

POST-DOCTORAL MENTORING PLAN

A. OVERVIEW

A series of reports from the National Academies of Science and the National Research Council have demonstrated that most post-doctoral training programs provide inadequate preparation for postdoctoral scholars to assume the faculty positions that await them. Indeed, whereas most junior faculty are expected to be able to implement new strategies for student learning and assist campus-wide interdisciplinary curriculum programs, the conventional doctoral and postdoctoral training programs offer little or no preparation in these areas. Thus, a key component of the overall project goals is to create a new model for postdoctoral training that integrates cutting-edge research training with training in high impact pedagogical methods that implement new approaches to student learning.

The post-doctoral experience proposed here will begin with a 6-month laboratory rotation at the University of Oregon, where the postdoc will receive training in the use of next-generation sequencing tools in population genomic studies. During this rotation the scholar will also participate in workshop courses to provide additional training in genomics and bioinformatics. Following this rotation the postdoc will complete 3.5 years in the PIs laboratory at Willamette University, during which time the postdoc will translate methods and techniques learned at UO to the setting of a small college that involves undergraduates in research.

B. CAREER COUNSELING

Another area of deficiency in the predominant model of postdoctoral training identified by National Research Council is that most post doctoral scholars are not made aware of the variety of career options available to them. By providing a programmatic mechanism by which the postdoctoral scholar can see two very different institutional settings (University of Oregon, a large, public, research intensive institution, and Willamette University, a very small, private, liberal arts college), the mentoring program described here will provide a context in which the scholar can identify a career path that best matches their own interest and ability. To provide additional career development, the postdoctoral scholar will attend the Project Kaleidoscope Summer Leadership Institute, which is designed to help young science faculty create plans for professional leadership development.

C. TRAINING IN PREPARATION OF GRANT PROPOSALS

In year four of the grant the postdoctoral scholar will work to prepare a draft collaborative research proposal with the PI that will build on the results of this proposal, with the goal that proposal can be submitted within the first six months of the scholar assuming a faculty position. In preparing the proposal, the postdoctoral scholar will work with Willamette's Office for Faculty Research and Resources (OFFRR). OFFRR assists faculty to identify and pursue external grant funding to support their research and teaching.

D. PUBLICATIONS AND PRESENTATIONS

The PI will collaborate with postdoctoral scholar in authoring publications arising from the work described here, and the PI will offer to comment on drafts of manuscripts arising from the postdoctoral scholar's prior work. The postdoctoral scholar will present the results of this research at Society for the Study of Evolution's annual meetings on at least one occasion during the project.

E. GUIDANCE ON WAYS TO IMPROVE TEACHING AND MENTORING SKILLS

As an integral part of the project, the postdoctoral scholar will develop and deliver a "Research Methods" course, in which undergraduates undertake authentic, original research projects, giving the postdoctoral scholar experience in with techniques in high-impact pedagogy. The PI will meet with the scholar on a weekly basis to advise on the development and implementation of this course. The postdoc will also participate in mentoring independent undergraduate research projects. Finally, the scholar and the PI will attend a Council on Undergraduate Research (CUR) Institute on developing and sustaining research programs at undergraduate institutions.