

Next Generation Researchers: Institutional Responses to Previous Recommendations

Yasmeen Hussain

Amanda Field

Irene Ngun

Lida Bennison

Previous Reports

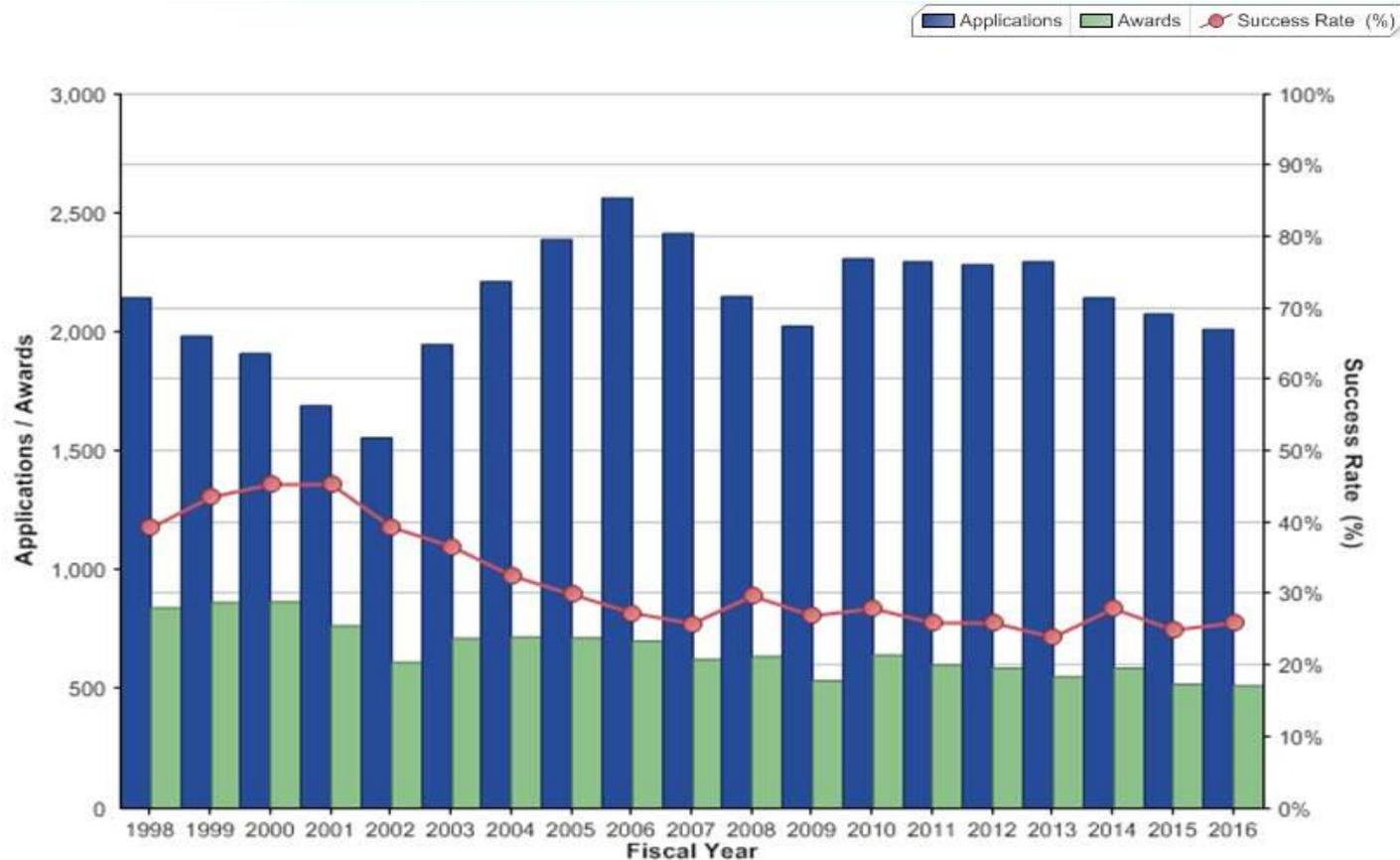
- Bridges to Independence: Fostering the Independence of New Investigators in Biomedical Research (NAS, 2005)
- Research Training in the Biomedical, Behavioral, and Clinical Research Sciences (NAS, 2011)
- Biomedical Research Workforce Working Group Report (NIH, 2012)
- Working Group on Diversity in the Biomedical Research Workforce (NIH, 2012)
- Physician-Scientist Workforce Working Group Report (NIH, 2014)
- The Postdoctoral Experience Revisited (NAS, 2014)
- Sustaining Discovery in Biological and Medical Sciences (FASEB, 2015)

