Transforming Diversity in Research Training:

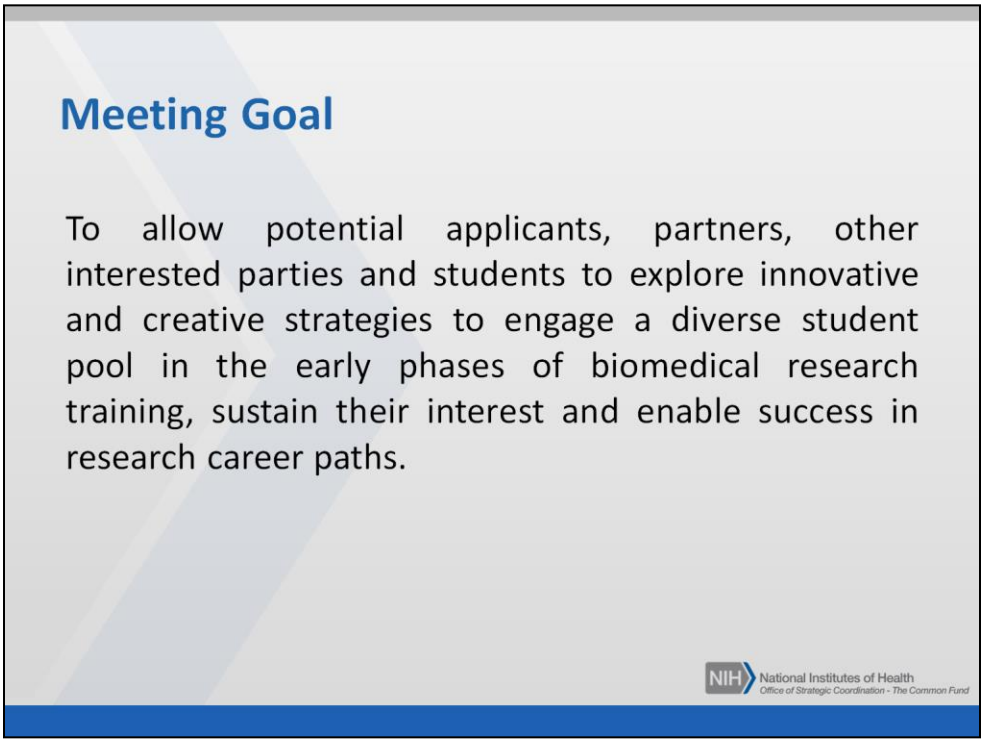
Interactive Sessions for the NIH "Enhancing the Diversity of the NIH-Funded Workforce" Program

Elizabeth Wilder, Ph.D.

Director, Office of Strategic Coordination

The Common Fund

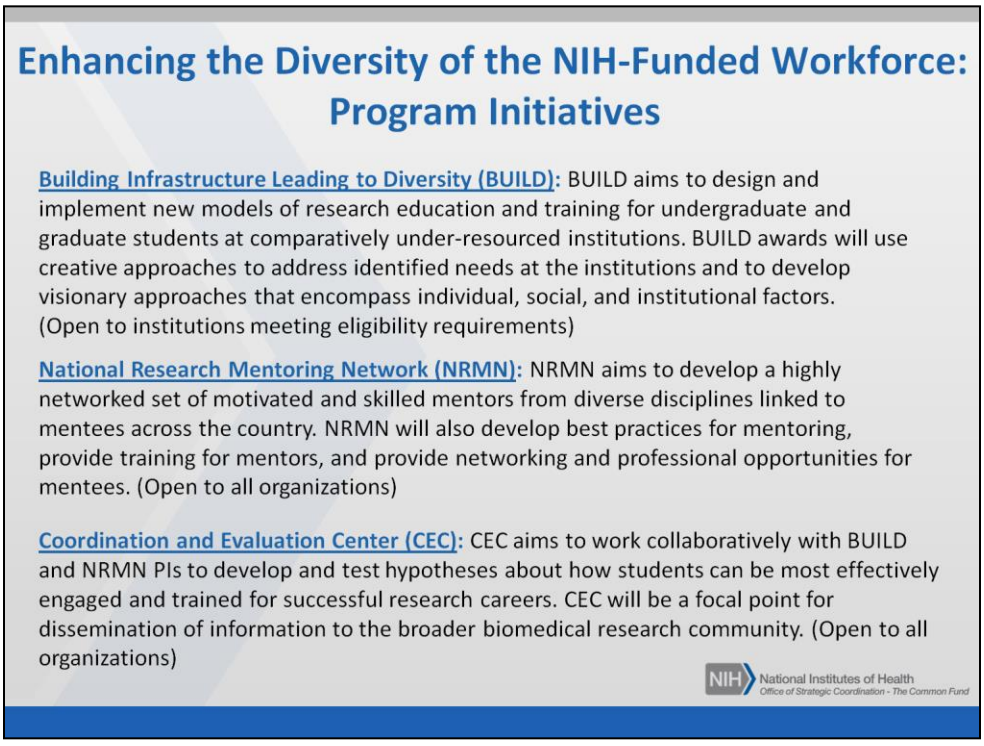
NIH National Institutes of Health
Office of Strategic Coordination - The Common Fund



