

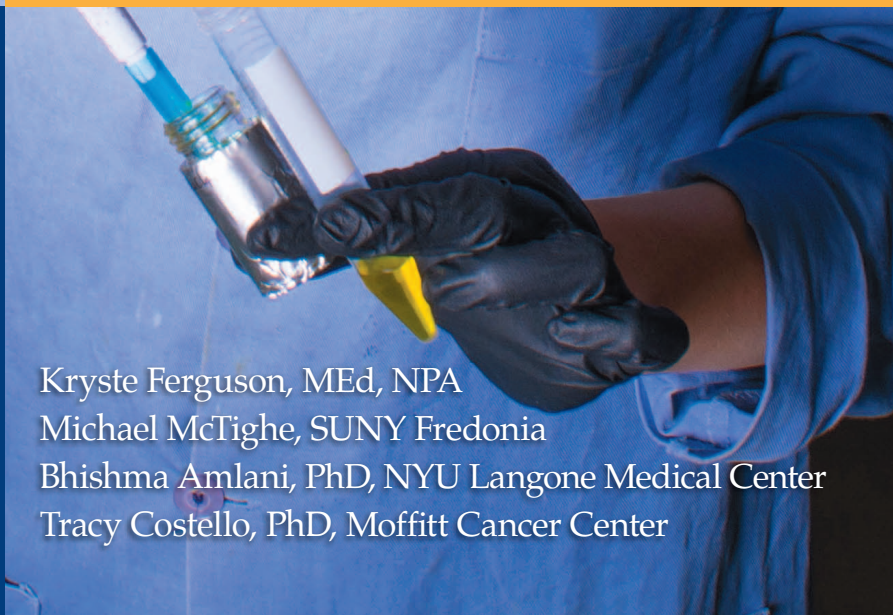


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Supporting the Needs of Postdocs

2017 National Postdoctoral Association
Institutional Policy Report



SIGMA XI
THE SCIENTIFIC RESEARCH HONOR SOCIETY

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POSTDOCTORAL
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2017 National Postdoctoral Association Institutional Policy Report

Introduction

What Is the NPA's mission, and What Is a Postdoc?

Since 2003, the National Postdoctoral Association (NPA) has sought to enhance the research training experience for postdoctoral scholars (or postdocs), who, by definition, are individuals holding doctoral degrees and who are engaged in a temporary period of mentored research and/or scholarly training for the purpose of acquiring the professional skills needed to pursue a career path of his or her choosing.¹ The NPA has consistently provided postdoc scholars with a unified national platform that provides advocacy, education, and professional development. By working closely with federal agencies such as the National Institutes of Health (NIH) and the National Science Foundation (NSF), as well as professional societies and postdoctoral support offices at institutions across the country, the NPA has developed policies and programs that improve the training experience for postdocs. The NPA provides resources that postdocs and postdoctoral program administrators need for success, and it hosts an annual conference where all members can network and develop their professional and leadership skills. The NPA's Institutional Policy Survey is designed as a longitudinal survey of its member postdoc offices. The organization is using these data to measure the progress and growth of postdoc services and benefits over time. "Improvements have continued to be made in the postdoc experience," notes Kate Sleeth, chair of the NPA Board of Directors. "However, there are still areas for growth. The NPA is committed to providing guidance and resources to our membership and advocating at the national level to ensure that improvements continue to be made."

The Need for Data Collection and Analysis

The various fields of research that postdocs study are diverse and often interdisciplinary. Data collection on

the postdoc community is vital to advocate at both the institutional and agency level to provide postdocs with more equitable benefits and competitive compensation. Moreover, further research into this field can help promote a more audible dialogue for the public and for policy makers. The research presented in this report seeks to improve the quality of life for postdocs who, for example, are hoping to make the next big breakthrough in cancer treatment, attempt to find a way to bring humans to Mars, or work to improve education access around the world, among many other significant areas of research.

2014 NPA Institutional Policy Report

In 2014, the NPA published the *NPA Institutional Policy Report 2014: Supporting and Developing Postdoctoral Scholars*,² addressing issues in the postdoc world such as professional development programs, compensation, and benefits, to name a few. The report concluded that the quality of programs and availability of postdoc offices (PDOs) have improved significantly over the past decade. Concerns remained, however, about minimal funding for PDOs, limited health and retirement benefits, training lasting longer than five years, a lack of training programs, and a lack of exit surveys. This 2017 report will highlight some of the advances made since the recommendations in the 2014 NPA Institutional Policy Report, as well as areas where work remains to be done.

Previous Studies and Recommendations

Although the first postdoc fellowships were formed more than a century ago, reports examining the postdoc world were rare until the 1990s. Since 2000, various associations, societies, and organizations have published a number of reports on the importance of postdoctoral fellows in the research enterprise, and how the postdoctoral training period could be improved. As a result of these early studies, postdocs



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2016 NPA INSTITUTIONAL POLICY SURVEY RESPONDENTS

Argonne National Laboratory
Baylor College of Medicine
Boston Children's Hospital
Boston College
Brown University
Case Western Reserve University
City of Hope
Cold Spring Harbor Laboratory
Columbia University
Cornell University
Dana-Farber Cancer Institute
Dartmouth College
East Carolina University
Emory University
Fred Hutchinson Cancer Research Center
Georgia Institute of Technology
Gladstone Institutes
Harvard Chan School of Public Health
Harvard Medical School
Harvard University
Indiana University
Iowa State University
Jet Propulsion Laboratory
Johns Hopkins University
King Abdullah University of Science and Technology
Los Alamos National Lab
Maine Medical Research Institute
Massachusetts Institute of Technology
McMaster University
Medical University South Carolina
Memorial Sloan Kettering Cancer Center
Michigan State University
Moffitt Cancer Center
National Institute of Environmental Health Sciences
National Institutes of Health, National Cancer Institute
National Institutes of Health, Office of Intramural Education

2016 NPA INSTITUTIONAL POLICY SURVEY RESPONDENTS (continued)

Nationwide Children's Hospital
New York University
New York University School of Medicine
North Carolina State University
Oregon Health & Science University
Oregon State University
Pennsylvania State University
Princeton University
Rosalind Franklin University of Medicine
and Science
Roswell Park Cancer Institute
Rush University Medical Center
Salk Institute for Biological Studies
Sanford Burnham Prebys Medical
Discovery Institute
Schepens Eye Research Institute
Stanford University
State University of New York at Buffalo
State University of New York Downstate
Medical Center
Stony Brook University
Temple University
Texas A&M University
Texas A&M University Health Science
Center
The Children's Hospital of Philadelphia
The Jackson Laboratory
The Ohio State University
The Rockefeller University
The Scripps Research Institute
University of Alabama Birmingham
University of California, San Francisco
University of California, Berkeley
University of California, Los Angeles
University of California, San Diego
University of Chicago
University of Colorado Boulder
University of Colorado Denver
University of Connecticut
University of Florida
University of Georgia
University of Illinois at Chicago
University of Iowa
University of Kansas Medical Center
University of Maryland
University of Maryland, Baltimore
University of Miami
University of Missouri
University of Nevada, Reno

began to be discussed at a national level, the NPA was formed, and the association has remained the national voice for the postdoc community.

In 1998, the Association of American Universities (AAU) conducted the first major examination of the postdoc world. Their report highlighted the gradual expansion of the postdoc population and the number of postdocs studying on temporary visas. Furthermore, their report brought to light general concerns regarding unclear appointment processes as well as overall postdoc dissatisfaction.³

A joint effort in 2000 by the National Academy of Sciences (NAS), the National Academy of Engineering (NAE), and the Institute of Medicine (now called the National Academy of Medicine [NAM]) fostered the publication of a comprehensive review of the postdoc world. Their report, *Enhancing the Postdoctoral Experience for Scientists and Engineers*, was the first of its kind that provided information regarding postdoc demographics and career plans, as well as postdoc salaries and benefits, or lack thereof.⁴ The NPA Recommendations for Postdoctoral Policies and Practices, created as a result of that report, continue to be used across the country as benchmarks for institutions to improve their postdoc environment.⁵

In 2014, the NAS published *The Postdoctoral Experience Revisited*, a follow-up to their 2000 report. This report provided a means of comparison to the 2000 report and further emphasized their recommendations to institutions, mentors, and funding sources aimed at improving the individual postdoc training experience. Two noteworthy recommendations discussed in their report are raising the starting salary from an NIH National Research Service Award (NRSA) to \$50,000, and limiting appointment lengths to a maximum of five years.⁶

The data put forth by these reports, and others by the National Research Council⁷ and the NIH Biomedical Workforce Working Group,⁸ have laid the foundation for a more inclusive conversation regarding postdocs across the research community. There is a general agreement for the institutional recommendations put forth by these

organizations and the NPA. One cannot overstate the importance of clear appointment processes, access to career services, affordable health benefits, and a living stipend for postdocs.

