



EARLY CAREER RESEARCH FORUM

Summary: The *Early Career Research Forum* of the South Central Climate Adaptation Science Center (CASC) will establish a cohort of graduate students, postdoctoral associates, and early career environmental professionals within the South Central CASC region to produce science consistent with the USGS South Central CASC Science Agenda (USGS, 2024) and needs of CASC partners. The objectives of the *Forum* are to: (1) introduce participants to the unique research-related challenges of the South Central CASC and the larger CASC network as they conduct their personal research and data collection; (2) extend the participants' research and interdisciplinary collaboration with an eye toward piloting research and data collection activities associated with USGS projects; and (3) advance participants' understanding of actionable research and collaborating with resource managers. Expected outcomes include recognition of various ways that actionable science can be conducted, development of pilot projects using best practices for actionable science, a cohort of early career professionals who can learn from one another throughout their careers, and a larger body of relevant, actionable science for our region.

Management Partner Relevance: Many researchers and managers find it difficult to conduct necessary and important interdisciplinary work because basic research, applied research, management processes, disciplines, and even sub-disciplines have been “siloed” for so long. It is clear that the next generation of researchers and managers must be better positioned to collaborate, conduct interdisciplinary science, and understand each other's needs as they share data and conduct research.

Expected Results: A major outcome of the *Forum* will be the design of a pilot research project using best practices for actionable science. During this project, the participants are expected to start removing institutional barriers so they can better navigate multi-institutional and multi- or interdisciplinary research involving decision-maker engagement. The pilot projects also are expected to contribute to the development of better research and data-sharing practices. With participants selected who already are conducting research relevant to the South Central CASC research priority areas, they will leave the meeting with additional research concepts, collaborators, and pilot projects to increase their research output in the near future.

Procedures/Methods: The proposed one-week, in-person *Forum* will be hosted at one of the Consortium member universities in Year 1 (likely University of New Mexico) and rotate to a different institution in Year 3. The *Forum* will build upon the successes of previously funded research and data/products and highlight research strengths and partner engagement in the hosting institution's network, complementing those prior workshops provided at Texas Tech University (TTU) in 2016, Louisiana State University (LSU) in 2018, and the University of Oklahoma (OU) in 2014 and 2022.



2014 Early Career Research Forum Participants



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Participants will be primarily graduate students, post-docs, and early-career environmental professionals within five years after receiving their degree. Their research focus must be associated with the south-central U.S. and correspond with the USGS South Central CASC Science Agenda (USGS, 2024). We will select approximately ~27 participants through a competitive application process, prioritizing applicants who (1) are aligned with South Central CASC consortium institutions, or (2) are funded through South Central CASC supplementary research projects. As space permits, participants will be drawn from other institutions.

During the meeting, we will introduce participants to the USGS, South Central CASC, its partner organizations, and the nationwide CASC network. We will recruit appropriate leaders to discuss the research and data collection goals of the South Central CASC. Other speakers through the week will include representatives from the DOI (e.g., USGS Water Science Centers, Bureau of Land Management, U.S. Fish and Wildlife Service), neighboring CASCs, and a variety of product users such as wildlife managers, state water managers, tribal environmental professional, and private or non-governmental adaptation planners. A unifying theme among these experts will be to demonstrate how their particular organization interacts with the South Central CASC research enterprise and the unique research challenges and successes of such interactions. Established researchers in the region will provide participants with an in-depth perspective on how their particular research activities incorporate ideas and feedback from partners and users so that the early-career researchers can emulate these processes in their pilot studies. One key to successfully conducting actionable science is good communication among researchers, partners, and science translators (e.g., boundary organizations like the CASCs). We will have the participants practice science communication techniques during their research process.



2016 Early Career Research Forum Participants

A key focus of the Forum is to build pilot research projects that highlight how scientific results and data are used in the decision-making process. For example, with the Forum in Year 1 anticipated to be held at the University of New Mexico (UNM), participants may design a research project that assesses future streamflow in southern New Mexico. Access to water from the Elephant Butte Reservoir has been curtailed in recent years due to severe drought. Allocations of released water are made early each year and are based on projections of streamflow into the reservoir from snowpack in the headwaters upstream. The project requires a range of knowledge, technical skills, and research method expertise to develop a science-based recommendation in partnership with decision-makers.



EARLY CAREER RESEARCH FORUM (CONTINUED)

Finally, the *Forum* will incorporate research-related visits to explore climate impacts to the nearby environment and provide opportunities for partner engagement as part of the process of actionable science. For example, the anticipated Year 1 *Forum* location at UNM offers a variety of sites relevant to the research priorities of the South Central CASC. Examples include: (1) the Sevilleta Long-term Ecological Research site that monitors long-term trends in vegetation and soil moisture, as well as hosts ecological manipulation experiments to explore climate impacts; (2) the Jemez Mountains, which have experienced several extreme stand-replacing wildfires in recent years; and (3) DOI facilities, including the regional office of the U.S. Fish and Wildlife Service and the New Mexico USGS Water Science Center. These visits will help researchers connect their pilot projects and future research with relevant climate impacts in the south-central U.S.

Project Personnel: The CASC's Consortium Research Coordinator will have funding (built into the budget) in Years 1-4 for planning, implementation, and evaluation of the *Forum*. The PI, Co-PIs, and Postdoctoral Researcher at the consortium institution hosting the *Forum* will assist with local planning and implementation.

Schedule/Timeline:

- Year 1 - *Forum* planning and implementation
- Year 2 - Evaluation and revisions made
- Year 3 - *Forum* planning and implementation
- Year 4 - Evaluation and final reporting

References

USGS. (2024). South Central Climate Adaptation Science Center science agenda: 2025-2030 (DRAFT). U.S. Geological Survey, Norman, OK, 38 pp. <https://southcentralclimate.org/2025-2030-science-agenda/>



2018 Early Career Research Forum Participants