



Creating **Growth**  
**Mindset Cultures** to  
Mitigate Inequalities  
in Higher Education

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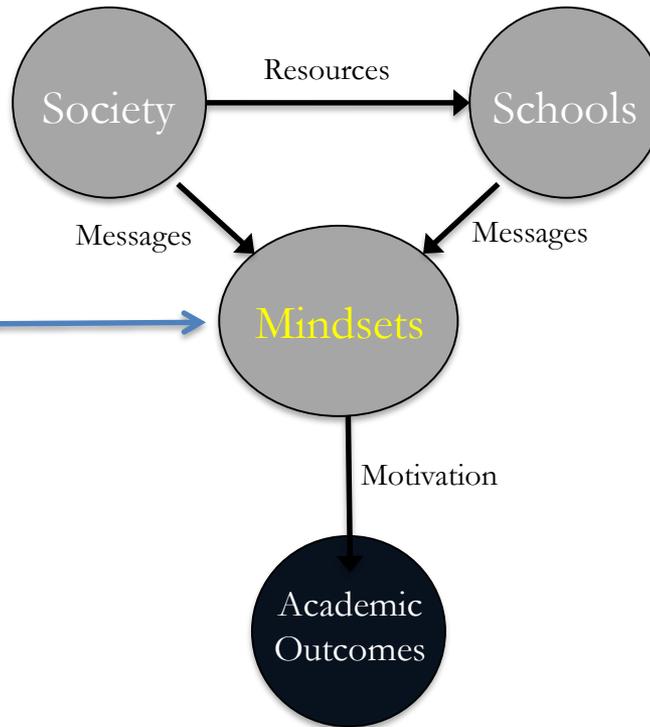
# Institutional Opportunities to Reduce Inequalities

- Direct-to-Student Interventions:
  - Addressing Belonging (Social Belonging Intervention)
  - Helping Students Cultivate Growth Mindsets (Growth Mindset Intervention)
- Institutional/Cultural Interventions:
  - Psychologically-wise Messaging to Students (Probation)
  - **Creating Growth Mindset Cultures Inside and Outside of the Classroom**

# We can intervene at multiple points to remedy maladaptive mindsets



**Intervene through:**  
Opportunity structures  
Stereotypes  
Prejudice & Bias



**Intervene through:**  
Direct-to-students programs.  
**Example: Social-Belonging exercise**



**Intervene through:**  
Student messaging (Probation)  
Curriculum/Pedagogy  
Assessment  
**Example: Growth Mindset Culture Messages and Practices**





**Carol Dweck**

# Mindsets



People's personal beliefs about the malleability of human characteristics

- Intelligence/intellectual ability
- Personality
- Athletic ability
- Musical ability...

# 2 Types of Mindsets



## Fixed Mindset:

- Intelligence and ability are fixed traits
- They can't be changed; either you have it or you don't
- *E.g., "I'm just not a math person."*

# 2 Types of Mindsets



## Growth Mindset:

- Intelligence and ability are malleable qualities
- A potential that can be developed and improved by effort, applying the right strategies, and seeking help
- *E.g., “I just haven’t mastered math **yet**”*

# Personal Mindset Beliefs



Predict many motivational and behavioral outcomes

The degree that people might:

- Fear failure
- Hide mistakes
- Cheat (to demonstrate their ability)
- Exert effort
- Relish (or shy away from) challenges

# Mindset 2.0: From Personal Mindsets to Mindset Culture



- Personal beliefs about the malleability of human characteristics (Dweck, 1996; Dweck & Leggett, 1988)
  - **Fixed Mindset**: abilities are **fixed**
  - **Growth Mindset**: abilities are **malleable**
- **Perceptions of professors' mindsets** influence men & women's performance & experiences of identity threat in STEM

# Perceived Mindsets of STEM Ability



- Fixed Mindset
  - STEM abilities are *fixed*
  - STEM abilities can't be changed; either you have them or you don't
  - **Inference: Professor may expect men > women**
- Growth Mindset
  - STEM abilities are *malleable*
  - STEM abilities can improve with effort and learning
  - **Inference: Professor may expect men = women**

