

**NDEW 2013 — OXIDE**

**April 15, 2013**

# **National Diversity Equity Workshop 2013**

**Rigoberto Hernandez**



**www.oxide.gatech.edu — NDEW 2013 — OXIDE**

Georgia Tech  
Chemistry & Biochemistry



# Diversity Equity



# 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.



# Competitiveness



# Numbers

- In 2010 female faculty comprised:
  - 16.4% in Top 10
  - 16.6% in Top 25
  - 16.9% in Top 50
  - 16.5% in Top 75
- In Top 75 Male:Female ratios for 2010 are:
  - 324:114 - Assistant
  - 289:86 - Associate
  - 1238:162 - Full



## SCIENCE & TECHNOLOGY

### WOMEN ARE 17% OF CHEMISTRY FACULTY

After a year's pause, **GRADUAL GROWTH** in the percentage of female chemistry professors resumes

SOPHIE L. ROYNER, C&EN WASHINGTON

**WOMEN STILL** hold surprisingly few chemistry professorships, although they are slowly gaining ground: The gradual expansion in women's share of chemistry faculty positions resumed in the 2010–11 academic year after pausing the year before. At the 50 universities that spent the most on chemical research, women held 17% of the tenured and tenure-track positions in 2010–11, up from 16% in the previous two years, according to revised C&EN figures. The weak economy may be impeding faster progress. Budget cuts resulting from the Great Recession and other financial strains have prevented many willing chemistry departments from recruiting new female professors or, for that matter, any new professors at all. And some chemistry departments tell C&EN they have been trying their damndest to recruit female faculty but have lost promising candidates to schools with more resources.

When considering faculty positions for which a chemistry department paid at least half the salary, women held 10% or less of those positions at just four of the top 50 schools. They included the University of Chicago, Emory University, and the University of Southern California. Johns Hopkins University had just one woman out of a total of 20 chemistry professors, giving it the lowest proportion of women among the schools. The brevity of the 10%-and-under list marked quite an improvement over 2009–10, when seven schools were in this category.

The University of Puerto Rico, Rio Piedras, had the highest percentage of women in 2010–11. There, women held almost one-third of the faculty positions. Purdue University came in a close second, with 28% women. (If the pool of schools is expanded to the top 75, Colorado State University was the only other school with that high a percentage of female chemistry faculty.)

In absolute numbers, Purdue had the most women in its chemistry department, with 15 female faculty, followed by the University of California, Los Angeles, with 12. C&EN has been counting women on chemistry faculties every year since 2000.

For each of those years, the survey covered the schools that spent the most on chemical R&D, based on the most recent National Science Foundation ranking available in a given year. Usually, C&EN limited the survey to the top 50 schools.

Arguably, these selection criteria have some flaws. For example, NSF's ranking makes no distinction between schools that have chemistry-only departments and those with departments that combine chemistry with another subject, such as biochemistry. Also, selecting a certain number of schools to profile excludes plenty of schools with good news to report. For instance, at school number 79—Brown University—three of the last five tenure-track hires were women, notes chemis-

try department chair Matthew B. Zimmt. For this year's story, C&EN partnered with the Open Chemistry Collaborative in Diversity Equity (OXIDE) to collect data on the schools that topped NSF's list for 2008, the most recent year available since the survey began. Data on the top 75 schools appear in the tables in this story; data on additional schools are available on the OXIDE website (oxide.gatech.edu).

The OXIDE initiative is also gathering data on other aspects of diversity, including citizenship, race, and ethnicity. OXIDE's objective is to try to establish diversity equity within the leading research-active chemistry departments, explains Director Rigoberto Hernandez. Hernandez, who is a chemistry professor at Georgia Institute of Technology, has served on a number of policy-making boards with the American Chemical Society (which publishes C&EN), Georgia Tech, and the National Academies to try to help achieve diversity equity.

**"IN ANY GIVEN YEAR,** schools typically hire only one or two individuals, so change is going to be incremental from year to year," Hernandez concedes. Still, several of the schools that OXIDE looked at have hired at least one woman in the past year. He notes that "the percentages at the moment are generally between 10 and 20%, with a few happy exceptions that are above that." NSF data indicate that approximately 39% of chemistry graduate students in 2009 were women, Hernandez says. So he expects that women's share of faculty positions could eventually approach or exceed that level "if the pathways to go from Ph.D. to assistant professor are equitable." OXIDE plans to "do detailed, longitudinal assessments of whether those pathways are in fact equitable," he adds.