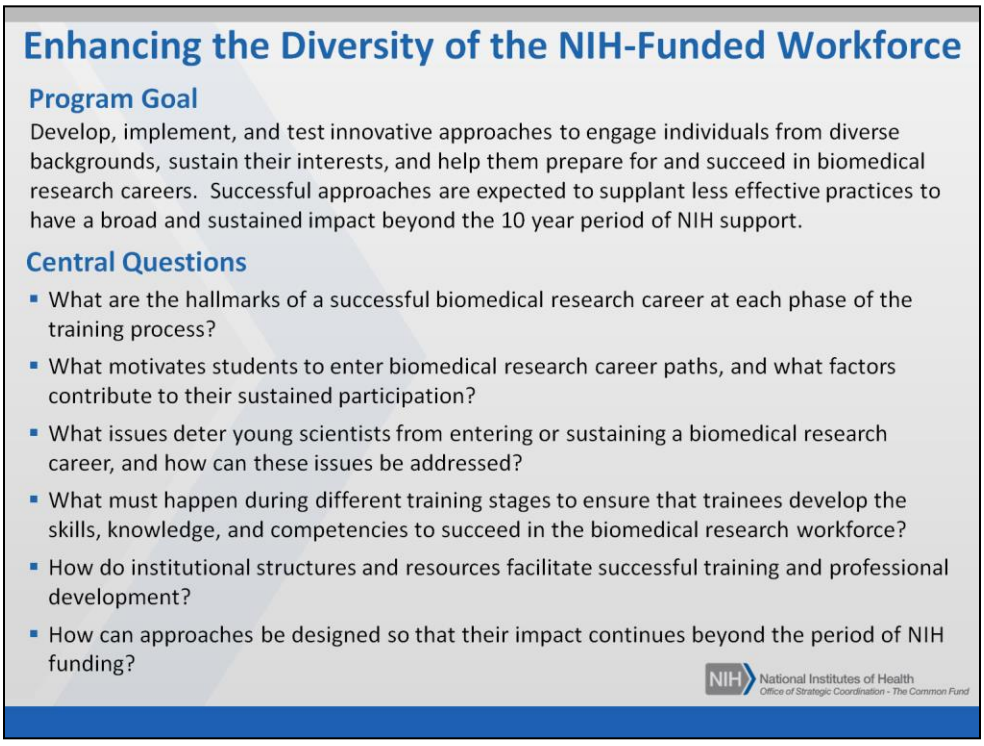
Meeting Goal:

To allow potential applicants, partners, other interested parties and students to explore innovative and creative strategies to engage a diverse student pool in the early phases of biomedical research training, sustain their interest and enable success at each career path.