Methodology

2016 NPA Institutional Policy Survey

The 2016 NPA Institutional Policy Survey was distributed to 190 NPA institutional sustaining members. The postdoc administrator at the sustaining member institution is often the person who best understands the current policies, benefits, and resources for postdocs at their respective institutions. The survey included 82 possible questions, which sought to ascertain basic demographics, benefits, resources, and policies at the institutional level. The average respondent took between 30 and 60 minutes to complete this survey, depending on the accessibility of their data on their postdocs. The survey, which launched in August 2016, was open for eight months, during which time 130 institutions (68 percent of those surveyed) started the survey, and 102 (54 percent) completed it.

The comprehensive survey is critical to understanding the current state of the postdoc community and how to improve it. The topic areas covered in the survey include the following:

- demographics of the institution and its postdoc population
- structure of the institution's postdoc office
- postdoc policies: appointment process, length of appointment, postdoc handbook, exit survey, administrative policies that pertain to postdocs, postdoc performance reviews, and tracking of alumni
- postdoc compensation and benefits
- career and professional development services
- other institutional services

To maximize the ability to make comparisons between the two surveys, the survey task force used the following same four categories for postdocs that were used in the 2013 survey:

Institutionally Funded Postdoc Employees (IFPE): the classification(s) an institution typically uses for a postdoc employed by the institution and

usually funded on a principal investigator's research grant (for example, an NIH R01 grant).

Institutionally Funded Postdoc Trainees (IFPT): the classification(s) an institution typically uses for a postdoc funded on a principal investigator's training grant (for example, an NIH T32 grant) but who is not considered an employee of the institution.

Individually Funded Postdocs (IFP): the classification(s) an institution typically uses for a postdoc funded by a fellowship that is paid to the institution (such as an NIH National Research Service Award).

Externally Funded Postdocs (EFP): the classification(s) an institution typically uses for a postdoc funded by a fellowship that is paid directly to the postdoc (such as a fellowship from a foreign country).

Building the Survey

After reviewing the data from the 2013 survey, the policy survey task force decided to add questions to gain a better understanding of some topic areas. Among the new questions were if and with whom PDOs share resources, whether they plan to start an exit survey and/or postdoc tracking in the next 12 months, and the postdoc's cost for insurance plans. Additional demographic questions asked about the types of visas the international postdocs hold, how many permanent-resident postdocs they have, and if they track the number of postdocs with a disability and/or from disadvantaged backgrounds.

Follow-Up Postdoc Compensation Survey

In the 2016 survey, the reworded compensation question asked what postdocs would be paid after December 1, 2016, the date new regulations under the Fair Labor Standards Act (FLSA) were anticipated to be implemented. (The postdoc compensation section includes more information about FLSA.) Following a court injunction against the new FLSA regulations, the survey task force conducted a brief follow-up survey in February 2017 to find out how the change affected the NPA institutional sustaining member's compensation policies. NPA sent the eight-question follow-up survey to 210 of its institutional postdoc office and postdoc association sustaining members.

The survey was open only for two and a half weeks, during which time 142 institutions (68 percent of those surveyed) started the survey and 127 (60 percent) completed it. The vast majority stood by their decision to compensate their postdocs at the higher level.

Analysis

To measure the level of success, further analysis of these data included comparison to the data collected in 2013 as well as evaluation of the implementation of the NPA Recommendations for Postdoctoral Policies and Practices as a factor driving change. We also present subsets of data to illustrate how various factors—including institution type, size of postdoc community, and NIH funding levels—influence postdoctoral benefits and programs.

Overview of Findings

Establish an Active Postdoc Office and Association

At the heart of every strong set of institutional postdoc policies and programs sits a vital and vibrant postdoc office (PDO) and postdoc association (PDA). This recommendation is first among the NPA Recommendations for Postdoctoral Policies and Practices because it builds the base for all other efforts. When working closely with the PDA, the PDO is able to stay current with the needs of its institution's postdoc population. The PDO administrator becomes the liaison between postdocs and their institution for creating and enforcing all postdoc policy—from working with human resources on the classification and appointment/reappointment process of postdocs, to assisting the international office in taking care of the international postdocs' unique and important needs, to collaborating with the career services office to incorporate postdoc career needs into their programs, just to name a few.

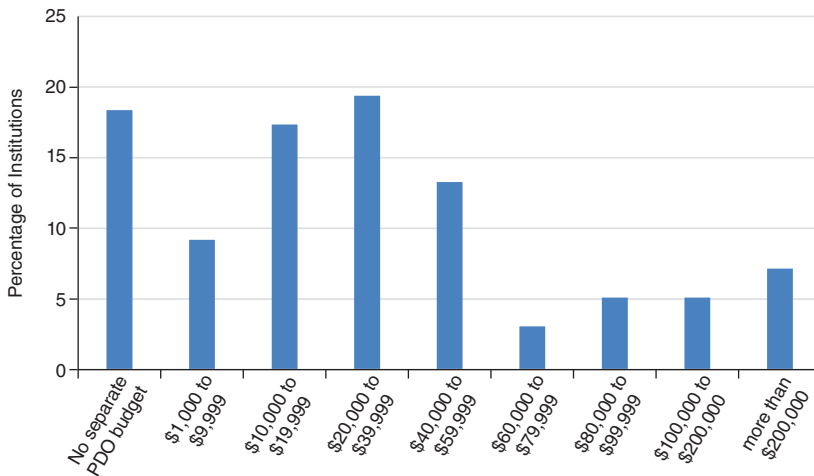
To ensure equity in benefits across all postdoc classifications, or to create a robust set of career and professional-

2016 NPA INSTITUTIONAL POLICY SURVEY RESPONDENTS (continued)

University of North Carolina Chapel Hill
University of Notre Dame
University of Oklahoma Health Sciences Center
University of Pennsylvania
University of Pittsburgh
University of Rochester
University of South Florida
University of Tennessee Health Science Center
University of Texas Health Science Center at San Antonio
University of Texas Health Science Center at Houston
University of Texas Medical Branch
University of Texas Southwestern
University of Utah
University of Virginia
University of Washington
University of Wisconsin-Madison
Upstate Medical University
Van Andel Research Institute
Virginia Commonwealth University
Washington University in St. Louis
Wayne State University
Whitehead Institute for Biomedical Research
Woods Hole Oceanographic Institution
Yale University



**PDO Annual Operating Budgets
(excluding personnel salaries)**



development programs, an institution needs a postdoc advocate from within who can interact with all the different offices and also help educate the institution's staff who may not be familiar

At the heart of every strong set of institutional postdoc policies and programs, sits a vital and vibrant postdoc office and postdoc association.

with the important role the postdocs play in the research enterprise. This is the role the postdoc administrator has at NPA member institutions across the country.

Given the importance of a strong PDO presence at an institution, arguably one of the most significant outcomes the NPA advocacy efforts have

seen over the years is the increase in the number of institutions with a formal PDO or at least a dedicated staff member for postdoc affairs. When the NPA began in 2003, there were only about 25 PDO/institutional Members across the country. This list grew to 167 members in 2014, and the growth trend has continued so that there are 190 NPA PDO/institutional members in 2017. There has also been a parallel and consistent growth in the presence of a PDA, at 84 percent of institutional respondents in our 2016 survey.

