Diversity Equity is a Figure of Merit

Rigoberto Hernandez
Diversity Equity is a Figure of Merit

- Defining Diversity...
  ➔ as broadly as possible

- Is there a problem? I.e., does diversity need to be increased?
  ➔ What is the problem?

- Is there an Objective Function for Merit?
  ➔ Implicit bias and other factors cast a shadow on objectivity

- Redefining the evaluation function in the meritocracy
  ➔ Diversity Equity needs to be included
    ✴ Document demographics and participation
    ✴ Assess climates (Is your institution an equitably desirable place to go to?)
    ✴ Evaluate applicant’s past accomplishments in their context
What is Diversity?

Inclusion of the “other”:

- Gender
- Race & Ethnicity
- Disabilities
- LGBTQIQ
- Socioeconomic
- Culture
- Life experiences
- Ideas
- Geography
- University Pedigrees
- Political Ideology
- Place of Origin (International)
- etc.
Is there a problem?

“... our nation needs to take advantage of the excellence inherent in the growing percentage of URM in order to maintain a sufficient supply of domestic Ph.D.'s.”*

It is a crisis in our international competitive position if we only access 74% of our population; that population will be even smaller in 30 years.

“Human capital and the extent of education thereof is increasingly considered to be an important metric of a nation’s economic health.” (L. Hood)

Session #4: Demographics & Assessment
Donna Nelson, Eric Kaler, Jean Stockard

¿Is there a Problem?

Let’s do the numbers:

- 6,268 BS / 1,029 PhD
  \[ \Rightarrow 1 \text{ Ph.D. : 6.1 B.S.} \]
- (1,029 PhD / year) / (1,459 Profs / 25 years)
  \[ \Rightarrow 1 \text{ Prof : 17.6 Ph.D.} \]
  \[ \Rightarrow 1 \text{ Prof : 107.4 B.S.} \]

Faculty in the top 50 are rare events.

The best URM’s have options with better odds.

A systemic solution is needed!


http://chemchairs.uoregon.edu

WARNING: No breakout groups at NDEW2011 on postdocs!?
Can we blame the pipeline?

• Yes... (we should support better K-12 education)

• BUT:
  • URMss are represented at 20% even after whatever we do to them as undergraduates
  • We effectively reduce that percentage at subsequent stages
  • So we can do something about it!

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  http://chemchairs.uoregon.edu
• 4% S&E Bachelor’s degrees are awarded to temporary visa holders

• 40% Physical Sciences Doctorates are awarded to foreign students

• The playing field is leveling... & our domestic students increasingly require international perspectives that they are not being exposed to in their undergraduate peer groups
Is there an Objective Function for Merit?

- I know quality when I see it
- I can count (publications, grants, etc)
- I can admire pedigrees
- I can read letters of recommendation
- And, of course, these objective functions have been working well up to now...
Questioning our Objective functions of Merit: Distortions of objective perceptions and Implicit Bias

Bryan Nosek has shown how unreliable the senses are in making judgments when our experience or expectations circumscribe the elements in the field of view.

*Implicit bias* encompasses stereotypic and prejudicial associations acquired from one’s socio-cultural environment/context

Session #1: Contributing Factors
Denise Sekaqueptawa, Fred Smyth, and Virginia Valian

*"Workshop on Excellence Empowered by a Diverse Academic Workforce: Achieving Racial & Ethnic Equity in Chemistry" (DOE/NSF/NIH Report) [http://chemchairs.uoregon.edu](http://chemchairs.uoregon.edu)*
Do You Know Your Own Mind?
Implicit Bias is Ever Present

Are Squares A and B the Same Color?

Courtesy of B. Nosek, U.Va. & T. Swager, MIT
The Colors Are Exactly the Same:
It is Only the Context That has Changed
If it is That Easy to Trick You... How Can You be Completely Objective in the Complex Analysis of Science/People?

- A challenge to even the most enlightened faculties:
  - Admitting that we (All of Us) have a problem is the first step

- But surely, these are just simple tricks, and they wouldn’t affect actual hiring decisions...
  - Or would they?
Blind Auditions: Gender

Records from major US symphony orchestras from 1970-1996:

• Audition data from 14,000 individuals show the use of a screen increases the probability that a woman will advance from preliminary rounds by 50%

• Roster data from 11 major orchestras show the switch to blind auditions accounts for 30% of the increase in the proportion of women among new hires

http://sitemaker.umich.edu/advance/stride

Evaluation of Identical Resumes: Race

- Applicants with African American-sounding names had to send 15 resumes to get a callback, compared to 10 needed by applicants with white-sounding names.
- White names yielded as many more callbacks as an additional eight years of experience.
- The higher the resume quality, the higher the gap between callbacks for white and African American names.

http://sitemaker.umich.edu/advance/stride

Why do race cues produce different evaluations?
Ambiguity in Job Credentials: Race

• Identical resumes, but ambiguous fit of credentials to job (rather than ambiguous credentials)
  – In a white sample, evaluators recommend
    • Black candidate 45% of the time
    • White candidate 76% of the time
• Whites get “benefit of the doubt” in ambiguous situations—bias leading to advantage in this case

http://sitemapmaker.umich.edu/advance/stride

Questioning our Objective functions of Merit: Accumulation of micro-aggressions

Daniel Solorzano, University of California, Los Angeles, ‘pointed out that students and faculty of Color experience and respond to the university climate very differently from the perceptions of their majority counterparts. His research shows that many of the interactions URM have with majority group members are not harmless but constitute “racial microaggressions” because they serve to remind the out-group member that member.’*

Solorzano defines racial microaggressions as a “form of systemic everyday racism used to keep those at the racial margins in their place.”

