



National Science Foundation

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NSF Geosciences Directorate Support for Postdoctoral Appointees and Graduate Students: Guidelines for Principal Investigators

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Dear Colleague,

The Directorate for Geosciences (GEO) seeks to highlight the importance of providing professional development and mentoring for postdoctoral appointees, and to remind PIs to include descriptions of these efforts in the Broader Impacts activities of proposals. The geosciences community recognizes that the postdoctoral experience is an important time to develop and refine the professional skills that will maximize the potential for postdoctoral appointees to succeed in their fields. In recognition of these shared values and their benefits for our community, provision of quality mentoring (or access to the appropriate mentors) and advisement on a continuing basis to all postdocs and to graduate students supported by NSF awards should be documented and highlighted as “Broader Impacts” outcomes in annual and final project reports.

GEO recognizes that many PIs and their institutions already provide professional development opportunities for their postdocs, and encourages all awardees – particularly those with no prior experience as a postdoctoral supervisor - to explore the full range of activities that contribute to a meaningful postdoctoral experience. Several recent workshop reports, listed below, have identified positive ways for PIs and their institutions to prepare postdocs for their careers. These reports highlight the need to provide formal training and structured oversight of postdoctoral career development activities, and include resources on topics such as broadening access, facilitating transitions into and out of the postdoctorate, and how to enhance the development and choices of careers.

GEO encourages all awardees, project managers, and their institutions to provide their postdocs with access to professional activities that provide formal or informal training in (for example): proposal preparation; lab and project management; research ethics; verbal and written communication; teaching; education and public outreach; negotiating; and time management. In addition, efforts to reach out and recruit members of underrepresented groups into postdoctoral positions are specifically encouraged.

PIs may propose these activities to fulfill NSF’s Broader Impacts criterion, and should document these activities in Annual and Final Reports for the project. Measures of success include, in addition to publications and research results, documentation of specific activities related to professional career development and how these activities contributed to the progress of individuals capable of functioning as independent professionals. PIs may also find it useful to track the career pathways of postdocs after the appointment, in order to document successes that may have resulted from their professional development efforts. Reports on highly effective or innovative ways that PIs have contributed to the professional development of postdocs are of particular interest to NSF.

Parallel efforts that foster the professional development of graduate students, so that they may become successful future scientists, fulfill the “**Broader Impacts**” criterion and also should be documented in reports and proposals to NSF. Traditionally, PIs have provided the names and thesis titles of graduate students involved in their research projects in the “Results from Prior Research Support” section of proposals, and in Annual and Final Project Reports. Professional development activities provided to graduate students during projects may be included in these reports.

Explicit professional support provided to new PhDs and to graduate students leads to professional satisfaction, productive careers, and benefits the entire geosciences community. GEO shares these values and greatly appreciates the contributions of our community in working to achieve these goals.

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Workshop Reports

Postdoctoral Appointments: Policies and Practices, NSF Workshop Report (March 2005, <http://www.MerrimackLLC.com/2004/postdoc-workshop.html>).

Doctors Without Orders: May-June 2005 Special Supplement to American Scientist, and **Professionalizing the Postdoctoral Experience** (a Forum, 2006) both by Geoff Davis, <http://postdoc.sigmaxi.org>

Recommendations for Postdoctoral Policies and Practices. One document, among other resources available from the National Postdoctoral Association (<http://www.nationalpostdoc.org>).

Other Resources

Enhancing the Postdoctoral Experience for Scientists and Engineers, Committee on Science, Engineering, and Public Policy, National Academy Press (<http://www.nationalacademies.org/postdocs>)

On the Cutting Edge, professional development for geoscience faculty (<http://serc.carleton.edu/NAGTWorkshops/>)

DIALOG and DISCCRS Resources for early-career development (<http://marcus.whitman.edu/~weilercs/resources/>)