The organizational structure of a PDO is tailored to the institution's unique culture. We consistently find that the PDO structure depends on the configuration of the institution's hierarchy and this structure defines whether the PDO exists within a graduate education division, stands alone under research affairs, or resides at the provost level of a university. Interestingly, where the PDO

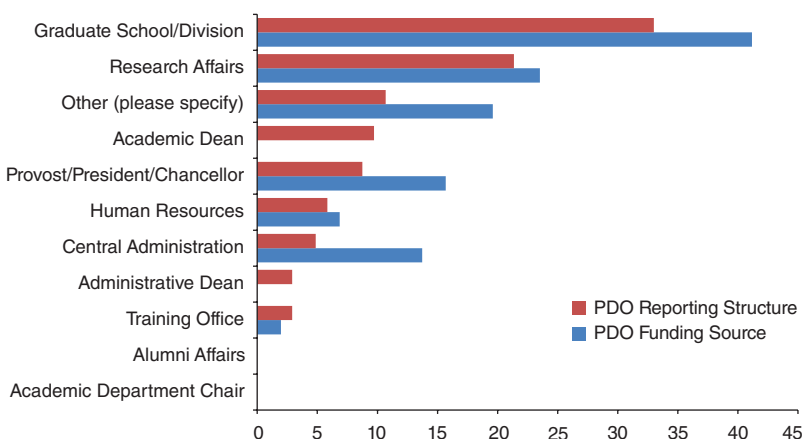
resides can be different from where it receives its funding.

Provide Sufficient Budgets to PDOs

To adequately assist postdocs, it is critical for PDOs to have an operating budget and dedicated staff, which allows a PDO to perform functions such as enforcing policies, appointing postdocs, coordinating training programs, mediating disputes between postdocs and their advisors, and/or providing career counseling.

The distribution of PDO budgets (excluding personnel salaries) in the 2016 survey did not change from the 2013 survey data. The 2016 survey asked more questions about PDO budgets and found that 61 percent of PDOs share resources with other offices at their institution. This arrangement is not surprising, given how much PDOs interact with other offices and that they are understaffed the majority of the time. The average full-time equivalent (FTE) staff for a PDO was 1.24 FTEs, and the mode was 1 FTE. Having at least one dedicated staff person is important to a PDO's success, but the demands on only one dedicated staff person of serving an institution's entire postdoc population are still daunting. There are PDOs with only one staff member who serve even more postdocs than the average number across institutions (449 postdocs). By sharing resources, we know anecdotally that the PDO is able to better serve their postdoc population because they receive help with carrying the workload of implementing programs, as well as drafting and enforcing policy.

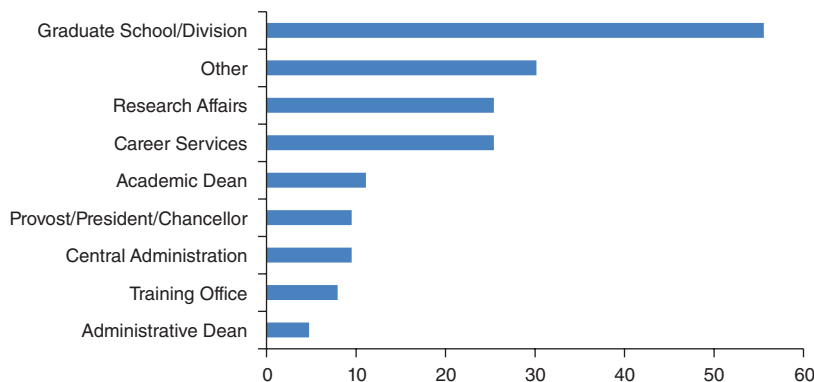
PDO Reporting Structure and Funding Sources (percent)



Establish Administrative Policies

Part of creating a good training environment for postdocs is to have established administrative policies in the event of authorship disputes, termination due to grant funding loss or other causes, along with other grievance issues. The survey question covering this topic asked whether the policies listed in the figures are in place and include postdocs at the institutional level of policy or whether there is a specific postdoc policy. It is encouraging to see that institutions generally have policies that include postdocs. The NPA contends, however, that establishment of postdoc-

Who Shares Resources with PDOs? (percent)



specific policies is essential, because in cases such as termination, authorship, misconduct, grievance, and intellectual property, postdocs are in a position of lesser power than their advisors. Creating a postdoc-specific termination policy, for example, enacts the safeguards necessary in case grant funding runs out for an international postdoc on a temporary visa. Under such a policy, the postdoc could be given time to find another position so there is no lapse in their work status. The survey results do not show a high percentage of postdoc-specific policies for any of the types queried.

Define the Appointment Process

The appointment process of postdocs is another critical area in which PDOs should exert a degree of control when postdocs are entering the institution. Although the survey did not cover the topic of uniform postdoc titles, the NPA supports this concept. Defined titles for postdoc appointments in the payroll system of an institution are critical for the successful tracking of postdocs. The 2014 NPA report, like most of the previous postdoc reports, strongly recommended that institutions have a specific process for appointing

postdocs. Many of these policies and important resources can be outlined in a uniform appointment letter that all postdocs sign before starting their appointment. The percentage of institutions that have adopted an appointment policy since the last survey has increased: In 2013, 87 percent of institutions reported having a clear appointment process and this number rose to 94 percent in the 2016 survey.

Because postdocs are primarily hired by their advisors and may not gain exposure outside of the research group, it is critical for them to know from the beginning about the PDO as their institutional home base for support. The PDO often serves as the gateway to all other institutional services, and the NPA advocates that an orientation program is the best mechanism to present this information to postdocs. The number of NPA member institutions that reported holding an orientation program is another area that showed growth, from 70 percent in 2013 to 85 percent in 2016. An orientation program can address a variety of topics—such as the importance of institutional identification, where to obtain an ID card, and what



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institutional services and amenities are available to postdocs—as well as provide an opportunity to connect with peers and begin networking outside of their research group to mitigate feelings of isolation.

Many institutions with postdocs are located in major cities. The cost of living in these areas is often

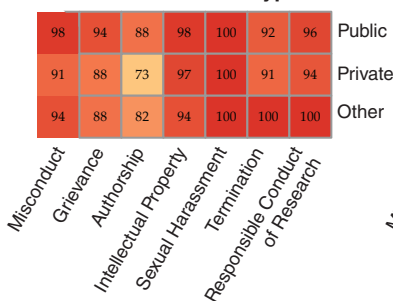
The establishment of postdoc-specific policies is essential, because in cases such as termination, grievance, and intellectual property, postdocs are in a position of lesser power than their advisors.

exceptionally high, and a significant amount of the average postdoc’s stipend goes toward housing. Furthermore, for foreign postdocs the process of finding a place to live can be exceptionally difficult. Only 46 percent of respondents reported providing monetary or non-monetary housing assistance to postdocs.

