioner interaction generates usable knowledge and unanticipated benefits; and
  - Lessons learned for improved evaluation and program management.
- Informed NSC request for proposal design and proposal development resources available to applicants.
- Informed the design of project and program evaluation materials.

Anticipated Accomplishments Over the Next Two Years

- Presenting final results to NSC Advisory Board, NERR System (at Annual Meeting);
- Publishing two peer-reviewed papers, highlighting NERRS System innovation to coastal/estuarine community and beyond:
  - A paper focusing on the history of innovation within the NERR System;
  - A paper focusing on drivers of usability;
- Provide guidance to NSC in the design of future funding competitions; and
- Provide guidance to other science program managers about designing funding competitions.