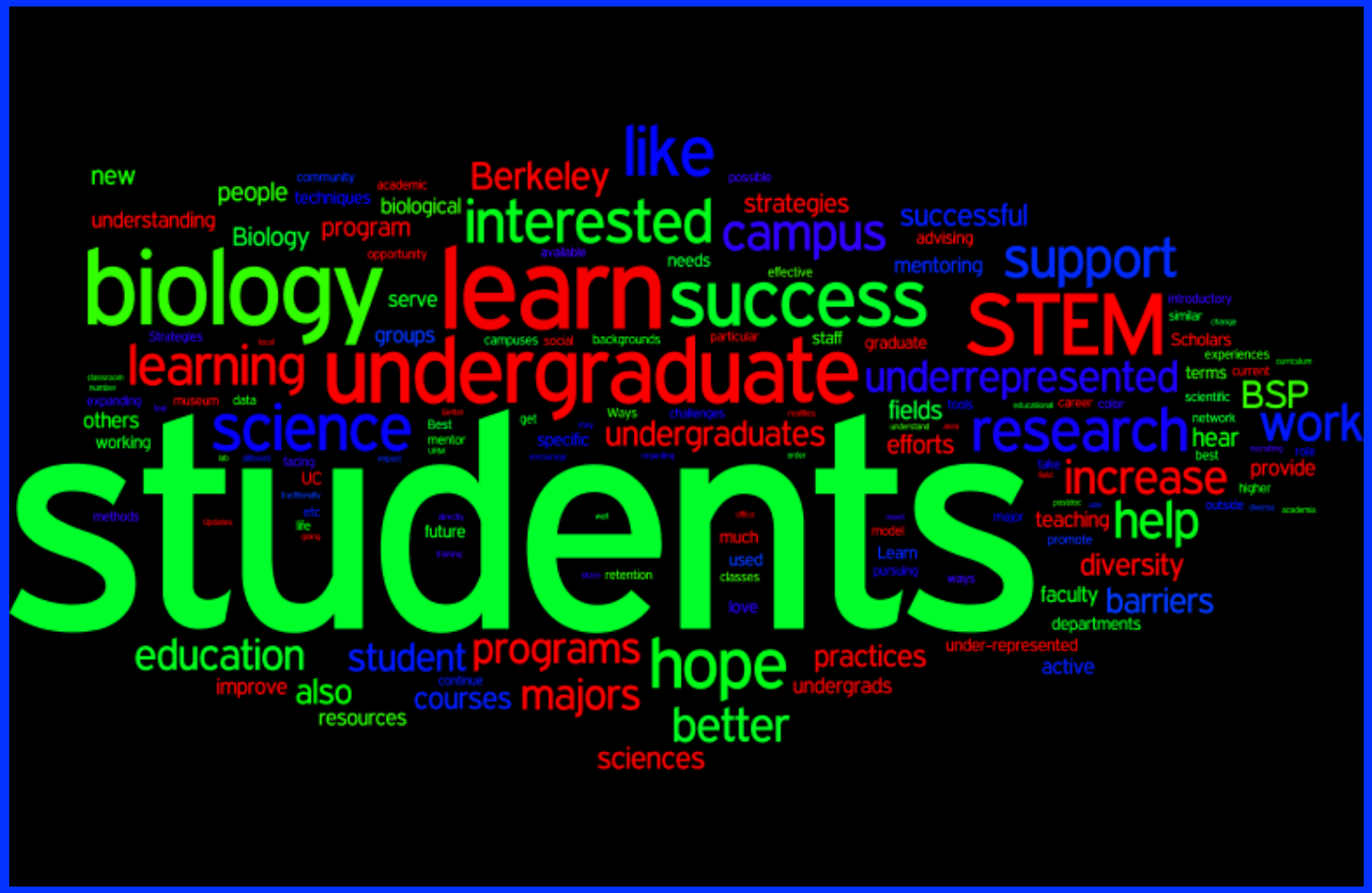
Expanding Undergraduate Success in Biology



Our Funders

- Gibor Basri

  VC, Equity and Inclusion
- J. Keith Gillis

  Dean, CNR
- G. Steven Martin

  Dean, Biological Sciences L&S
- Howard Hughes Medical Institute

Who's here?

