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
REPORT TO THE PRESIDENT
ENGAGE TO EXCEL: PRODUCING ONE MILLION ADDITIONAL COLLEGE GRADUATES WITH DEGREES IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

Executive Office of the President
President’s Council of Advisors on Science and Technology

FEBRUARY 2012
ACHIEVING SYSTEMIC CHANGE

A SOURCEBOOK FOR ADVANCING AND FUNDING UNDERGRADUATE STEM EDUCATION

The Coalition for Reform of Undergraduate STEM Education
Edited by Catherine L. Fry, Ph.D.
National Institutes of Health addresses the science of diversity

Hannah A. Valantine and Francis S. Collins

Chief Officer for Scientific Workforce Diversity, US National Institutes of Health, Bethesda, MD 20814; and Director, US National Institutes of Health, Bethesda, MD 20814

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
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. Andrew Eppig
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 - 1stGen/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