TAGT NEW STATE PLAN DEEP DIVE DAY

Local Norms: Nuts, Bolts, and Benefits

Karen E. Rambo-Hernandez, Ph.D.

Associate Professor

Texas A&M University

TAGT

Acknowledgements & Contributors

Scott J. Peters, Ph.D.

University of Wisconsin- Whitewater

Matt Makel, Ph.D.

Duke University

Michael S. Matthews, Ph.D.

University of North Carolina-Charlotte

Jonathan Plucker, Ph.D.

Johns Hopkins University

Matt McBee, Ph.D.

East Tennessee State University

First… a quick question:

- How familiar are you with Local Norms?
    1. Brand new
    2. A little bit familiar
    3. Pretty familiar- but not yet implemented
    4. Very familiar- some level of implementation happening
    5. Extremely familiar- full on implementation mode

Part I:
The Benefits

Building norms are:

1) more logically / conceptually defensible than

and

2) more equitable than national norms

Why do we Identify Students as Gifted in K-12 Schools?

"The term 'gifted and talented', when used with respect to students, children, or youth, means students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop those capabilities. (2018 reauthorization of ESEA)

Giftedness depends on:

1. The capability* of the individual student.
2. The capability* of class/school peers.
   - As a proxy for the “ordinary” services provided

What would happen to racial/ethnic representation if schools relied on local norms during gifted identification?

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Effect of Local Norms on Racial and Ethnic Representation in Gifted Education

Scott J. Peters
University of Wisconsin–Whitewater

Karen Rambo-Hernandez
West Virginia University

Matthew C. Makel
Duke University

Michael S. Matthews
University of North Carolina–Charlotte

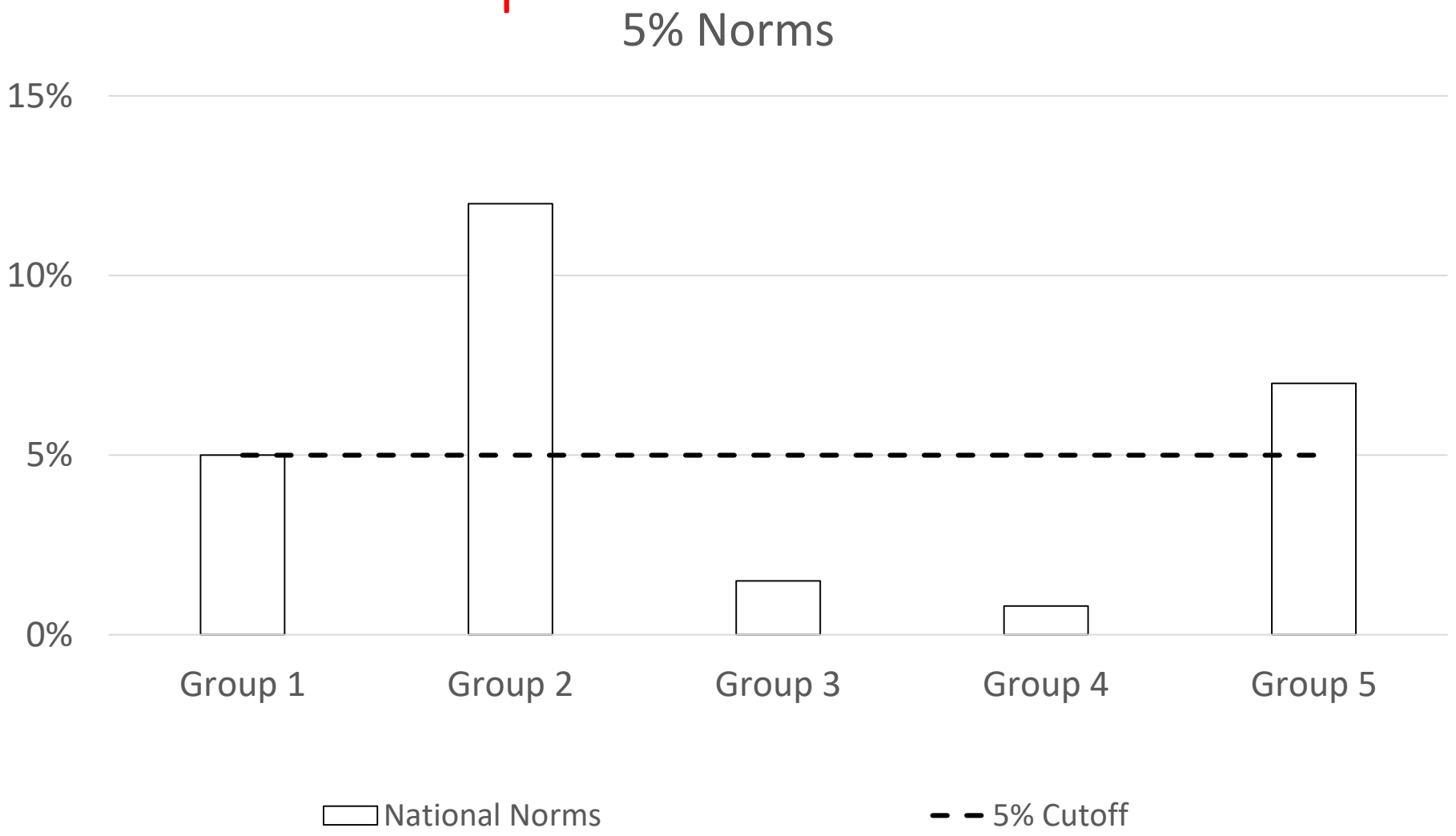
Jonathan A. Plucker
Johns Hopkins University

