



National Institutes of Health  
*Office of Strategic Coordination - The Common Fund*



# NIH Director's Broadening Experiences in Science Training (BEST) Award Informational Webinar

March 26, 2013, 3:00pm-4:00pm EDT

To submit questions to be answered during the  
webinar, please email questions to:

[Workforce\\_Award@mail.nih.gov](mailto:Workforce_Award@mail.nih.gov)



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# Agenda



- **Welcome/ NIH's Support for Biomedical and Behavioral Workforce Training** **Sally Rockey**, Ph.D., Deputy Director for Extramural Research, Office of Extramural Research, NIH
- **Introduction to the Common Fund and the New Funding Announcement** **Patricia Labosky**, Ph.D., Program Director, Office of Strategic Coordination, DPCPSI, NIH
- **Review Process for the NIH Director's Workforce Innovation Award Applications** **Larry Boerboom**, Ph.D., Review Group Chief, Center for Scientific Review, NIH
- **Question and Answer Session** **Alison Hall**, Ph.D., Deputy Director for Division of Training, Workforce Development, and Diversity, NIGMS; **Henry Khachaturian**, Ph.D., Director of Policy and Liaison Activities, Division of Loan Repayment, OER; **Stephen Korn**, Ph.D., Director of Office of Training, Career Development and Workforce Diversity, NINDS; **Patricia Labosky**, Ph.D., Program Director, Office of Strategic Coordination, DPCPSI and other members of the Working Group.

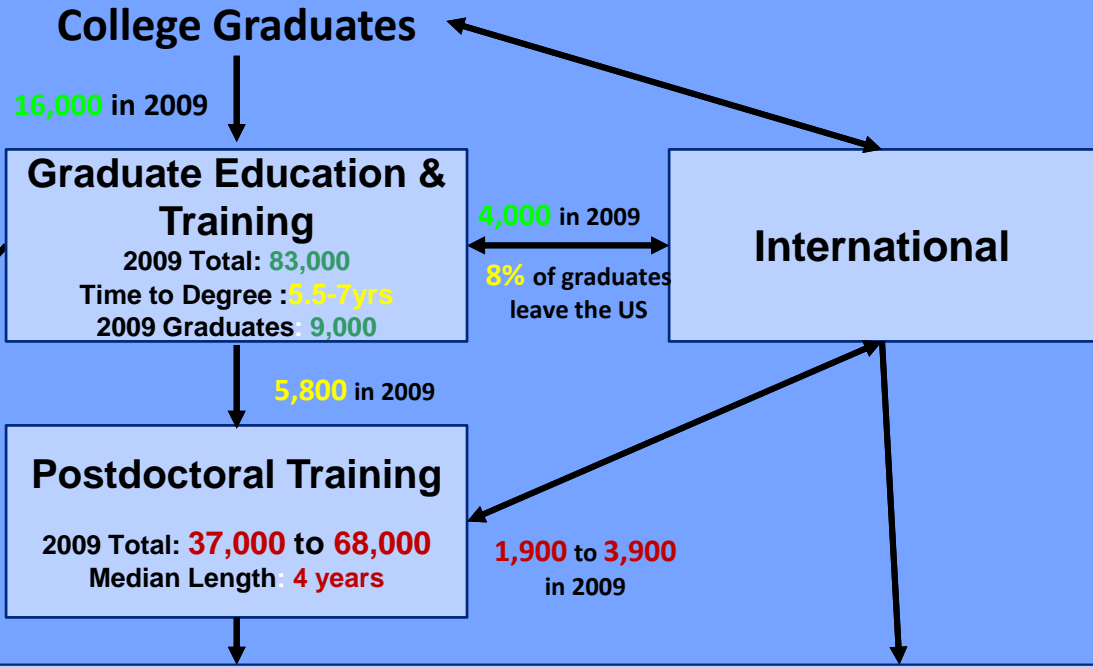
# Biomedical Research Workforce Working Group