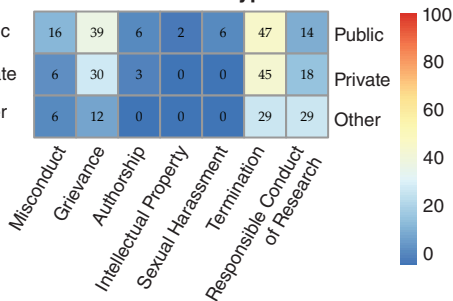
Provide Fair Postdoc Compensation

One of the key areas for which the NPA has consistently advocated since its inception is higher postdoc pay and this point is central in the NPA Recommendations for Postdoctoral Policies and Practices. The NIH NRSA stipend scale provides a framework that is used beyond the NIH’s internal research program; at many institutions, it serves as the gold standard for minimum stipend in institutional policies regardless of funding source. Our 2013 and

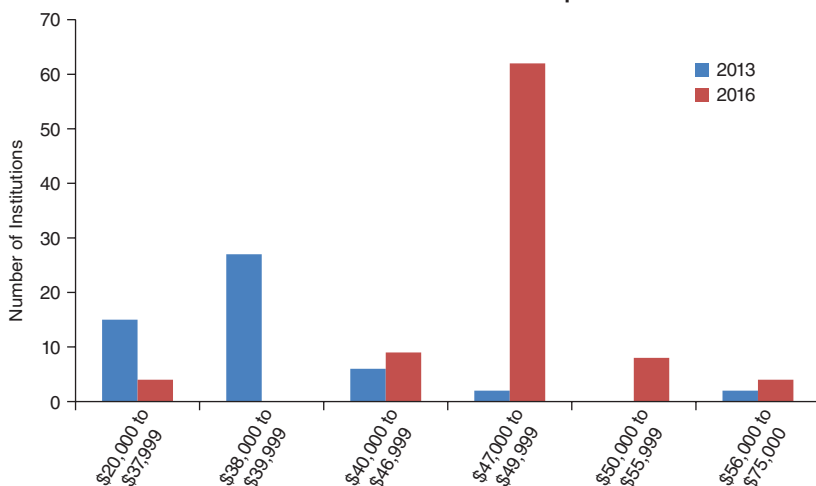
Administrative Policies that Include Postdocs: Institution Type



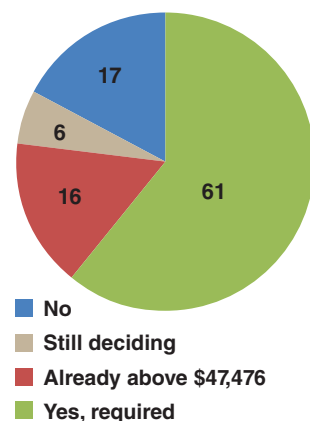
Postdoc Specific Administrative Policies: Institution Type



2013 and 2016 Minimum Postdoc Stipends



Institutions Raising the Minimum Postdoc Compensation Level to \$47,476 (n=134) (percent)



2016 survey data show that the NIH NRSA stipend scale is the driving force for what institutions decide to pay their postdocs.

The largest increases in the NRSA stipend scale have historically come after publication of reports or

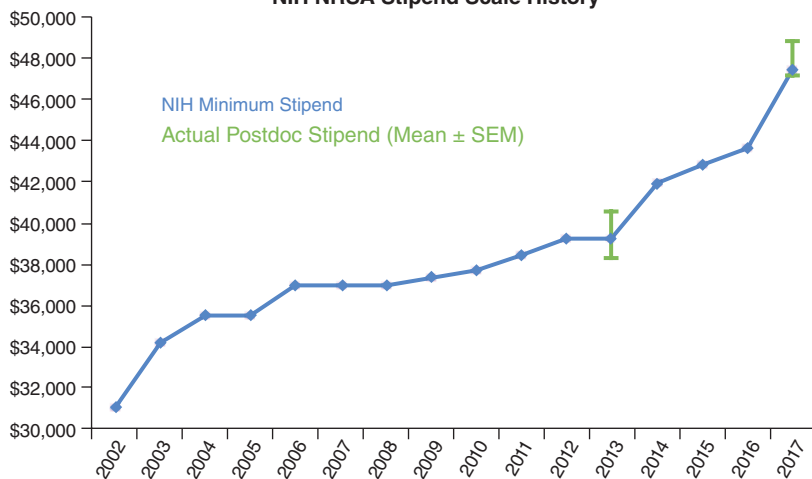
tists and Engineers,⁴ by the Institute of Medicine, National Academy of Sciences, and National Academy of Engineering, and *Addressing the Nation's Changing Needs for Biomedical and Behavioral Scientists*,⁹ by the National Research Council. Both reports recommended raising postdoc stipend levels. After the release of these reports, the NIH promised in 2001 after the release of these reports to raise NRSA stipend levels from about \$31,000 to \$45,000 over the next few years.¹⁰ Stepwise increases occurred for a few years, but because of a recession and a relatively flat NIH budget, postdoc stipend levels were either frozen or raised by only 1–2 percent for the next several years. The next biggest increase occurred because the NIH Biomedical Research Workforce Working Group recommended raising the starting NRSA stipend level to \$42,000 in 2014.¹¹

The majority of responding institutions have a minimum stipend for postdocs but do not require annual stipend increases.

introduction of legislative measures that brought postdoc compensation to the forefront of discussions with senior leadership at research institutions. The 2003 increase was after the release of two reports—*Enhancing the Postdoctoral Experience for Scien-*

The most recent increase in postdoc compensation came as a result of the FLSA legislation that Congress passed in May 2016 to raise the minimum salary for all United States nonexempt workers from \$23,600 to \$47,476 per year, or allow for overtime pay. To become an exempt worker, one must be paid more than the FLSA minimum salary. Postdocs were explicitly included in this legislation's working population. The new regulations became controversial on many academic campuses because this increase in the minimum salary now meant postdocs, if paid less than \$47,476, would be eligible to receive overtime pay for any time worked more than 40 hours per week. Because postdoc hours depend on their research and do not fit into a typical 9 A.M. to 5 P.M. schedule, this legislation had institutions discussing postdoc compensation more than ever before. In October 2016, 21 states filed an emergency motion for a preliminary injunction, and after this case was consolidated with another lawsuit filed by the U.S. Chamber of Commerce and other business groups, a Texas federal judge filed an injunction 10 days prior to the December 1, 2016, implementation date. On August 31, 2017, the court officially concluded that the FLSA overtime rule was invalid. Prior to the anticipated FLSA implementation, institutions had already spent a lot of effort analyzing postdoc compensation, and most had told their postdocs that they would be receiving a raise. Additionally, Francis Collins, director of NIH, announced

NIH NRSA Stipend Scale History



Benefits to Each Postdoc Type

96	83	90	89	82	88	84	79	83	76	60	67	47	76	65	74	86	67	45	64	37	61	22	41	22	41	40	50	IFPE*
78	66	72	70	64	69	64	59	61	50	40	40	19	30	30	50	67	53	37	49	30	49	14	32	17	21	32	41	IFPT*
68	60	64	63	55	62	55	50	54	44	32	31	14	24	23	47	55	51	33	45	24	45	12	31	12	18	32	36	IFP*
52	50	52	51	48	51	45	43	44	31	24	24	10	18	17	40	48	44	24	40	17	40	6	24	9	11	21	32	EFP*

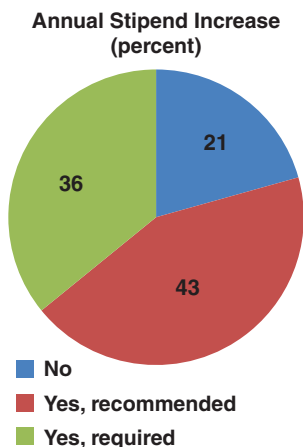
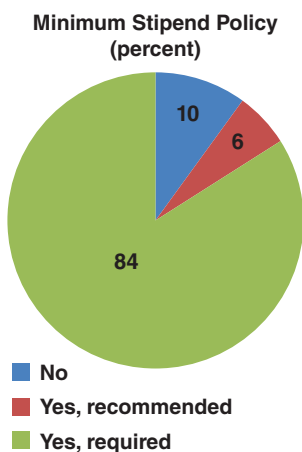
*See pages 2-3 for postdoc definitions.

Benefits by Institution Type

98	87	91	89	87	87	84	80	82	78	58	64	49	71	58	62	84	64	29	64	24	58	9	42	9	40	24	44	Public
97	84	97	94	78	91	84	75	88	81	56	69	41	75	69	88	88	78	66	69	59	69	38	44	34	47	62	69	Private
100	88	94	88	82	94	94	88	88	71	71	71	53	88	76	82	94	65	59	65	41	71	29	41	35	35	53	41	Other

Single Health Ins. Two-Person Health Ins. Family Health Ins. Single Dental Ins. Two-Person Dental Ins. Family Dental Ins. Single Vision Ins. Two-Person Vision Ins. Family Vision Ins. Life Ins. Short-Term Disability Long-Term Disability Matched Retirement Tax-Deferred Retirement Flex Spending Acct. Employee Asst. Program Paid Time Off Unpaid Time Off Unpaid Maternity Leave Paid Maternity Leave Unpaid Paternity Leave Paid Paternity Leave Unpaid Paternity Leave Adoption Assistance On-Site Child Care Subsidized Child Care Tuition Assistance Transportation Assistance Discouraged Athletic Membership

that NIH would move forward with the higher compensation levels for NRSA stipends regardless of what happened with FLSA.¹² This strong support for raising the compensation of postdocs is evident in the data



collected from the 2016 NPA Institutional Policy Survey and from a small follow-up survey conducted in February 2017 to see what decisions NPA member institutions had made after the injunction halted implementation of new FLSA regulations.