"We're hoping to change the infrastructure from the top down, so that the

**& MORE ONLINE**

View an updated and expanded table of data for the 2009–10 academic year at [cenm.ag/women](http://cenm.ag/women).

#### SLOW, STEADY GROWTH

Now, 17% of chemistry professors at top universities are women

	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Assistant	18%	20%	21%	21%	20%	21%	21%	22%	24%	26%	27%
Associate	21	20	20	20	19	21	22	22	22	22	22
Full	6	7	7	8	8	9	10	11	12	12	13
All ranks	10%	11%	12%	12%	12%	13%	14%	15%	16%	16%	17%

NOTE: Tenured and tenure-track women chemistry faculty at the 50 schools identified by the National Science Foundation as having spent the most on chemistry research.  
SOURCES: C&EN and OXIDE surveys

# Numbers

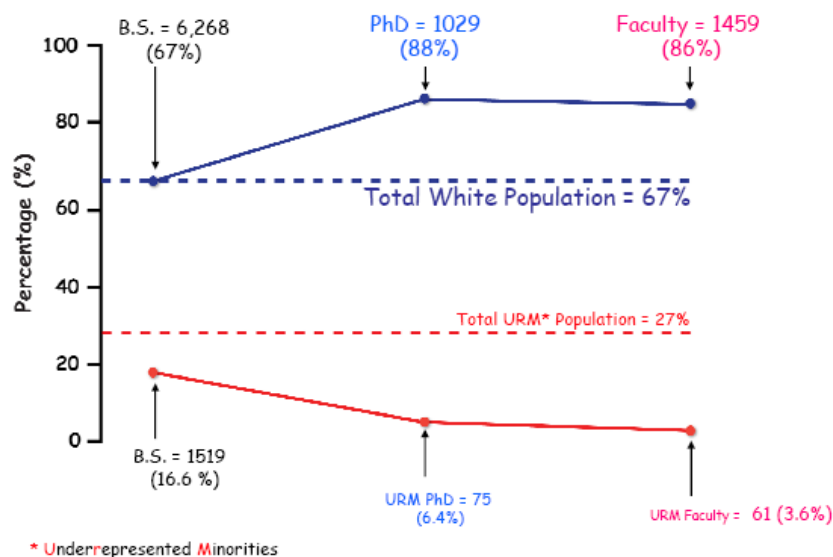
## 2010 Numbers (chemistry)‡:

- 2306 PhDs
- 37.4% Female
- 57.4% (1323) U.S. Citizen or PR
  - 0.4% Native American
  - 10.9% Asian
  - 4.1% African American
  - 4.8% Hispanic
  - 76.1% White

‡Advancing Graduate Education in the Chemical Sciences (2012)

- In the 2010 Census:
  - 16.4% Hispanic or Latino
  - 12.6% African American
  - 4.8% Asian American
  - .9% Native American
  - .2% Pacific Islander

## FROM B.S. TO FACULTY: THE PIPELINE FOR U.S. CITIZEN ETHNIC GROUP REPRESENTATION IN CHEMISTRY in 2003



\* From: "Workshop on Excellence Empowered by a Diverse Academic Workforce: Achieving Racial & Ethnic Equity in Chemistry" (DOE/NSF/NIH Report)

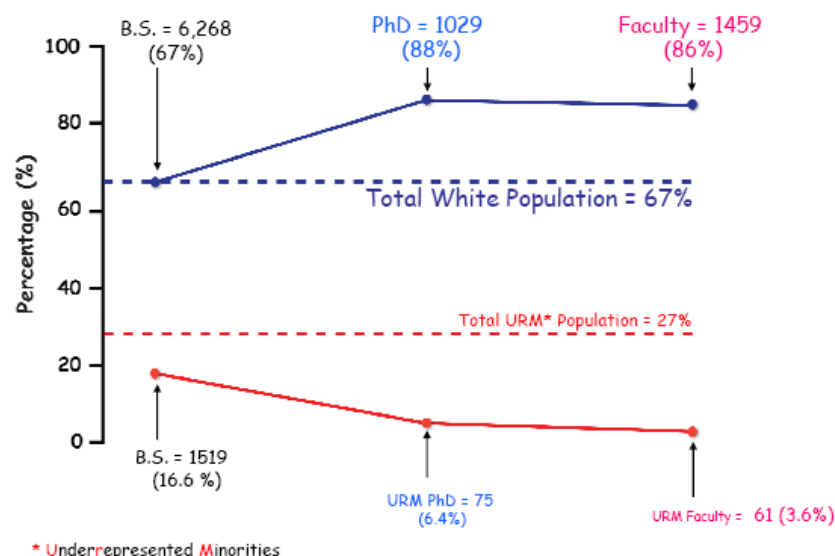
## URM Data on Faculty in Chemistry coming this year!