- Chaired by Shirley Tilghman (Princeton) and Sally Rockey (NIH)
- Charge
  - Develop a model for a sustainable and diverse U.S. biomedical research workforce that can inform decisions about training of the optimal number of people for the appropriate types of positions that will advance science and promote health.
  - Based on this analysis and input from the extramural community, make recommendations for actions that NIH should take to support a future sustainable biomedical infrastructure.
- Report
  - Executive Summary [http://acd.od.nih.gov/bmw\\_report.pdf](http://acd.od.nih.gov/bmw_report.pdf)
  - Report [http://acd.od.nih.gov/Biomedical\\_research\\_wgreport.pdf](http://acd.od.nih.gov/Biomedical_research_wgreport.pdf)
  - Supplementary Web Site [http://report.nih.gov/investigators\\_and\\_trainees/ACD\\_BWF](http://report.nih.gov/investigators_and_trainees/ACD_BWF)

# Snapshot of the PhD Biomedical Research Workforce

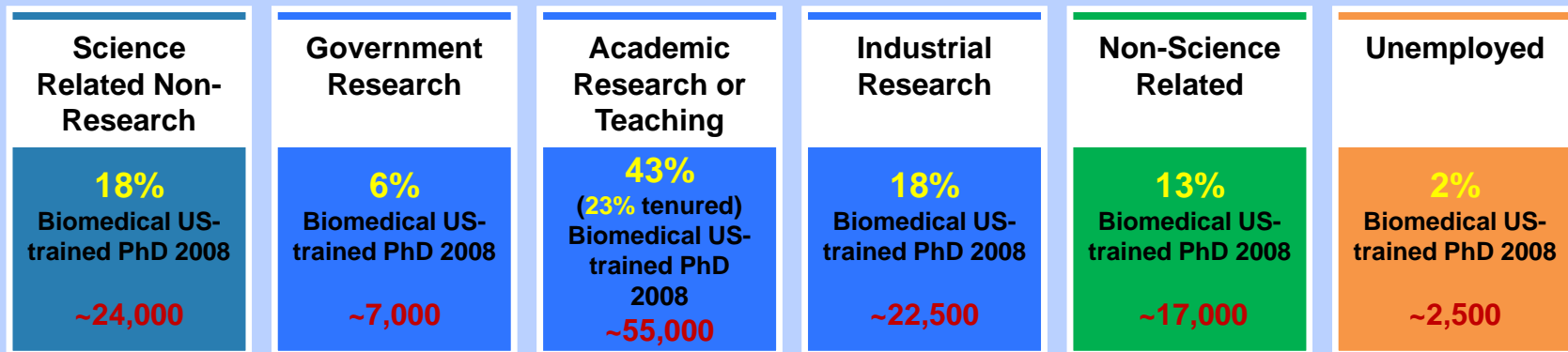
NOTE: The color of the numbers reflects the confidence in the accuracy of the data.

Of graduates who stay in the US  
**30%** skip a postdoc  
**70%** do a postdoc



## Post-Training Workforce

(128,000 Biomedical US-trained PhDs)



# Conclusions

Weighing all the data analyzed, the working group concluded that:

- The combination of the large upsurge in US-trained PhDs, increased influx of foreign-trained PhDs, and aging of the academic biomedical research workforce make launching a traditional, independent, academic research career increasingly difficult.
- The long training time and relatively low early-career salaries when compared to other scientific disciplines and professional careers may make the biomedical research career less attractive to the best and brightest of our young people.
- The current training programs do little to prepare people for anything besides an academic research career, despite clear evidence that a declining percentage of graduates find such positions in the future.

# Recommendations

- The goal of the recommendations is to modify the career paths in biomedical research in a timely fashion in order to:
  - Attract and retain the best and most diverse scientists, engineers and physicians from around the world.
  - Increase the number of domestic students from diverse backgrounds who excel in science and become a part of the STEM workforce.
  - Better prepare biomedical PhD students and postdoctoral researchers to participate in a broad-based and evolving economy.
- The working group made specific recommendations on:
  - Graduate Students - diversify and shorten the PhD.
  - Postdoctoral Researchers, - shorten the pathway to an independent career, enhance the training aspects of the postdoc, and improve pay and benefits.
  - Information Collection, Analysis and Dissemination - fill data gaps, routinely track student and postdoc career outcomes, and institute ongoing analysis of the workforce
  - Physician Scientists - conduct a focused follow-on study.
  - Staff Scientists - study sections should be receptive to these positions in applications.
  - Salary Support – long term approach to assess NIH support.
  - Diversity – stronger coordination of programs and rigorous evaluation.

