



USGS NSF GRIP Opportunity

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- Point of Contact Name:** Marcia McNiff
- USGS Center:** Core Science Analytics, Synthesis & Libraries
- Project Title:** USGS Earth System Informatics Scientist (Informatics Research and Development) – John Wesley Powell Center
- Project Hypothesis or Objectives:**

The U.S Geological Survey’s Science Strategy, Facing Tomorrow’s Challenges—U.S. Geological Survey Science in the Decade 2007–2017, emphasizes applied Earth systems information research with a focus on data integration and new methods of investigation. Recommendation for a place apart from everyday work pressures where synthesis of multi-disciplinary data could take place led to the development of the John Wesley Powell Center for Analysis and Syntheses. The Powell Center offers the opportunity for collaborative synthesis and analysis opportunities in Earth system science where leveraging existing research efforts produces powerful new insights and moves scientific understanding and its inclusion into management forward at an accelerated pace. One of the core values of the Powell Center is the pursuit of data synthesis in conjunction with scientific synthesis and the application of advanced computer and information science to accomplish this goal. USGS’s Core Science Analytics, Synthesis, and Libraries program works in partnership with the Powell Center to determine and accommodate technical needs to bring improved computational and data management capabilities to Working Group participants. It is envisioned that Powell Center working groups will intersect with the broader world of informatics research and development in areas from scientific semantics and ontology development to advanced earth system models. Expertise is needed in these areas, as well as in information management and delivery, information technology and security, modeling, statistics, GIS and remote sensing applications, and managing, merging, and querying large data sets.
- Duration:** 9-12 months
- Internship Location:** Fort Collins, CO

<p>Area of Discipline:</p>	<p>Informatics, Computer Science, Earth Science, Data and Information Science, Physical Sciences, Big Earth Data</p>
<p>Expected Outcome:</p>	<p>This work and intended results will have a direct impact on a number of Powell Center Working Groups currently desiring to implement more advanced informatics capabilities in their research environment. Resources are needed to address the growing demand for support and continued implementation of these advanced method and capabilities in support of USGS science.</p>
<p>Special skills/training Required:</p>	<p>The job will require knowledge and skills in the fields of computer and information science, scientific data management and publishing, informatics research and development in areas such as semantics and ontology, advanced earth system models, information management and delivery, information technology and security, modeling, statistics, GIS and remote sensing applications, and managing, merging, and querying large data sets. A firm grounding in the biological and earth sciences will be of great benefit in working with Powell Center Working Groups and other aspects of the USGS science portfolio.</p> <p>Completion of a bachelors or masters degree in computer science, earth sciences related discipline (geology, biology, hydrology, etc), applied mathematics, or related field. Applicant must be proficient in various scientific computing technologies including organizing and managing complex datasets, various scientific analysis software (i.e. R, MatLab, etc.), metadata (i.e. FGDC, ISO), and supporting local/remote collaborative teams.</p>
<p>Duties/Responsibilities:</p>	<p>Development of informatics methods, tools, and advanced capabilities in support of Powell Center multi-disciplinary research Working Groups.</p> <p>Provide technical support and education to USGS scientists and data managers related to: advanced informatics expertise; available data management tools and cyberinfrastructure; informatics best practices with addressing complex earth science data; and development of various methodologies/approaches to dealing with analysis and synthesis needs of Working Group participants.</p>
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