Our Broad Prediction

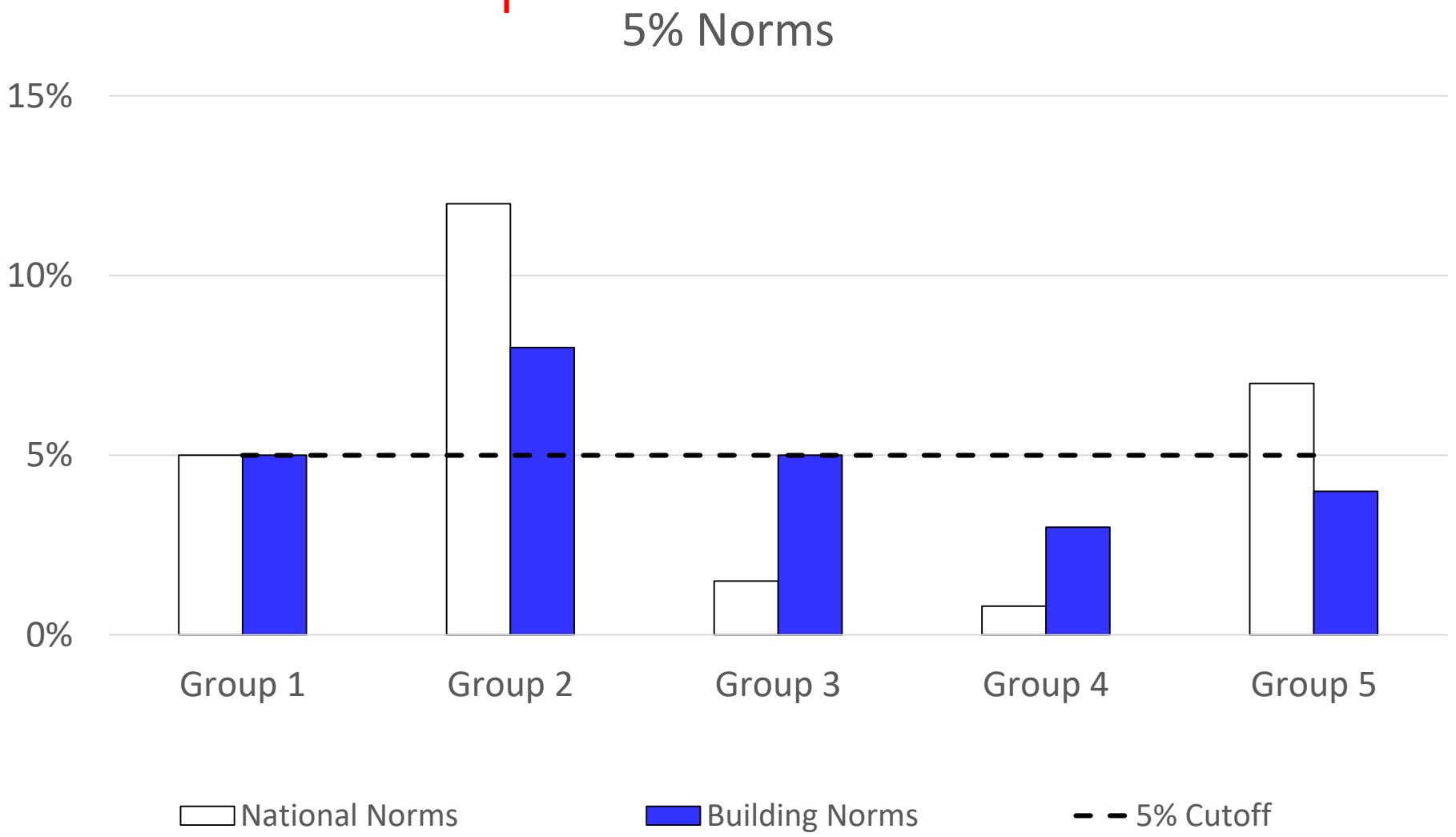
The more proximate the normative group used for gifted identification decisions, the more racially and ethnically representative the identified population of gifted students will be.

National < State < District < Building

Hypothetical Example



Hypothetical Example



Our Sample

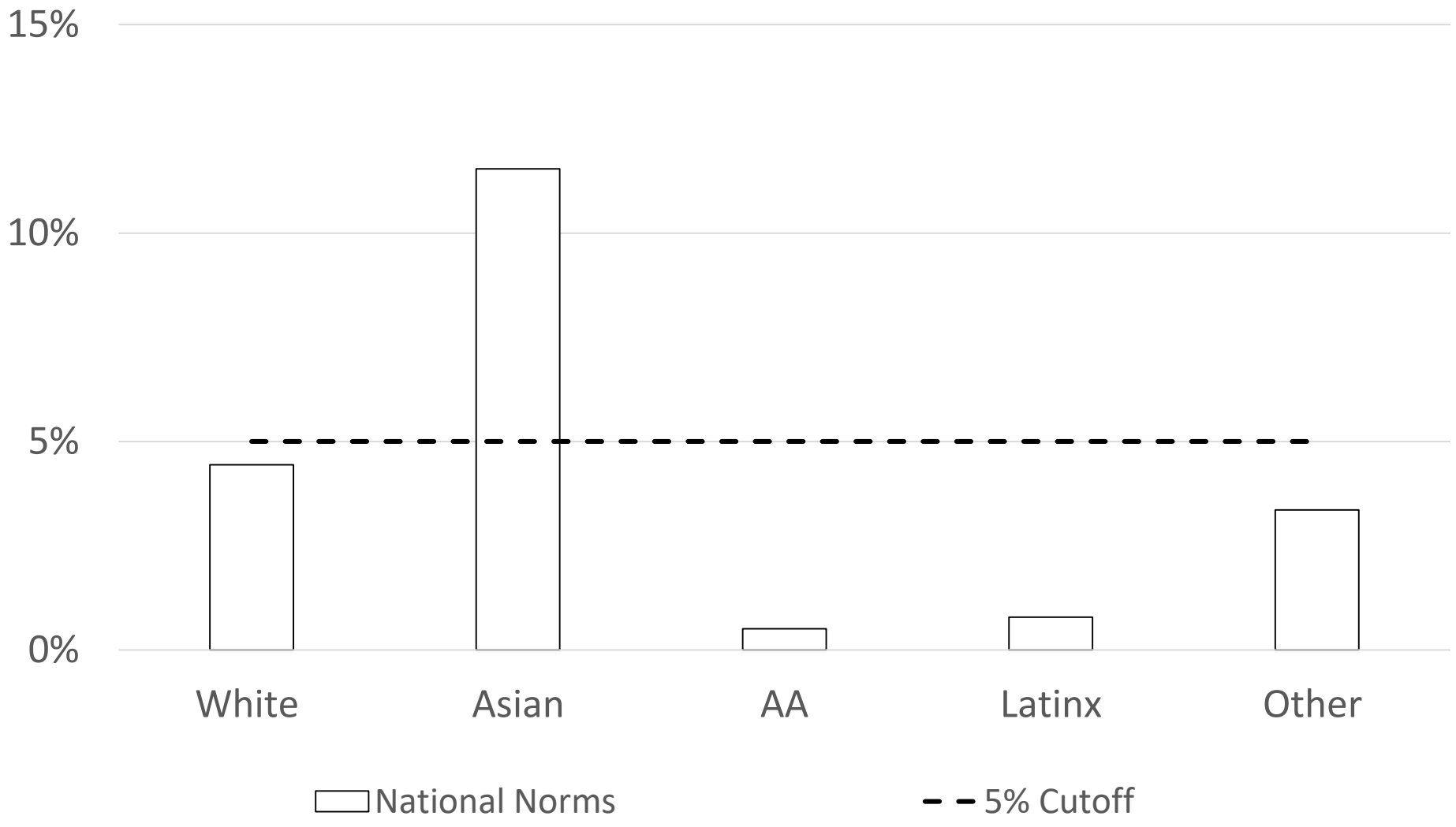
- NWEA MAP data from all participating schools in: California, Colorado, Illinois, Kentucky, Minnesota, Michigan, Ohio, South Carolina, Washington, and Wisconsin.