Recommendation Categories

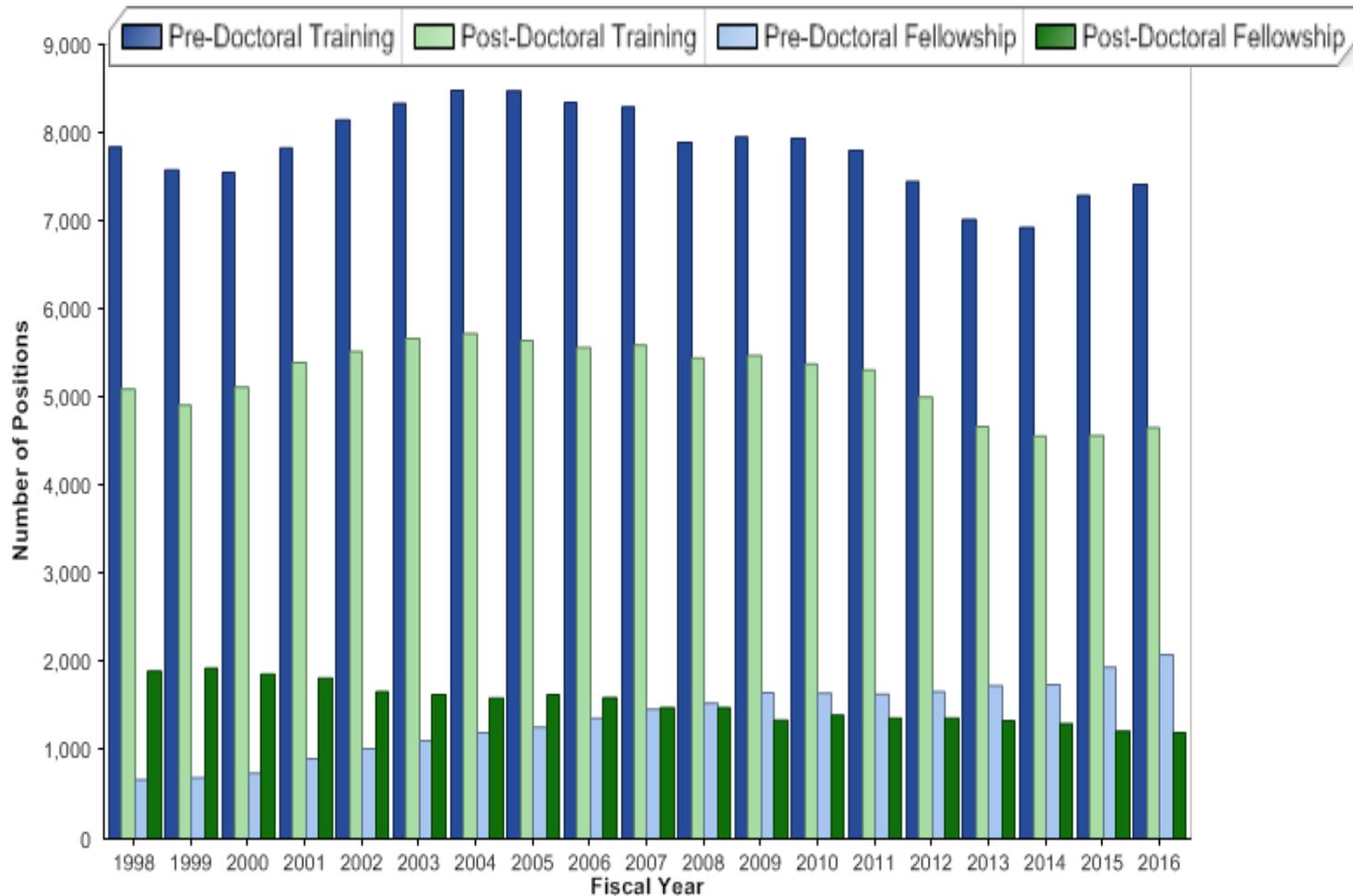
- Postdoctoral practices
- Supporting diversity
- Collecting data
- Supporting early career investigators
- Supporting faculty
- Supporting staff scientists

