EQUITY IN THE MATH CLASSROOM

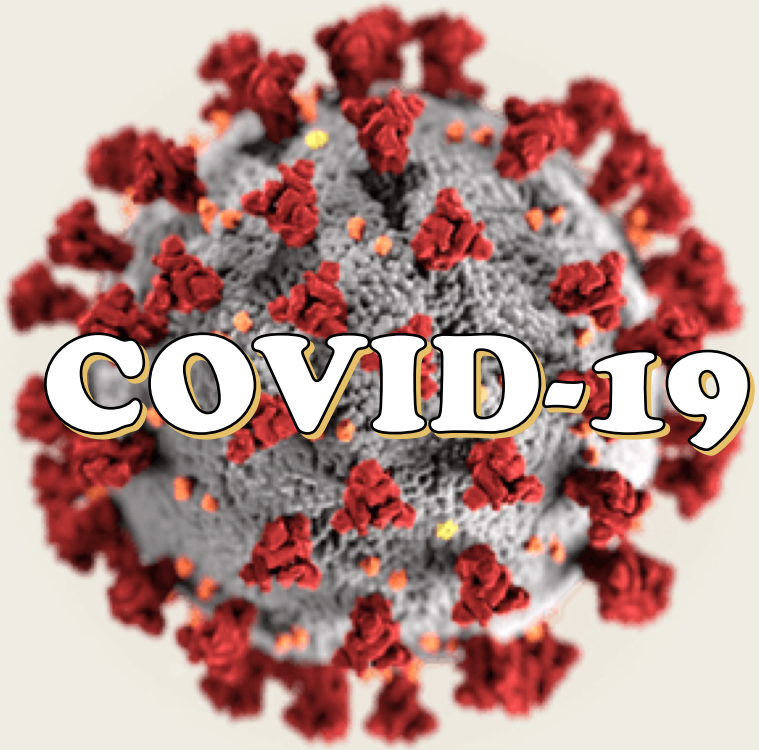
Strategies for Reaching Every Student

Dr. Jenna P. Carpenter
Campbell University

Outline

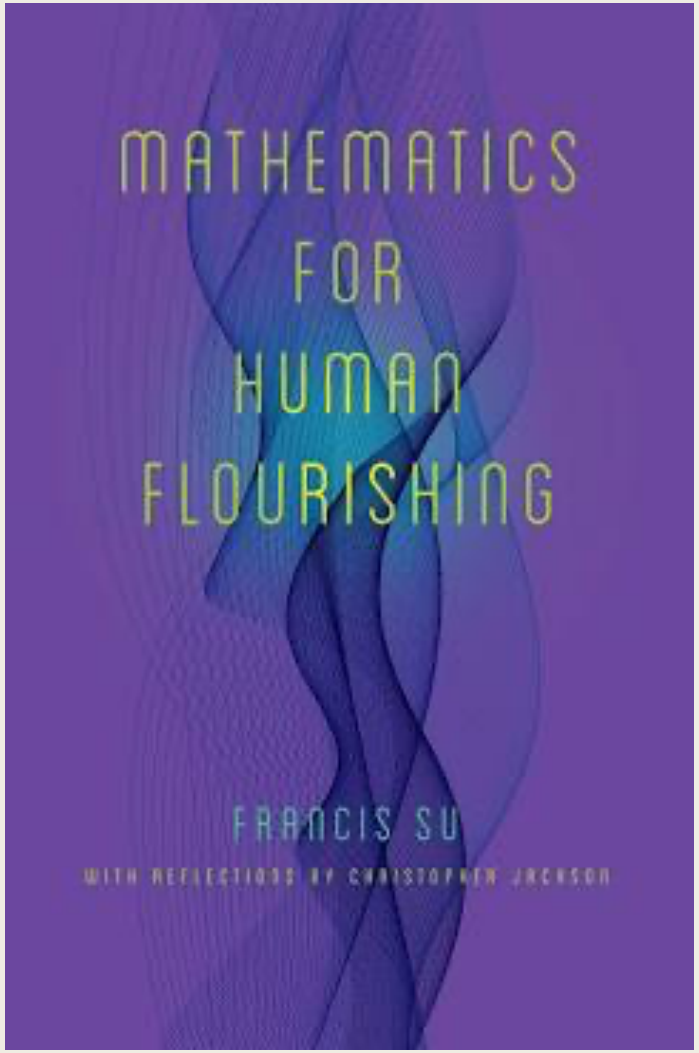
- Intro
- Two stories of equity in mathematics
- Equity in Mathematics – What can we do?
  - Admit for ability, not background & opportunity
  - Create engaging entry and alternate pathways
  - Check our implicit biases and build a culture of belonging
  - Believe in our students and do everything possible to help them succeed
- What else can we do?