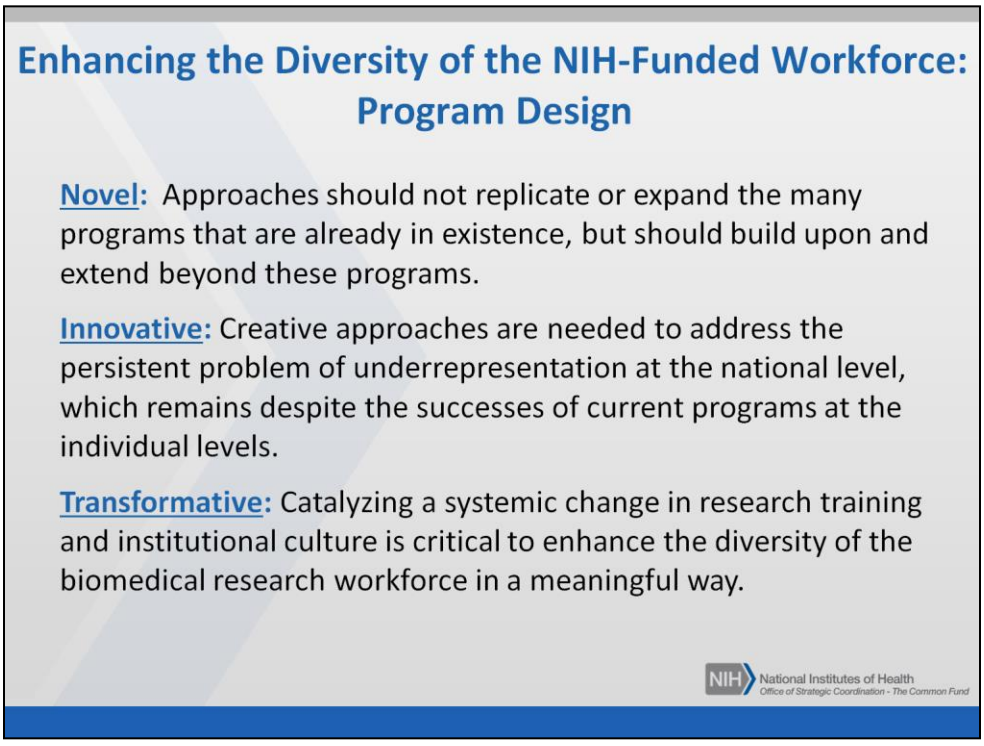
- Background for the Advisory Committee to the Director (ACD) Working Group on Diversity in the Biomedical Research Workforce
- June 2012 provided recommendations
- Pipeline: address the "leaky pipeline" for underrepresented minorities– support for students, faculty, and institutions to improve training, keep students engaged, and foster career success
- Mentoring: mentoring is import for the success of early career scientists; NIH should connect mentors and mentees, as well as develop standards for good mentorship and training to become better mentors.
- Infrastructure- Increased engagement by NIH Leadership. Create a Steering Committee Working Group on Diversity; recruit Chief Officer for Scientific Workforce Diversity
- Peer Review– examine whether unconscious bias may play a role in disparities in research awards; pilot training programs and policies designed to reduce bias; enhance feedback to unsuccessful applicants



- Building Infrastructure Leading to Diversity (BUILD) will provide support for relatively under-resourced institutions with concentrations of students from disadvantaged backgrounds to implement transformative approaches to the development of scientific talent. These approaches will emphasize research opportunities for students, along with additional innovative activities, to enable students to achieve the hallmarks of success at each phase. Awardee institutions will be encouraged to partner with research-intensive institutions to expand research opportunities for their students, to foster networking, and to enrich the educational experiences available to students at both institutions.
- The National Research Mentoring Network (NRMN) will be a single nationwide network of mentors and mentees, spanning all disciplines relevant to the NIH mission. The NRMN will address the critical need for increased access to high quality research mentorship and networking opportunities by establishing an interconnected set of skilled mentors linked to mentees across the country, developing best practices for mentoring, providing training opportunities for mentors, and providing professional opportunities for mentees. The goals for mentoring at each career phase will align with the hallmarks of success to be established by the consortium.
- The Coordination and Evaluation Center (CEC) will coordinate consortium-wide activities and assess efficacy of the training and mentoring approaches developed by the BUILD and NRMN awardees. The CEC will develop both short- and long-term measures of efficacy, allowing the consortium to continuously gather data and respond accordingly. The CEC will also serve as the focal point for dissemination, sharing consortium progress and lessons learned with the broader biomedical research training and mentoring communities.