# Numbers

- Let's do the numbers:
  - 6,268 BS / 1,029 PhD  
 $\Rightarrow$  1 Ph.D. : 6.1 B.S.
  - $(1,029 \text{ PhD} / \text{year}) / (1,459 \text{ Profs} / 25 \text{ years})$   
 $\Rightarrow$  1 Prof : 17.6 Ph.D.  
 $\Rightarrow$  1 Prof : 107.4 B.S.
- Faculty in the top 50 are rare events.
- The best chemists have options with better odds.

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\* From: "Workshop on Excellence Empowered by a Diverse Academic Workforce: Achieving Racial & Ethnic Equity in Chemistry" (DOE/NSF/NIH Report)

Professors are the intellectual 1%!



# Excellence





# Implicit Bias

## Can you believe what you see?



Do you see  
one or two  
colors in  
the swirling  
stripes?

(Blue or  
green?)

***Adapted from B. Nosek, U.Va.***

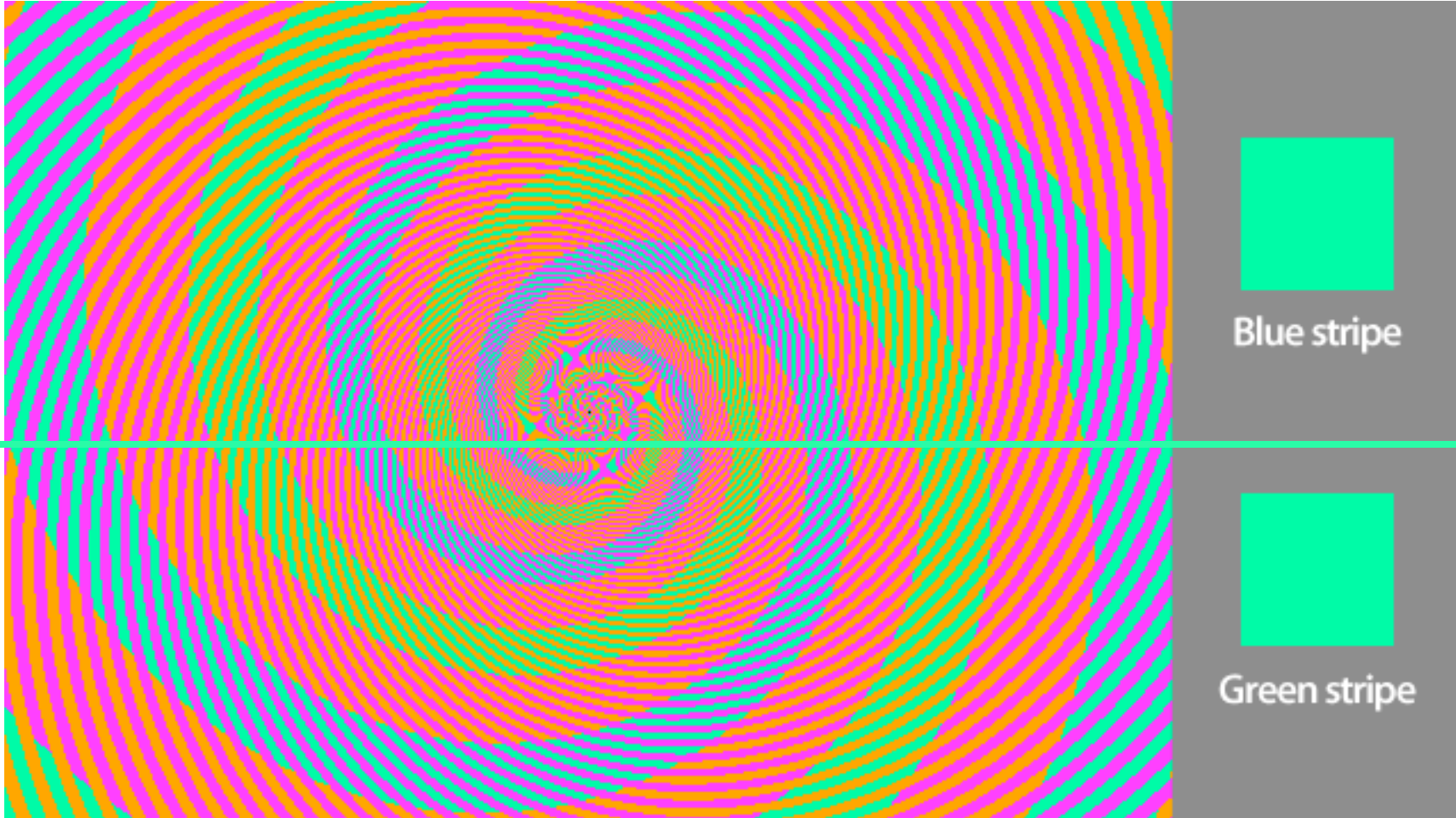
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R. Hernandez  
@ Georgia Tech