- 3rd grade Fall test scores, 2007 to 2016
- Over 3 million students from over 6,000 schools

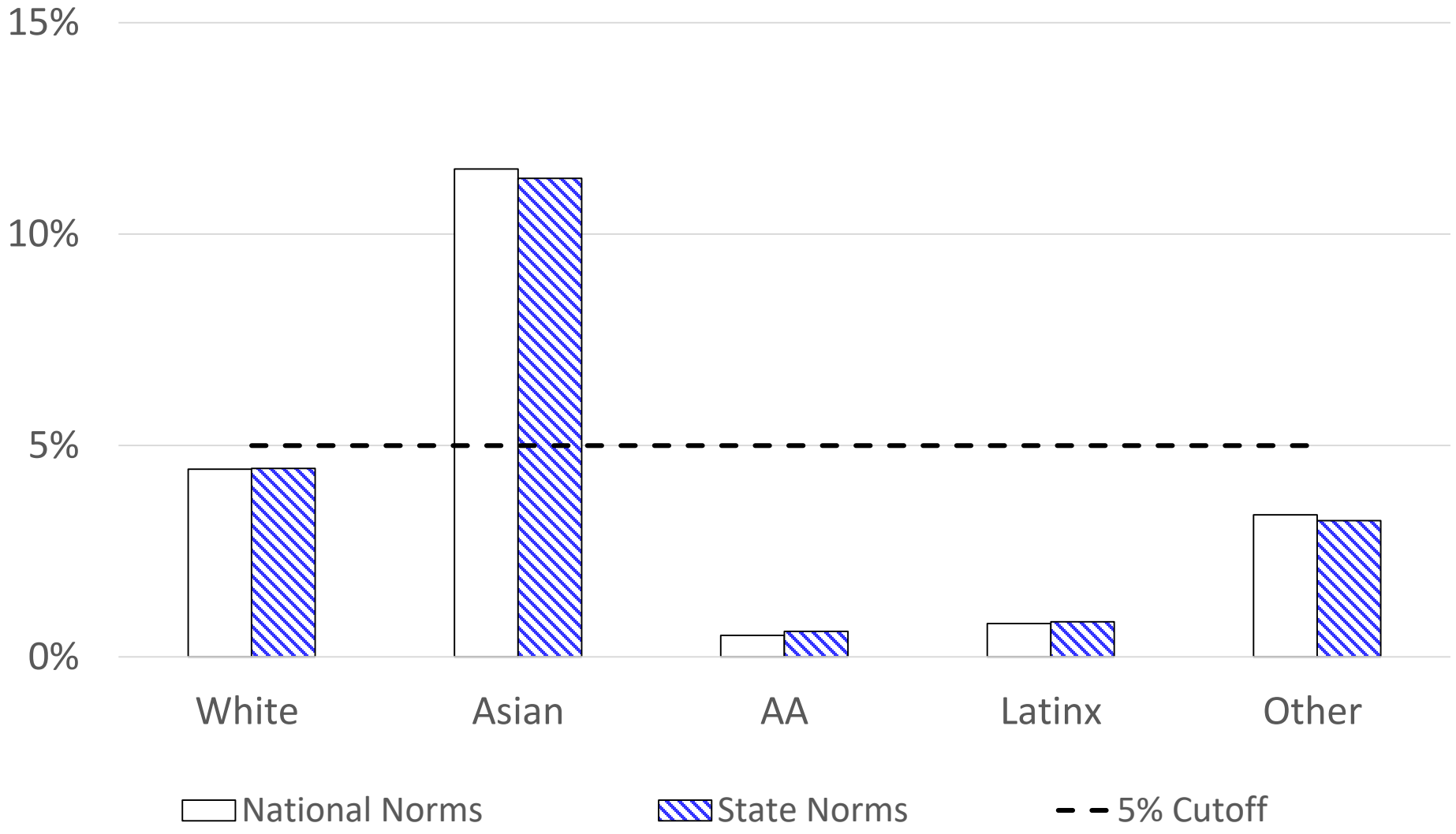
What we found

Our actual results…

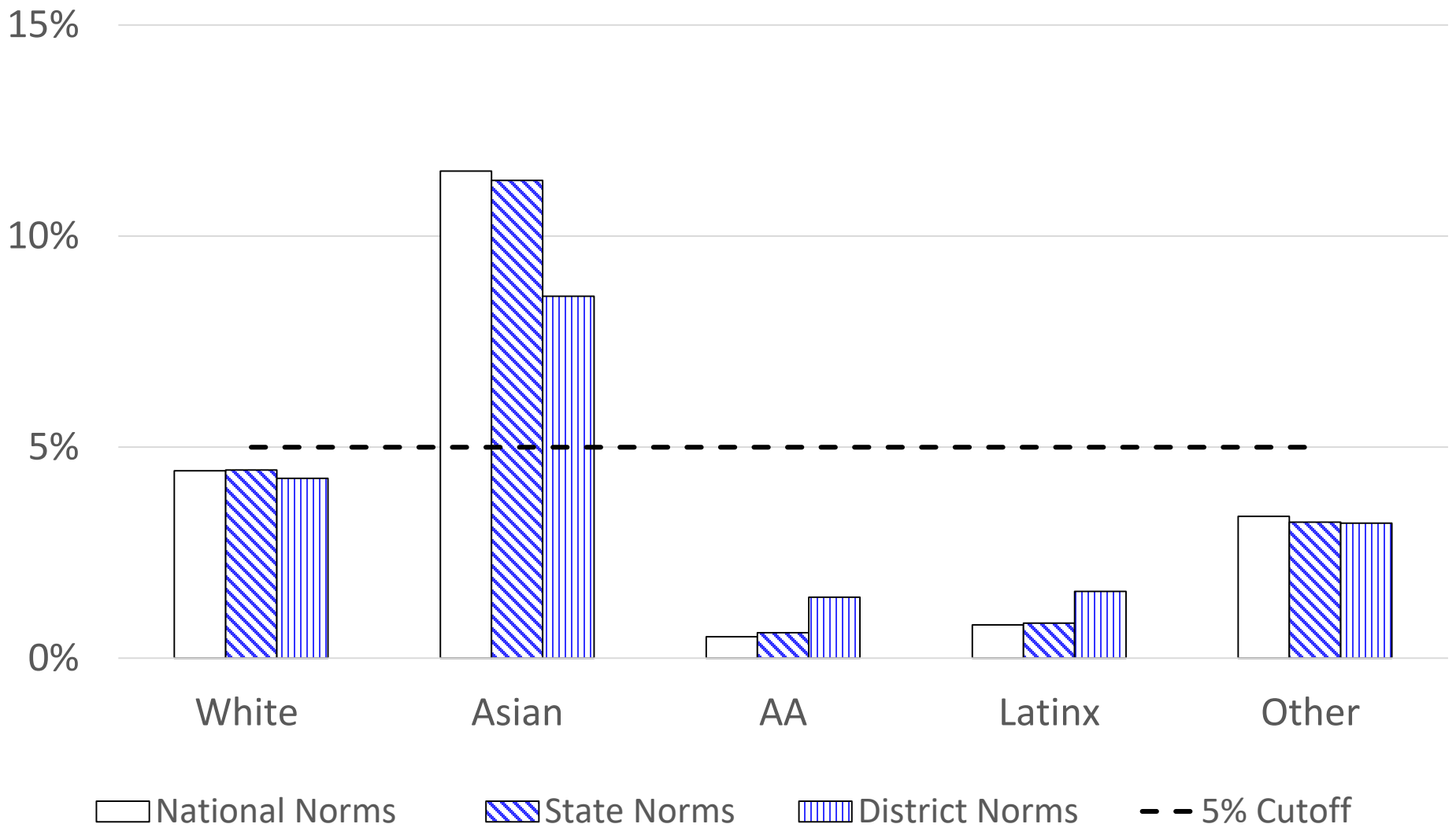
5% Norms



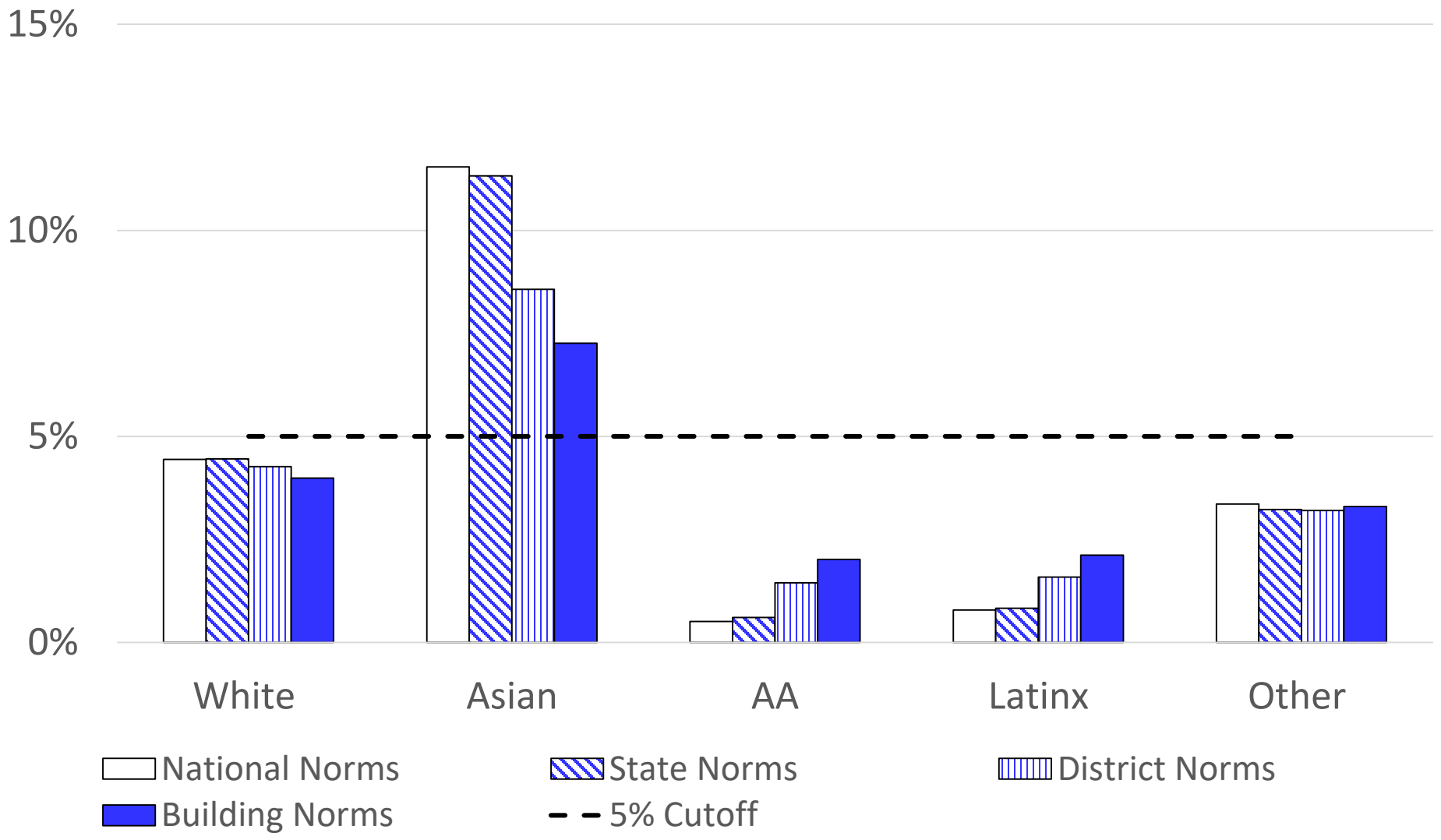
5% Norms


15%
10%
5%
0%
White
Asian
AA
Latinx
Other
National Norms
State Norms
5% Cutoff

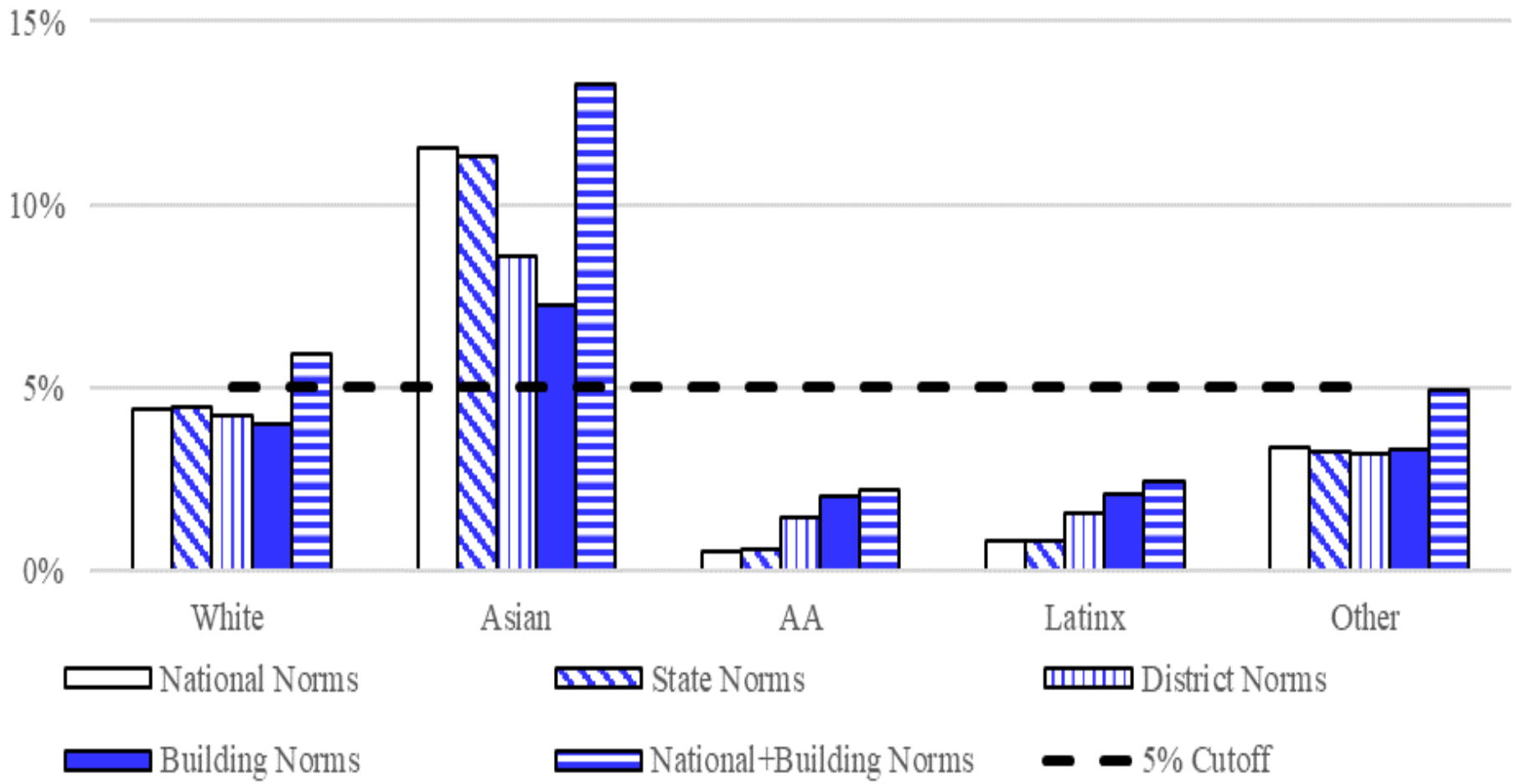