Although it is critical to establish a baseline postdoctoral salary to support fair compensation as well as inclusion, it is important for institutions to require an annual stipend increase. The vast majority of responding institutions have a minimum stipend for postdocs that are either required (84 percent) or recommended (6 percent), but the majority do not require annual stipend increases: 36 percent require an annual increase and 43 percent recommend it. The remaining 21 percent of institutions do not have a policy that requires annual increases.

Have Equal Benefits for All Postdocs

The topic of benefits offered to postdocs is one of the most debated areas in the postdoc community. It is, of course, critical for postdocs to have adequate health insurance, paid time off, and retirement benefits, along with parent and family benefits for those postdocs that need them. The topic of benefits has the widest variance in what is offered to postdocs at different institutions and in who is eligible.

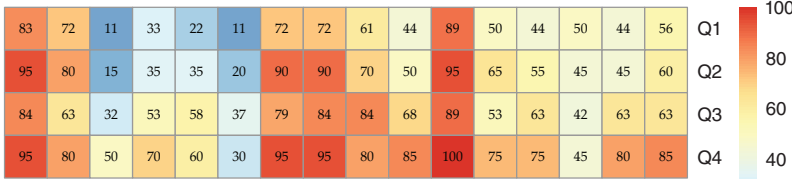
The largest disparity found in the survey results is the availability of benefits for different classifications

of postdocs based on their funding source. The survey uses the same four postdoc classifications shown on pages 2 and 3.

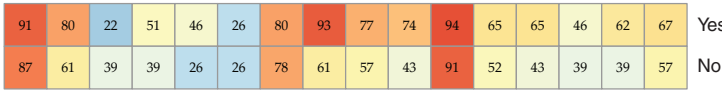
When postdocs move from their principal investigator's grant to their individual fellowships, they often lose access to health insurance or can only sign up for lesser health insurance.

Although most postdoc employees receive insurance benefits and paid time off, the postdocs who have their own funding (individually funded and externally funded postdocs) show a sharp decline in access to benefits. This point is critical to raise, because a postdoc that successfully writes and is awarded a prestigious fellowship should not lose benefits. The data, however, clearly show that when postdocs move from their principal investigator's grant (institutionally funded postdoc) to their individual fellowships (individually funded postdoc), they often lose access to health insurance. Some institutions provide an option for these individuals to sign up for graduate student health insurance, but it is often a lesser insurance and

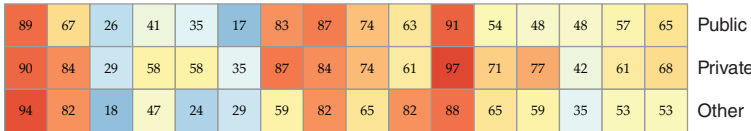
Development Programs: NIH Funding



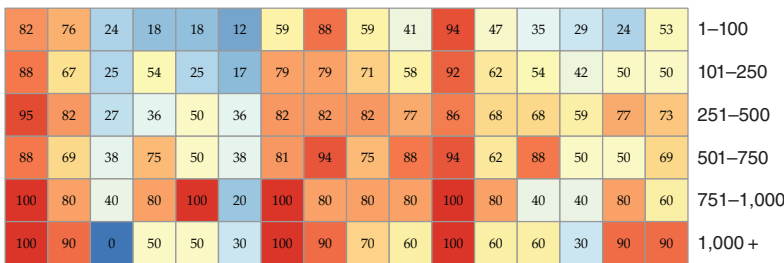
Development Programs: Dedicated Staff?



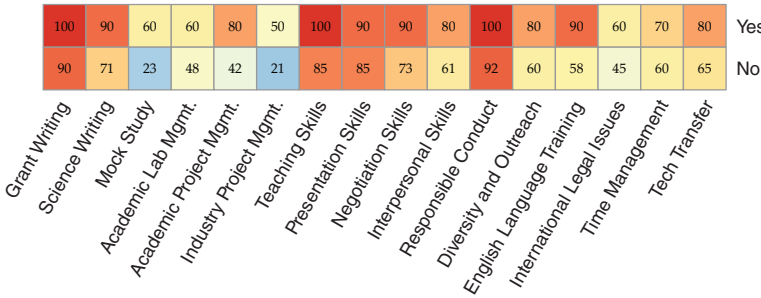
Development Programs: Institution Type



Development Programs: Number of Postdocs



Development Programs: BEST Award?



inadequate for the postdocs, especially if they have families.

We know some institutions create policies and provide mechanisms to ensure all postdocs receive the same

Institutions that offer the same benefits to all postdocs consistently have postdoc titles separate from faculty and staff.

benefits, but we reiterate that it is critical to provide the same comprehensive benefits package to all postdocs regardless of funding source.

Postdocs are at a stage in life where this benefit cannot be overlooked; furthermore, they represent a low-risk, highly educated population that can be insured at a rate that is lower than a typical university employee pool. Although the implementation varies among institutions that offer the same benefits to all postdocs, the consistent element is that the institution has defined postdoc titles so it can administratively separate the group from faculty and staff. Establishing defined and enforced postdoc titles allows institutions to address this group's unique needs.

Besides looking at the different postdoc classifications in relation to benefits, NPA also analyzed benefits

data across other variables, including institution type, the number of postdocs at different institutions, and NIH funding level. For this analysis, the benefit was classified as being offered if any one of the postdoc classifications reported the benefit. The types of benefits offered in relation to number of postdocs and NIH funding level did not appear to affect benefits offerings, but there is some variance among institution types. The most apparent difference is that public academic institutions lack parental and family benefits. The need for paid parental-leave policies is important and ongoing. *Parents in the Pipeline*, a 2017 report on which the NPA collaborated with the University of California Hastings College of the Law, specifically looked at this issue and has many relevant recommendations for institutions and funders.¹³

Maintain Training Programs

The NPA's Recommendations for Postdoctoral Policies and Practices recommends that institutions provide training programs that assist postdocs in developing a time frame for transition to independence through effective mentoring, career planning, professional development programs, and career counseling.

Professional development programs offered across institutions include diversity outreach programs, presentation skills, grant proposal writing, and many others. The 2016 survey yielded results similar to the survey conducted in 2013. The three most common professional development programs offered still are responsible conduct of research (86 percent), grant proposal writing (84 percent), and presentation skills (79 percent). The three least common programs remain the mock study session (23 percent), project management for an industry setting (23 percent), and project management for an academic setting (37 percent). Professional development programs across institutions are still being offered at a high rate.