Intro



https://en.wikipedia.org/wiki/File:Black_Lives_Matter_logo.svg, https://www.cpf.navy.mil/COVID19/
https://www.chronicle.com/article/How-the-Education-System/249097

Mathematics for Human Flourishing



https://www.amazon.com/Mathematics-Human-Flourishing-Francis-ebook/dp/B082P4PMYK,
https://www.harvardmagazine.com/2020/01/francis-su-math

My Story

https://www.latech.edu, https://www.math.lsu.edu/srntc/nt2017/RobertPoster.pdf, https://blogs.campbell.edu/2020s-jenna-carpenter/

Equity in Math – What Can We Do?

Dr. Bill Velez
Emeritus Professor of Mathematics
University of Arizona
Fellow, AAAS

#1 - Admit students for ability, not background

https://mlkscholars.mit.edu/wvelez/

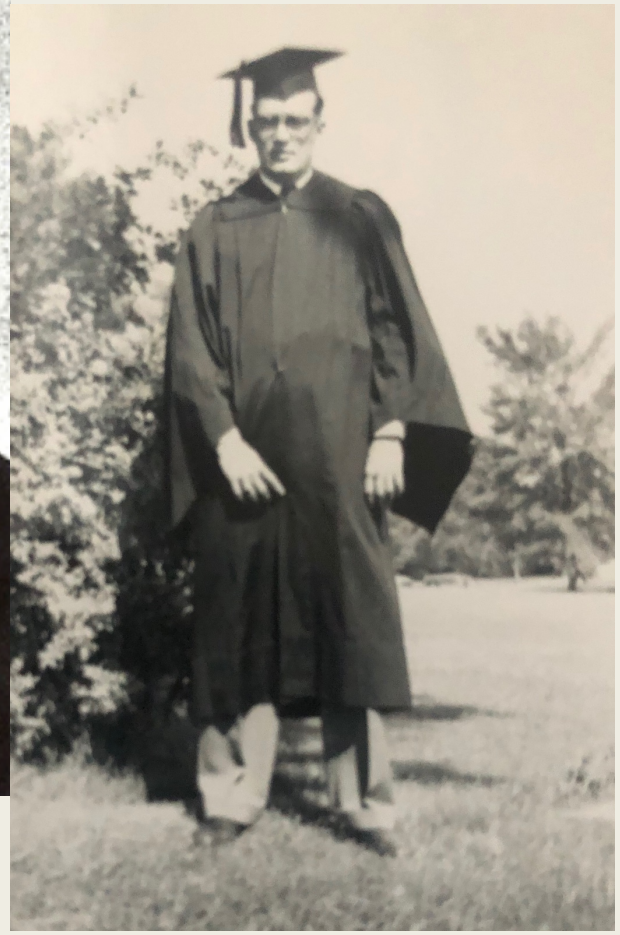
Another example…

Dr. Michael Dorff
President of the MAA
Professor of Mathematics
Brigham Young University