- 35 Faculty
- 32 Staff
- 6 Post-docs
- 17 Graduate students
- 9 Administrators
- 7 Other (e.g., Consultants, did not state)

Universities

- UC Berkeley
- UC Riverside
- UC Santa Cruz
- UC Santa Barbara
- Notre Dame de Namur
- Iowa State

Institutes, Centers, Museums & Programs

- Gladstone Institute
- Institute for Scientist & Engineer Educators
- Synberc-QB3
- COMPASS Project
- EOP
- Physics Scholars
- STEM Scholars
- Biology Scholars
- College of Chemistry Scholars
- Center for Emerging & Neglected Diseases
- Graduate Group for Science and Math Education
- Museum of Vertebrate Zoology
- Student Learning Center
- Helen Wills Neuroscience Institute
- Cal NERDS
- Joint Medical Program
- Museum of Paleontology
- TRUST Center
- HHMI
- Sustaining Excellence
- Other affiliated

Disciplines

- Integrative Biology
- Molecular and Cell Biology
- Psychology
- Physical Sciences
- Plant and Molecular Biology
- Soil and Microbial Sciences
- Earth and Planetary Sciences
- Mathematics
- Social and Behavioral Sciences
- Neuroscience
- Paleontology
- Chemistry
- Medicine
- Education
- Developmental Biology

Organizers* & Scribes
BSP

- Karen Aguilar*
- Monica Albe*
- Katherine Castro*
- Diana Flores*
- Gabe Santamaria
- Sam Regalado
- Sabriya Rosemond*
- Brook Yu*

Origin of this conference?

In 2014 Awarded HHMI Grant

To do 3 things over 5 years

1. Continue Biology Scholars Program (BSP)
2. Research Why and How BSP 'Works'
3. Disseminate 'Best Practices' at Berkeley

Shift from

Localized Responsibility

A Program/Office/Position

'Few of Us'

