



# **Crossing Signals:** What College Websites Tell Students About Taking Mathematics

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# WHO WE ARE

## Presenters:

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## Panelists:

**Mónica Henestroza**, Higher Education Advisor, *Assembly Speaker Anthony Rendon*

**Toros Berberyán**, Math Instructor, *Citrus College*

**Michael O'Sullivan**, Professor & Chair, Department of Mathematics and Statistics and Chair of CSU Math Council, *San Diego State University*

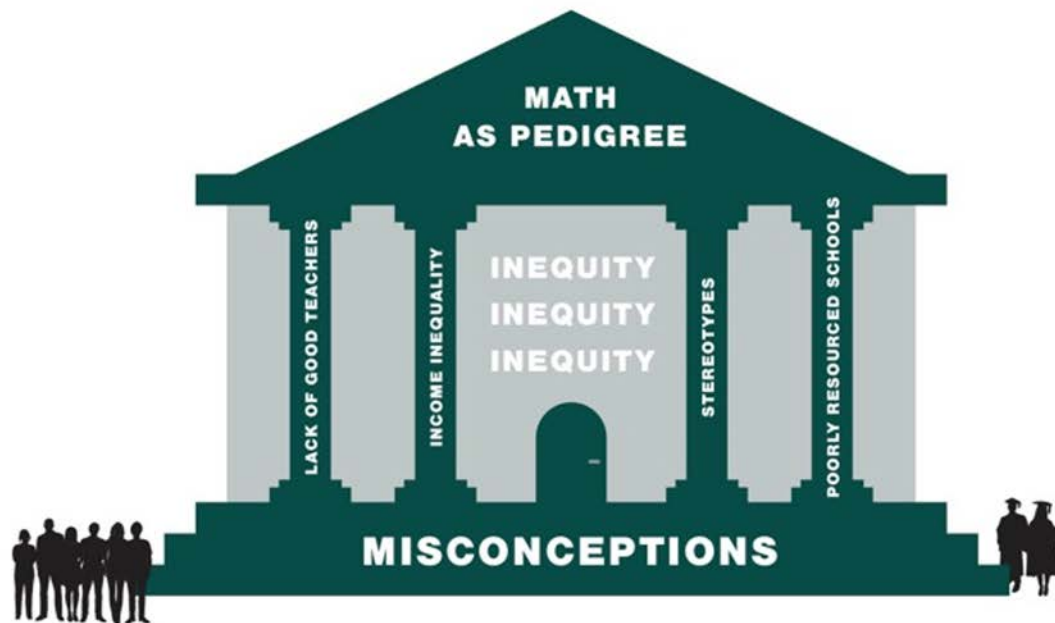
# PARTICIPANT INSTRUCTIONS

- When you'd like to ask a question, please use the chat box.
- Feel free to submit your questions throughout the webinar – we will get to as many as we can.
- Please share your experiences and challenges in the chat or write us after the webinar at [info@justequations.org](mailto:info@justequations.org).

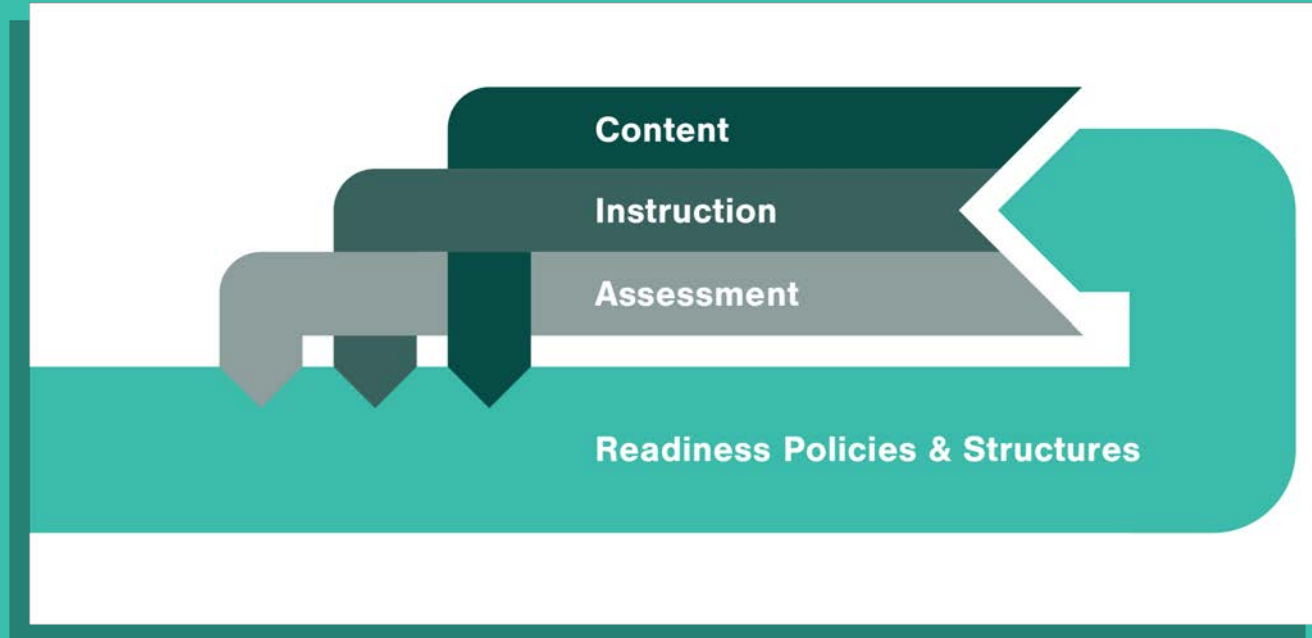
# JUST EQUATIONS

Re-conceptualizing the role of math in ensuring  
educational equity

# PREVAILING ARCHITECTURE OF MATH OPPORTUNITY



# EQUITY DIMENSIONS OF MATH EDUCATION



# MATH OPPORTUNITY POLICIES:

- Redesigning high school math pathways
- Rethinking postsecondary admissions policies
- Redesigning postsecondary math pathways/placement