# Implicit Bias

## Can you believe what you see?



***Adapted from B. Nosek, U.Va.***

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# Implicit Bias

## Can you pick the winner?



*Adapted from F Smyth, U.Va.*

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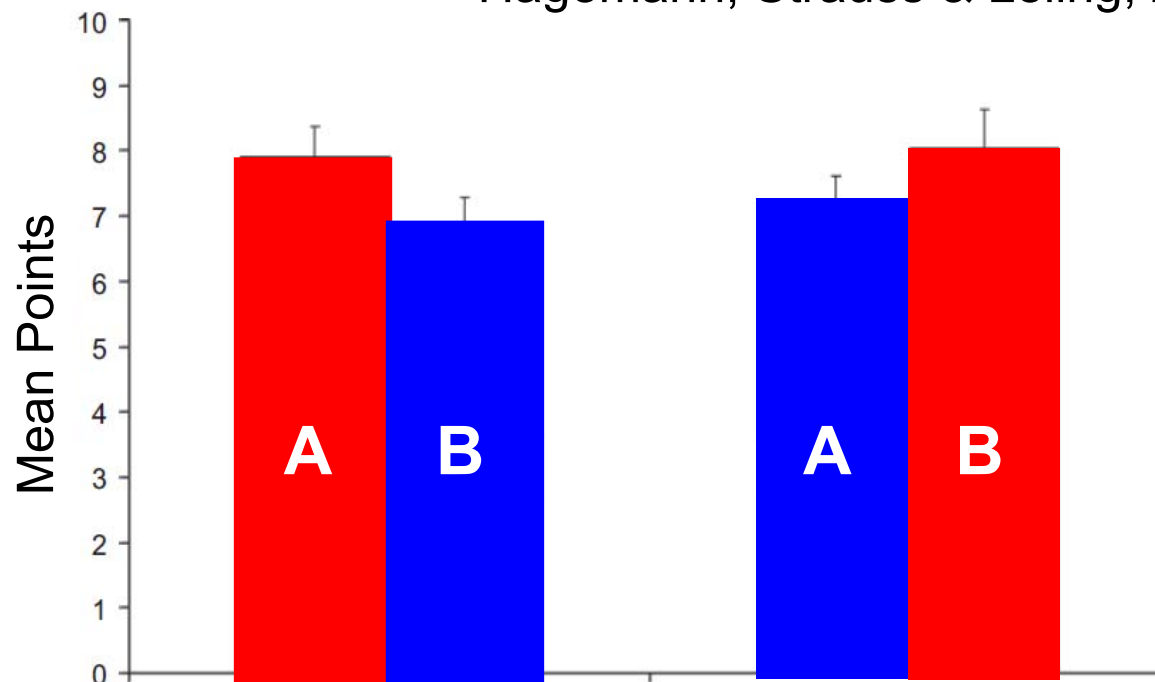


# Implicit Bias

## Can you pick the winner?

Competitor A wins...IF he's wearing red

Hagemann, Strauss & Leining, 2008



***Adapted from F Smyth, U.Va.***



# Diversity Equity is Timely





# Gender in the News



Letter from alumna receives national attention

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Sheryl Sandberg

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# LGBTQIQ in the News

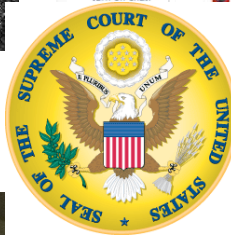
Lesbian  
Gay  
Bisexual  
Transgender  
Queer  
Intersexed  
Questioning



Alan Turing &  
UK Apology



Carolyn  
Bertozzi



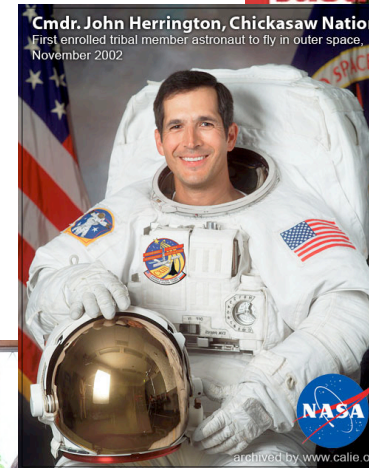
Lynsey Addario, New York Times, March 29 2013