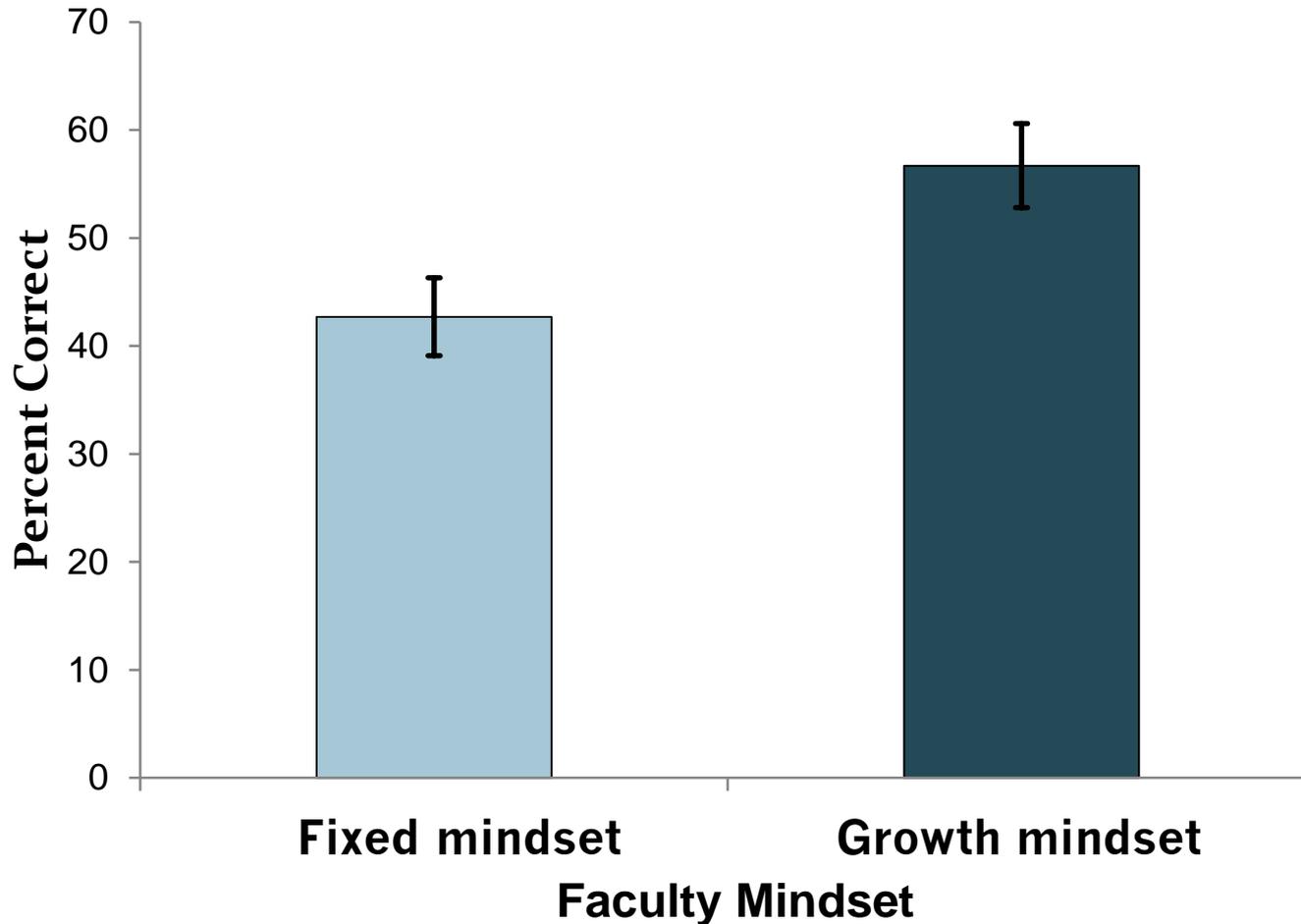
# Perceiving a fixed faculty mindset of ability creates a context of stereotype threat



He thinks  
women just  
don't have  
it...

- Risk of confirming a negative stereotype about one's group (Steele & Aronson, 1995)
- Effects of stereotype threat:
  - Women underperform relative to men on “diagnostic” math tests (Spencer, Steele, & Quinn, 1997)

# Women's Math Performance



$F(1, 34) = 6.952, p = .013$

Murphy, Garcia & Zirkel (in prep)



Exposure to the *growth mindsets* of STEM faculty **buffers women's math performance** relative to exposure to STEM faculty who espouse *fixed mindsets*.

