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Value for value

The period between obtaining a doctorate and acquiring that first “real” job is critical to the development of a young scientist. If the time is well spent, postdoctoral fellows receive training and research experience that equips them to head their own successful research efforts. The postdoctoral position is now a prerequisite for obtaining the proper credentials for advancement in the biomedical sciences. What started in 1876 at Baltimore’s Johns Hopkins University as 20 US\$500 fellowships for further studies has become the engine upon which much of biological research depends. Nearly half the papers published in some journals bear a postdoc as first author.

The position of postdoctoral fellow is a balancing act in which the postdoc must focus on an advisor’s research agenda while simultaneously becoming proficient at competing for funds and designing independent research programs. Advisors and postdocs form a unique partnership: the postdoc is neither student nor employee, tenure-tracked nor technician. The best postdoctoral advisors are those who recognize these apprentice scientists as junior colleagues rather than a source of cheap labor.

The role of postdoctoral research in the scientific enterprise, as well as the well-being of those in this temporary position, has been assessed by the Committee on Science, Engineering and Public Policy (COSEPUP) of the US National Academies, which issued a report in September 2000 on the postdoctoral experience. Postdocs, advisors, host institutions and funding organizations were surveyed and interviewed and the limited statistics available on postdocs examined. COSEPUP’s guide for enhancing the postdoctoral experience, available on the web at <http://books.nap.edu/catalog/9831.html>, is an excellent snapshot of the condition of the postdoctoral experience in the US today. The conclusions are relevant for postdocs worldwide.

The COSEPUP study identified the factors that comprise “best postdoctoral practices” and outlined the responsibilities of postdoc, advisor, institution and funding agency. First was the recognition that responsibility for success ultimately rests with the postdocs themselves. Postdocs must seek out what they need to move their careers forward. To do this while furthering the goals of the group they join, though, requires substantial communication with all concerned. Expectations of both the advisor and the postdoc need open discussion and agreement and should be put in writing. Mentors must provide technical, management, grant-writing, publication and ethical guidance. Regular, honest evaluation of a postdoc’s progress and a clear “exit strategy” for the transition out of the postdoc stage aid both parties throughout the postdoc’s tenure. Intellectual property issues should be broached

early on. As a mentor, the advisor is responsible for guiding and helping the postdoc to choose and attain their next appointment or position. Host institutions also have obligations, such as providing a structure that ensures that no postdoc “falls through the cracks” and providing support for postdoctoral associations. Best practices would include setting minimum postdoctoral compensation (including health insurance) and incorporating discussion of mentor activities in the annual performance evaluations of advisors.

The study also revealed, however, the distance the system has yet to go. The American biomedical research enterprise is the envy of much of the world for its productivity and innovation. These gains have come at a cost that seems inordinately borne by young scientists. Compensation schemes are too variable, the average age of postdocs has increased and the duration of postdocs has lengthened.

The best and brightest postdocs frequently “bring their own support” but, due to arcane rules from funding sources or institutions, basic health and disability benefits are often not included in the complete package. Many US institutions now peg postdoctoral compensation to the National Research Service Award (starting at US\$26,256), which is still insufficient for cities with higher costs of living, and it is less than the average salary of a laboratory technician in 1998 (US\$32,420). For comparison, the UK’s Medical Research Council postdoc pay starts at US\$24,000, which was also the average for web-advertised positions in France. All compensation, but especially for experienced postdocs who need little “guidance and training”, should be commensurate with their years in the position.

The number of tenured positions in immunology has been stable, yet funding for research has increased, as has the pool of talented and trained young scientists. Research and training funds could therefore be redistributed to take these circumstances into account. As suggested in this month’s Commentary in *Nature Immunology* by Harrison and Kincade, there is a need for more “research track” staff scientist positions. These permanent posts would attract those who would prefer to do bench science rather than spending the bulk of their time running the administrative and managerial aspects of a lab. Simultaneously, postdoc pay should be increased and the total years an individual can be considered a postdoc limited. Even if this reduces the number of postdoctoral positions available, these plus the additional new staff positions would comprise an equitable system that would maintain, and could increase, current productivity. Young scientists have fueled the biomedical research effort—it is time they received their due.