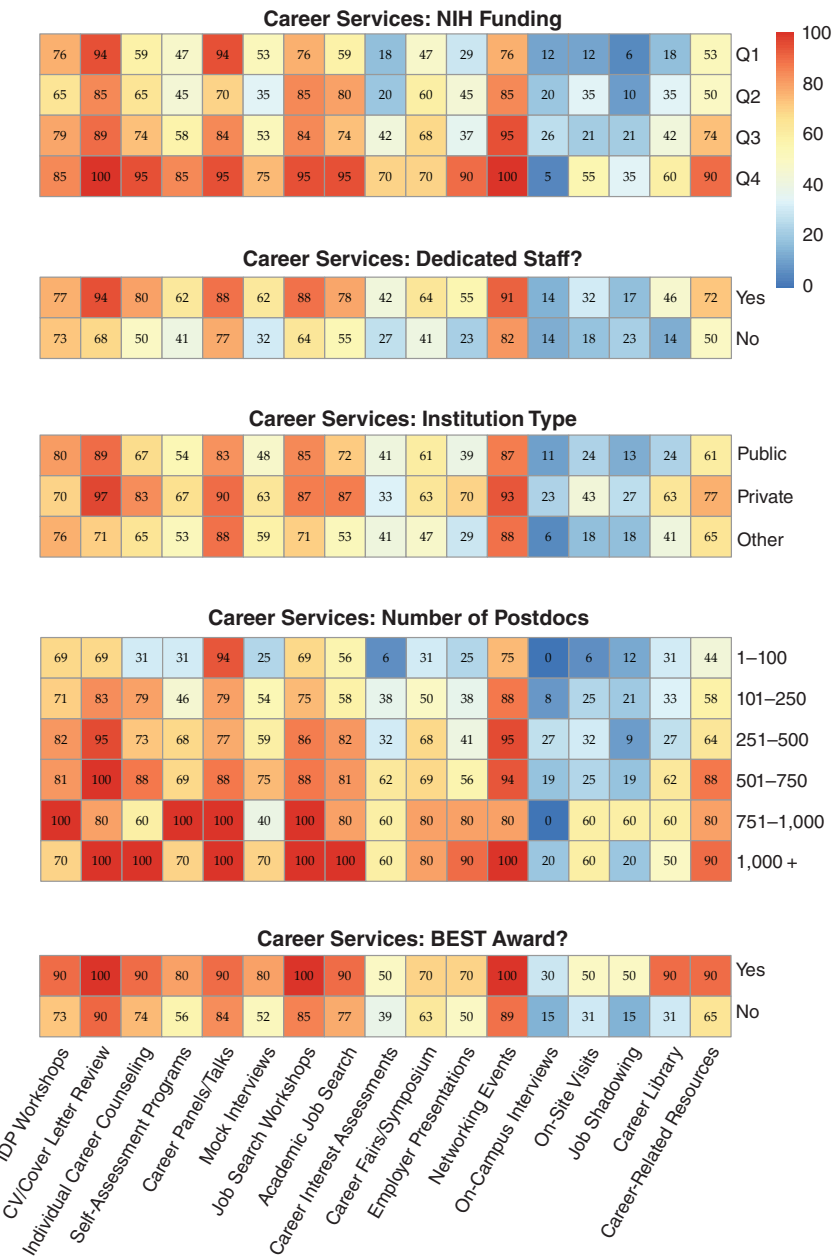
NPA evaluated several factors to determine whether they correlated with more or less professional development programming. With NIH funding levels of academic institutions grouped in quartiles, results showed that institutions with higher

NIH funding were more likely to have developmental programs across the spectrum. Having dedicated PDO staff at an institution, however, does not alter the availability of developmental and training programs. There is also no relationship between the availability of these programs and the type of institution, whether public, private, or other. The results did determine that there is a modest trend correlating the number of postdocs at an institution with the overall availability of professional development programs.

PDOs offer various events, workshops, and programs to assist postdocs in their career exploration and skill development. According to the 2016 survey, the most commonly offered programs are networking events (86 percent), cover letter reviews (85 percent), and career exploration programs, panels, and talks (83 percent). The least commonly offered programs include on-campus interviews (13 percent), job shadowing opportunities (17 percent), and on-site visits to local employers (27 percent). Unlike professional development programs, career service programs across the spectrum are more available now than in 2013.

As was the case with professional development programs, there is a positive correlation between funding and available services. Academic institutions with higher NIH funding have more available career services. The results also show that institutions with dedicated staff have a tendency to provide better career services. There was not, however, any significant relationship between career services and institution type: Private, public, and other types of institutions all have similar career services. Additionally, the number of postdocs that an institution serves does correlate with available career services: Institutions with more postdocs generally provide more career services.

Since 2013 the NIH has provided Broadening Experiences in Scientific Training (BEST) awards to 17 institutions across the country for the purpose of improving biomedical career development. These BEST programs provide grant funding for institutions to develop innovative training programs that prepare postdocs for a wide range of career opportunities. Ten of the 17 BEST



institutions responded to our survey. When comparing their professional development and career services programs, as well as their overall benefits, to institutions that did not receive a BEST award, results show that, as expected, institutions that have received BEST awards provide more professional development and career services programs. This result reinforces NIH's position that investing in training programs helps institutions provide better programs and services for their postdocs to succeed in their careers.

Support Diverse Demographics

The opportunities for postdoctoral training are more widely avail-

able than graduate students often consider. In addition to academic institutions, PhD graduates can find postdoc training opportunities in

Professional development programs across respondent institutions are still being offered to postdocs at a high rate.

national laboratories, government agencies, and industry. The majority of responses to the survey came from public academic institutions (51 percent) and private academic insti-

tutions (33 percent). The “other” category (16 percent) comprises national laboratories, government agencies, and private research institutes, which provides a group large enough for comparison in analyses.

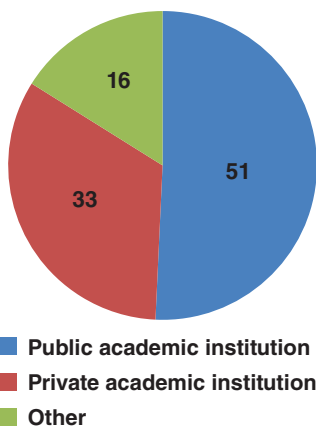
The overall number of postdocs at a particular institution varies greatly from place to place. The majority of institutions (53 percent) have between 100 and 500 postdocs, 17 percent of institutions have less than 100 postdocs, and only 10 percent have more than 1,000 postdocs.

The gender demographic of current postdocs is almost exactly the same as it was in 2013. The survey asked respondents, “What percentage of postdocs at your institution are female, male, or other?” On average, the population across institutions is just

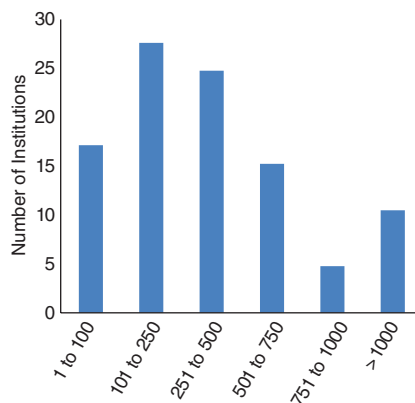
Only 9 percent of respondent institutions are tracking postdocs from disadvantaged backgrounds.

under 57 percent male, and just under 43 percent female. The percentage of postdocs with gender reported as “other” was less than 1 percent, likely based on an institution’s collection of this variable. The survey results indicated clearly that a number of universities actively capture diversity beyond binary gender assignment.

Institution Type (percent)



Number of Postdocs



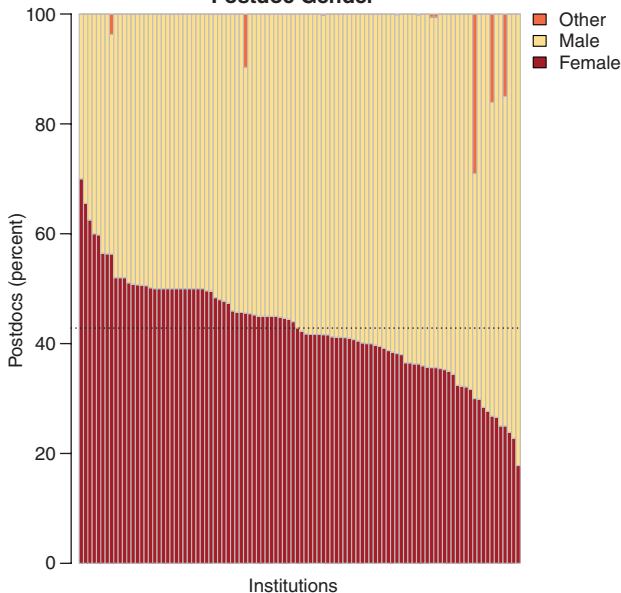
Since the 2013 survey, little has changed regarding the demographics of international postdocs. More than half of the population at the majority of institutions consists of international postdocs conducting research while on temporary visas. The overwhelming majority of these postdocs are short-term scholars, holding J-1 researcher visas. On average, 38 percent of postdocs at an institution are U.S. citizens, and 8 percent hold permanent resident status.