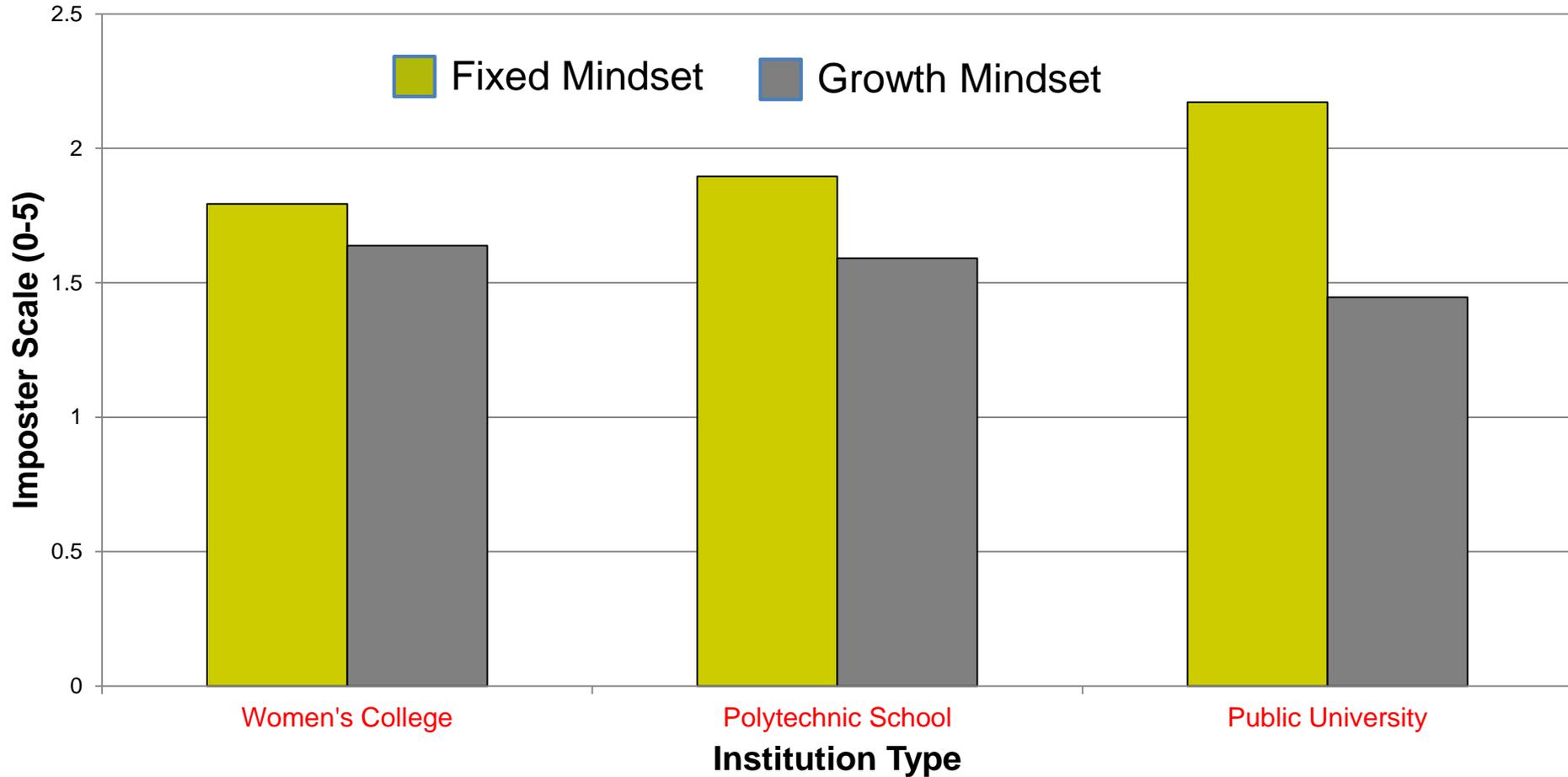
# Experience Sampling in STEM and non-STEM Classrooms



Within STEM classrooms, what are the effects of perceived faculty mindsets?

