

Sample Mentoring Plans

FASEB believes that investigators should develop a plan for training and mentoring the postdoctoral scholars supported on their research grants. Because research grant applications typically provide an extensive description of the projects on which postdocs will work, including the methods, tools, and skills necessary to carry out those projects, it is not necessary for investigators to address these activities in detail. Their plans should, however, describe in broad terms the scientific opportunities available to postdocs, including the type of research they will conduct and the technical and methodological skills they will develop in the course of their training. Mentoring plans should also address the suitability of the training environment for postdoctoral scholars, including how postdocs will acquire training in grants management, laboratory management (including responsible conduct of research), communication skills, and career planning and professional development. Sample plans are included below.

Sample 1

Postdoctoral scholars working in my laboratory will conduct research on the neuronal processes involved in Pavlovian fear learning. Under my mentorship, they will learn to formulate and test hypotheses related to the acquisition, consolidation, and retrieval of fear memories; develop expertise in behavioral and neurobiological techniques, including intracranial drug infusion, single-unit and slice electrophysiology, and immunocytochemical analysis; and acquire expert knowledge of the scientific literature in our research area.

At the start of their training, postdocs will be required to attend an orientation session hosted by the Postdoctoral Affairs Office, which will provide information on postdoctoral policies (e.g., appointment terms, grievance procedures, health benefits), campus resources (e.g., libraries, computing facilities, grants office), and coursework, teaching, and funding opportunities. The Postdoctoral Affairs Office also regularly hosts career development seminars on topics such as grant writing, lab management, research ethics, networking and interviewing, and teaching, and it has staff experienced at providing career advising suited to biological science PhDs.

In addition, our institution has demonstrated a strong commitment to creating a high quality research training environment. We are supported by a National Research Service Award

institutional postdoctoral training grant and an Institutional Research and Academic Career Development Award through which we have been able to establish innovative workshops and courses available to all of our trainees. We currently offer a postdoctoral seminar series at which postdocs can present and receive feedback on their research, as well as courses in pedagogy, grants management, organizational behavior, and the structure of colleges and universities. We also have several certificate programs aimed at providing additional training to postdocs. For example, our *Postdoctoral Certificate Program in Research* offers coursework in research ethics, mentoring, and becoming an independent investigator, as well as traditional journal club and research training experiences.

To foster open and clear communication with my postdocs, I will provide them with the Association of American Medical Colleges' *Compact Between Postdoctoral Appointees and Their Mentors* (attached), which describes the commitments both they and I are expected to make in order to ensure an effective postdoctoral training experience. We will discuss these expectations and the steps we will take to achieve the goals of the *Compact* at the start of the postdoctoral appointment. I will also help my postdocs complete an individual development plan (attached) in order to identify and work toward their short- and long-term career goals.

Because effective communication of research findings is an essential component of scientific success, I will help my postdocs hone their communication skills by writing research articles and developing oral and poster presentations for lab meetings, department seminars, and scientific meetings. I will also help them to prepare their own research grants and involve them in the development of mine. Finally, I believe that all trainees benefit from the perspectives and guidance of multiple mentors; therefore, while I will serve as my postdocs' primary advisor, I will encourage them to seek additional mentors within and outside our institution.

Sample 2

Scientific and technical skills

- Postdocs will contribute to research on the role glutamate-dependent neuronal plasticity plays in addiction to psychostimulant drugs such as cocaine and amphetamine.
- They will work under my guidance and with assistance from senior lab members and faculty collaborators to develop the scientific and technical skills necessary to carry out this research program.

- In the course of this research, they will develop expertise in behavioral and biochemical techniques, including drug self-administration, immunocytochemical analysis, BS³ assay, SDS-PAGE, and Western blotting. These skills will have broad applicability to other areas of research and will be an immense benefit to postdocs as they establish their own laboratories.
- Postdocs will add to their scientific knowledge by reading and discussing scientific literature with me and other members of the lab and participating in journal clubs and seminars related to this research.

Career planning and professional development

- I will work with postdocs to design an individual development plan describing their research, training, and career goals as well as the approaches they will take to achieve those goals. We will review and revisit this plan on a regular basis.
- I will meet weekly with postdocs to discuss their progress on research projects and to identify and resolve any difficulties carrying out their work.
- Postdocs will be encouraged to attend workshops on responsible conduct of research, career opportunities, resume writing, and interview skills. All of these workshops are currently offered by our institution's Office of Postdoctoral Affairs and many more are offered at our disciplinary society's annual meeting.

Communication skills

- Postdocs will improve their ability to communicate research findings by presenting and obtaining feedback on their research at regularly scheduled lab meetings.
- Postdocs will also have an opportunity to present their research at our weekly departmental colloquium series at which faculty, graduate students, postdocs, and invited speakers present on a rotating basis.
- Postdocs will be encouraged to give poster and oral presentations during the Experimental Biology annual meeting.
- I will help postdocs enhance their writing skills by working with them to develop research reports and review articles.
- Postdocs will be invited to join me in teaching a freshman seminar on our research topic. This will give them experience presenting complex scientific information to an audience of non-experts, and it will provide valuable teaching experience.

Grants management

- I will involve postdocs in the preparation of new grant applications and competing renewals.
- I will encourage postdocs to apply for independent research support, such as a National Science Foundation postdoctoral fellowship or National Institutes of Health Pathway to Independence award. I will provide guidance as they develop these grant applications.

Laboratory management

- Postdocs will be required to receive training in lab safety, animal care and use, and responsible conduct of research.
- Postdocs will be involved in day-to-day management of lab operations (e.g., ordering laboratory supplies, overseeing the lab budget, maintaining research equipment and facilities, ensuring compliance with safety standards).
- Postdocs will be involved in training and mentoring undergraduate and graduate students.
- Postdocs will have a role in recruiting and interviewing new students and employees to the lab.

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