To

Shared Responsibility

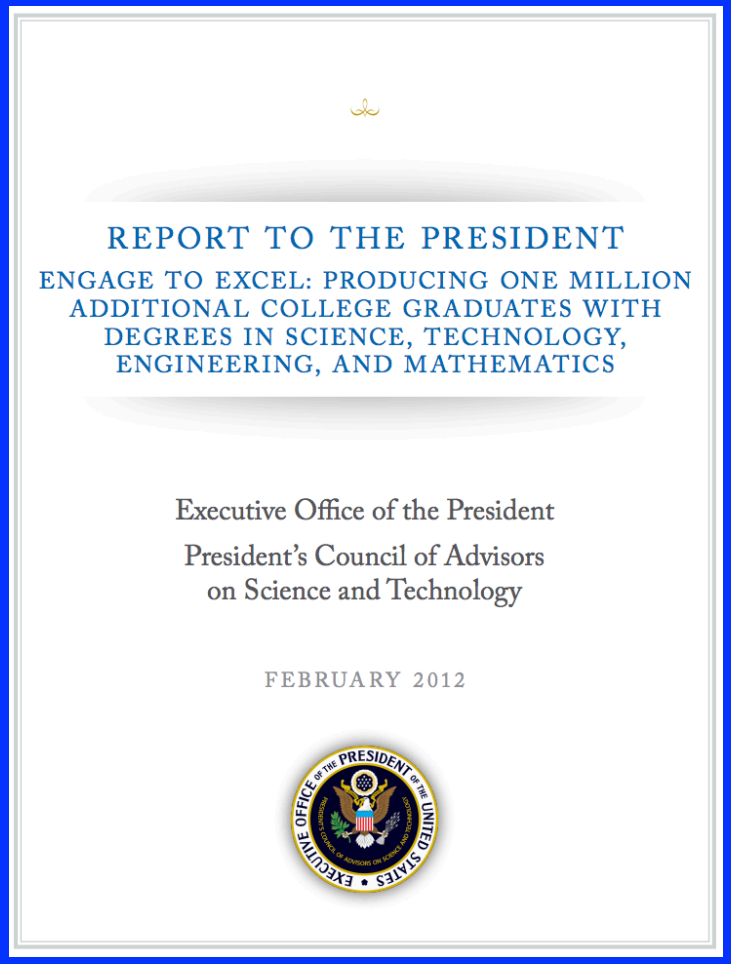
The Institution

'All of Us'

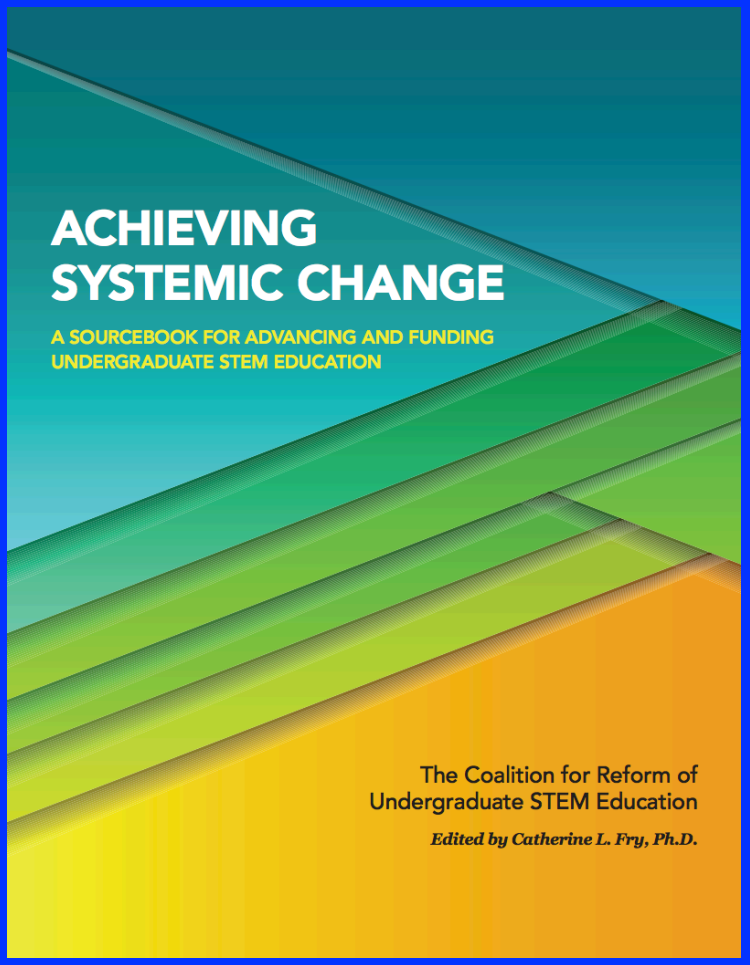
Timing & Approach Aligned with

- Reports and Reviews
- STEM Workforce and Quality of Science
- Scale and Complexity of Problem – Requires Thoughtful, Coordinated, and Integrated Approach

PCAST Report 2012



AAC&U Report
2014



PERSPECTIVE

National Institutes of Health addresses the science of diversity

Hannah A. Valantine[a,1] **and Francis S. Collins**[b]

[a]*Chief Officer for Scientific Workforce Diversity, US National Institutes of Health, Bethesda, MD 20814; and* [b]*Director, US National Institutes of Health, Bethesda, MD 20814*

Edited by Inder M. Verma, The Salk Institute for Biological Studies, La Jolla, CA, and approved August 26, 2015 (received for review May 14, 2015)

