Standards for Postdoc Training

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Postdoctoral (Postdoc) training has become virtually institutionalized in many parts of the world as a discrete stage in the career progression in most science and engineering fields. However, there is far too much variability in what such training involves, across institutions and among the laboratories within them. Given its importance and pervasiveness—there are over 50,000 postdocs in the United States alone—we need to establish and enforce standards, norms, and expectations for mentors, mentees, and their institutions that are analogous to those for undergraduate and graduate education.

The original rationale for postdoc training was to acquire additional skills that were not included in one’s graduate program. That motivation has persisted, but an extended postdoc period has also become a way to establish one’s credentials, or a source of temporary employment when regular jobs are scarce. In many fields it is almost impossible to get a permanent job directly out of graduate school, and it is not unusual for researchers in some fields to have had two or more postdoc experiences. In addition, postdocs have become nearly indispensable members of many research groups, because they provide novel ideas and do much of the hands-on experimentation.

The U.S. National Academies’ Committee on Science, Engineering, and Public Policy (COSEPUP) did an in-depth analysis of the postdoc experience in 2000* and is revisiting the issues with another study committee now. The 2000 report concluded that postdoc training is far too variable and recommended a set of remedial steps. Examples include the development of distinct goals, policies, and standards for postdoc experiences; institutional recognition, status, and compensation in keeping with the important roles postdocs play in the research enterprise; and career guidance to prepare postdocs for regular employment.

Unfortunately, none of these recommendations has been implemented on a broad scale. To convert them into reality requires oversight bodies both within and across research institutions that train postdocs. A critical COSEPUP recommendation was that every university should have a designated high-level office that oversees postdoc training across the entire institution. Although some institutions have established such offices, many lack the standing and influence needed to enforce adherence to standards and policies, and therefore the nature of postdoc training remains idiosyncratic from laboratory to laboratory.

Another barrier to implementing these recommendations is the absence of national bodies that support the institutional officials responsible for postdoc training, collecting data important for decision-making and articulating standards and best practices. In the United States, the Council of Graduate Schools (CGS) represents graduate school deans and serves these functions for graduation education. The National Postdoctoral Association (NPA) was founded by a small number of postdoc trainees in 2003 with the goal of improving the quality and consistency of U.S. postdoc experiences. The NPA now has about 171 institutional members, but, in contrast to the CGS, it lacks the full senior-level membership and official standing needed to foster consistency and standards across all institutions.

Every institution that trains postdocs should have a high-level office responsible for ensuring the quality and consistency of its training programs. And all such institutions should join together and either strengthen the NPA or form an alternative organization that will have the standing to recommend in detail best practices and standards and offer technical assistance to its institutional members. For any such efforts to succeed requires the full endorsement and participation of all elements of the scientific community—faculty, students, administrators, and funders. Today’s postdocs are the future of the science and engineering enterprise. Let’s commit to ensuring that all of them get the quality postdoc experiences they need and deserve.