# BEST Program - Broadening Experiences in Science Training

**FUNDING**  
Search NIH Guide for Grants and Contracts

Funding Opportunities & Notices  
Unsolicited Applications (Parent Announcements)

- Common Fund program seeking innovative approaches to complement traditional research training in biomedical sciences at institutions that receive NIH funds.
- Encourage institutions to leverage funds with existing institutional offices and programs, local resources outside the institution, or that partner with industry or other entities.
- Must include rigorous analysis to demonstrate impact.
- Proven approaches will be widely disseminated throughout the biomedical research community; awardees will meet to exchange ideas.

<http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-12-022.html>



# Origins of the Common Fund

2004: NIH Roadmap is launched

December 9, 2006: Congress unanimously passes a reauthorization bill affirming importance of NIH and its vital role in advancing biomedical research to improve the health of the Nation



Establishes the **Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI)** within Office of the Director and the **NIH Common Fund** to provide a dedicated source of funding to enable *trans*-NIH research

## One Hundred Ninth Congress of the United States of America

AT THE SECOND SESSION

*Begun and held at the City of Washington on Tuesday,  
the third day of January, two thousand and six*

### An Act

To amend title IV of the Public Health Service Act to revise and extend the authorities of the National Institutes of Health, and for other purposes.

*Be it enacted by the Senate and House of Representatives of  
the United States of America in Congress assembled,*

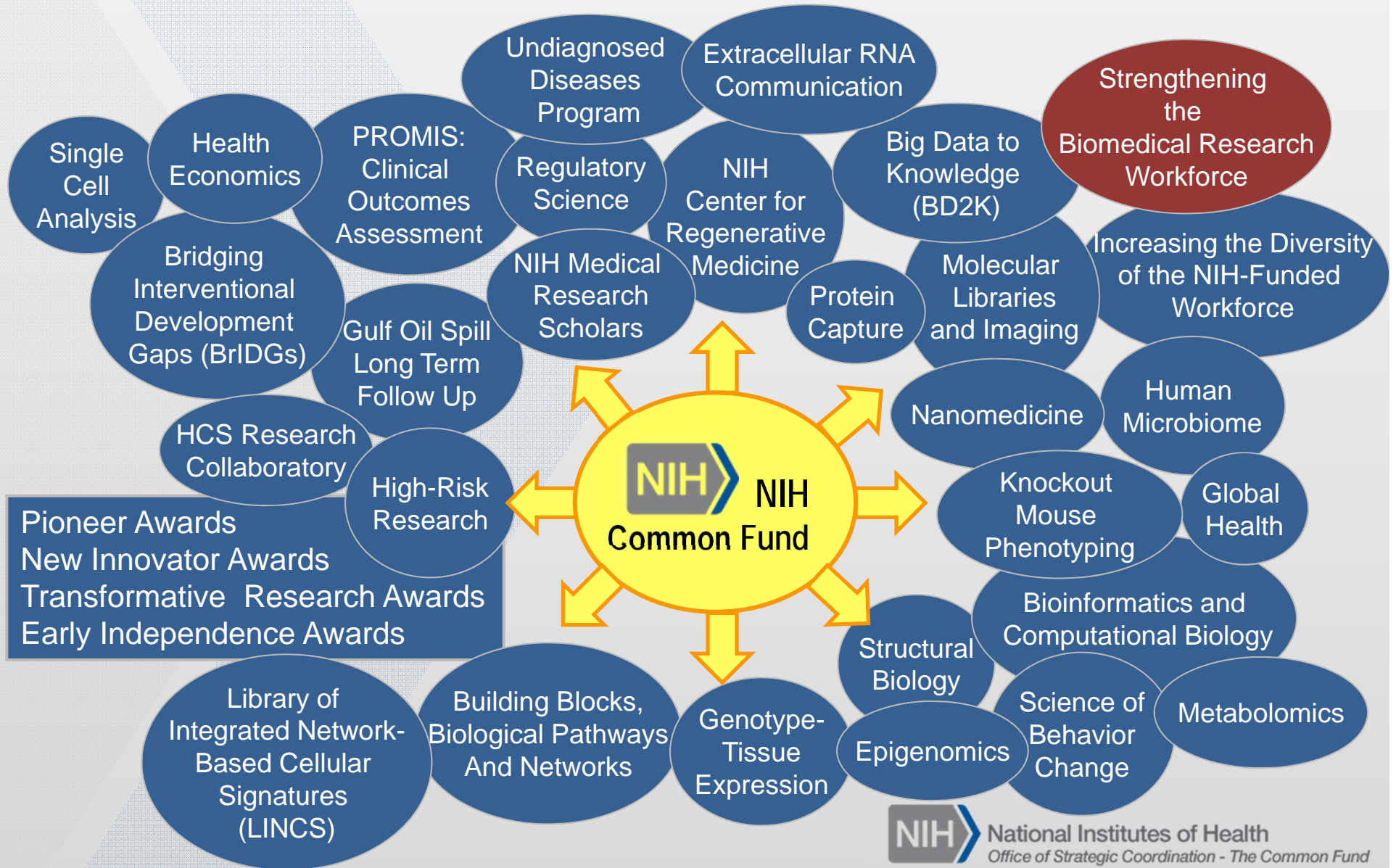
#### SECTION 1. SHORT TITLE.

