

DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY POSTDOCTORAL FELLOW MENTORING

Postdoctoral training is an integral component of the training of scientific professionals. EEB is committed to maintaining the highest standards of postdoctoral training to help postdoctoral fellows develop the skills necessary to function independently as scientific professionals. To facilitate this process, EEB has developed: A) a set of key principles for all postdoctoral fellows, B) a department-level mentoring plan, C) a template for a compact between faculty research mentors and postdoctoral fellows, and d) a template for annual evaluation. These elements are described below. Appendix I contains the NSF template for a postdoctoral mentoring plan that must be included in all NSF grants that include funding for a postdoctoral fellow.

A. KEY PRINCIPLES FOR ALL POSTDOCTORAL APPOINTMENTS IN EEB

- Postdoctoral fellows should be trained to carry out the following functions independently: formulate meaningful hypotheses and questions; design and conduct interpretable experiments; adhere to best laboratory practices; analyze results critically; understand the broad significance of their research findings; and uphold the highest ethical standards in research. Oral and written communication, grant writing, and laboratory management are also considered essential components of postdoctoral training.
- Effective mentoring is critical for postdoctoral training and requires that the primary mentor dedicate substantial time to ensure personal and professional development. A good mentor builds a relationship with the trainee that is characterized by mutual respect and understanding. Attributes of a good mentor include being approachable, available, and willing to share his/her knowledge; listening effectively; providing encouragement and constructive criticism; and offering expertise and guidance.
- To foster flexibility in career choices, postdoctoral fellows should have access to training experiences of sufficient breadth to ensure that they are prepared to pursue a wide range of professional career options. Effective and regular career guidance from the mentor is essential and expected.
- Postdoctoral fellows are expected to contribute in substantial and meaningful ways to the research productivity of their host laboratory and to the intellectual life of the department in general.

B. DEPARTMENT-LEVEL MENTORING PLAN

Each postdoctoral fellow in the department will be encouraged to seek additional professional mentoring beyond that of their immediate research mentor. The Chair will suggest potential career mentors based upon the fellow's research interests and overall career goals. In addition, postdoctoral fellows will be given: high priority for seminar slots to present their research to the department during their postdoctoral period; invitations to meet with all seminar visitors; information on the departmental postdoctoral network for social and academic interactions; information on, access to, and encouragement to attend departmental, college, and institutional programs on career development such as teaching and learning workshops at the Center for Research on Learning and Teaching (CRLT) and seminars and workshops in the Preparing Future Faculty Program. Postdoctoral fellows will be invited to meet regularly with the Department Chair for feedback about their training programs and the department.

C. POSTDOCTORAL COMPACT

This template can be modified as desired by the faculty research mentor and postdoctoral fellow, but it is recommended that a signed copy of an agreed-upon compact be submitted to the department office at the time of hiring.

COMMITMENTS OF POSTDOCTORAL FELLOWS

1. I acknowledge that I have the primary responsibility for the development of my own career. I recognize that I must take a realistic look at career opportunities and follow a path that matches my individual skills, values, and interests.
2. I will develop a mutually defined research project with my mentor that includes well-defined goals and timelines. Ideally, this project should be outlined and agreed upon at the time of the initial appointment. Discussion must take place early in the mentoring relationship about a) what share of the research is collaborative, b) expectations for authorship and how decisions about authorship are made, and c) any obligations of the postdoc to running the lab and training other personnel. (A written summary of this discussion is recommended.)
3. I will perform my research activities conscientiously, maintain good research records, and catalog and maintain all tangible research materials that result from the research project.
4. I will respect all ethical standards when conducting my research including compliance with all institutional and federal regulations as they relate to responsible conduct in research, privacy and human-subject research, animal care and use, laboratory safety, and use of radioisotopes. I recognize that this commitment includes asking for guidance when presented with ethical or compliance uncertainties and reporting on breaches of ethical or compliance standards by me and/or others.

