The webinar will begin shortly…

The Impact and Implementation of the National Academies of Sciences, Engineering, and Medicine 2018 Reports on Biomedical Research

Collaboration between AAMC & FASEB

AAMC
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The Impact and Implementation of the National Academies of Sciences, Engineering, and Medicine 2018 Reports on the Biomedical and Medical Workforce

The Next Generation of Biomedical and Behavioral Researchers

Lida Beninson, PhD
Program Officer
Board on Higher Education and Workforce
February 19, 2019
The Next Generation of Biomedical and Behavioral Researchers: Breaking Through

- Chaired by Ron Daniels, President, Johns Hopkins
- Released in April 2018
- Funders: National Institutes of Health (NIH) and Bloomberg Philanthropies

Committee’s Focus

- Ensure the nation’s successful launch and sustainment of careers among the next generation of researchers
- Evaluate the barriers that prospective researchers encounter
- Evaluate the extent to which employers can facilitate smooth transitions into independent research careers
Problem: Rise in Applicants, Not in Awardees

Research Project Grant Investigators: Competing Funded and Unfunded Investigators and Funding Rate

SOURCE: Data and visualization from https://nexus.od.nih.gov/all/2015/03/25/age-of-investigator/

Problem: Aging Research Workforce

Proportion of RPG Direct Cost Dollars Awarded; By Age Group

SOURCE: Data and visualization from https://nexus.od.nih.gov/all/2015/03/25/age-of-investigator/
Problem: Increasing Age to Independence

Age at first-R01 equivalent by degree type
Data provided courtesy of NIH

Problem: The High Costs to Becoming a Biomedical Researcher

The Numbers:
- ~12 years of post-baccalaureate training
- ~80% of US biomedical PhD’s enter postdocs
- 18% secure tenured or TT positions within 10 years of doctorate

The Experiences:
- Low wages for high skilled labor
- Inadequate benefits
- No guarantee of mentorship or formal training opportunities
- No assurance of independent research experience
- Lack of adequate career counseling
- Non-US citizen face additional vulnerabilities
Review Of Prior Work Relevant To Study
Appendix B

This report will only make an impact if we examine why recommendations of the past have not improved circumstances

- Improve postdoctoral training practices:
  - 5 year limit
  - Postdocs are trainees
  - Increase training and mentorship
  - Increase postdoc training grants and fellowships
  - Better communicate career prospects to trainees

- Support staff scientists:
  - NIH should encourage study sections to urge institutions to create position categories reflecting the value and stature of staff scientists
  - The research community should employ more staff scientists

A Systems Approach

Report proposes a systems approach to securing a robust and innovative biomedical research ecosystem, requiring shared oversight by multiple stakeholders

- Action steps for every stakeholder (Ch. 7)
- Stakeholders include
  - Congress
  - Federal funding agencies
  - Biomedical research institutions
  - Principle investigators (PIs)
Transitioning to Independence
Key Report Recommendation 4.1

- Institutions, PIs and federal funding agencies should support and provide every postdoctoral researcher with a high-quality training experience
- NIH should require the inclusion of an institutional training and mentoring plan
- Institutions should provide evidence that faculty mentors have received formal mentoring training
- Institutions should provide career counseling as early as the first year of postdoc experience
- NIH should levy a fee of $1000 per year per postdoc on all NIH RPGs to support training and professional development programs
Deeper Dive: Recommendations on the Postdoctoral Experience

- Postdoctoral researchers are temporary, advanced trainees
- Postdoctoral researchers will remain largely supported on Research Progress Grants
- PIs and institutions must be accountable for quality training and mentoring
- Career guidance should be documented and occur before the third year
- The National Postdoctoral Association provides core competency guidelines

Key Takeaways: Changing the postdoctoral experience

Postdoctoral researchers should receive mentored training and professional development to transition to research independence and be afforded opportunities to consider additional suitable career trajectories
The Postdoctoral Experience and the Importance of Mentorship

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Transitioning to Independence: A Personal Experience

What helped and what didn’t...

- Training in areas relevant to job market:
  - Grant Writing
  - Laboratory/Team management
  - Institutional “literacy”
  - Teaching & service
- Networking opportunities
  - Professional societies/Conferences
  - Speaking engagements
  - Workshops
- Grant opportunities
- Assistance with issues affecting international trainees
- Multiple mentors
- Addressing conflict of interest in the laboratory
- Mentor commitment
The UNC Example

UNC equips postdocs with skills and individualized support:
- Family friendly policies
- Professional development programs
- Individual funding support
- Individual career counseling by licensed professional counselors

What We Do...
1. Consultations on mentoring relationships, postdoc rights, and policy issues
2. Individual and group career counseling (Individual Development Plan, critique of job search materials, mock-interviews)
3. Consultations (individual and group) on finding funding opportunities, proposal writing and review
4. Professional development seminars & workshops (ROIR training, grant writing, networking, finding funding)
5. Support for peer-led organizations (Postdoctoral Association (PDA), Minority Postdoc Alliance (MPA), Parenting Groups, International Coffee Hours)
6. Funding for travel and professional development for postdocs

Facts & Figures
NEARLY 1,250 postdocs at UNC
33 average age of a postdoc
38% of postdocs are on international visas

Mentoring Postdocs to Become Future Mentors

Perspective from a junior investigator:
Student → Postdoc → Independent position

Mentoring Peer support Guidance

Responsibility Management Collaborations

Key skills to develop:
- Leadership
- Project management
- Conflict resolution
- Time management
- Communication
Key Recommendation 1: Transitioning to Independence

Poll: After discussing these recommendations, which top three implementation strategies do you think are the most valuable?

