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NIH Advisory Committee to the Director Working Group on Diversity

Diversity Program Consortium (DPC) Subcommittee
NIH Scientific Workforce Diversity: ACD DWG Updates

Presentation Outline

• 2017 ACD DWG recommendations
  – Next steps for prioritization

• Strategies for institutional culture change
  - Intramural research program pilots as national models

• Diversity Program Consortium
  – Short-term outcomes
  – Phase II funding announcements
NIH Scientific Workforce Diversity

Interventions at *Individual* Level

Intervention at *Institutional* Level
Institutional Transformation and Culture Change

Programs are necessary but not sufficient:

Promote Transparency and Accountability

Link to Institutional Values and Reward Systems

• Systematic review and transparency of hiring and promotion procedures, policies
• Transparency: collect and publicize aggregate diversity metrics
• Provide tools to Divisions, Departments for enhancing recruitment and retention
• Evaluation of impact
### 2017 ACD WGD Recommendations

<table>
<thead>
<tr>
<th>NIH Institutional Support</th>
<th>Mentoring, Career Development, Recruitment, Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Institutional partnering for recruitment and retention</td>
<td>• Transition: independent careers</td>
</tr>
<tr>
<td>• Diversity metrics</td>
<td>• Partnerships</td>
</tr>
<tr>
<td>– Transparency</td>
<td>– Public-private</td>
</tr>
<tr>
<td>– Accountability</td>
<td>– Industry</td>
</tr>
<tr>
<td>• Institutional best practices</td>
<td>• SWD recruitment/retention toolkit</td>
</tr>
<tr>
<td>– Equity</td>
<td>• Recognize value of teaching: Expand IRACDA</td>
</tr>
<tr>
<td>– Implicit-bias education</td>
<td>• Address gaps for other underrepresented groups*</td>
</tr>
<tr>
<td>– Climate survey</td>
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<tr>
<td>• Training grants: Diversity focus</td>
<td></td>
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</tbody>
</table>

* Collect demographic data: SES, SGM, military veterans, non-traditional students
NIH Scientific Workforce Diversity Interventions

**Intramural**
- Recruitment Strategies and Tools: NIH SWD Interactive Toolkit
- Retention strategies: NIH Central Equity Committee
- Graduate Student Diversity

**Extramural**
- BUILD, NRMN, CEC
- Diversity Supplements
- Eliminate R01 funding gaps
  - Next Generation Scientist
  - Peer Review Bias Study
- Sustain and Scale
  - Hubs of Innovation
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### NIH Intramural Tenure Track & Tenured Investigators: End of FY16 (Total 1,052)

<table>
<thead>
<tr>
<th>Gender (Tenure-Track &amp; Tenured)</th>
<th>End FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>783      (74.5%)</td>
</tr>
<tr>
<td>Female</td>
<td>269      (25.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>1052     (100%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race/Ethnicity (Tenure-Track &amp; Tenured)</th>
<th>End FY16</th>
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</thead>
<tbody>
<tr>
<td>African American</td>
<td>19       (1.8%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>39       (3.7%)</td>
</tr>
<tr>
<td>Native American</td>
<td>2        (0.2%)</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>194      (17.9%)</td>
</tr>
<tr>
<td>White</td>
<td>798      (75.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>1052     (100%)</td>
</tr>
</tbody>
</table>

National Average (Tenured) = 23%

Sources: TABLE 7: 2015 BENCHMARKING—FULL-TIME FACULTY BY GENDER, RANK, AND TENURE AAMC Faculty Roster, December 31, 2015 snapshot; NIH Office of Intramural Research
Institutional Culture Change

Institution-focused
1. Leadership commitment for hiring and promotion
2. Transparency in resources and salary: tracking, reporting, accountability

Individual-focused
1. Provide support, mentoring, coaching, sponsorship
2. Address inclusion and belonging

Apply to other underrepresented groups

As of Oct. 1, 2017 Source: OIR Database N = 211
URM Assistant Professors: Lags Behind Growth in Ph.D. Recipients

Gibbs, K. D., et al. (2016). Decoupling the minority PhD talent pool and assistant professor hiring in the medical school basic science departments in the US.
Race/Ethnicity and NIH Funding: Trainees (1996-2015)

1,274 URG PhDs (~9% total pool)
1,747 URG PhDs (~10% total pool)

NSF Survey of Earned Doctorates 1996-2015. Fields included: Biological Sciences (53%), Medical Chemistry (19.2%), Sciences (7.5%), Other Life Sciences (5.2%), Psychology (14.7%)
Expanding Diversity of NIH Candidate Pools: Junior Career Stage
Post-Doctoral and Assistant Professors