This Act may be cited as the "National Institutes of Health Reform Act of 2006".

### TITLE I—NIH REFORM



# Current Common Fund Programs



# Criteria for Common Fund Programs

- **Transformative:** Must have high potential to dramatically affect biomedical and/or behavioral research over the next decade
- **Catalytic:** Must achieve a defined set of high impact goals within 5-10 years
- **Synergistic:** Outcomes must synergistically promote and advance individual missions of NIH Institutes and Centers to benefit health
- **Cross-cutting:** Program areas must cut across missions of multiple NIH Institutes and Centers, be relevant to multiple diseases or conditions, and be sufficiently complex to require a coordinated, trans-NIH approach
- **Unique:** Must be something no other entity is likely or able to do

# What makes a Program Common Fund'able?

Common Fund programs catalyze progress across a broad spectrum of biomedical research

## ■ **New Approaches, Tools, Technologies, Data**

- We are trying to affect a “sea change” with this program.
- Alter the training landscape to give pre-doctoral students and postdoctoral fellows direct exposure to a myriad of career options.
- Provide trainees with a working knowledge of the opportunities available to them AND the information to facilitate their path towards these options.

## ■ **Enabling Infrastructure**

- We aim to enable institutions to build infrastructure, novel courses, internships, training opportunities, etc.

# New FY 2013 Program: Strengthening the Biomedical Research Workforce

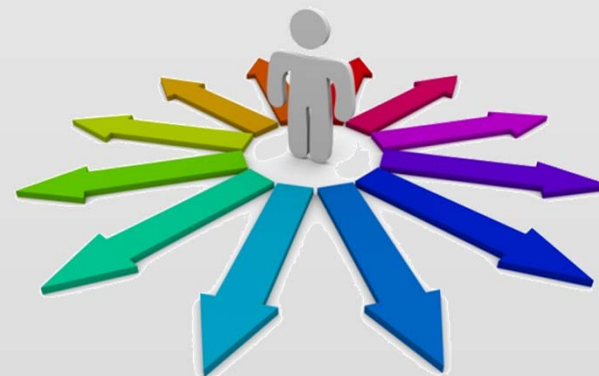
**Challenge:** Long training periods for Ph.D. students and postdoctoral researchers and the declining percentage of graduates obtaining traditional academic research positions make biomedical research a less attractive career to promising trainees.



**Opportunity:** The NIH Common Fund is launching the **Strengthening the Biomedical Research Workforce** program to expand the versatility of training opportunities to prepare early career scientists for entry into the dynamic biomedical workforce landscape.

## **RFA-RM-12-022: NIH Director's Biomedical Research Workforce Innovation Award: Broadening Experiences in Scientific Training (BEST)**

Goal: to develop innovative approaches to complement traditional research training in biomedical sciences



# Broadening Experiences in Scientific Training: BEST Awards

Despite the broad range of career options available to U.S.-trained PhD biomedical scientists, **most graduate programs and postdoctoral training focus almost exclusively on preparing individuals for careers as academic researchers.** It makes sense that PIs may not have all the working knowledge to train their students and postdocs for career choices other than the one they know best.



# Broadening Experiences in Scientific Training: BEST Awards

This program is seeking applications that propose the **establishment, implementation, and assessment** of innovative approaches and activities to broaden and complement traditional research training in biomedical, behavioral, social and clinical (referred to as ‘biomedical’) sciences.

This is intended to be an **EXPERIMENT!**  
This is not a training grant.