- Require an institutional training and mentoring plan
- Provide formal mentoring training
- Provide career counseling/professional development for postdocs
- Establishment of a postdoc fee to fund training and development
- Provide networking opportunities for postdocs
- Increase grant opportunities/individual funding support for postdocs
- Assistance for international trainees
- Encourage multiple mentors
- Address conflict of interest in the lab
- Oversee accountability of mentor commitment
- Other: Share in the chat box!

Tell us why you selected your choices in the chat box

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Key Recommendation 1: Transitioning to Independence

Poll: Which top three implementation strategies do you think will be the most challenging?

- Require an institutional training and mentoring plan
- Provide formal mentoring training
- Provide career counseling/professional development for postdocs
- Establishment of a postdoc fee to fund training and development
- Provide networking opportunities for postdocs
- Increase grant opportunities/individual funding support for postdocs
- Assistance for international trainees
- Encourage multiple mentors
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- Other: Share in the chat box!

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Increase Staff Scientists
Report Recommendation 5.3

- Research institutions and NIH should develop mechanisms to increase staff scientist positions.
- Staff scientist positions could provide more stable, non-faculty research opportunities.
- Research institutions should experiment with providing career tracks with clearly defined review and promotion processes, as well as opportunities for professional development.
- Staff scientists should receive a salary and benefits commensurate with their experience and responsibilities.

Deeper Dive: Increase Staff Scientist Positions

- Few established paths exist for non-faculty researchers/staff scientists.
- Can manage technologies in core or shared facilities, train graduate and undergraduate researchers, and provide collaborative support.
- Little clarity about how to secure these positions and advance professionally, but some promising testimony about job satisfaction.
- Could these positions address the backlog of postdoctoral researchers and bring greater equilibrium to the research system?
Key Takeaways: Increase Staff Scientists

- Stakeholders are interested in increasing staff scientist positions to alleviate the supply-demand imbalance and make important contributions.

- Very little data or evaluations available about staff scientist positions or experiences.

- Well suited for pilot projects that provide appropriate evaluation criteria and position tracking.

- The National Academies of Sciences plans to host a workshop in 2019 to discuss potential roles, responsibilities, sources of funding, and career progressions.

Supporting Staff Scientists

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Motivations and Personal Experience

Motivations included need for:
- More expert independent scientists
- Lack of time to build career of multiple post-docs
- More sophisticated help with lab/personnel management
- Highly translational focus required increased stability of workforce, technical “memory”, uniform quality of scientific product, more professional approach to documentation

Additional benefit has been alignment of staff scientists’ and laboratory’s goals:
- Lab environment much less stressful and increased focus
- Greater drive to interdisciplinarity and collaboration
- Increased transparency and reliability related to results and problem areas

Resistance Related to Definitions, Metrics and Goals

- Very little data available about institutional administrative/HR experience with staff scientist positions
  - Makes advocacy and adoption more difficult
- Little attention to differentiating role in individual laboratories vs larger organizations
  - Core director or leader
- Lack of data on the value proposition
  - Laboratory stability
  - Technical “memory”
  - Quality of scientific product
  - Alternate job path
Institutional Implementation: Practical Considerations

- **Recognition** – path for professional advancement and what it confers

- **Evaluation** – most relevant metrics and how to assess; rewarding quality without mirroring the standard academic track

- **Funding** – NIH key personnel? How to present in grant applications? Is there opportunity for independent funding?

- **Exit strategy** – what resources are necessary for skill acquisition and improvement?

**Key Recommendation 2:**
Increase Staff Scientists

**Poll:** After discussing these recommendations, which top three implementation strategies do you think are the most valuable?

- Increase staff scientist positions
- Provide a clearly defined review and promotion process
- Provide commensurate salary and benefits
- Pilot projects with evaluation criteria and position tracking
- Recognize value staff scientists’ benefit to research
- Recognize value staff scientists’ benefit to the lab environment
- Differentiate roles in individual labs vs larger organizations
- **Other:** Share in the chat box!

Tell us why you selected your choices in the chat box.
Key Recommendation 2: Increase Staff Scientists

Poll: Which top three implementation strategies do you think will be the most challenging?

- Increase staff scientist positions
- Provide a clearly defined review and promotion process
- Provide commensurate salary and benefits
- Pilot projects with evaluation criteria and position tracking
- Recognize value staff scientists' benefit to research
- Recognize value staff scientists' benefit to the lab environment
- Differentiate roles in individual labs vs larger organizations
- Other: Share in the chat box!

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Questions?

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Thank you for joining us!

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