Recommendations: Postdoctoral Practices

NIH NRSA positions should remain at previous fiscal year levels



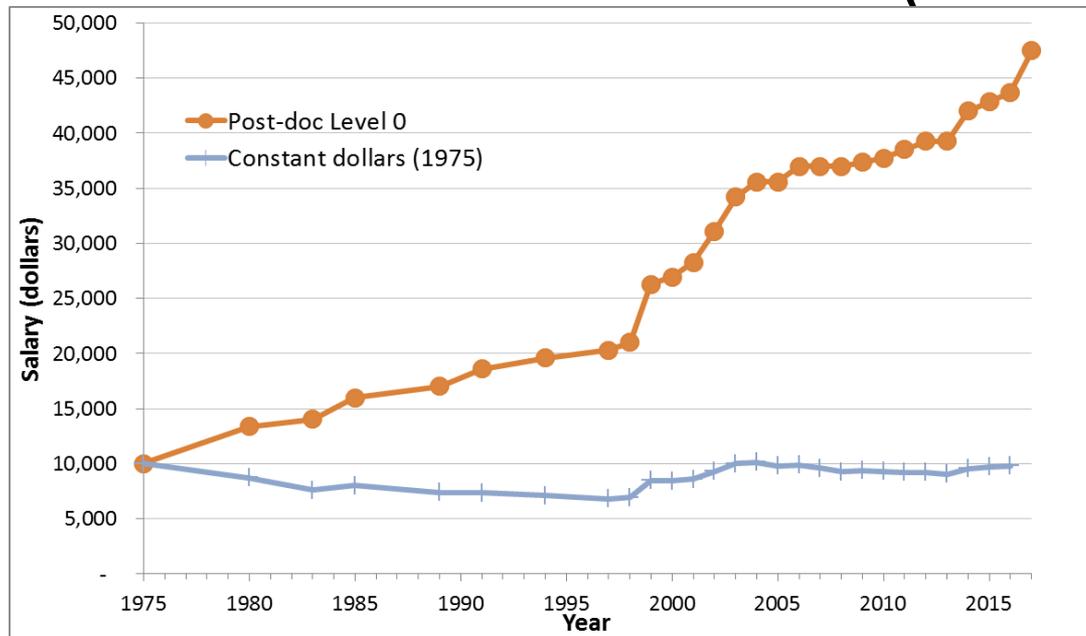
NIH NRSA positions should remain at previous fiscal year levels



Source: Kay Lund

Postdoctoral fellow stipends should increase

- NIH increased salaries each year
- Fair Labor Standards Act effects (not NIH)