*“Workshop on Excellence Empowered by a Diverse Academic Workforce: Achieving Racial & Ethnic Equity in Chemistry” (DOE/NSF/NIH Report) http://chemchairs.uoregon.edu

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Accumulation of Advantage and Disadvantage

• Very small differences in treatment can, as they accumulate, have major consequences in salary, promotion, and prestige, including advancement to leadership positions.

• “Mountains are molehills piled one on top of the other”


http://sitemaker.umich.edu/advance/stride
Unintended Impact of Schemas

• Gender and race schemas result in biased evaluations for members of both groups.

• These biased evaluations have important consequences that accumulate over time.

http://sitemaker.umich.edu/advance/stride
Questioning our Objective functions of Merit:

Summary

- **Flawed Hypotheses (Myths):**
  - Talented URM scientists are out there; They need to be identified, encouraged and recruited
  - But we should be aware that the academic climate for URMs has been largely unsupportive, indifferent, or in some cases even hostile…

- **Distortion (Error) in Objective Perceptions & Implicit Bias**
  - Awareness: We need to recognize that our HR skills are not always perfect.
  - Systemic actions/corrections are more difficult because training classes are often ineffective

- **Accumulation of micro-aggressions & misuses of schemas**
  - The accumulation of the effects of implicit biases and micro-agressions is a subtle factor pervading all our interactions and undermines the progress of URM candidates at all levels of the pipeline from B.S. to faculty.

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Including Diversity Equity into the Objective Function for Merit

- The NRC Rankings include the following principal components (out of 20):
  - Faculty characteristics:
    - v. Racial/ethnic diversity of program faculty
    - vi. Gender diversity of program faculty
  - Student Characteristics:
    - v. Racial/ethnic diversity of the student population
    - vi. Gender diversity of the student population
    - vii. A high percentage of international students
- Eric Kaler will discuss the weights of these factors during Session #4.
Including Diversity Equity into the Objective Function for Merit

• The return on investment for companies has been observed to correlate positively with the diversity in the working group:
  
  

• The value for increasing diversity in a collective thus introduces an extra factor in the decision matrix involved with hiring or promoting individuals whose inclusion diversifies the collective.
  
• This dichotomy is seen routinely in hiring discussions
  
• Do you really need to be twice as good to get a position?
Including Diversity Equity into the Objective Function for Merit

• Quantify the value of the individual to the collective and reward her or him for it

• Additional administrative responsibilities should be correlated with additional staff support

• Academic pedigrees should be contextualized, and individuals judged on what they do thereafter

• Ensure that evaluations are based on quantitative statements not “feelings” or schemas

• Always reward success
Can you do anything to change departmental demographics and climate?

- New Interventions/Programs
  - Session #2: Frank Dobbin, Jean Stockard, Sheryl Burgstahler
- Standing Recommendations & Outcomes:
  - Session #3: Ken Houk, Isiah Warner, Karl Booksh, Lawrence Wagner
- Breakout groups:
  - Focus on academic groups and transitions
Diversity Equity is a Figure of Merit

SUMMARY & CONCLUSIONS

• Burden of thorough assessment of individuals is on institutions (traditional methods may overlook qualified candidates)

• Institutional assessments should track demographics (OXIDE will survey departments and report out numbers in C&EN)

• University resources are being provided to departments that win on diversity equity:
  • Implications on how you will lower or raise your budget relative to other departments at your institution.
  • Implications on how you will “out-resource” other chemistry departments in raiding each other’s faculties
Acknowledgments

OXIDE TEAM

Timothy Swager  
Paula Hammond  
Karl Booksh  
Sheila Browne  
Larry Dalton  
Michelle Francl  
Sharon Neal  
Geraldine Richmond  
Frank Dobbin  
Denise Sekaqueptawa  
Jean Stockard

My Group

Alicia Gardner-Aben  
Virna Mendoza

OXIDE SUPPORT

AFOSR  
NSF  
NATIONAL INSTITUTES OF HEALTH

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8 Breakout Groups

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- **Group B1 East**
  - Topic: Graduate Student Recruitment

- **Group B3 West**
  - Topic: Graduate Student Recruitment

- **Group B3 North**
  - Topic: Faculty Recruitment

- **Group B3 South**
  - Topic: Faculty Recruitment

- **Group B4**
  - Topic: Faculty Climate & Retention

- **Group B6**
  - Topic: Faculty Climate & Retention

- **Group B7**
  - Topic: Graduate student promotion/subsequent career success

- **Group B9**
  - Topic: Faculty promotion/subsequent career success

**WARNING:**
No breakout groups at NDEW2011 on postdocs!
Charge to Breakouts
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- **Deliverable #1**
  - Scribe (to present on Wednesday)
  - Chair (to present on Tuesday)

- **Deliverable #2:**
  - Which demographic within the topical area of your group do you intend to target?
  - What are the inequities that you are targeting to alleviate?

- **Deliverable #3:**
  - Propose a program or intervention to address the concerns you identified in the second deliverable.
  - What is the basis for your hypothesis that such a program or intervention would impact your objective?
OXIDE: Open Chemistry Collaborative in Diversity Equity

- Annual Demographic Census of Research-Active Doctoral Chemistry Departments
- National Diversity Equity Workshops
- Dissemination of relevant findings in the Social Sciences & Natural Sciences
- Assessment of Departmental Interventions
- Self-Assessment of OXIDE Activities

pending funding!

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