Because of the significant presence of postdocs studying on temporary visas, the availability of resources for international postdocs is a major concern of the NPA. Many academic institutions have some type of international scholar office wherein postdocs on temporary visas can receive assistance in navigating the U.S. tax

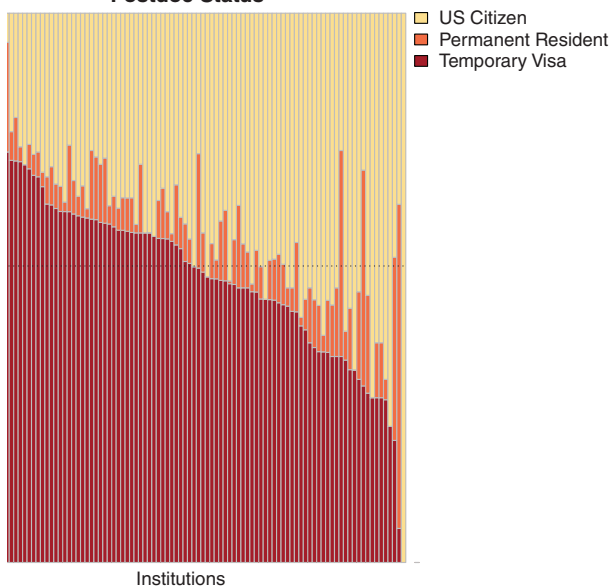
and other governmental systems, and many institutions provide information or programs to help postdocs learn or improve their English-language skills, and services to navigate living in a new city or country. Theoretically, any institution that trains an international postdoc with a temporary visa should have support available. Institutions overwhelmingly reported the availability of resources for international postdocs (98 percent).

The NPA diversity statement indicates, “The National Postdoctoral Association seeks to promote diversity and ensure equal opportunity and inclusion for all postdocs in the membership, leadership and activities of the NPA regardless of race, ethnicity, sex, disability, national origin, socio-economic status, religion, sexual orientation, or

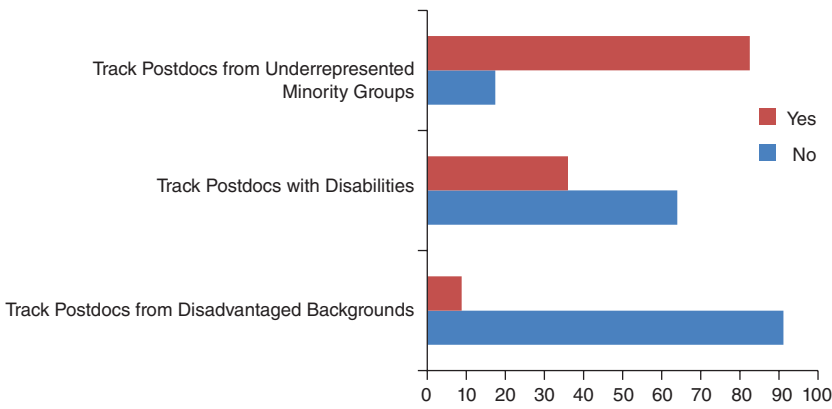
Postdoc Gender



Postdoc Status



Institutions Tracking Postdoc Demographics (percent)



Konstantin Pelikh/Alamy

gender identity.” The past decade has witnessed many positive advances in regards to diversity; however, diversity within the fields of the sciences continues to lag behind. Given that government agencies are increasingly concerned with the presence of diversity in the various fields of research, the NPA survey asked, “Of the U.S. citizen postdocs at your institution, approximately how many are from underrepresented groups?” The survey defined an underrepresented group as: “Racial and ethnic groups such as blacks or African Americans; Hispanics or Latinos; American Indians or Alaskan Natives; Native Hawaiians or other Pacific Islanders; Filipinos; Southeast Asians; or other groups determined by your institution.” Two-thirds of respondents reported that less than 20 percent of postdocs at their institutions were from an underrepresented group. It is important to note, however, that these are the percentages of minorities within those classified as U.S. citizens. Because postdocs studying on temporary visas make up a significant portion of the overall postdoc population, we know that the percentage of the complete group is actually much lower. To meet the NPA’s diversity goals, it is important to ensure that institutions create inclusive recruiting procedures and policies, and support diversity through programming, so future postdocs can transition into the career path of their choice. Establishing a diversity office in each institution can potentially assist with this goal.

The survey defined disability as “Any person who has a physical or mental impairment that substantially limits one or more major life activities.” In the survey, 74 respondents

answered the following question: “Does your institution collect data on the number of U.S. citizen postdocs from the following groups: with a disability?” Only 36.5 percent of these respondents answered “yes.” Because of the high percentage of missing data, the percentage of postdocs with a disability across institutions cannot be accurately stated. Similarly, the NPA sought to understand whether institutions are tracking postdocs from disadvantaged backgrounds, and only 9 percent of survey respondents indicated that they have been. Again, this response rate does not provide accurate data to fully understand the effect of economic background on current postdocs.

Conduct Exit Surveys

The NPA’s Recommendations for Postdoctoral Policies and Practices has continuously encouraged institutions to conduct exit surveys at the end of a postdoc scholar’s appointment to collect honest feedback about the individual’s experience and to have information about a next location so that the postdoc’s future endeavors can be tracked. The data collected in these surveys could inform institutional policy decisions that affect future postdocs. Additionally, tracking postdocs after their appointments could help develop a comprehensive alumni network.

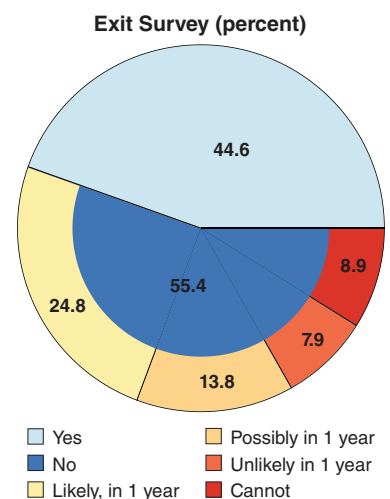
According to the 2016 NPA Institutional Policy Survey, the percentage of institutions administering exit surveys remains at 45 percent, despite recommendations from NPA and NAS in their report, *The Postdoc Experience Revisited*.⁶ Among the 55 percent of institutions that do not administer exit surveys, the primary reason reported was that the PDO is

not integrated into the appointment process, and they do not know when a postdoc is leaving the institution. Without this knowledge, it is significantly more difficult to introduce an initiative and collect these data. Data

The percentage of institutions administering exit surveys remains at 45 percent. The primary reason the rest do not was because the postdoc office does not know when a postdoc is leaving.

such as these, however, are critical to being able to provide information on outcomes and career trajectories,¹⁴ although this study comments that recommendations to collect outcomes data have largely gone unheeded.

To evaluate planned implementation of exit surveys, the NPA survey asked how many institutions plan to





start conducting exits surveys over the next 12 months. Of the institutions that responded, 25 percent stated they are likely to start conducting them within a year. At the other end of the continuum, 17 percent reported they

Only 28 percent of institutions indicated that they track their postdocs after their postdoctoral training period.

will not start or are unlikely to start conducting these surveys. Nearly 14 percent of institutions were undecided, responding that they might or might not begin conducting exit surveys in the next 12 months.

Track Postdoc Alumni

The current model of postdoc training has the potential, in some fields, to narrow postdoc research focus, which in turn limits the potential opportunities for postdocs to find employment

within the same field of research. Also, the overall success of the postdoc experience is often measured by whether or not a postdoc can find employment as faculty within their academic field. Because outcome reporting is critical to understanding the success of a training program, some institutions track postdocs after their appointment period has ended. The NPA survey asked participants whether they tracked postdocs after they left and found that only 28 percent of institutions indicated that they do. The survey also asked if institutions plan to start tracking postdocs over the next 12 months: 32 percent of institutions that responded to the survey reported that they are likely to start tracking; 23 percent of institutions reported that they might or might not start tracking; 13 percent are unlikely to start tracking; and 4 percent of institutions did not know.