~ 667 total, top 1/3rd culled
4-10 years post-doctorate (most 4-7)
Authorship in top journals
10+ publications: 357
100+ citations: 407
200+ citations: 311

Race/Ethnicity
- White/Caucasian: 23%
- African-American/Black: 31%
- Hispanic/Latino: 15%
- Native American: 5%
- Asian: 1%
- Other: 25%

Gender
- Female: 48%
- Male: 52%
Cohort Model for Enhancing Diversity: Tenure-Track Investigators in NIH IRP

• Identify and appoint vetted pool of scientists that enhance diversity (broadly defined)
  - Trajectory - independent investigator

• Eliminate or minimize implicit bias in hiring process

• Accelerate hiring process of the cohort

• Create culture of inclusion: Cohort-focused activities

• Institutional change: Equity, transparency

Translatable to other academic institutions
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NIH Diversity Program Consortium

Building Evidence - Awards made October 2014
Total: $250 million (5 years)

**BUILD: 10 sites/experiments**
National Research Mentoring Network (NRMN)
Center for Evaluation and Coordination (CEC)

**BUILD**
- California State University Long Beach
- California State University Northridge
- Morgan State University
- Portland State University
- San Francisco State University
- University of Alaska Fairbanks
- University of Detroit Mercy
- University of Maryland Baltimore County
- University of Texas El Paso
- Xavier University of Louisiana

**NRMN**
- Boston College
- Morehouse
- U. Utah
- U. North Texas
- U. Wisconsin

**CEC**
- University of California Los Angeles
BUILD Dashboard (Years 1-3)

**Student**
- BUILD NRSA training slots (TL4)*: 1329
- BUILD research training slots (RL5): 786
- Student Seminars/ Workshops: 364
- Faculty Release Time (# participants): 248
- Faculty Mentor Training (# activities): 91
- Pilot Projects: 98
- Faculty Professional Development (# activities): 88
- Novel Curricula: 104
- Institutional Partner Agreements: 88
- Publications: 85

**Faculty**
- BUILD NRSA training slots (TL4)*: 1329
- BUILD research training slots (RL5): 786
- Student Seminars/ Workshops: 364
- Faculty Release Time (# participants): 248
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- Faculty Professional Development (# activities): 88
- Novel Curricula: 104
- Institutional Partner Agreements: 88
- Publications: 85

* Students supported for multiple years

Updated December 2017
BUILD TL4 Participant Demographics (Total: 683)

- Hispanic: 41% (280)
- White: 12% (84)
- Black: 27% (184)
- Asian: 12% (82)
- AI/AN/PI/MR: 6% (40)
- Unknown / Withheld: 2% (13)
NRMN Grant-Writing Participants
N=432

- American Indian/Alaska Native: 5%
- Asian: 13%
- Black: 34%
- Hawaiian/Pacific Islander: 1%
- Hispanic: 19%
- Multiracial: 4%
- Other: 2%
- White: 22%
- Multiracial: 4%
- Other: 2%
Matching and Linking

Web Interface NRMN Participants

0  200  400  600  800  1000  1200  1400  1600

- MyMentor mentees
- MyMentor mentors
- MyMentor matches
- Gransmanship matches
- Collaboratory matches
- MyNRMN MyConnections
- MyNRMN new participants joining MyGroups
- MyNRMN new MyGroups formed
- Collaboratory connections
Coordination and Evaluation Center (CEC) Student Activity Tracking Tool

- Individuals tracked by their activities and linked to outcomes
- Data is tracked in the same way
- Stores all data in one location
- Ensures data will be accessible in future years

Example of Tracking Data
BUILD: Testable Interventions

Impact on pre-defined outcomes of:

Site-Specific

- Reducing stereotype threat
- Diminishing imposter syndrome
- Overcoming microaggressions
- Mitigating unconscious bias
- Increasing cultural awareness and sensitivity
- Emphasizing cultural assets
- Engaging family and support systems

Consortium-Wide

- Science identity
- Providing financial assistance
- Providing authentic research experiences
- Implementing active learning courses
- Forming supportive cohorts and learning communities
- Mentor training
- Creating professional networks
### BUILD: “Clinical Trial” Model of Investigation