https://bit.ly/2ZrTh6C

https://blogs.ams.org/livingproof/files/2019/10/blogheader-livingproof.png

Privilege matters…

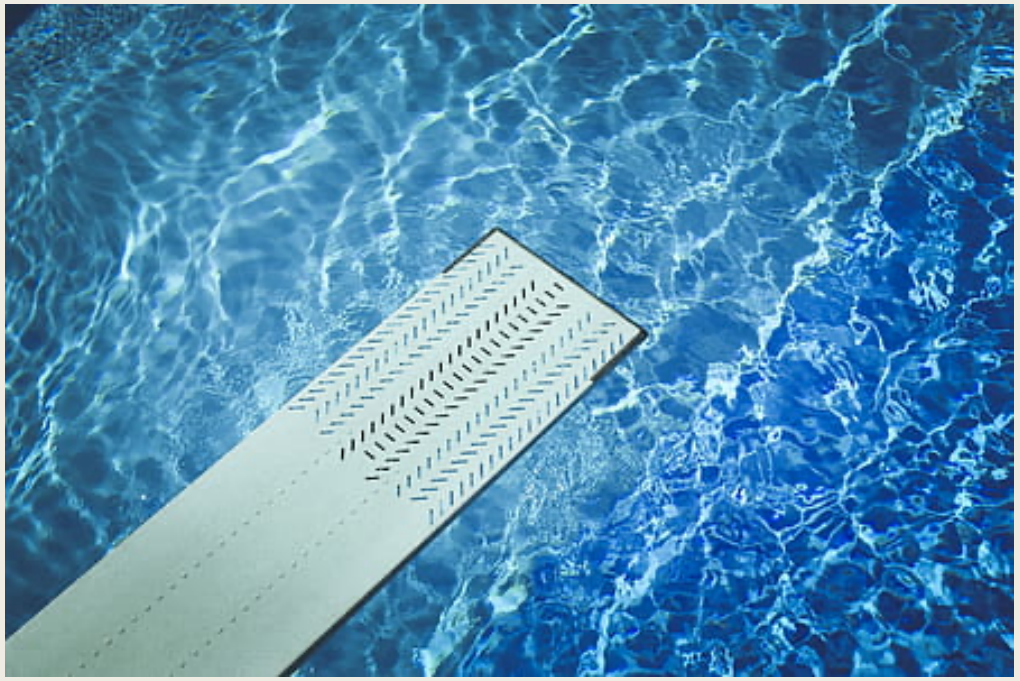


Equity in Math – What Can We Do?

#2 – Build rich and engaging entry points & alternate pathways for students

https://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_191791.pdf

Think more than just math class…



https://mpng.subpng.com/20180326/vhe/kisspng-swimming-pool-inflatable-child-plastic-swimming-5ab95f8e3ffd77.7626900415220980622621.jpg,
https://i1.pickpik.com/photos/1009/982/442/blue-diving-board-pool-recreation-thumb.jpg

Equity in Math – What Can We Do?

#3 – Create a culture where all students belong

Our Implicit or Unconscious Biases undermine our efforts at every step…

Equity in Math – What Can We Do?

#4 – Believe in your students & show them you do

Expectancy Theory

Belief in likelihood of success

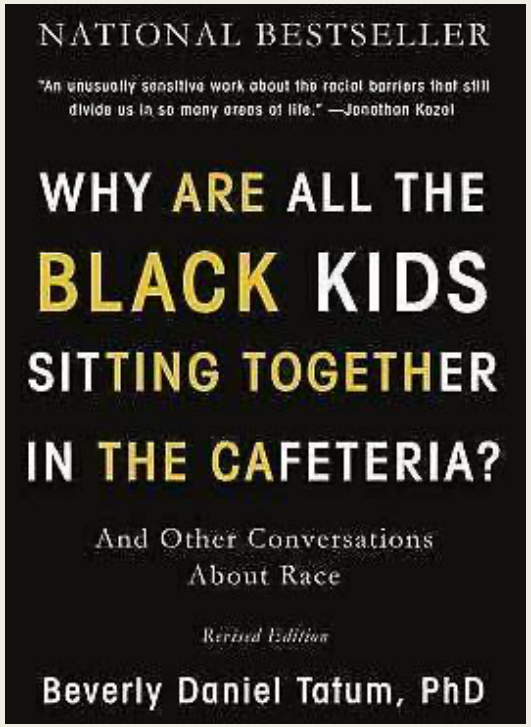
Belief that behavior -> desired outcomes