5. I will show respect for and will work collegially with my co-workers, support staff, and other individuals with whom I interact.
6. I will endeavor to assume progressive responsibility and management of my research project(s) as it matures. I recognize that assuming responsibility for the conduct of research projects is a critical step on the path to independence.
7. I will seek regular feedback on my performance and ask for a formal evaluation at least annually, using a mutually agreed-upon structure.
8. I will have open and timely discussions with my mentor concerning the dissemination of research findings and the distribution of research materials to third parties.
9. I recognize that I have embarked on a career requiring “lifelong learning.” To meet this obligation, I must stay abreast of the latest developments in my specialized field through reading the literature, regular attendance at relevant seminar series, and attendance at scientific meetings.
10. I will actively seek opportunities outside the laboratory or field (e.g., professional development seminars and workshops in oral communication, scientific writing, and teaching) to develop the full set of professional skills necessary to be successful in my chosen career.
11. At the end of my appointment, in accordance with institutional policy, I will leave behind all original notebooks, computerized files, and tangible research materials so that other individuals can carry on related research. I will also work with my mentor to submit the research results for publication in a timely manner. I can make copies of my notebooks and computerized files, and have access to tangible research materials that I helped to generate during my postdoctoral appointment according to institutional policy.

COMMITMENTS OF MENTORS

1. I acknowledge that the postdoctoral period is a time of advanced training intended to develop the skills needed to promote the career of the postdoctoral fellow.
2. I will work with the postdoctoral fellow to define a set of expectations and goals at the outset of the postdoctoral training period, and I will work with the postdoctoral fellow to create an individual career development plan.
3. I will strive to maintain a relationship with the postdoctoral fellow that is based on trust and mutual respect. I acknowledge that open communication and periodic formal performance reviews, conducted at least annually, will help ensure that the expectations of both parties are met.

4. I will promote all ethical standards for conducting research including compliance with all institutional and federal regulations as they relate to responsible conduct in research, privacy and human-subject research, animal care and use, laboratory safety, and use of radioisotopes. I will clearly define expectations for conduct of research in my lab and make myself available to discuss ethical concerns as they arise.
5. I will help provide the postdoctoral fellow with opportunities to acquire the skills necessary to become an expert in an agreed-upon area of investigation.
6. I will provide the fellow with the required guidance and mentoring, and will seek the assistance of other faculty and departmental or institutional resources when necessary. Although I am expected to provide guidance and education in technical areas, I recognize that education also occurs by example. I will help provide access to formal opportunities and programs in complementary areas necessary for a successful career.
7. I will provide a training environment that is suited to the individual needs of the postdoctoral fellow in order to ensure his/her personal and professional growth. I will encourage a progressive increase in the level of responsibility and independence to facilitate the transition to a fully independent career.
8. I will encourage the interaction of the postdoctoral fellow with fellow scientists both here and elsewhere, when possible, and encourage the fellow's attendance at professional meetings to network and present research findings.
9. I will ensure that the research performed by a postdoctoral fellow is submitted for publication in a timely manner and that she/he receives appropriate credit for the work she/he performs. I will acknowledge her/his contribution to the development of any intellectual property and will clearly define future access to tangible research material according to institutional policy.
10. I recognize that there are multiple career options available for a postdoctoral fellow and will provide encouragement to explore appropriate options. I recognize that not all postdoctoral fellows will become academic faculty. To prepare a postdoctoral fellow for other career paths, I will direct her/him to the resources that explore non-academic careers, and discuss these options if the fellow wishes.
11. I will commit to being a supportive colleague to postdoctoral fellows as they transition to the next stage of their career and to the extent possible, throughout their professional life. I recognize that the role of a mentor continues after the formal training period.

