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Bridges to Independence: Fostering the Independence of New Investigators in Biomedical Research

The NPA Response

On March 27, 2005, a working group from the National Academies of Science released its report entitled Bridges to Independence: Fostering the Independence of New Investigators in Biomedical Research. This report includes dramatic data illustrating alarming trends in the career paths of new investigators and makes a compelling argument for the need to alter the system of training for new scientists. A series of recommendations to the National Institutes of Health, broad in scope, are put forward that would reinvigorate the U.S. scientific enterprise and reform a system that currently inhibits creativity and advancement at early career stages. The National Postdoctoral Association (NPA), as the primary advocate for postdoctoral scholars in the United States, applauds this report and issues this response to the suggestions put forth in the document.

Although the report contains a number of suggestions that would result in positive changes for the postdoctoral experience, the following are those recommendations that the NPA believes show the greatest promise for benefit to postdoctoral scholars.

Data Collection

Two of the suggestions of the Bridges to Independence report include the collection of data, one which addresses postdoctoral scholars directly (4.7), and the other which focuses on those who are no longer postdoctoral scholars (5.2), but are not tenure track faculty either. The NPA believes that the greatest benefit per dollar spent in the short term would be the collection and analysis of data on postdoctoral scholars and staff scientists/researchers. In the upcoming months, survey results from the Sigma Xi postdoctoral survey will become available. These results will represent the first fundamental study of postdoctoral scholars in the United States. However, this data set is limited to institutions that have established programs for postdoctoral scholars, and it is not clear that this survey will be repeated. In order to better understand the current demographic and economic trends for those who have earned their doctoral degrees, either in the form of a Ph.D. or M.D./Ph.D., the NIH would serve all stakeholders by collecting data on these individuals as an aggregate, as well as by following the career paths of those who receive select awards to better evaluate new and existing programs within all of the Institutes.

Independent Research under a Senior Scientist

Many definitions of the postdoctoral scholar allude to the need for mentoring and independent research that is predicated on the ideas of the younger scientists. Despite this, the current system of instruction for postdoctoral scholars is typically represented by research into areas in which the principal investigators have received funding. In order to better prepare postdoctoral scholars for future independence, as well as to fund research that is riskier, the NPA believes that the creation of grants that are used to fund

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postdoctoral scholars and their ideas, while under the tutelage of a senior scientist, is a desirable goal. By funding the scholar directly, the scientific enterprise benefits from the injection of new ideas, while the scholar herself benefits from the experience of a senior scientist and insures transfer of knowledge from one generation to another.

Creation of a New R01 Grant

In addition to allocating funds for projects with mentors, the creation of new R01s that are available only to new scientists is also a priority. As demonstrated in the Bridges report, the average age for a new recipient to receive an R01 is 42. Creation of a grant that allows new scientists to compete against their peer group would help to invigorate the scientific community with fresh talent and new ideas while insuring the next generation of scholars has been competitively evaluated without being overshadowed by established members of the community.

Revision of the current R01

The requirements and expectations for postdoctoral scholars are driven in large part by the cultural aspects of science. While important, reliance upon the prevailing culture to dictate acceptable practices results in disparate policies and attitudes when comparing institutions and departments. In an effort to foster a new culture in which the needs of postdoctoral scholars are addressed, the revision of the R01 is a necessary first step. By requiring more expansive descriptions of expectations and of development opportunities for funded postdoctoral scholars in R01 grant applications and renewals, the NPA believes that a shift in culture can be initiated. A revision of the current R01 funding guidelines would also encourage changes at the institutional level, perhaps achieving the recommendations set forth in section 4.6 (e.g. improved career development) of the report with all parties benefiting from these changes.

Conclusion

As noted in the Bridges to Independence report, the median age for new scientists to reach independence and achieve funding has been increasing to such a point that there can be no argument that change is needed. While the recommendations presented by the working group may be expensive and risky, the NPA believes that proceeding with the system as it currently stands will damage the long term scientific enterprise in the United States, and undermine its role as the premier nation for training. The choices made today will affect countless thousands in the future, and the NPA believes that only through active discussion and change can the future be made to be as bright as the past.

Approved by the NPA Executive Board, May 11, 2005.