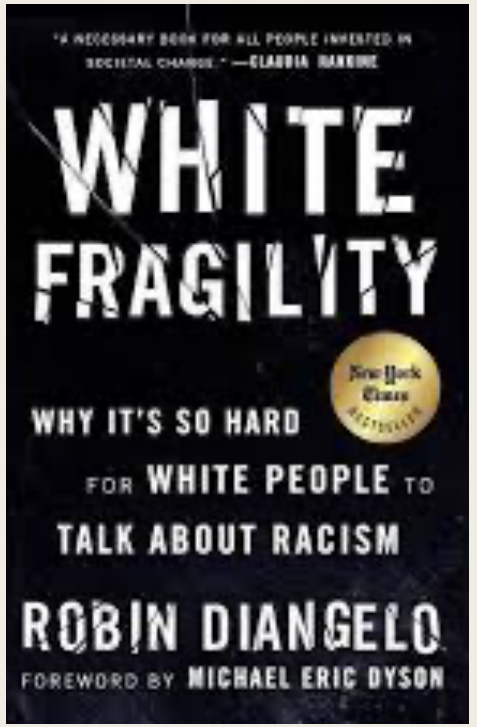
Value placed on outcomes

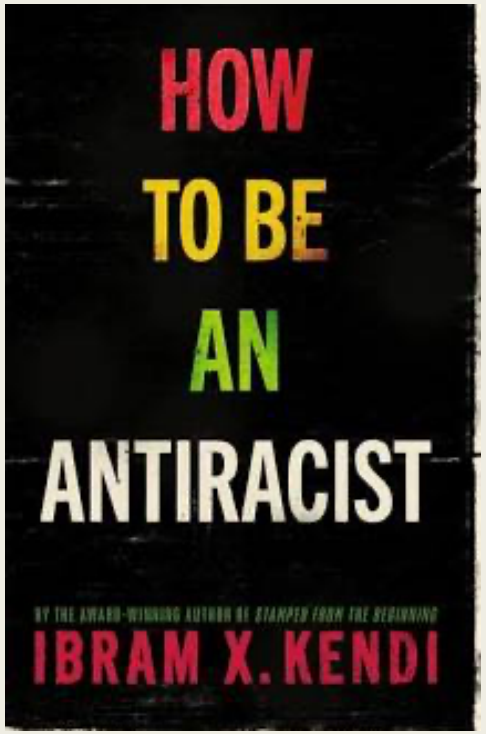
Hancock, D. (1995). WHAT TEACHERS MAY DO TO INFLUENCE STUDENT MOTIVATION: AN APPLICATION OF EXPECTANCY THEORY. *The Journal of General Education,44*(3), 171-179. Retrieved June 27, 2020, from www.jstor.org/stable/27797259

What else can we do?

- Educate yourself about systemic racism and its impact on both K12 and higher education