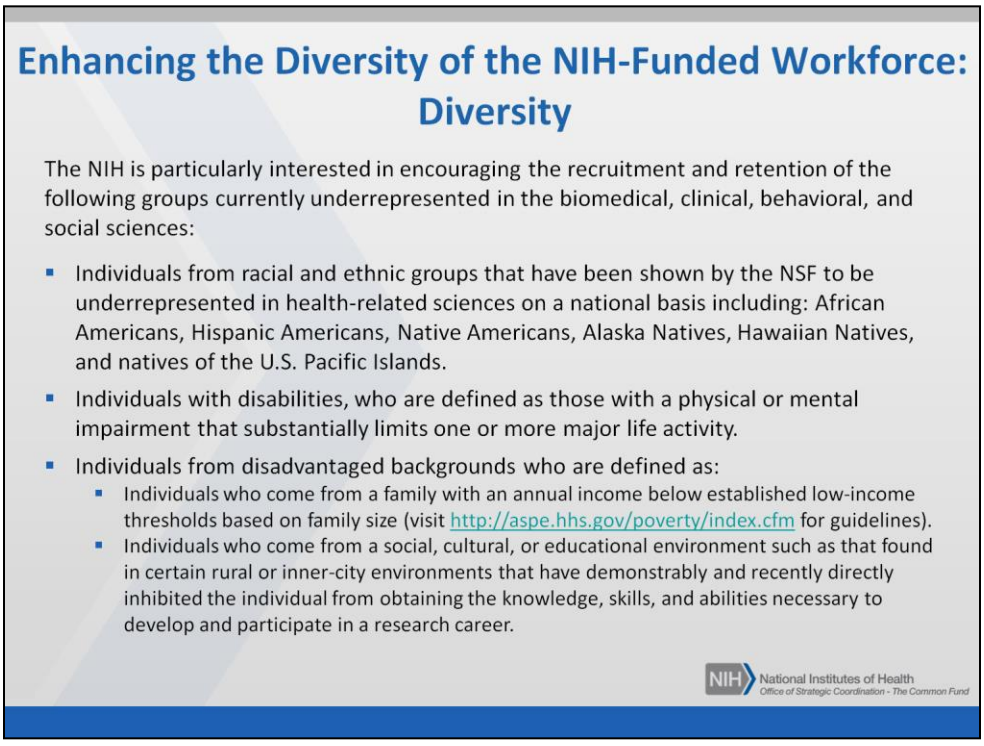
- Current data indicate that the single most predictive activity for successful research careers is exposure to meaningful research experiences at the undergraduate stage.
- Awardees have the opportunity to employ new, innovative, novel ideas and concepts to help students achieve the hallmarks of a successful biomedical research career.
- Successful careers include not only mastery of science but creativity, logic in experimental design, networking skills, writing skills, etc.
- But how to determine if trainees are mastering these things?
- The consortium will develop this list of the hallmarks.
- The consortium will also have an opportunity to increase our understanding of the needs, attitudes, motivations, and career trajectories of students from diverse backgrounds, to test ways to more effectively help young scientists persist toward research careers, and to test hypotheses about practices that are most likely to lead to successful career outcomes.
- To have a transformative impact, successful approaches must be disseminated and used by many different institutions across the nation, to broadly impact many trainees.



This program is intended to be:

- Novel: Major investments in Diversity have been made by NIH and others. Approaches should not replicate or expand the many programs that are already in existence, but should build upon and extend beyond these programs.
- Innovative: Creative approaches are needed to address the persistent problem of underrepresentation at the national level, which remains despite successes at the individual level demonstrated by current programs. Creativity is needed to ensure we do not keep getting the same results.
- Transformative: Catalyzing a systemic change in research training and institutional culture is critical to enhance the diversity of the biomedical research workforce in a meaningful way. Successful approaches will be widely disseminated to benefit trainees beyond the relatively modest number that are directly supported by the program.

On the handout there is a list of articles about some of the novel innovations other organizations are testing to address diversity issues. (INCLUDED IN TO PDF)



The NIH is particularly interested in encouraging the recruitment and retention of the following groups currently underrepresented in the biomedical, clinical, behavioral, and social sciences:

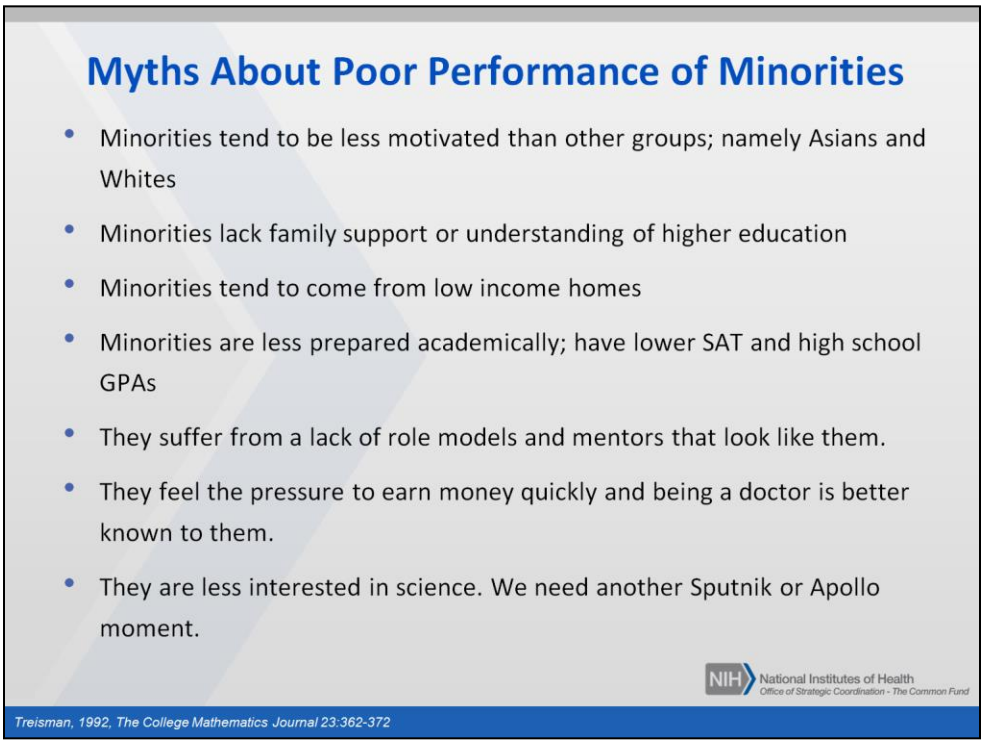
- Individuals from racial and ethnic groups that have been shown by the NSF to be underrepresented in health-related sciences on a national basis including: African Americans, Hispanic Americans, Native Americans, Alaska Natives, Hawaiian Natives, and natives of the U.S. Pacific Islands.
- Individuals with disabilities, who are defined as those with a physical or mental impairment that substantially limits one or more major life activity.
- Individuals from disadvantaged backgrounds who are defined as:
    - Individuals who come from a family with an annual income below established low-income thresholds based on family size (visit http://aspe.hhs.gov/poverty/index.cfm for guidelines).
    - Individuals who come from a social, cultural, or educational environment such as that found in certain rural or inner-city environments that have demonstrably and recently directly inhibited the individual from obtaining the knowledge, skills, and abilities necessary to develop and participate in a research career.

