NSF Postdoctoral Mentoring Activities

I. NSF Requirement

From the National Science Foundation (NSF) Grant Proposal Guide (GPG):

- Each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. In no more than one page, the mentoring plan must describe the mentoring that will be provided to all postdoctoral researchers supported by the project, irrespective of whether they reside at the submitting organization...
- The proposed mentoring activities will be evaluated as part of the merit review process under the Foundation's broader impacts merit review criterion. Proposals that include funding to support postdoctoral researchers, and, do not include the requisite mentoring plan will be returned without review (see GPG Chapter IV.B.)

In addition, the FastLane project reporting format has been modified to inform PIs of the requirement to report on the mentoring activities provided to postdoctoral researchers during the performance period, including any postdoctoral researcher not identified in the original proposal submission.

II. Example Postdoctoral Researcher Mentoring Plan

The grant proposal guidelines provides examples of mentoring activities, “career counseling; training in preparation of grant proposals, publications and presentations; guidance on ways to improve teaching and mentoring skills; guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and training in responsible professional practices.” NSF has recommended against the use of “boilerplate” language and expects each PI to describe a mentoring plan that is appropriate to the individual(s), the research program at the University.

Research Administration and Finance provides the following language as an example but expects that each proposed mentoring plan will vary depending on the nature of the research program and the potential benefits to the postdoctoral researcher(s). Please note that as part of a separate NSF policy implementation, RCR training will become mandatory for all students and postdoctoral researchers supported by awards resulting from proposals submitted on or after January 4, 2010. The plan for ensuring RCR training in not required to be included in the proposal but the University will be expect all postdoctoral researchers, and students, funded by awards resulting from these NSF proposals to complete RCR training within 90 days of the award or assignment to the project.

Example Introduction:

x# postdoctoral researcher(s) will be funded on this project. As described below, a structured mentoring program tailored to meet the needs of each postdoctoral researcher’s development will be implemented. Each mentoring program is designed to enhance the postdoctoral researcher’s knowledge and experience and the career skills he/she will need to succeed. A subset of the following components could be included in the mentoring plan:
Plan Component Examples:

- Research
  - Research Development course on how to write competitive proposals
  - Research Administration and Finance training:
    - Community of Science – identification of research funding opportunities
    - Grants.gov – Preparation of electronic grant application packages
    - Banner Finance basics
    - What to charge or not charge on a research grant
      - Regional Seminars on Program Funding and Grants Administration
      - Each NIH Institute, Center and Office regularly holds workshops that are open to the public, including grant writing workshops
    - Travel to conferences with the goal that the postdoctoral researcher present a poster or paper
- Teaching
  - Mandatory workshop for all new graduate teaching assistants hosted by the Principal Investigator
  - International Teaching Assistant Program (ITAP) conducted by the University’s English Department
- Responsible Conduct of Research (RCR)
  - Comprehensive RCR course. This course is available via Collaborative Institutional Training Initiative (CITI) and includes four discipline specific courses; Biomedical, Social and Behavioral, Physical Science and Humanities. The following content areas are covered in this course:
    - Introduction to the Responsible Conduct of Research
    - Research Misconduct
    - Use of Human Subjects in Research
    - Use of Animals in Research
    - Data Acquisition and Management
    - Responsible Authorship
    - Peer Review
    - Mentoring
    - Conflicts of Interest
    - Collaborative Research
  - Human Subjects Research:
    - Institutional Review Board Training (medical and non-medical), made available via the CITI program
    - UA AAHRPP GUIDANCE Document: Responsible Conduct of Human Subject Research
  - Humane care and use of laboratory animals:
    - Working with the IACUC (Institutional Animal Care & Use Committee), made available via the CITI program
  - Office of Research Integrity (ORI) RCR Program for Postdocs - http://www.nationalpostdoc.org/site/c.eoJMIWOBlrH/b.2625523/k.5BD7/Bring_RCR_Home_Project.htm
- Lab Safety
  - UA Environmental Health and Safety provided additional lab specific training as Biological Safety, Laser Safety and Radiation Safety as needed.
Lab Management
  - On-line laboratory management training can be found on the ORI website -
    http://ori.dhhs.gov/education/products/rcr_general.shtml

Export Control
  - EAR (Export Administration Regulations) - Dual Use/Commercial Technologies
    - Export control tutorial available on Northeastern’s website
      http://www.northeastern.edu/research/ExportControl/tutorial/
    - BIS training available thru online Training Room
      http://www.bis.doc.gov/seminarsandtraining/seminar-training.htm
  - ITAR (International Traffic in Arms Regulations) - Military/Space Technologies

Other Professional Development
  - Individual mentoring of the postdoctoral researcher including formal evaluations, at
    least annually, of the performance of the postdoctoral researcher*
  - Resources provided by the NEU Technology Transfer office, including individual
    consultation, for identification and development of Intellectual Property
  - Career advancement
    - University Career Center resource for Resume and Curriculum vitae writing
      and Salary Negotiation
    - Individual Negotiation counseling

III. Other Resources

FASAB: Federation of American Societies for Experimental Biology provides guidance and planning
on an annual review and an Individual Development Plan for Postdoctoral Fellows, that identifies
both professional development needs and career objectives.

AAMC: The American Association of Medical Colleges (AAMC) has created a Compact between
Postdoctoral Appointees and Their Mentors, which is "intended to initiate discussions with the
postdoctoral appointee-mentor relationship and the commitments necessary for a high quality
postdoctoral training experience." The AAMC suggests various ways it can be used in order to
create mutual expectations for training between postdocs and their mentors.

NAS: National Academy of Sciences, National Academy of Engineering, Institute of Medicine,
"Enhancing the Postdoctoral Experience for Scientists and Engineers: A Guide for Postdoctoral
Scholars, Advisers, Institutions, Funding Organizations, and Disciplinary Societies,”
http://www.nap.edu/openbook.php?isbn=0309069963

National Academy of Sciences, National Academy of Engineering, Institute of Medicine, "On Being a
offers researchers — particularly early-career scientists and their mentors — guidance on how to
conduct research responsibly, avoid misconduct such as fabrication and plagiarism, and think about
how to respond in complex ethical situations.”