# Broadening Experiences in Scientific Training: BEST Awards

## Two major goals:

1. Better prepare pre-doctoral students and postdoctoral scientists for the breadth of careers in the biomedical research workforce, and
2. Establish a network to develop, share, evaluate, and disseminate best practices within the training community.



# Broadening Experiences in Scientific Training: BEST Awards

## Award Details:

- \$250,000 plus full indirect costs.
- Five year award, non-renewable.
- Allowable costs:
  - faculty and/or staff salary is allowed
  - no tuition, stipend or salary for students or postdocs is allowed
  - consultant costs, equipment, supplies, travel for key persons, and other program-related expenses may be included in the proposed budget
- There will be an additional call for applications in 1-2 years.





# Broadening Experiences in Scientific Training: BEST Awards

Eligible institutions must be **doctoral degree granting institutions** with established pre-doctoral programs. If the applicant institution also trains a significant number of postdoctoral scientists, the postdocs must be included in the novel program.

Activities must be available to all trainees regardless of funding source. (Note: these programs must be far-reaching; they are not intended to reside within an individual department.)



# Broadening Experiences in Scientific Training: BEST Awards

Applications should **leverage existing institutional resources** to broaden and enrich training experiences so that trainees are exposed to multiple research and research-related career paths **early** in their training.

Programs should identify **various** career paths and develop **meaningful** opportunities targeting those pathways.

Trainees are expected to have the opportunity to select from among these experiences.

The program is NOT meant to train them fully for new career options, but should prepare them for the next steps in their career development.



# Broadening Experiences in Scientific Training: BEST Awards

One goal of these awards is to broaden traditional training experiences such that trainees are better prepared for careers in a variety of other venues, including industry, government, academia, or entrepreneurial enterprises.

While it is expected that trainees intending to enter academic research careers will benefit from the broader training experience, **programs designed exclusively to target academic research careers will be considered non-responsive.**

Design of positive and attractive exit pathways for those individuals intending careers that do not require a research doctorate are encouraged.



# Broadening Experiences in Scientific Training: BEST Awards

A long term goal of this program is to **work toward new business and academic models** of how graduate programs in biomedical research sciences define themselves and their purpose, how they recruit, admit, support, steer and mentor students to prepare them appropriately.

It is **not** expected that new programs would provide experience in **all** research or research related outcomes, but novel programs should target aspects of training that will enhance their existing programs and add to a more holistic approach across the enterprise.



# Broadening Experiences in Scientific Training: BEST Awards

## Principal Investigator Details:

- PI/PD can be any individual(s) with the skills, knowledge, and resources necessary to carry out the proposed research.
- The PD/PI should be an **established investigator** in the scientific area in which the application is targeted (training or career development) and capable of providing both administrative and scientific leadership to the development and implementation of the proposed program.
- The PD/PI will be expected to monitor and assess the program and submit all documents and reports.
- **Multiple PIs are allowed.**



# Broadening Experiences in Scientific Training: BEST Awards

## Partnerships:

Applicants are encouraged to form partnerships with organizations that employ scientists engaged in the careers for which the training experiences are directed (private sector, publishing, government, etc.). Partner organizations may provide opportunities for internships, their staff may participate in the development and implementation of novel curricula, or they may contribute in other ways to the success of the program.



# Broadening Experiences in Scientific Training: BEST Awards

Applicants currently exploring novel approaches are encouraged to apply but must carefully explain how **support from this award would substantially complement and/or add new dimensions to their existing programs**. Applications that request additional support only to maintain an existing program will be deemed non-responsive.



# Broadening Experiences in Scientific Training: BEST Awards

It is expected that the novel programs will **transcend department, program, and possibly school boundaries**, and be available to biomedical science students and postdocs across disciplines.

They should aim to **transform the culture of research training in the biomedical sciences for both trainees and mentors** and disseminate findings widely across the training community.

Applications that **leverage funds** from this program with existing institutional offices and programs, local resources outside the institution, or partners are highly encouraged.





# Broadening Experiences in Scientific Training: BEST Awards

## Evaluation:

- This Common Fund Program is meant to be an **experiment**, therefore rigorous evaluation of each individual award will be required by both the individual awardees and independently by NIH.
- Each individual awardee will devise appropriate metrics to determine the impacts/outcomes of their program
- For NIH's evaluation plan, awardees will be required to provide data including, but not limited to, information specified in the evaluation plan in the FOA.
- NIH expects that the successful approaches will be widely disseminated.