QUESTIONS?

Innovation Builds on Previous Research

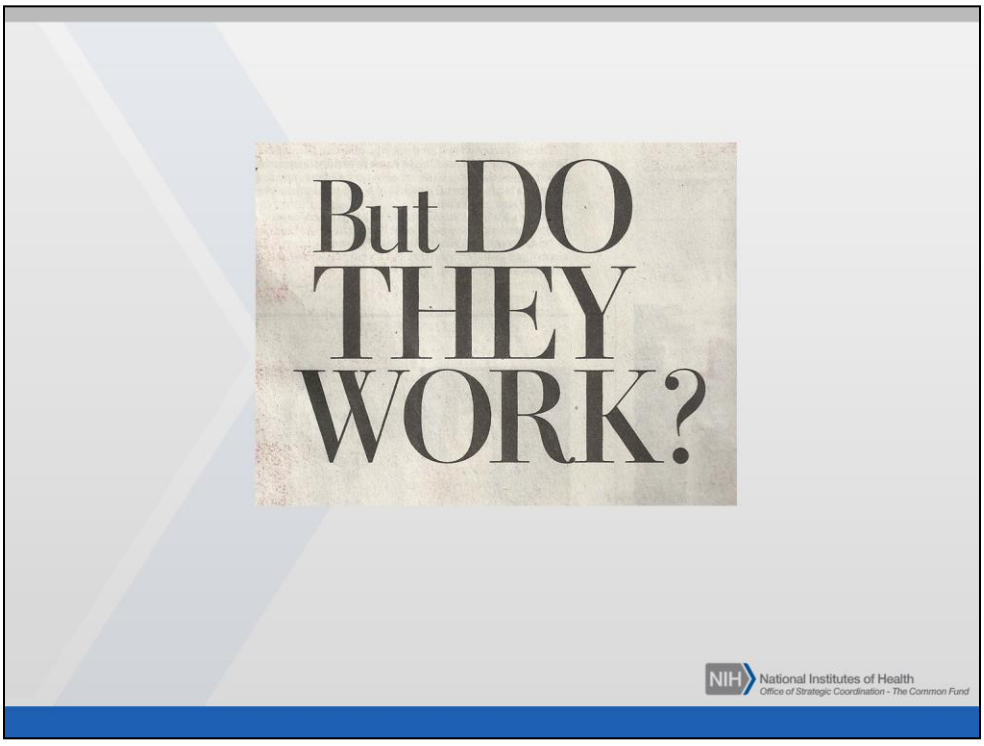
Clifton Poodry, Ph.D.
Director, Division of Training, Workforce Development, and Diversity
National Institute of General Medical Sciences