Recommendations and Conclusions

The NPA continues to stand by its currently published recommendations for postdoc policies and practices document.¹⁴ The presence of a strong PDO and PDA at every institution where postdocs train continues to be a strong indicator of institutional commitment to the education and training of their postdoc population. The support offered from PDOs across the country remains a deciding factor in the postdocs' overall experience, and potential postdocs might note this factor when choosing an appointment. The NPA commends the creation of or expanded development of PDOs since the 2014 report; however, improvement in this and other areas is still needed.

The radar graph at right shows the degree to which institutions are meeting the NPA's recommendations and where progress can be made. The closer a dot is to the edge of the graph, the closer the percentage of institutions possessing that queried policy is to 100 percent. According to this graph, institutions as a whole are doing very well at maintaining an office for international scholars. This graph also shows, however, that a great deal of progress can be made regarding institutions conducting exit surveys, providing family

benefits, and in several other areas. The NPA will continue to advocate for these recommendations, as they have been shown to positively affect the postdoctoral experience, and the NPA will continue to evaluate progress with comparative radar graphs in the coming years.

These data additionally provide an important resource for institutions to evaluate their policies in comparison with those of their peer institutions. In some instances, showing an opportunity to provide the same or better level of benefits or policy can strengthen their advocacy for policy changes. Examples of successful advocacy have included providing the same insurance benefits for all postdocs regardless of funding source, providing access to career services programs, or establishing a uniform appointment process for all postdocs.

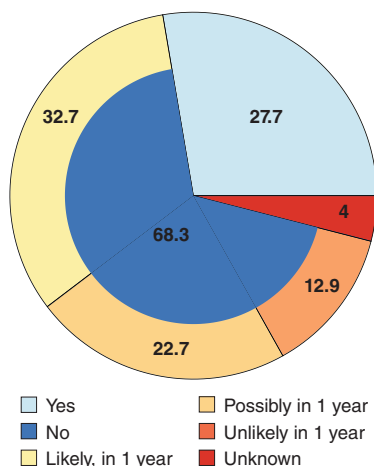
Increase PDO Staff and Budgets

A core finding of this report is that a strong PDO at every institution is required for the development of postdoc policies and programs. Many institutions, however, don't have even one full-time staff member, and institutions that have one are often understaffed compared with the number of postdoctoral fellows and/or the quantity and depth of programmatic initiatives they seek to provide. Institutions should do their best to increase the number of full-time staff dedicated to postdoc affairs. It is likely that this limited PDO staff is related to PDO funding across institutions. Increasing PDO budgets across institutions will help increase the number of available staff, so institutions can provide the optimal postdoc training experience at their campus.

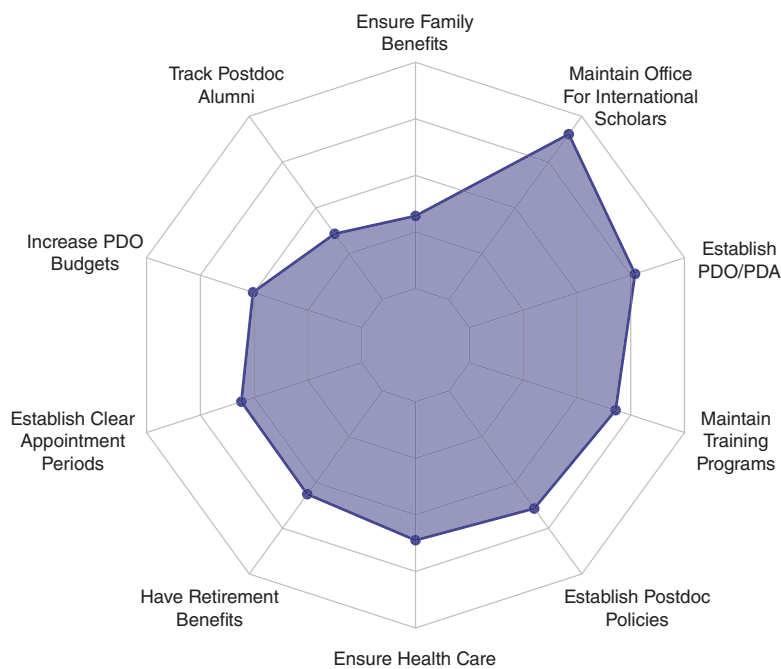
Provide Higher Compensation and Equality in Benefits

The NPA recommends that all institutions that fund postdocs should establish a minimum stipend amount, which should be equal for all postdocs, and that institutions consider implementing a stepwise increasing stipend ladder by year of postdoc experience, such as the NIH NRSA scale. The NPA recognizes that a sizeable proportion of postdocs within the United States are not in biomedical fields, but trends

Tracking Alumni (percent)



NPA Recommendations: Opportunities for Growth



Monty Rakusen/Cultura Creative (RF)/Alamy

nationally show institutions across disciplines adopting the NIH NRSA minimum stipend or scale, because this national agency has significant visibility in postdoctoral training. Given the number of reports on the postdoctoral experience that recommend \$50,000 as a baseline postdoctoral salary, the NPA recommends that all institutions continue to work toward this minimum. In addition, the NPA strongly recommends that institutions provide equal health benefits for all postdocs, regardless of their classifications. In particular, a disparity exists for individually funded and externally funded postdocs, and institutions should establish policies to ensure that postdocs in these categories receive the same benefits as their institutionally funded peers.

Increase Parental Leave Policies and Family-Friendly Benefits

The NPA recommends that more institutions adopt and enforce parental leave policies and offer more family-friendly benefits for postdocs. Recent studies have concluded that women's research productivity is related to an increase in parental leave policies.¹⁵ Paid maternity leave is currently low, especially at public institutions. Given that postdoc training often occurs when many people begin to establish families, policies offering parental leave and family benefits can provide a degree of security at such an

important time, while also potentially helping to stem the leaky pipeline of women leaving academia at higher rates than their male counterparts.¹³

Implement More Postdoc Tracking

The percentage of institutions that track postdocs after their appointment is exceptionally low. It is critical, however, that we begin to better understand which career sectors postdocs transition into, as well as trends over time. It has been noted that this tracking will be most pertinent at the institutional level¹³ because of regional and field-specific nuances, but the overall recommendation stands that institutions should establish a system to contact postdocs after their training and track where they become employed. Continued contact with postdocs after their appointment period also provides data about the effectiveness of their training, which can also enhance recruiting strategies as well as foster a loyal alumni network. We know anecdotally from conversations with PDOs that provide career coaching that postdoc alumni provide strong networking opportunities for current postdocs who are exploring career options.

Other Recommendations

In aggregate, all of the data presented in this report verify that a number of institutions agree with the recommendations set forth in the NPA

Recommendations for Postdoctoral Policies and Practices. There are a number of areas, however, in which there are opportunities to grow and in which institutions can improve the postdoc experience. Much of these findings have been stated previously, through a variety of reports,

The presence of a strong PDO and PDA at every institution where postdocs train continues to be a strong indicator of institutional commitment to the education and training of their postdoc population.

workshops, conferences, etc., and although the NPA's findings are promising, the importance of these areas cannot be emphasized enough. Institutions must establish clear postdoc appointment periods and clear postdoc policies to adequately protect the postdoctoral fellows as well as their faculty. Additionally, the NPA reiterates the recommendation that more institutions conduct exit surveys upon the completion of a postdoc's training. Above all, the postdoc experience is considered a time of advanced training, and it is imperative that institutions evaluate the quality and quantity of current postdoctoral career development and work to provide more training programs for postdocs.

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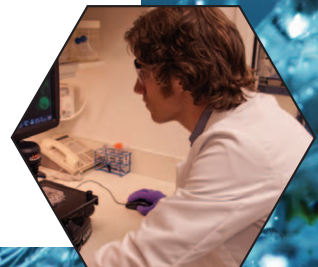
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