Revitalizing Graduate STEM Education for the 21st Century
National Academies of Sciences, Engineering, and Medicine
Board on Higher Education and Workforce
Second Committee Meeting
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Mission: To *improve the postdoctoral experience* by enhancing training and the professional environment to benefit scholarship and innovation.

Vision: Working in collaboration with the entire research community, the NPA envisions *changing the culture* of those individuals and institutions engaged in the U.S. research enterprise so that the contributions of postdoctoral scholars are fully recognized.

“Supporting Postdocs, Promoting Discovery”
National Postdoctoral Association
15 years of Enhancing the Postdoctoral Experience
2003-2017

About Us
The National Postdoctoral Association (NPA) is a member-driven, 501(c)3 nonprofit organization that provides a unique, national voice for postdoctoral scholars. Since 2003, we have taken on the ambitious agenda to enhance the quality of the postdoctoral experience. We have assumed a leadership role in addressing the many issues confronting the postdoctoral community that are national in scope and requiring action beyond the local level.

By the Numbers
- **79K**: Estimated number of postdocs, see NPA Institutional Policy Report
- **200+**: Leaders developed: Board and Committee Leaders
- **150+**: Institutions adopting the NPA’s Recommendations for Postdoctoral Policies and Practices
- **135**: Postdoc offices established. 75 new offices since our founding in 2003.

Selected Resources from the NPA
- **6**: Core Competencies
- **Family-Friendly Resources**
- **International Postdoc Survival Guide**
- **Responsible Conduct of Research Toolkit**
- **Diversity Programs and Resources**
- **Institutional Policy Database and Reports**

Collaborative Advocacy Efforts
- **$**: 4 Increases in NIH NRSA Stipend
- **post·doc (pōst'dōk'), n. adj. Postdoctoral**: NIH and NSF Adopt Uniform Definition of Postdocs in 2007
- **National Summit on Gender and the Postdocorate**
- **Proposed the Follow-up NAS Report “The Postdoctoral Experience Revisited”**
- **Establishment of NIH Pathways to Independence Awards**

powered by Piktochart: make information beautiful
By the Numbers

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Selected Resources from the NPA

- Core Competencies
- Family-Friendly Resources
- International Postdoc Survival Guide
- Responsible Conduct of Research Toolkit
- Diversity Programs and Resources
- Institutional Policy Database and Reports
The six core competencies are:

1. Discipline-specific conceptual knowledge
2. Research skill development
3. Communication skills
4. Professionalism
5. Leadership and management skills
6. Responsible conduct of research
Acknowledgements

- Burroughs Wellcome Foundation for their generous support of this project since 2012
- The Institutional Policy Survey & Report Taskforce
- All member institutions who responded to the survey

History

2013 - First round of data collection
2016 - Second round of data collection
PROFESSIONAL DEVELOPMENT FOR POSTDOCS

- Grant Proposal Writing
- Manuscript/Scientific Writing
- Mock Study Sections
- Lab Mgmt/Academic Setting
- Project Mgmt/Academic Setting
- Project Mgmt/Industry Setting
- Teaching Skills
- Presentation Skills
- Negotiation Skills
- Interpersonal Skills
- RCR
- Diversity & Outreach Prgms
- English Language Training
- International Legal Issues
- Time Mgmt
- Tech Transfer/Commercialization
- Other
- N/A

[Bar chart showing the distribution of professional development areas for postdocs]
VANDERBILT ASPIRE PROGRAM

Broadening Experiences in Scientific Training

BRET Office of Career Development
Broaden training experiences so trainees are empowered to make well-informed career decisions with confidence.

Timeline of PhD training

- Year 1: IMPACT Phase
- Year 2: Exploration Phase
- Year 3: Enhancement Phase
- Year 4
- Year 5
- Year 6

Ongoing Career & Professional Development Activities & Opportunities

NIH BEST award (DP7OD018423)
Short, non-credit bearing courses open to BOTH graduate students & postdocs:
1) Communication
2) Teaching
3) Clinical research
4) Business & entrepreneurship

Practical Strategies for Strong Writing
Oral Communication Methods
EQ + IQ = Career Success
Biomedical Research and the Media
STEM Teaching in K-12 Schools
Clinical Laboratory Medicine: Applying Your PhD to Patient Care
Introduction to Principles & Practice of Clinical Research
Technology Commercialization
Summer Intensive in Entrepreneurship & Commercialization
Management & Business Principles for Scientists
OTHER OPPORTUNITIES

Certificate in College Teaching
- Seminar in College Teaching
- College Teaching Practicum

- 6-week business competition
- Interdisciplinary teams
- Learn about commercialization strategies
- Facilitates networking between researchers and business professionals
- Showcases emerging intellectual property from Vanderbilt University
EXPLORATIONS IN SCIENCE COMMUNICATION

Vanderbilt Center for Student Professional Development

Cultivating Ensembles in STEM Education and Research

Communicating Complex Ideas Workshop Series
Successful candidates:

- Demonstrate exceptional **competence in their specialty** appropriate to their career stage.
- Show an understanding of the opportunities for S&E to support a broad range of non-scientific issues, and display a commitment to apply their scientific or technical **expertise to serve society**.
- Exhibit awareness and sensitivity to the political, economic and social issues that influence policy.
- Are **articulate communicators**, both verbally and in writing, to decision-makers and **non-scientific audiences**, and have the ability to work with individuals and groups outside the scientific community.
- Demonstrate initiative, **problem-solving ability**, **leadership capacity**, and the **flexibility** and willingness to address policy issues outside their scientific expertise.