The US biomedical research workforce does not currently mirror the nation's population demographically, despite numerous attempts to increase diversity. This imbalance is limiting the promise of our biomedical enterprise for building knowledge and improving the nation's health. Beyond ensuring fairness in scientific workforce representation, recruiting and retaining a diverse set of minds and approaches is vital to harnessing the complete intellectual capital of the nation. The complexity inherent in diversifying the research workforce underscores the need for a rigorous scientific approach, consistent with the ways we address the challenges of science discovery and translation to human health. Herein, we identify four cross-cutting diversity challenges ripe for scientific exploration and opportunity: research evidence for diversity's impact on the quality and outputs of science; evidence-based approaches to recruitment and training; individual and institutional barriers to workforce diversity; and a national strategy for eliminating barriers to career transition, with scientifically based approaches for scaling and dissemination. Evidence-based data for each of these challenges should provide an integrated, stepwise approach to programs that enhance diversity rapidly within the biomedical research workforce.

diversity | scientific workforce | underrepresentation in science | culture | biomedical research

PNAS October 6, 2015 v.112 no.40

Challenge 1

Among Scientists, what is the impact of diversity on the quality and outputs of research?

Challenge 2

Which evidence-based approaches to training and persistence in biomedical research work? And in which contexts?

Challenge 3

Identify psychological and social factors that mitigate individual and institutional barriers to workforce diversity.

Challenge 4

Develop a scalable strategy to effectively disseminate and sustain diversity within the nationwide scientific workforce.

AM

- Framework to think about diversity work
- Research
- Data

Agenda

8:30-9:00	Welcome, Introduction and Overview
9:00-9:30	Perspective on Diversifying STEM – *David Asai*
9:30-10:30	National Data and Best Practices – *Sylvia Hurtado*
10:30-10:45	Break
10:45-12:00	Data - Understanding What Happens to Our Majors - Across UC Campus Comparison – *Andrew Eppig* - Biology Scholars Program (BSP) – *John Matsui* - How & Why Does BSP Work? – *Mica Estrada*
12:00-1:00	Lunch

PM

- Develop Action Plans - Advising, Mentoring, Policy, Courses, Programs, and Supplemental Instruction
- Develop ‘Next Step’ Plans

Agenda

1:00-2:15	Work Groups by Topic of Interest - Group Assignment - Nametag - Room Assignment - Back of Agenda
2:15-3:15	Large Group Returns/Work Groups Report Back
3:15-4:00	Town Hall-Style Discussion
	- Emergent Themes and Take-Aways
	- Open Discussion
	- Next Steps
4:00-	Reception