# Broadening Experiences in Scientific Training: BEST Awards

**Interactive Network:** BEST awardees will interact on a regular basis. Each year, awardees will meet to discuss developments, progress and insights gained.

- “Kick-off” meeting in Bethesda, Oct 29-30, 2013.
- Periodic (monthly) teleconference calls,
- Site visits from NIH staff



# Broadening Experiences in Scientific Training: BEST Awards

- **Important dates:**

Letter of Intent Due Date:	April 10, 2013
Application Receipt:	May 10, 2013
Scientific Merit Review:	June/July 2013
Advisory Council Review:	September 2013
Earliest Start Date:	September 16, 2013
Kick-Off Meeting:	October 30-31, 2013



U.S. Department of Health & Human Services



Center for  
Scientific Review

## **Review of Applications: Broadening Experiences in Scientific Training (BEST)**

Lawrence Boerboom, PhD

Chief, Cardiovascular and Respiratory Sciences

Integrated Review Group

Center for Scientific Review

# Two Levels of Review

- Peer review for scientific and technical merit (study section)
  - June/July, 2013
- National Advisory Council
  - September 9, 2013

# Critiques and Scores

- Overall Impact
- Scored Review Criteria
  - Significance
  - Investigators
  - Innovation
  - Approach
  - Environment
- Preliminary scores given to Overall Impact and each criterion
  - Range 1-9 (best to worst)

# Review Criteria

- **Significance**
- **Investigator(s)**
- **Innovation**
- **Approach**
- **Environment**

# Review Criteria

- **Significance**
  - Is an important need in training addressed?
  - Is there **convincing evidence** in the application that the proposed activity will **significantly contribute** to enhancing the training of the future biomedical research workforce?



# Review Criteria

- **Significance**
- **Investigator(s)**
  - Is the PD/PI capable of providing administrative and scientific leadership to develop and implement the proposed program?
  - Is there evidence that an appropriate level of effort will be devoted by the program leadership to ensure the program's intended goal?
  - Is there evidence that the participating faculty and other experts have experience in mentoring students and teaching science or other aspects of research and research-related careers?
  - Are the faculty and experts good role models for the participants by nature of their scientific and career accomplishments?
  - If the project is collaborative or multi-PD/PI, do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate for the project?

# Review Criteria

- **Significance**
- **Investigator(s)**
- **Innovation**
  - Are the proposed experiences innovative in nature?
  - Is the proposed program developing or utilizing innovative approaches and latest best practices to improve the knowledge and/or skills of the intended audience?
  - Does the program clearly propose to go beyond the traditional training activities experienced by graduate students and postdoctoral scientists?

# Review Criteria

- **Significance**
- **Investigator(s)**
- **Innovation**
- **Approach**
  - Are clear goals and objectives stated?
  - Are appropriate partnerships in place to provide novel training experiences? (Note: partnerships are not required but are strongly encouraged as appropriate.)
  - Is there a sound evaluative component? Is the plan for evaluation sound, does it include the evaluative elements outlined in this FOA, and likely to provide information on the effectiveness of the program?
  - Are the planned recruitment and enlistment plans adequate to ensure a highly qualified and diverse participant pool from across the institution?
  - Is the dissemination plan adequately detailed? Is there evidence of strong institutional commitment to the short and long term goals of the program?

# Review Criteria

- **Significance**
- **Investigator(s)**
- **Innovation**
- **Approach**
- **Environment**
  - Will the scientific and training environment contribute to the goals?
  - Is there a plan to take advantage of this environment and/or environments outside the training institution to enhance the educational value of the program?
  - Is there tangible evidence of institutional commitment?
  - Is there tangible evidence of faculty commitment?
  - Where appropriate, is there evidence of collaboration and buy-in among participating programs, departments, centers, schools and institutions?

# Discussed vs. Not Discussed Applications

- Depending upon the number of applications received, some may not be discussed
  - Selection will be based on preliminary Overall Impact score
- Discussed applications will be reviewed in rank order – best to worst, based on preliminary Overall Impact score

# Broadening Experiences in Scientific Training: BEST Awards

## Questions Please!

Send emails to:

[Workforce\\_Award@mail.nih.gov](mailto:Workforce_Award@mail.nih.gov).

Questions will be de-identified and answered right now.

These slides and an audio recording of today's webinar will be available on our website:

<http://commonfund.nih.gov/workforce/>.

