



RESEARCH SCHOLARS PROGRAM

Applying elements from the USGS NCASC's Climate Adaptation Postdoctoral (CAP) Fellows Program and the Core Competencies of the National Postdoctoral Association, we propose to develop a cohort of graduate and postdoctoral researchers who acquire the skills necessary to successfully undertake the unique research requirements to conduct actionable science for or aligned with the South Central CASC. The cohort will engage in learning activities that help them strengthen their research skills. Example topics are listed below for each skill/competency area:

- **Cross-disciplinary conceptual knowledge** – to develop skills that generate research questions, acquire cross-disciplinary knowledge, and recognize limitations and challenges in datasets and methods used in research. Example topics include:
 - Guide researchers through how to conduct a literature review and analysis of research gaps
 - Introduce researchers to a range of methods used in the physical, natural, and social sciences, including their usefulness and limitations
 - Discuss the differences and nuances among different climate datasets, both historical and projected
- **Research skill development** – to develop skills for conducting research safely, designing appropriate research protocols, and recognizing biases in research design and data analysis. Example topics include:
 - Provide examples of poorly designed research protocols and discuss how to revise them to be more appropriate for the research question
 - Outline the grant awards process and critical elements for USGS and other Federal agencies (e.g., proposal writing, reporting, compliance, budget and finances)
 - Discuss human, animal, and equipment safety in the laboratory and field, including codes of conduct to ensure everyone is safe from harassment
- **Communication skills** – to develop skills for translating research results to different audiences using a variety of communication methods. Example topics include:
 - Examine the process of scientific publishing and peer review
 - Conduct mock presentations for various audiences (scientific experts, natural or cultural resource managers, lay audiences)
 - Develop and critique posters for scientific conferences
 - Provide example of how to have difficult conversations and how to resolve conflict in the workplace
 - Translate research for use by the news media and social media

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RESEARCH SCHOLARS PROGRAM (CONTINUED)

- **Professionalism** – to develop skills that advance professional standards and practices in the workplace, including professionalism with colleagues; rightsholders, societal partners, and product users; institutional representatives; and society at large. Example topics include:
 - Conduct a peer review using respectful and constructive feedback, and respond to a critical peer review professionally
 - Learn how to discover, uphold, and (if needed) challenge workplace norms, rules, and regulations
 - Practice advancing the ideas of others
 - Develop a plan for service to professional societies
- **Leadership and management skills** – to develop skills and techniques to work collaboratively on teams, manage tasks and projects, and lead others with a collegial attitude. Example topics include:
 - Discuss the value of scientific mentorship throughout one's career and learn examples of successful mentoring techniques
 - Develop a plan for project management, including how to determine priorities, manage time and budgets, maintain notes, delegate responsibilities, and backup data/information
 - Overview the elements of a performance review, individual development plan, and job posting
- **Responsible and ethical conduct of research** – to develop skills and habits that lead to ethical and legal choices in the research process. Example topics include:
 - Learn how to conduct research with Tribal partners and understand what Tribal sovereignty means as related to research
 - Overview research with human subjects, including ethical principles, the Belmont Report, and Institutional Review Boards (tribal and non-tribal)
 - Overview research involving animals, including ethical principles, governmental regulations, and Institutional Animal Care and Use Committee procedures
 - Discuss how to recognize and report research misconduct
 - Overview conflicts of interest (personal, financial, etc.), confidentiality, and power differences (e.g., professor/student)
 - Outline what harassment and discrimination are in the workplace and how to respond or report