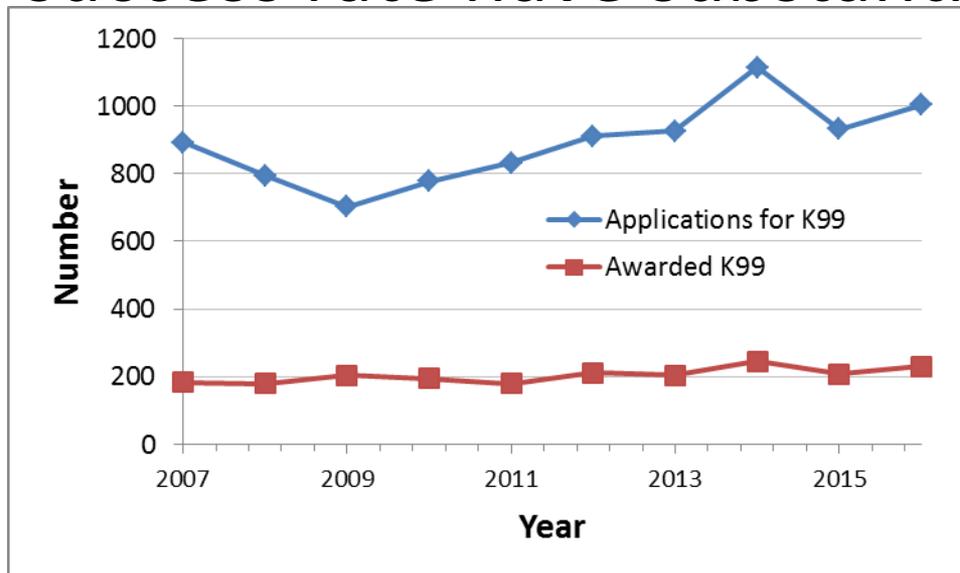


Source data: NIH
 NRSA Notices
 CPI adjustment:
 BLS Inflation Tool

Research Training in the Biomedical, Behavioral, and Clinical Research Sciences (NAS, 2011)
 Biomedical Research Workforce Working Group Report (NIH, 2012)
 The Postdoctoral Experience Revisited (NAS, 2014)

Training grants and fellowships should support a higher proportion of postdocs

- NIH intended to increase support for K99/R00 awards (2012), but neither award number nor success rate have substantially increased



Source data: NIH databook

Bridges to Independence (NAS, 2005)

Biomedical Research Workforce Working Group Report (NIH, 2012)

Training grants and fellowships should support a higher proportion of postdocs

- NIH intended to increase support for K99/R00 awards (2012), but neither award number nor success rate have substantially increased
- Recommendation not uniformly supported across scientific community
- Simons Foundation Bridge to Independence Award

A higher proportion of physician-postdocs should be supported by individual than institutional NRSAAs

- No known action

Title “postdoctoral researcher” should only apply to recipients of advanced research training

- Postdoctoral researchers should be trained rather than filling permanent staff roles
- No known action

Training and mentoring of postdoctoral researchers should be increased

- NIH recommended using Individual Development Plans (IDPs) for postdocs (2013)
- NIH Broadening Experiences in Scientific Training (BEST) Awards for career training (2013)

Bridges to Independence (NAS, 2005)