5% Norms

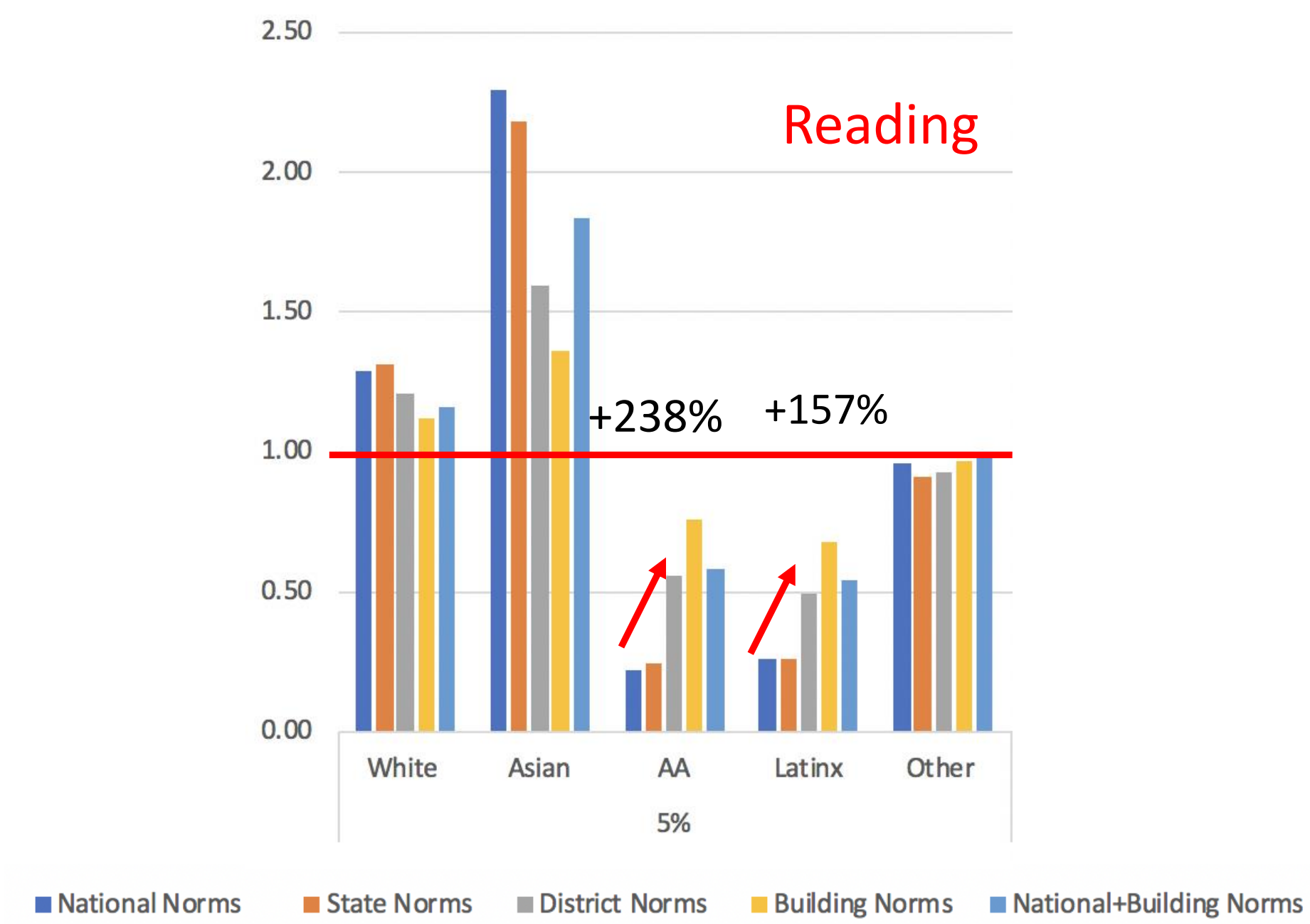

15%
10%
5%
0%
White
Asian
AA
Latinx
Other
National Norms
State Norms
District Norms
5% Cutoff

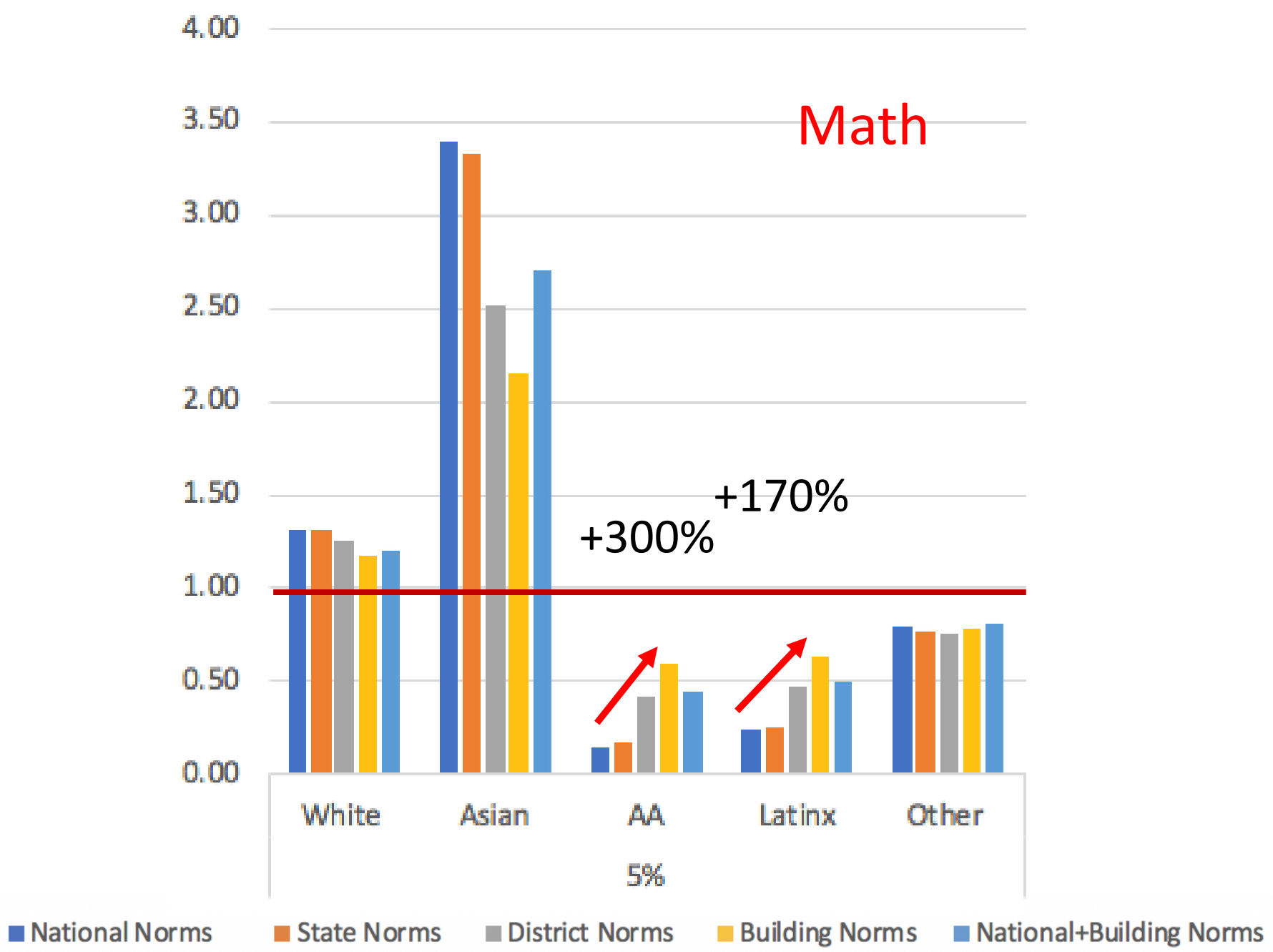
5% Norms


15%
10%
5%
0%
White
Asian
AA
Latinx
Other
National Norms
State Norms
District Norms
Building Norms
5% Cutoff

5% Norms


15%
10%
5%
0%
White
Asian
AA
Latinx
Other
National Norms
State Norms
District Norms
Building Norms
National+Building Norms
5% Cutoff


Reading
2.50
2.00
1.50
1.00
0.50
0.00
+238%
+157%
White
Asian
AA
5%
Latinx
Other
National Norms
State Norms
District Norms
Building Norms
National+Building Norms


Math
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
+300%
+170%
White
Asian
AA
Latinx
Other
5%
National Norms
State Norms
District Norms
Building Norms
National+Building Norms

HUGE Equity Benefits

In other words…

African American students were:

- 13.65% of our overall sample.
- 2.04% of gifted students using national norms
- 8.15% of gifted students using local norms

Latinx students were:

- 13.41% of our overall sample.
- 3.16% of gifted students using national norms
- 8.55% of gifted students using local norms

So What's the Catch?

Where will it work?