<table>
<thead>
<tr>
<th>Independent Variables</th>
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<tbody>
<tr>
<td>Gender</td>
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<tr>
<td>Race/Ethnicity</td>
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<tr>
<td>Disability Status</td>
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<tr>
<td>Socio-economic Status</td>
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<tr>
<td>Institutional Factors</td>
</tr>
<tr>
<td>Test Scores</td>
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<tr>
<td>Major</td>
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<tr>
<td>GPA</td>
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<table>
<thead>
<tr>
<th>Activities or Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Support</td>
</tr>
<tr>
<td>Academic Advising &amp; Support</td>
</tr>
<tr>
<td>Research Training &amp; Support</td>
</tr>
<tr>
<td>Novel Curricula</td>
</tr>
<tr>
<td>Mentoring</td>
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<tr>
<td>Diversity Training</td>
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<tr>
<td>Career Development</td>
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<table>
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<tr>
<th>Short to Medium-Term Outcomes</th>
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<tbody>
<tr>
<td>Engagement in Research</td>
</tr>
<tr>
<td>Enhanced Self-Efficacy &amp; Science Identity</td>
</tr>
<tr>
<td>Pursuit &amp; Persistence in Biomedical Science Disciplines</td>
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<tr>
<td>Scientific Presentations and Authorship of Manuscripts</td>
</tr>
<tr>
<td>Social Integration</td>
</tr>
<tr>
<td>Satisfaction with Faculty Mentorship</td>
</tr>
<tr>
<td>Intent to Pursue Biomedical Research Career</td>
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</tbody>
</table>

<table>
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<tr>
<th>Medium to Long-Term Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of Undergraduate Degree in Biomedical Science</td>
</tr>
<tr>
<td>Evidence of Biomedical Career Preparedness</td>
</tr>
<tr>
<td>Application &amp; Acceptance to Graduate Programs</td>
</tr>
<tr>
<td>Research Fellowships &amp; Scholarships</td>
</tr>
</tbody>
</table>
SF State University
Stereotype Threat Intervention

**STEP Intervention:** Addressing stereotype threat, affirming underrepresented students’ values, improving sense of belonging, and building science identity

**Course Grades**

![Course Grades Graph](image1)

**Abstract Reasoning**

![Abstract Reasoning Graph](image2)

**Resilience**

![Resilience Graph](image3)

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**Education Sciences 2017, 7(2), 65; doi:10.3390/educsci7020065**
University of Texas, El Paso

Intervention:

- **Freshman Year Research Intensive Sequence (FYRIS)**
- Foundation course (1) + Research skills course (2)
- Retention after 1 year (%)

**BUILD Fellows** (n=22), complete FYRIS: 100%

**Non-BUILD** (n=197), no FYRIS: 85%

**BUILD Affiliates** (n=135) non-funded, FYRIS: 81%

(BUILD Affiliates (n=34), complete FYRIS): 97%

(BUILD Affiliates (n=101), part FYRIS): 75%

**BUILD Fellows**: Financial support; **BUILD Affiliates**: participate - no scholarship

**Non-BUILD**: Control: Entering freshmen - same majors, not participating in BUILD
DPC Phase II

Building Infrastructure Leading to Diversity (BUILD) (NOT-RM-18-005)

- Limited competition – to allow meritorious sites to complete the BUILD experiments
- Focus on site-specific and consortium-wide experiments
- Emphasize sustainability and dissemination

Center for Evaluation and Coordination (CEC) (NOT-RM-18-006)

- Limited competition - allows for uninterrupted data collection
  - Review: Strengths and weaknesses of current center
  - Improvements and course corrections
  - Emphasize sustainability and dissemination
DPC Phase II

NEW - DPC Dissemination and Translation Awards (DPC DaTA) (NOT-RM-18-007)

- Open competition: increase DPC national impact
  - Training or Mentoring Interventions (U01)
  - Research Administration Capacity Building (U01)
- Focus: implement sustainable intervention
- Collect data using DPC methods
- Collaborate with funded BUILD or NRMN site; and CEC
- Institutional requirements are the same as for BUILD
  - <$7.5 M RPG; 25% Pell eligible
DPC Phase II

National Research Mentoring Network (NRMN)

- Open competition
  - New ideas on science of mentoring and networking
  - Enhance efficiency of administrative structure
  - Move from U54 to: a U01 and two U24s

- The science of mentoring and networking (U01)
  - Science of Mentorship
  - Professional Networking
  - Navigating Critical Career Transition Points

- Coordination and Outreach Center (U24)

- Resource Center (U24)
  - Mentoring & Networking Core
Great minds think differently …

@NIH_COSWD