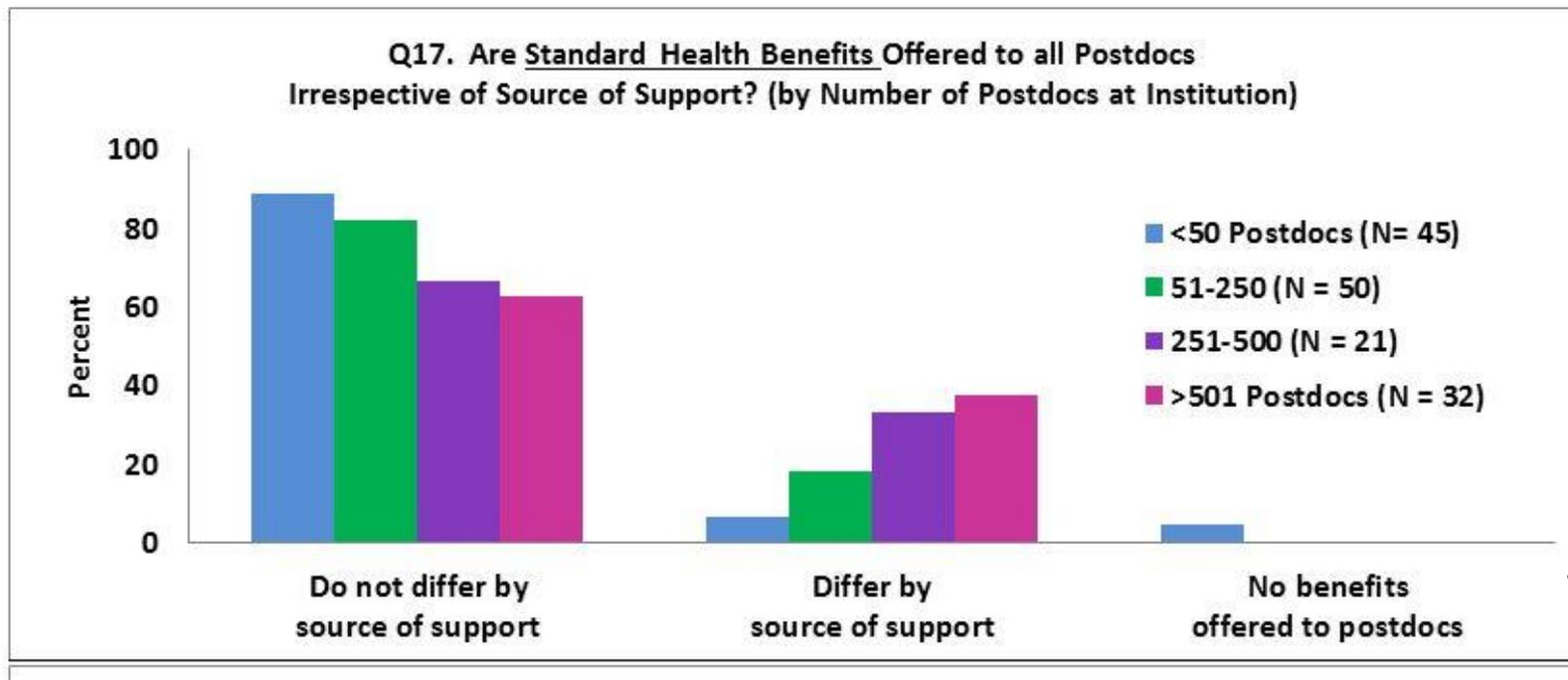
The Postdoctoral Experience Revisited (NAS, 2014)

Postdoctoral fellow benefits should be comparable to other employees

- NIH solicited input on benefits that postdoctoral fellows currently receive (2014)
 - Results reported on Open Mike NIH Nexus blog
 - 50% response from institutions with NIH postdocs
 - Survey responses required multiple offices at institution

Postdoctoral fellow benefits should be comparable to other employees

- Most postdocs received comparable insurance
- Fewer postdocs had leave and retirement



Source: "Open Mike" Nov 2015

Recommendations: Supporting Diversity

Diversity-related efforts and evaluation of outcomes need better coordination

- NIH created a diversity working group within the Advisory Committee to the Director
- NIH created a Scientific Workforce Diversity Office and recruited a Chief Officer
- NIH established a Diversity Program Consortium and Coordination and Evaluation Center to coordinate efforts (2014)

NIH should institute a comprehensive search to diversify intramural tenure-track investigators

- No known action

RPGs funding graduate student and postdoctoral training should be required to describe diversity efforts

- No known action

NIH & minority professional groups should partner to form mentorship networks for underrepresented students

- The National Research Mentoring Network (NRMN) was established by NIH (2014)
- NRMN partners with SACNAS and some other minority-service professional groups
- NIH has invested \$31 million into 12 institutions in NRMN, BUILD, and CEC (coordinated programs)

An Advisory Committee to the Director working group should provide regular input to reduce award disparities

- NIH subcommittee of ACD Working Group on Diversity of peer review; 2014 competition
- NIH indicated intent to implement bias/diversity awareness training for reviewers, pilot anonymous grant applications, enhance review feedback, continue early career reviewer program
- NIH reported persisting funding disparities (2016)

Under-resourced institutions with underrepresented minority scientists should have infrastructure development support

- NIH BUILD program supports institutional and faculty development in URM-serving institutions (2014)
- NIH SCORE program for research awards to historically URM-serving institutions (2014)

NIH should appoint a Chief Diversity Officer and establish an Office of Diversity

- Dr. Hannah Valantine became Chief Officer for Scientific Workforce Diversity (2014)
- Science Workforce Diversity Office established