- The more-segregated your school buildings, the greater the effect building norms will have on representation.
  - The more integrated your schools, the less impact of moving to building norms

- Not every building will see more racial / ethnic minority students identified.
  - Building norms work on the aggregate level

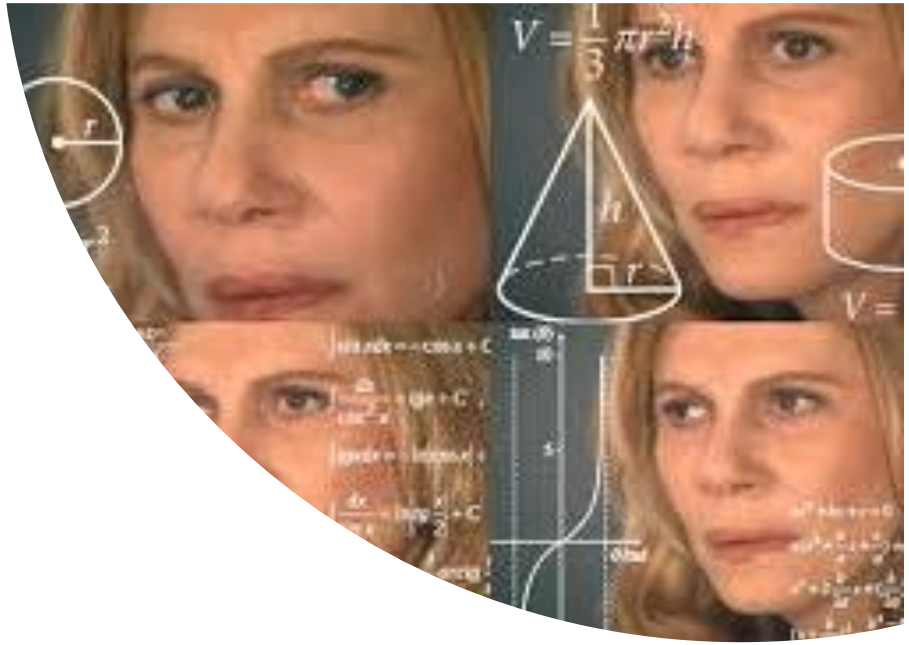
WHAT IF I TOLD YOU THAT
THERE IS NO FREE LUNCH?
imgflip.com

Implications of Moving to Building Norms

1. Fewer identified European American and Asian American kids
2. Wider range of learning readiness
3. BIG increase in population size under the compromise plan (OR pathway)

Local norms find underchallenged students hidden in plain sight. In every school.

Part II:
Nuts and Bolts



Things that will make this process easier

#1: Universal consideration

To the extent possible, use data you've already collected on all the students to make your identification or placement decisions.

Things that will make this process easier

#2: Decide on the program size / capacity first. Then fill the seats.

(This is the opposite of how gifted identification usually happens.)

Things that will make this process easier

#3: Think in terms of **rank ordering**, not fixed cutoffs.

You want to choose the most qualified (or most underchallenged) students in your school to fill those seats.

Things that will make this process easier

#4: Use the **mean** rule to incorporate multiple assessments / data sources into the placement decisions.

If you are rank-ordering, you ultimately need a single number to rank the students on.

Process for Identifying with Local Norms

1. **Design the program first**. What content areas will it serve? In what format? With what dosage? What are the goals?
2. **Decide on the number of students** you can accommodate. Call that number *n*.
3. **Choose the assessments** or data sources that you believe are diagnostic of being underchallenged.
4. **Obtain a composite score** that represents a combination of the assessment criteria.
5. **Select** (e.g., “identify”) the highest-scoring *n* students on the composite.

Obtaining the Composite Score

Before data can be combined, they must be placed on a common scale.

Suppose you wish to select on the basis of

- NWEA MAP Reading
- Reading / ELA grade point average

MAP 6th grade norms:

- mean 211.0, standard deviation 14.94

GPA:

- Ranges from 0 to 4. Mean 2.9, standard deviation 0.5

Problem: Students can get many more points from MAP performance than from GPA. GPA is overwhelmed due to its scale relative to MAP scores and will have almost no influence on placement decisions.

Standardizing to a common metric

The scores from the assessments need to be standardized to a common metric.

A natural choice is the *z*-score, which has a mean of zero and a standard deviation of one.

$$z = \frac{x - \bar{x}}{\mathrm{sd}(x)}$$

where *x* is the raw score, $\bar{x}$ is the mean of x, and sd(x) is the standard deviation of x.

The mean and standard deviation of *x* must be calculated *locally*, in your school!

The problem of percentiles

Percentile scores are nonlinear and should not be averaged or combined with other scores.

Solution: transform them to z-scores first.

In Excel, use the NORM.INV() function.

Weighting the assessments

You might decide that certain assessments should carry more weight than others in the selection process.

For example, you might have three assessments, but decide that the first should count as much as the other two combined. In this case, the weights are:

$$\text{Composite} = \frac{(2)\,x_1 + (1\,)x_2 + (1)\,x_3}{4}$$

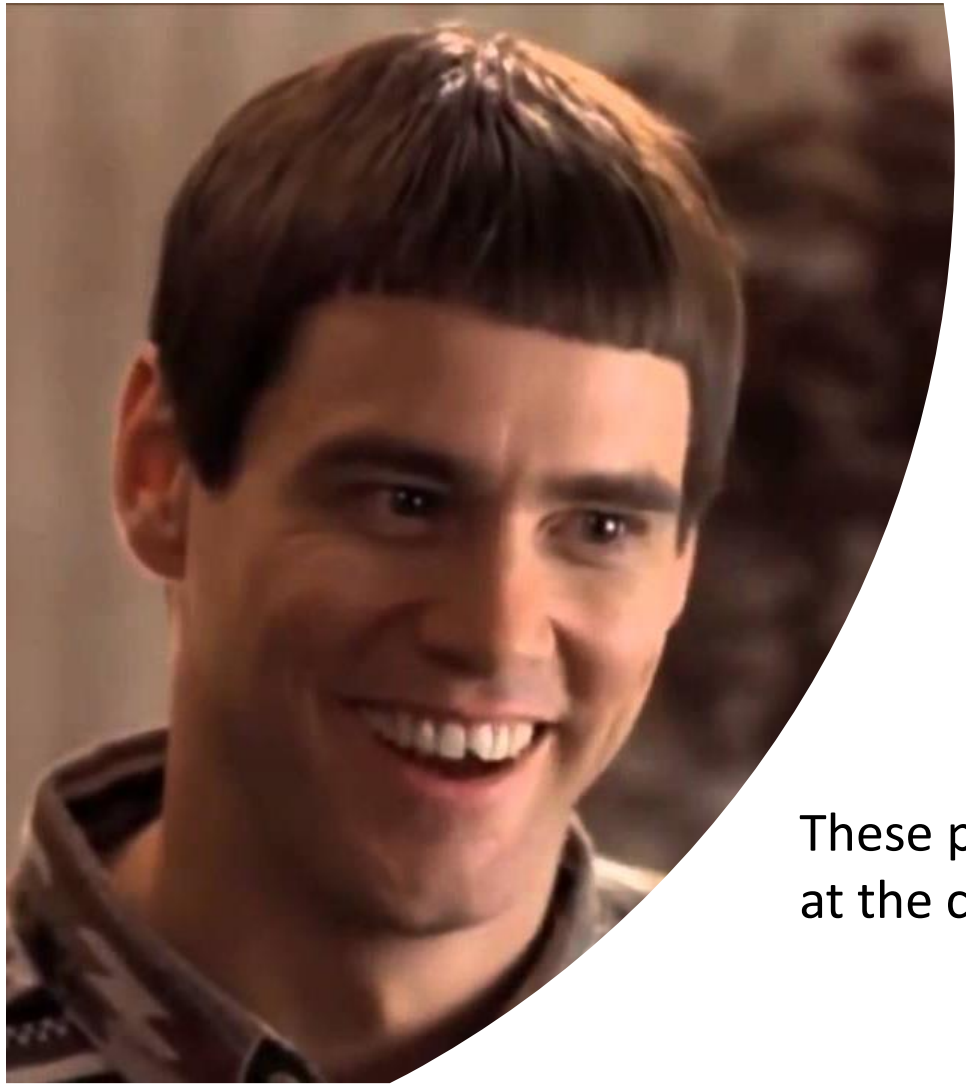
Let’s try it out!