Robbie Rogers,  
Pro Soccer Player



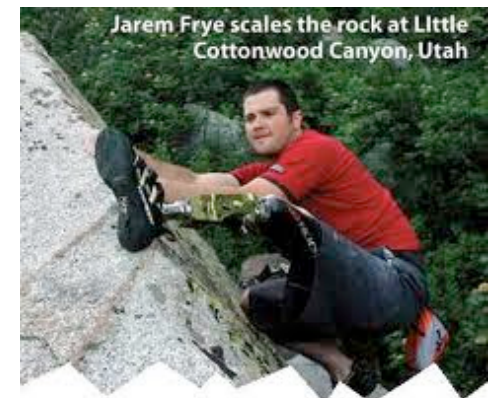
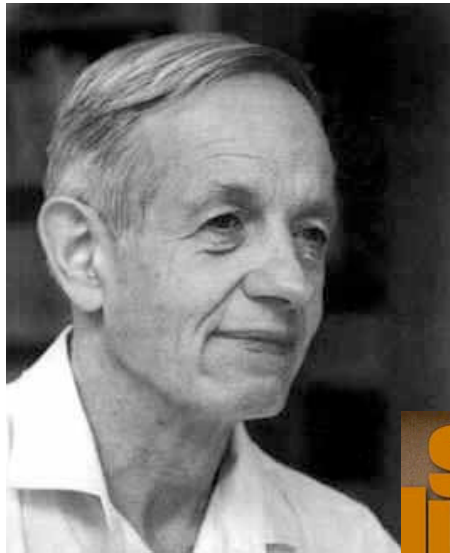


# URMs in the News





# Disabilities in the News



You build it and they  
**Diversity is a planned event**  
will come



# Who We Are

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- ❖ 2011: OXIDE = Open Chemistry Collaborative in Diversity Equity



- ❖ September 2012: funded jointly for five years by NSF, NIH, DoE
- ❖ Demographics of academic chemistry faculty do not correspond to the demographics of the U.S. population
- ❖ Vision: **flattening diversity inequities by placing the responsibility (to solve the problem) on institutions, not on single agents**



# Enacting the Vision

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- ❖ Change academic chemistry infrastructure from the top down
- ❖ Excellence-Driven (Diversity is Key to the Post-Modern Meritocracy)
- ❖ Partner with research-active chemistry department chairs
  - ❖ Responsibility and credit
- ❖ Reduce inequitable policies and practices
  - ❖ Historically led to disproportionate representation
- ❖ Collaborate with social scientists
- ❖ Diversity writ large
  - ❖ e.g., gender, race-ethnicity, disabilities, and sexual orientation
- ❖ Disseminate broadly



# What We Do

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- ❖ Host biennial National Diversity Equity Workshops (NDEWs)
  - ❖ 2011, 2013, 2015, 2017
- ❖ Conduct and publish annual demographic census of research-active doctoral Chemistry departments
- ❖ Disseminate relevant findings from STEM & the social sciences
  - ❖ OXIDE portal (beta version)
  - ❖ NDEWs and NDEW reports
  - ❖ To come: other mechanisms...
- ❖ Connect department chairs, social scientists, existing diversity communities
- ❖ Assess the impact of department policies, programs, and changes
- ❖ Assess our programming and dissemination products

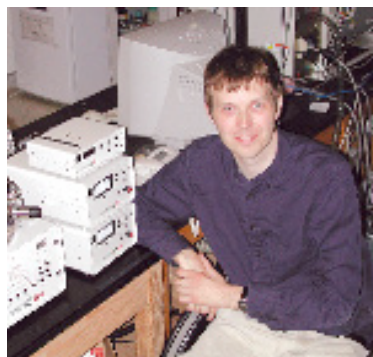




# OXIDE Advisory Board



Currently 12 members: 4 social scientists, 8 chemists



# NDEW 2013



# NDEW 2013 Highlights

- Breakouts!
- Focus session #1: Organizational structure, behavior & dynamics
- Focus session #2: Recruitment, hiring, retention and promotion
- Focus session #3: Lesbian, Gay, Bisexual, Transgender, Queer, Intersex and Questioning (LGBTQIQ) equity
- Focus session #4: Creating an inclusive culture
- Sample department diversity presentation & discussion





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