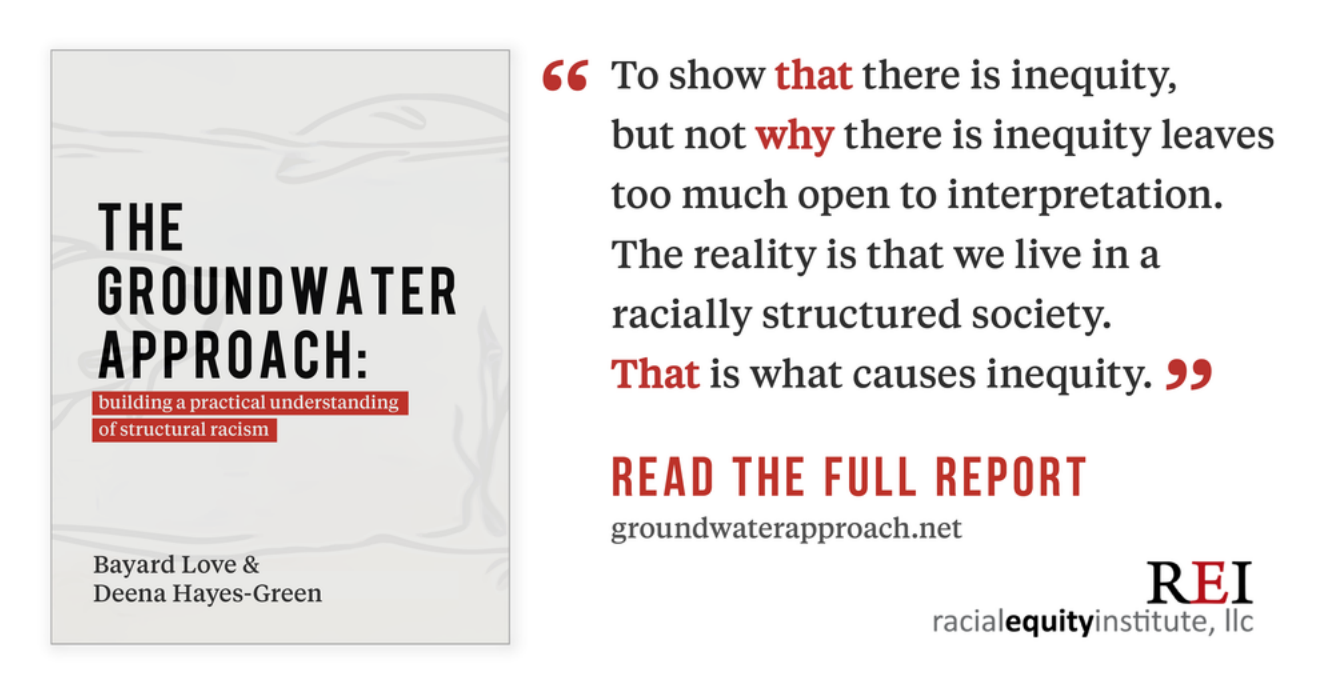






What else can we do?

- Educate yourself about systemic racism and its impact on both K12 and higher education



https://www.racialequityinstitute.com/groundwaterapproach

What else can we do?

- Look for good educational models, approaches and programs that help marginalized students succeed

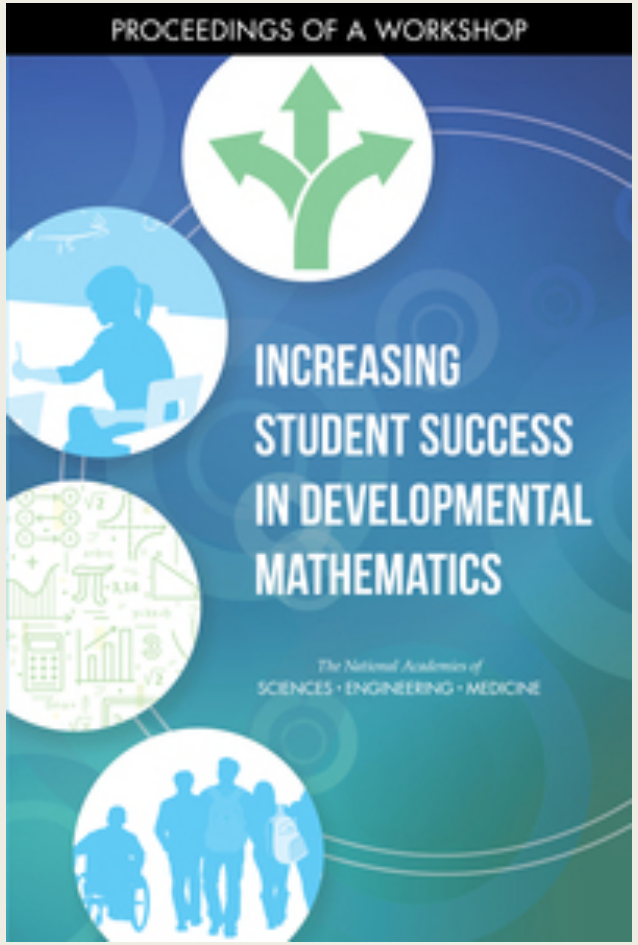
CUNY ASAP
ACCELERATED STUDY IN ASSOCIATE PROGRAMS

http://www1.cuny.edu/sites/asap/

What else can we do?