D. ANNUAL EVALUATION AND DEVELOPMENT PLAN FOR POSTDOCTORAL FELLOWS

At least annually, each postdoctoral fellow should meet with his/her mentor to review and discuss job expectations and develop a plan to successfully complete the post-doctoral appointment and to prepare the fellow to meet personal career goals. A possible template for the initial meeting follows. Prior to subsequent meetings, the research fellow will provide a written assessment of progress towards the previously defined targeted development areas and goals, and the mentor and postdoc will then discuss this progress and the development areas and goals for the subsequent period. The mentor will be responsible for writing up the development areas/goals immediately after this meeting and ensuring that these are agreed upon between the mentor and postdoctoral fellow.

**DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY
POSTDOCTORAL RESEARCHER DEVELOPMENT PLAN**

POSTDOCTORAL FELLOW NAME:

MENTOR NAME:

DATE OF REVIEW:

DATE OF NEXT REVIEW:

Targeted Development Areas	Goals for Upcoming Year
<i>List research accomplishments, as well as interpersonal, communication and/or analytical skills to focus on</i>	<i>How will the achievement of goals be determined or benchmarked?</i>

I have discussed the contents of this report with my mentor.

Postdoctoral Researcher Signature:

Date:

Research Mentor Signature:

Date:

APPENDIX I

NSF TEMPLATE MENTORING PLAN

This Postdoctoral Researcher Mentoring Plan has been prepared by <organization name>. The Plan establishes guidelines for work to be performed by a Postdoctoral Researcher in support of the NSF <SBIR or STTR> <Phase I or Phase II> Project Awarded to <company name>, entitled "<title of project>". The Postdoctoral Researcher assigned to the project will work in <name/university> laboratory and will conduct research on <name tasks>.

1. Orientation will include in-depth conversations between <researcher name> and the Postdoctoral Researcher. Mutual expectations will be discussed and agreed upon in advance. Orientation topics will include (a) the amount of independence the Postdoctoral Researcher requires, (b) interaction with coworkers, (c) productivity including the importance of scientific publications, (d) work habits and laboratory safety, and (e) documentation of research methodologies and experimental details so that the work can be continued by other researchers in the future.
2. Career Counseling will be directed at providing the Postdoctoral Researcher with the skills, knowledge, and experience needed to excel in his/her chosen career path. In addition to guidance provided by <mentor name>, the Postdoctoral Researcher will be encouraged to discuss career options with researchers at <university name> and with former students and colleagues of <mentor name>.
3. Experience with Preparation of Grant Proposals will be gained by direct involvement of the Postdoctoral Researcher in proposals prepared by <mentor name>. The Postdoctoral Researcher will have an opportunity to learn best practices in proposal preparation including identification of key research questions, definition of objectives, description of approach and rationale, and construction of a work plan, timeline, and budget.
4. Publications and Presentations are expected to result from the work supported by the grant. These will be prepared under the direction of <mentor name> and in collaboration with researchers at <other institutions involved> as appropriate. The Postdoctoral Researcher will receive guidance and training in the preparation of manuscripts for scientific journals and presentations at conferences.
5. Teaching and Mentoring Skills will be developed in the context of regular meetings within <mentor name> research group during which graduate students and postdoctoral researchers describe their work to colleagues within the group and assist each other with solutions to challenging research problems, often resulting in cross fertilization of ideas.
6. Instruction in Professional Practices will be provided on a regular basis in the context of the research work and will include fundamentals of the scientific method, laboratory and/or field safety, and other standards of professional practice. In addition, the Postdoctoral Researcher will be encouraged to affiliate with one or more professional societies in his/her chosen field.
7. Technology Transfer activities will include regular contact with researchers at <company name>. The Postdoctoral Researcher will be given an opportunity to become

familiar with the university-industry relationship including applicable confidentiality requirements and preparation of invention disclosure applications.

- 8.** Success of the Mentoring Plan will be assessed by monitoring the personal progress of the Postdoctoral Researcher through a tracking of the Postdoctoral Researcher's progress toward his/her career goals after finishing the postdoctoral program.

Approved by EEB Faculty: April 20, 2012