# THE CURRENT STUDY

- Builds on our recent report, *Go Figure—Exploring Equity in Students' Postsecondary Math Pathway Choices* (2020)
- Examines the messages about math course-taking provided to college students
- Focuses on California Community Colleges (CCC) and California State University (CSU) campuses' websites





## CONTEXT: CSU & CCC MATH REFORMS

- Emphasize **placing students in college-level courses** and providing various forms of support.
- Use **multiple measures from students' high school records** to determine initial math placement level.
- Offer **diversified pathways** aligned with students' fields of study.
  - STEM
  - Statistics
  - Quantitative Reasoning or Liberal Arts

# REFLECTIONS: POLICY

Mónica Henestroza, Higher Education Advisor to Assembly  
Speaker Anthony Rendon



**What were your expectations for  
these reforms?**



“

Students need online resources that proactively and transparently support their academic progress.

*-Crossing Signals*

## CROSSING SIGNALS: GOAL

- To further understand the information students receive and how college websites can support equitable outcomes
  - Significance of websites has increased due to the pandemic.
  - Available information can affect students' ability to select appropriate math course/pathway.
  - Online information offers bird's-eye view of institutional responses to systemwide policies.

# EQUITY BARRIERS

- “Shapeless river” inhibits optimal decision-making
- History of tracking in mathematics
- STEM majors “stand apart in their relative exclusion” of students of color
- Assumptions by students and advisors/counselors



# CROSSING SIGNALS: METHODOLOGY

Reviewed 23 websites in April and May 2020 (18 CCC and 5 CSU)

## Focused on the following:



Information on math placement



Explanation of math pathway options



Location of information on math



Availability of math-specific supportive services



Guidance for undecided students

## SUMMARY OF FINDINGS: VITAL SIGNS

Four interconnected themes that are reminiscent of Judith Scott-Clayton's (2015) "shapeless river" analogy

### **Obscure signposts:**

- Navigating the websites and locating reliable information was not always obvious or intuitive.
- Encountered unwieldy search functions and outdated links.
- Limited information about available math pathways on their websites.



# SUMMARY OF FINDINGS

*(continued)*

## **False starts:**

- Few sites offered resources for students to explore and make connections between their interests and aspirations and programs and majors.
- Little information to assist students who had not yet settled on a major, or who were thinking of changing to/from STEM to SLAM or SLAM to STEM.

# SUMMARY OF FINDINGS

*(continued)*

## Wrong turns:

- References to current policies not always consistent, clear, or up-to-date.

# SUMMARY OF FINDINGS

*(continued)*

## Unexpected obstacles:

- Vestiges of prior remedial math policies and deficit-oriented language could lead students to make suboptimal decisions and delay their progress to completion.
- Contain messages that appear to discourage students from pursuing college-level courses and/or STEM math pathways.

# REFLECTIONS: MATH REFORM IMPLEMENTATION & COVID-19

**Toros Berberyan**, Citrus College

**Michael O'Sullivan**, San Diego State University



## CONTEXT

- How has your department responded to new math reform policies?
- What have been challenges pre- and post-COVID-19?
- How can your college's website support your efforts?

# Recommendations



Information on math placement



Explanation of math pathway options



Location of information on math



Availability of math-specific supportive services



Guidance for undecided students



# INFORMATION ON MATH PLACEMENT



- Use asset-based language and positive messaging that highlight the benefits of enrolling in college-level or transfer-level courses
- Eliminate mentions of assessments or tests

# LOCATION OF INFORMATION ON MATH



- Outline general education math options consistently across various webpages
- Research accessibility of information through focus groups, surveys, or beta-testing



# GUIDANCE FOR UNDECIDED STUDENTS



- Offer opportunities to explore career interests and the skills and knowledge needed, and their connection to available programs or areas of study
- Outline complete descriptions of various STEM, statistics, and liberal arts math pathway options

# EXPLANATION OF MATH PATHWAY OPTIONS



- Offer clear descriptions or program maps illustrating various math pathways and their alignment with majors
- Eliminate or limit remedial prerequisite courses and present college-level courses as default options for the majority of students

# AVAILABILITY OF MATH-SUPPORTIVE SERVICES



- Offer corequisites and other just-in-time approaches to support students' success in college-level courses
- Offer course- or pathway-specific tutoring
- Ensure that academic support services, such as tutoring, math labs, and other resources, are clearly listed on websites with information on how to access them

# REFLECTIONS: POLICY

Mónica Henestroza, Higher Education Advisor to Assembly  
Speaker Anthony Rendon



# POLICY

- What is most important for colleges to understand about how policies are made?
- In what ways can colleges inform statewide education policy?
- Are there lessons and recommendations that you would share with policymakers based on this research?

# Questions





# THANK YOU

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