- Co-requisite Model
- New Mathways Project
- CUNY Start Program
- Carnegie Math Pathways: Quantway and Statway

https://www.nap.edu/catalog/25547/increasing-student-success-in-developmental-mathematics-proceedings-of-a-workshop



Increasing Student Success in Developmental Mathematics

What else can we do?

“How The Education System Exacerbates Inequality”

Chronicle of Higher Education, June 30, 2020

- Promising Approaches
- Funding & Resources
- System Redesign

- https://www.chronicle.com/article/How-the-Education-System/249097

Conclusion

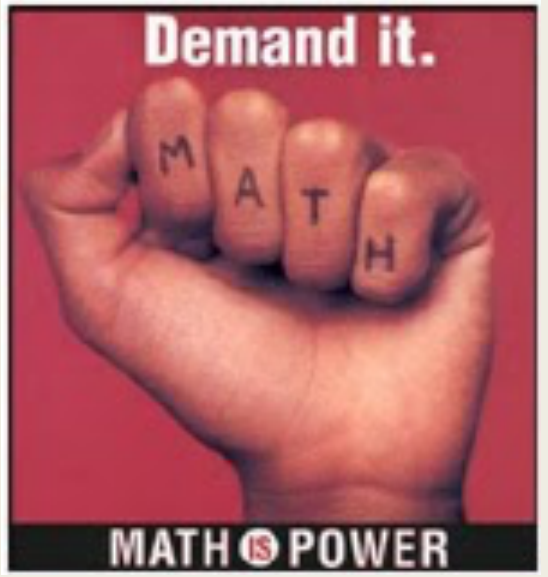
#1 - Admit students for ability, not background

#2 – Build rich and engaging entry points & alternate pathways for students

#3 – Create a culture where all students belong

#4 – Believe in your students & show them you do

#5 – Educate yourself about systemic racism and look for good models to adapt & implement



https://lh5.googleusercontent.com/proxy/4353KoJBceaIVIvwJ7JoHk3vpkBsQGAIKW21vNFZoSCE-fYXp3_LRqJy4wXx02o3C6iVx9HjbBoixe0ttDP6DQI0x4stjWcsRIAGkcu_=w1200-h630-p-k-no-nu

Questions?

carpenter@campbell.edu

Resource Links:

- Francis Su, "Mathematics for Human Flourishing," Yale University Press,2020, https://www.amazon.com/Mathematics-Human-Flourishing-Francis-ebook/dp/B082P4PMYK, (video: https://www.youtube.com/watch?v=xEtDvc1SWm8)
- Elain Seymour and Anne-Barrie Hunter, "Talking About Leaving Revisited," Springer, 2019, https://www.springer.com/gp/book/9783030253035 (video series: https://seachange.aaas.org/port-of-call/institute/talr/1)
- Michael Dorff, "My Living Proof Story," AMS Blogs, Living Proof: Stories of Resilience Along the Mathematical Journey, https://blogs.ams.org/livingproof/2020/06/28/my-living-proof-story-by-michael-dorff/
- "The Groundwater Approach," Racial Equity Institute, Greensboro, NC, https://www.racialequityinstitute.com/groundwaterapproach
- CUNY ASAP Program, http://www1.cuny.edu/sites/asap/
- "Increasing Student Success in Developmental Mathematics: Proceedings of a Workshop," National Academies Press, 2019, https://www.nap.edu/catalog/25547/increasing-student-success-in-developmental-mathematics-proceedings-of-a-workshop
- "How The Education System Exacerbates Inequality", Chronicle of Higher Education, June 30, 2020, https://www.chronicle.com/article/How-the-Education-System/249097