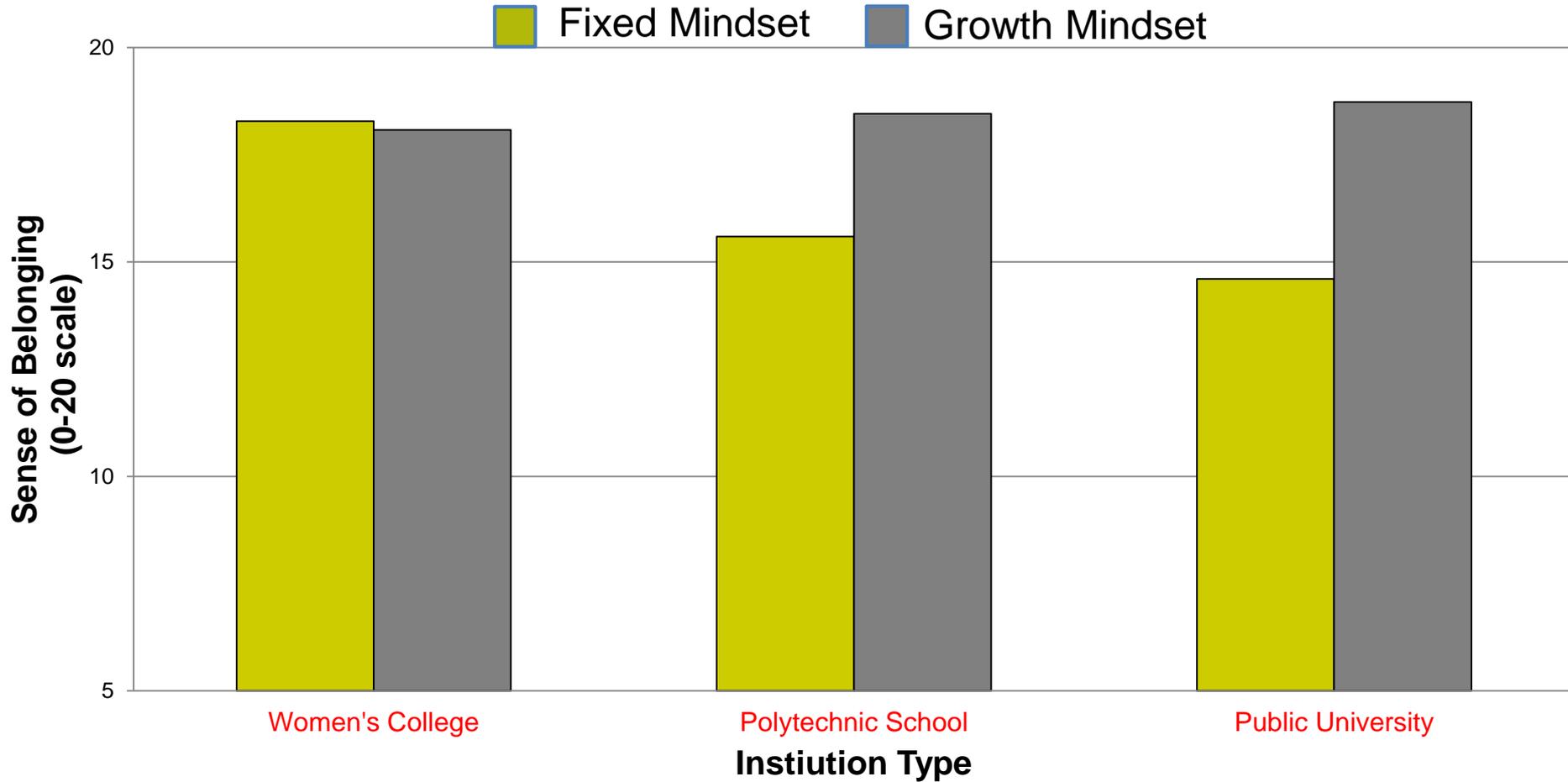
-Institutional differences?

# Perceived faculty mindsets on women's **imposter** feelings at 3 institutions



Institution X Perceived Lay Theory Cross-Level Interaction,  $B = .31$ ,  $SE = .10$ ,  $p = .002$