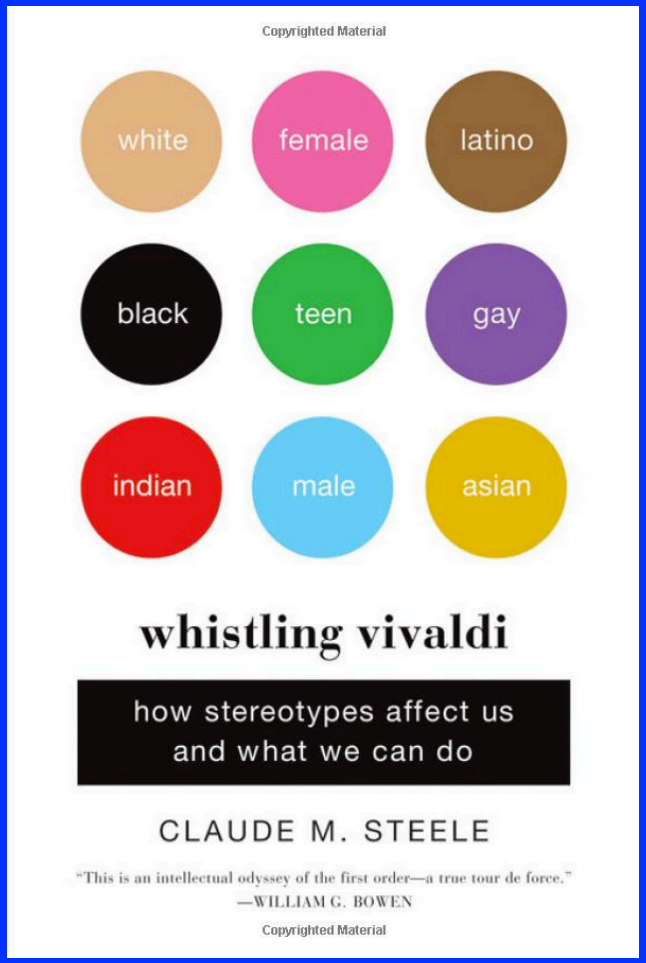
Reality

Translating Concept into Practice

Takes time, expertise, resources, & support

Case Study

The need to support those with the 'Will'



However

Change doesn't happen over night or at a one-day conference

So, what's the plan?

‘The 4-Year Plan’

1. Begin a process to use
   - Data - look at gaps, help us problem solve
   - Research – identify barriers and best practices
   - Expertise – persons, projects, programs
2. Work Groups – Initiate Action Plans
3. After Conference -> Work Groups further develop Action Plans

‘The 4-Year Plan’

4. Develop – Infrastructure to support our work over the next 4 years
5. Provide support for Work Groups (e.g., speaker series, workshops, collaborations on grants)
6. 2016 Conference -> Progress Reports; Refinement of Action Plans; Introduction of New Plans; Cutting-edge research and national perspectives
7. And so on over the next 4 years of the grant

A few thoughts …

‘Best Practices’

v.

What, with Whom, Under What Conditions?

Tacit Private Knowledge

v.

‘Shorthand’ Descriptive Public Knowledge

Data

v.

Conventional Wisdom

Strength Based

v.

Deficit Based

All Students

v.

UR Students

Not for 'Minorities Only'

- Conference framework – 'Institutional Accessibility' from the ADA (Americans with Disabilities Act)
- Focus - how we can make our institutions more accessible to *all* individuals
- Look at - generalizability of best practices of BSP/ other programs that work with UR students
- Ask - Can they be scaled up to make biology more accessible to all students?
- Research – 'Why BSP works?' to accomplish this.

Dr. David Asai

Dr. Sylvia Hurtado

Dr. Andrew Eppig

Dr. Mica Estrada

Before we break …

- After Lunch – Work Groups
  - Group Assignment – Name Badge
  - Room Assignment – Back of Agenda
- Be there at 1 pm sharp
- Facilitator and Scribe for each group
- Your Facilitators are …

Facilitators

- Bruce Birkett — *Physics (formerly)*
- Roseanne Fong — *L&S Advising*
- Sheila Humphreys — *Engineering*
- Han Lim — *Integrative Biology*
- Maria Lucero Padilla — *Compliance Education*
- Angelica Stacy — *Chemistry*
- Elisa Stone — *Cal Teach*
- Lisa White — *Museum of Paleontology*

Facilitators

- Bruce Birkett — *Supplemental Instruction*
- Roseanne Fong — *Advising*
- Sheila Humphreys — *Mentoring*
- Han Lim — *Policy*
- Maria Lucero Padilla — *Program 1 - 1st Gen/LI*
- Angelica Stacy — *Course Development 2*
- Elisa Stone — *Course Development 1*
- Lisa White — *Program 2 - URM*

Work Group Room Assignments

Stay in Chevron Auditorium

Advising

Mentoring

Golub Homeroom (Upstairs)

Policy

Program Development - Group 2

Ida Sproul Room (Upstairs)

Course Development - Group 1

Program Development - Group 1

Robert Sproul Room (Upstairs)

Course Development - Group 2

Supplemental Instruction