Recommendations: Collecting Data

Agencies including NIH should collect information about the biomedical workforce

- NIH has developed tools for tracking researchers:
 - eRA Commons ID required for students (2013)
 - Trainee tracking through xTRACT (responsive)
 - Available but not required
 - SciENv network for researchers' CVs (2013)

NIH should coordinate extramural data collection and workforce analysis & evaluate NIH policy

- NIH established Division of Biomedical Research Workforce (2013-2015)
 - Provide ongoing analysis of the biomedical research workforce
 - Evaluate NIH policies for research training, education and career development
 - Economic analyses of associated labor market

Institutions should collect data on career outcomes of grads & postdocs

Bridges to Independence (NAS, 2005)

Research Training in the Biomedical, Behavioral, and Clinical Research Sciences (NAS, 2011)

Biomedical Research Workforce Working Group Report (NIH, 2012)

Working Group on Diversity in the Biomedical Research Workforce (NIH, 2012)

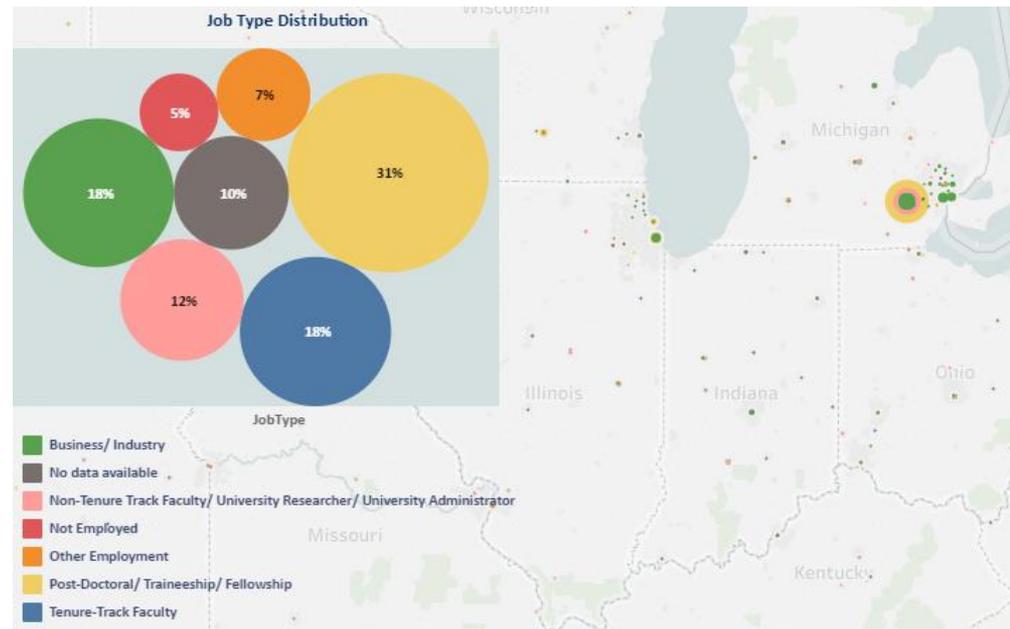
Physician-Scientist Workforce Working Group Report (NIH, 2014)

The Postdoctoral Experience Revisited (NAS, 2014)

Sustaining Discovery in Biological and Medical Sciences (FASEB, 2015)

Institutions should collect data on career outcomes of grads & postdocs

- Uneven implementation of this recommendation
- Current models:
 Univ. of Michigan
 U.C. Berkeley
 U.C. San Francisco