# Perceived faculty mindsets on women's sense of belonging at 3 institutions

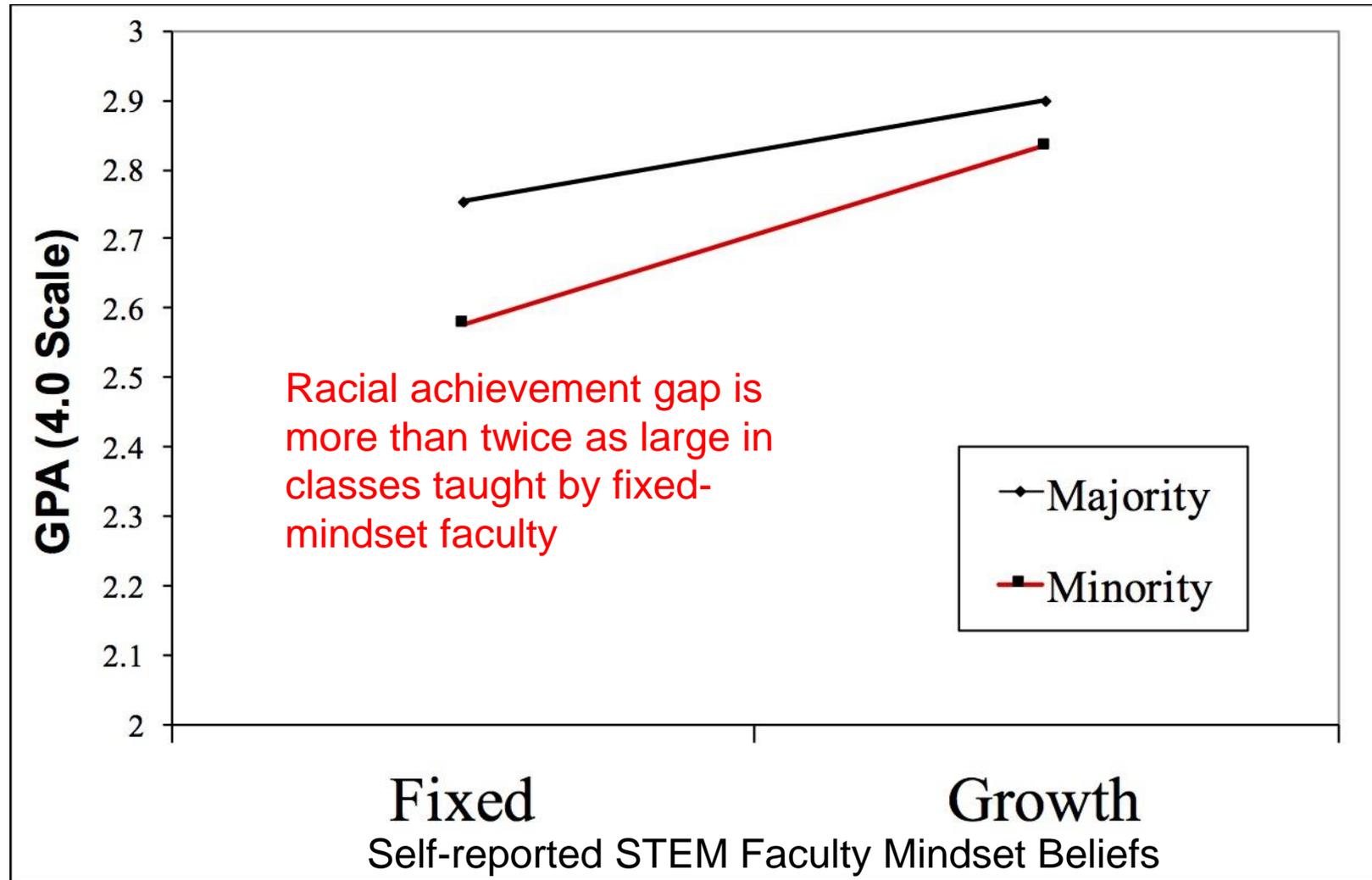


Institution X Perceived Lay Theory Cross-Level Interaction,  $B = -1.87$ ,  $SE = .61$ ,  $p = .002$

Not just about students' perceptions...



Larger racial achievement gaps in (self-reported) fixed faculty mindset classrooms



150  
STEM  
faculty

602  
courses

7  
semesters

15,214  
students

# Implications



- Situational cues shape students' experiences in academic environments
  - Fixed faculty mindsets
- Instructors who communicate a growth mindset of ability:
  - Reduce identity threat
  - Increase comfort and performance



# How do students come to know (perceive) their professors' mindsets?

- Focus groups data
- Thematically grouped and analyzed
- **4 Critical time points: Messages & Behaviors**
  - Initial, explicit messages about limited/exclusive vs. expandable/developing abilities
  - