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Diversifying the Biomedical Research Workforce: What do we know about what works?

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Keeping Science Top of Mind

“Put quite simply, diversity invites innovation. At its center is difference, not sameness, which encourages a broad palette of solutions for the complexity of health challenges before us. I believe that we must keep science top of mind as we pursue strategies to increase diversity in science.”

—Hannah A. Valentine, M.D., NIH Chief Officer for Scientific Workforce Diversity (Valantine, n.d.)



Background: USU's Study

Increasing Diversity in the
Biomedical Research Workforce
ACTIONS FOR IMPROVING EVIDENCE



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AAMC
Tomorrow's Doctors, Tomorrow's Cures®

- Collaborative effort of USU, APLU with AAMC, funded by NIH
- 72 experts across 28 universities
- Identify actions for improving evidence
- Four areas:
 - Leadership, organizational change and climate
 - Diverse student success
 - Recruitment and admissions
 - Diverse faculty hiring and advancement
- Report is available [here](#)

Graduate Admissions

What do we know?

- GRE scores have been a gatekeeper metric, particularly in STEM and biomedical sciences
- Why?
 - Expedience – often used as a way to “screen” applications, to winnow pool
 - Council of Graduate Schools Survey: 78% felt emphasis on GRE was appropriate, 8% felt too little. Only 11% felt too much emphasis on GRE
- A lot we don't know: process varies significantly, is opaque

Graduate Admissions

ARE GRE SCORES EVIDENCE-BASED?

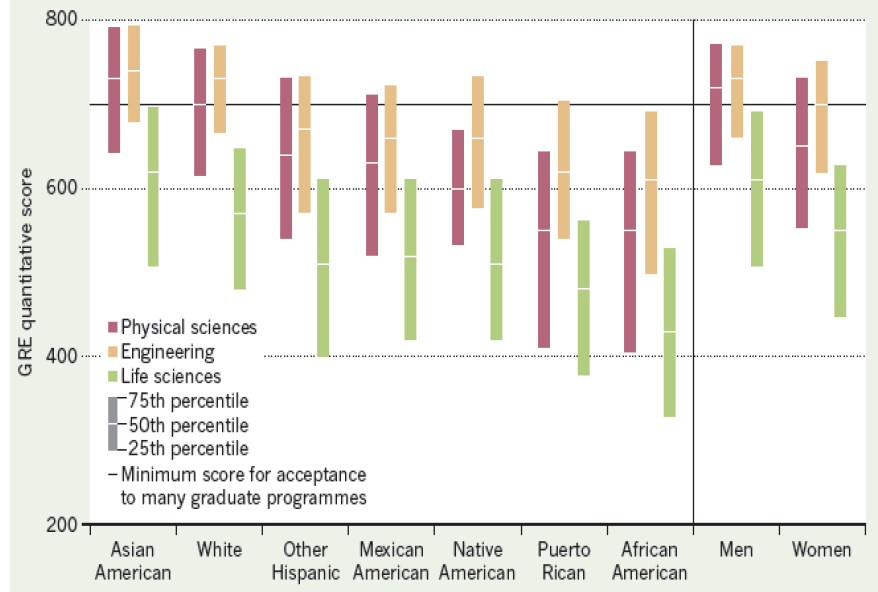
- Mounting evidence that GRE scores *are not* predictive of success
- Disparities in test performance by demographic group
- Other issues: (cost, test-taking conditions not equitable)
- Reliance on GRE reproduces racialized outcomes

A test that fails

A standard test for admission to graduate school misses potential winners, say **Casey Miller** and **Keivan Stassun**.

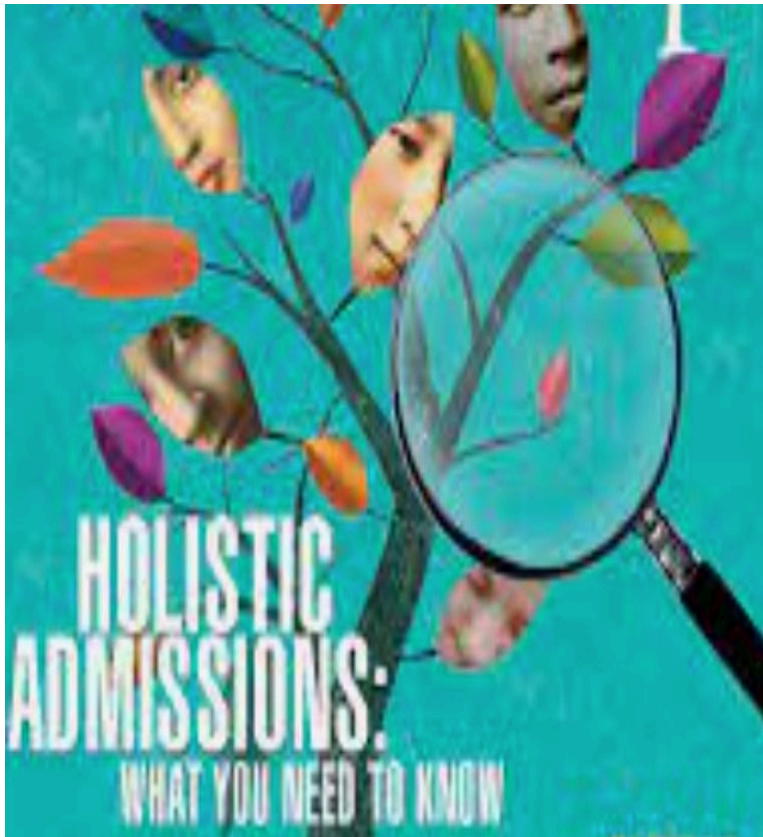
THE GREAT DIVIDE

The data represent the scores typically achieved in the quantitative reasoning test of the graduate record examinations (GRE) by US students from different ethnic groups applying for graduate school. In the physical sciences, a minimum score of 700 is required by many PhD programmes.



Source: *Nature* (2014).

Graduate Admissions



Looking Forward

- Eliminate or de-emphasize use of GREs
- A lot of work underway to adopt holistic review
 - *requires systems and culture change*
 - *Look at your data (disaggregated)*

Other opportunities?

- Holistic review in selection of KL2 early career faculty or TL1 predoctoral scholars
- Institutional partnerships to ensure equitable access to experiences valued in selection criteria

Holistic Review

Mission-aligned admissions process that evaluates applicants through a variety of methods, rather than prioritizing GPA, standardized test scores such as GRE scores, or former school of attendance. This process includes a balanced consideration of experience, attributes, metrics.

Recent Resources

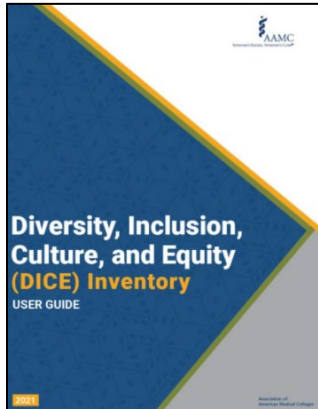
- Alliance for Multi-campus inclusive graduate education (AMIGA) produced [a toolkit for use of holistic review](#)
- Equity in Graduate Education Resources Center (USC) [offers workshops](#) on aspects of holistic review
- #GREexit – list of [biomedical programs that don't require GRE](#)

Creating an Inclusive Climate

What we know?

- Important for achieving benefits of diversity
 - An inclusive climate aids retention of minoritized students by increasing students' sense of belonging and scientific identity, reducing incidences of racism and discrimination, and fostering academic engagement and performance (Hernandez, Nguyen, Saetermoe, & Suarez-Orozco, 2013; Butts et al., 2012)
 - Improves learning environment for all (Association of American Medical Colleges [AAMC], 2013a; Piercy et al., 2005)
 - Important for attracting and retaining diverse faculty (McKay et al, 2007; Piercy et al., 2005)
 - Majority of doctoral students felt climate affected their ability to succeed and half felt isolated (Sowell, Allum, & Okahana, 2015)
- Need better mechanisms for measuring climate to support action and accountability
- Leadership visibility is important, but many unclear on their role in systemic change

Resources



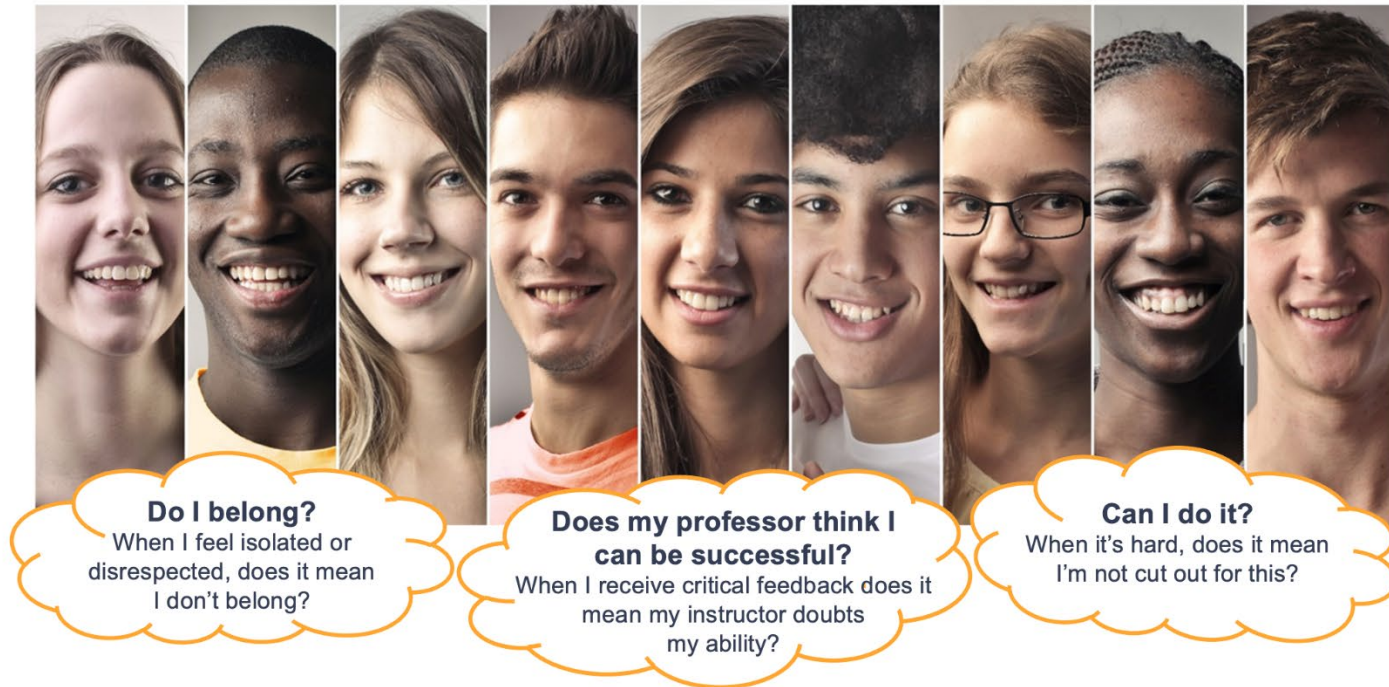
DICE Inventory: helps institutions conduct a comprehensive review of institutional policies, practices, procedures, and programs that impact the climate and culture around diversity, equity, and inclusion. Examples:

- Diverse leadership*
- Quality of mentoring and structures to promote community among UR scholars*
- Policies and practices (e.g. parental leave, resetting tenure clock)*
- Rewarding research and community engagement related to DEI*

USC Race & Equity Institute offer **Racial Equity Leadership Academy** provide an intensive learning experience for leaders to become more skilled on advancing racial equity

Equity in Graduate Education Resources Center (USC) **offers workshops** on fostering well-being in racialized mentoring environment

Belonging and Growth Mindset Culture



- Students' answers to these questions are informed by environmental and interpersonal cues from the institution, instructors, and other students about whether they, and people like them, can belong and succeed.
- Conclusions they draw can influence how they face challenges, whether they reach out for support, and ultimately affect their retention and academic achievement.

Walton, G.M., & Cohen, G.L. (2011). A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students. *Science*, 331(6023), 1447–1451.

Walton, G.M., & Cohen, G.L. (2007). A Question of Belonging: Race, Social Fit, and Achievement. *Journal of Personality & Social Psychology* 92(1), 82–96.

Resources



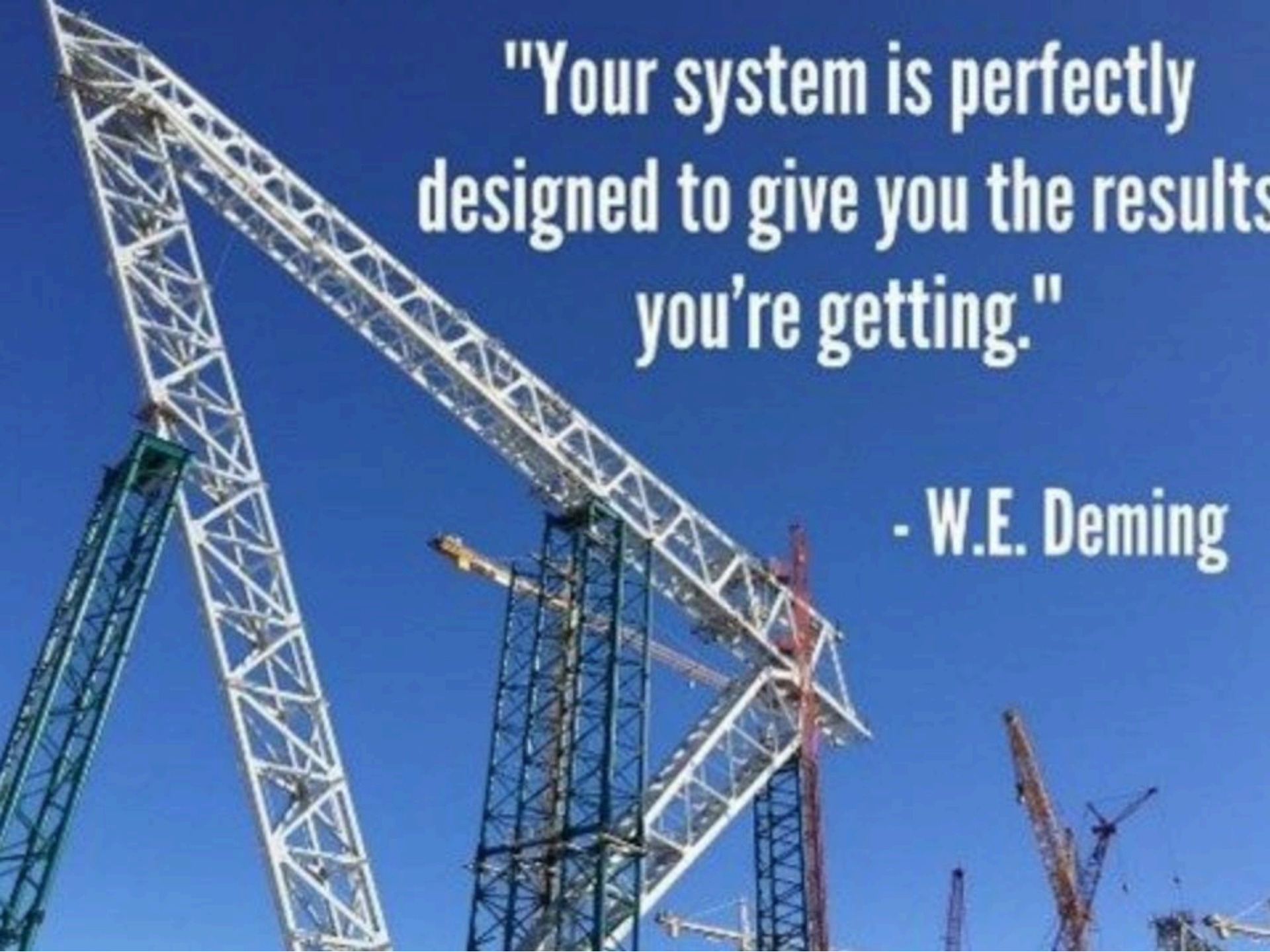
[ABOUT](#) [OUR WORK](#) [RESOURCES](#) [SEP IN ACTION](#) [CONTACT US](#)



Transforming the college student experience so that every student is supported to succeed

[First Day Toolkit](#) - help instructors and faculty create a growth mindset culture and foster belonging for students beginning on the first day of class

[SEP Practices Library](#) – evidence based practices for increasing equity in student experience of the learning environment



"Your system is perfectly
designed to give you the results
you're getting."

- W.E. Deming

Discussion

- What institutional strategies are working to support BTI, and how do you know?
- Are admissions practices and selection for training programs aligned with DEI goals?
- How are you measuring the climate for UR students and scholars engaged with the CTSA?