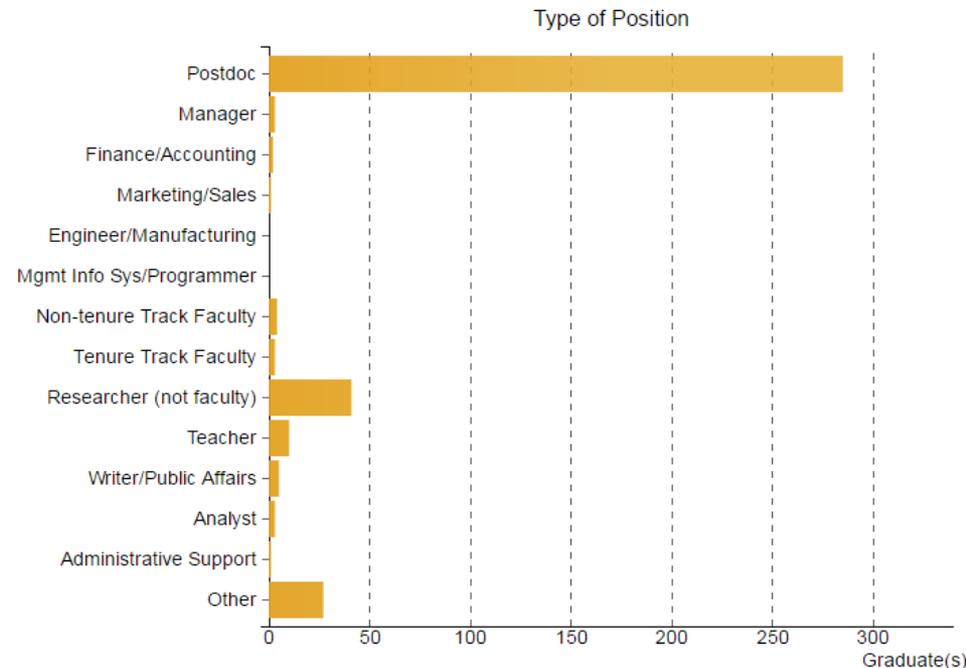


University of Michigan, Rackham Graduate School

Institutions should collect data on career outcomes of grads & postdocs

- Uneven implementation of this recommendation

- Current models:
 Univ. of Michigan
 U.C. Berkeley
 U.C. San Francisco



University of California, Berkeley Graduate School – Molecular and Cellular Biology Program

Recommendations: Supporting Early Career Investigators

Establish support for scientists transitioning into independent research positions

- NIH K99/R00 Pathways to Independence award program (2007)
 - 200 awards per year (as recommended)
 - Maximum amount \$249,000 (half of recommended)
- NIH DP5 Early Independence Award program (2011)

Double the number of NIH K99 awards and Early Independence Awards

- Numbers have increased but not doubled

Year	Number of K99s Funded	Number of DP5 Awards
2011	180	10
2012	212	14
2013	203	14
2014	246	17
2015	208	16
2016	231	16

Establish K99/R00-like support for *physician*-scientists transitioning into independent research positions

- NIH request for information to investigate this idea (2014)
 - No reported information
- K08 and K23 programs are mentored research

Expand loan repayment to all
biomedical physician-scientists;
increase amount to match debt level

- NIH Loan Repayment Program increased total awarded by \$350,000 (2015)
 - Same number of applicants
 - Same mean award level (\$51,000)
 - 79% of new award recipients had debt higher than \$50,000

Establish a New Investigator R01 grant de-emphasizing preliminary results

- NIH Director's New Innovator Award (DP2)
specifically for early career researchers (2007)
 - Funding Opportunity Description was clarified to
emphasize innovation over preliminary data (2012)
 - 33 awards, \$80 million total funding (2017)

Recommendations: Supporting Faculty

Congress should increase NIH salary cap contingent upon a reduced F&A cost recovery at higher salary levels

- No response beyond regular annual increase from \$183,300 to \$185,100

NIH should consider a long term approach to reduce % of funds from NIH sources used for faculty salary support

- NIH sent out pilot survey to obtain data on the percentage of salary covered by NIH grant dollars to 9 institutions in July 2013. Results were expected in fall 2013, but still unknown

Recommendations: Supporting Staff Scientists

NIH study sections should be receptive to grant applications that include staff scientists

- NIH implemented a change in the instructions to reviewers to now provide specific instruction to focus on qualifications of research team members rather than career tracks, job titles, or salaries

The research community should employ more staff scientists and technicians

- The National Cancer Institute is currently piloting the R50 “research specialist award”
 - Salary and some travel expenses for 5 years
 - 50-60 staff scientists

Summary

- NIH has responded to many recommendations
- Distinction between postdoctoral researchers and staff scientists is unclear
- Need more data on responses from higher education institutions