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

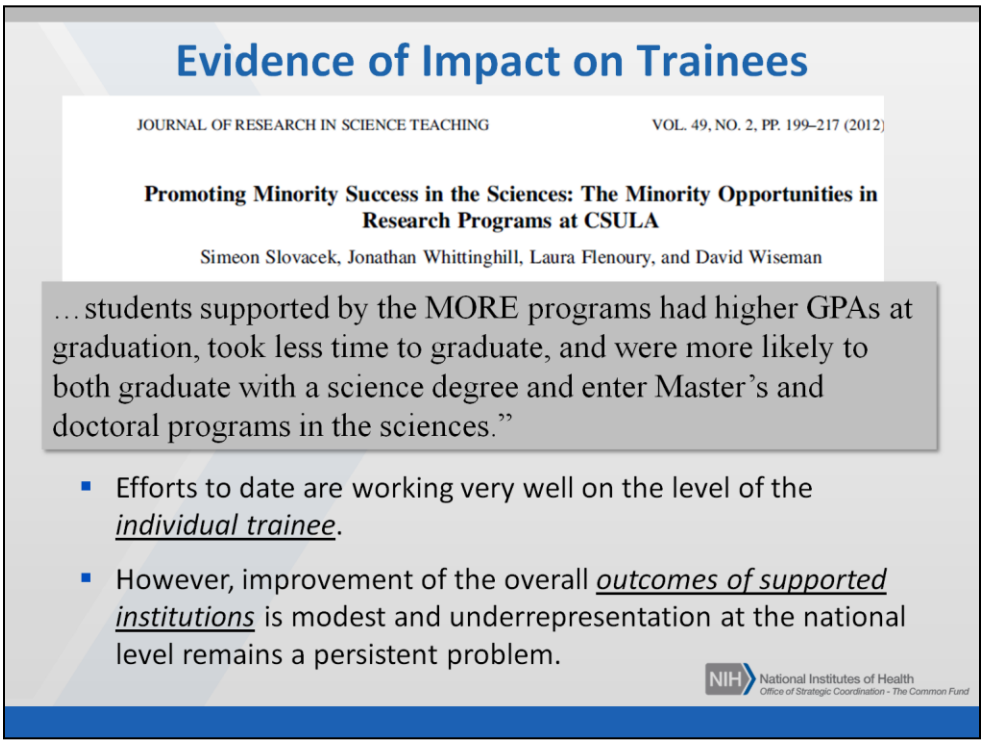


- Education, student development and training are strongly driven by beliefs and individual experiences.
- There is very little research done to test the underlying assumptions.
- Interventions tend to rely more on folk-insight than empirical evidence.
- These notions were imprinted on me many years ago by Uri Treismann then on the math faculty at UC Berkeley. In a preface to his seminar he asked a group of us what we thought the reasons were for poor performance of minorities in science and math. (At UCB no more than two URM/term had ever gotten higher than a B-; 60% got a D or F.) This list is probably pretty close to what we said. Uri told us that it was exactly what the faculty at UC Berkeley had come up with as well. But his research indicated otherwise.
- Over a number of months he interacted with the URM students and found that:
    - Students were very motivated.
    - They paid a high price (socially) to get in to Berkeley.
    - They expected to do well.
    - There was no parental apathy. Many parents themselves were college graduates who wanted the best for their children. Their kids got in to Berkeley.
    - They were from working class but not low income. Many of the parents were in teaching or civil service jobs.
    - The students were NOT less prepared –they got in to Berkeley! But their calculus scores were inversely correlated with math SAT. Blacks with the highest SAT failed early.
- Large national surveys by Sylvia Hurtado and others has indicated that minorities are just as,

or slightly more, interested in STEM than non-minority students. Thus, the last item on the list is another myth.



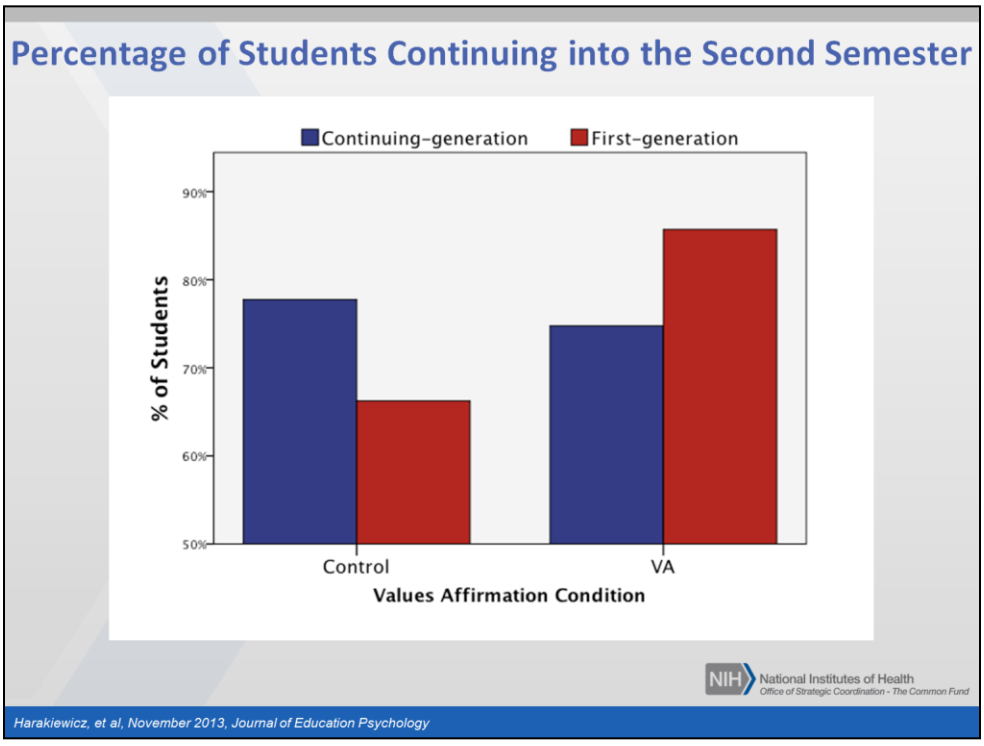
- The common question asked of any intervention is whether it works. It is an important but naïve question.
- This naïve question is being replaced by questions that put the interventions in context. Work for whom? How much? Under what conditions? Do they add value?