The local norms spreadsheet template

https://osf.io/3rmuw/

We have created a spreadsheet template that does these calculations for you. All you have to do is enter your school's data.

It assumes that you are using the mean combination rule and can handle up to ten assessments and 1,000 students.



Two-stage identification

You may decide to collect certain data only from students who you determine to have a reasonable chance of being selected.

These processes conserve money and time at the cost of missing some students.

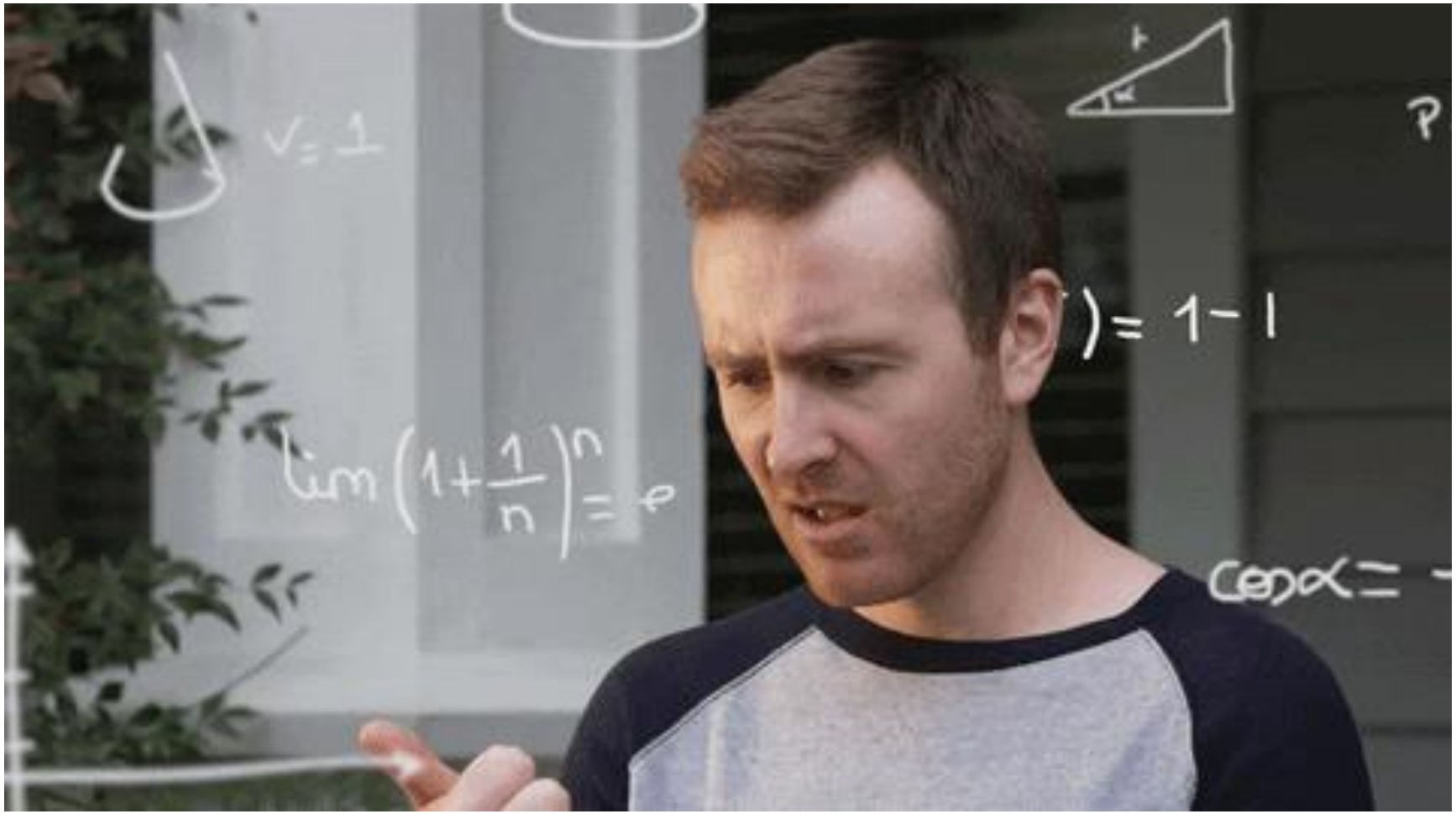
One Last Thing

You don't *have* to use the **mean** rule.

The **and** rule is equivalent to rank-ordering based on each person's minimum score across assessments

The **or** rule is equivalent to rank-ordering based on each person's maximum score across assessments.

Questions?



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Karen Rambo-Hernandez

rambohernandez@tamu.edu

Spreadsheet: https://osf.io/3rmuw/

Article under review: https://edarxiv.org/xern9/

AERA Open article: ttps://doi.org/10.1177/2332858419848446

NAGC Blog: https://www.nagc.org/blog/local-norms-improve-equity-gifted-identification

YouTube: https://www.youtube.com/watch?v=KmrOoGc-JVc

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