Analysis of the MORE program showed successes:

- Higher GPAs at graduation
- Shorter time to graduate
- More likely to graduate with a science degree and six times as likely to enter doctoral programs in the sciences

- Make the point that the money that has been spent so far has worked very well at the INDIVIDUAL level. And yet, we still have the situation of underrepresentation of these populations. Need to catalyze a "sea change" to transform research training culture more generally to benefit more students in addition to program supported trainees.



- A study supported by our Research on Interventions program suggests that the mindset of students may be critical in their success. This slide comes from Work of Judith Harakiewicz (J. Education Psychology, in press). In an introductory biology class at a large mid-western university, personal values are affirmed in 15-min writing intervention. Students randomly assigned in a double blind study. 798 students: 644 Continuing Generation and 154 first-generation students. (http://psycnet.apa.org/psycarticles/2013-38413-001.pdf&productCode=pa)

  Asks students to select *most important* personal values (friends/family, learning) and write about *why* these values are important (VA)

  OR

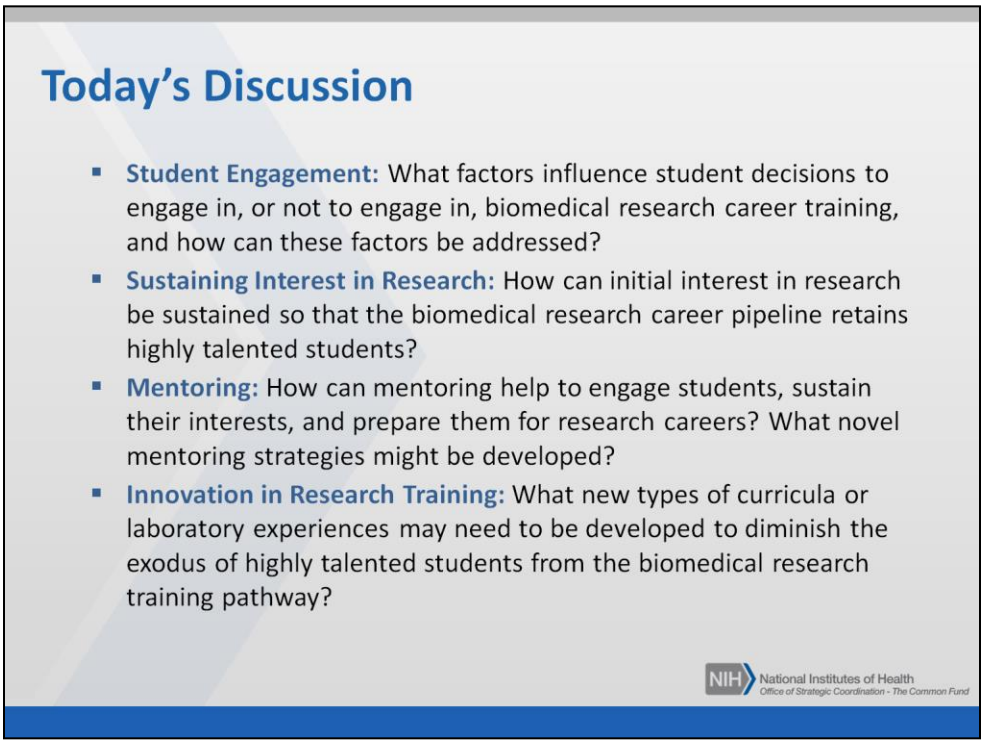
  Choose *least important* values and write about why least important values might be important for other people (Control)

- The course grades of first generation students was dramatically higher in the values affirmation group as was their continuation in the major.
- The point to be made is that there is a growing knowledge base.
- The 6th Annual Conference on Understanding Interventions that Broaden Participation in Research Careers will be held on May 16-18, 2014, at the Renaissance Baltimore Harbor Place Hotel in Baltimore, MD. For more information or to register for the meeting go to: http://www.understandinginterventions.org/

Interactive Discussions: Overview of Topics

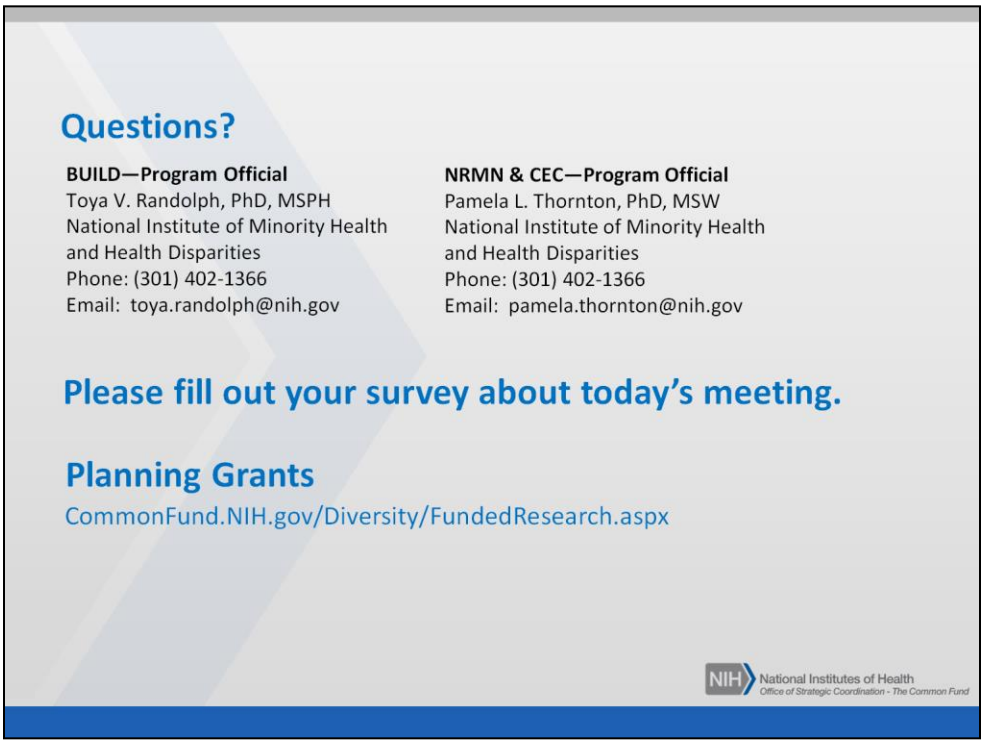
Elizabeth Wilder, Ph.D.

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



- **Student Engagement:** What factors influence student decisions to engage in, or not to engage in, biomedical research career training, and how can these factors be addressed?
- **Sustaining Interest in Research:** How can initial interest in research be sustained so that the biomedical research career pipeline retains highly talented students?
- **Mentoring:** How can mentoring help to engage students, sustain their interests, and prepare them for research careers? What novel mentoring strategies might be developed?
- **Innovation in Research Training:** What new types of curricula or laboratory experiences may need to be developed to diminish the exodus of highly talented students from the biomedical research training pathway?

- For the next 45 minutes you'll have the opportunity to explore innovative and creative strategies to engage a diverse student pool in the early phases of biomedical research training, sustain their interest and enable success at each career path.
- We wanted to provide this time to you to network with colleagues, to possibly find partners to build your applications with, or just to give you time with other like-minded educators who believe the barriers in creating a diverse biomedical research workforce can be overcome.
- Each group will have a facilitator, but we are particularly looking to you to drive the conversation.
- Just a quick reminder that this is not time for technical questions.



- If you have questions, you'll find contact information on the handout on the tables.
- You also have a survey. Please take a minute to fill it out and leave it at the registration table on your way out.
- Details about the recently awarded planning grants on the Common Fund's website.
- We want to encourage you to continue these conversations – and possibly consider how to work with other institutions and organizations to extend the reach of your vision. We will be sending around a registration list with email contact information soon. If you would prefer that we did not share your email address with this group, please stop at the registration table and opt out on the sign in sheet.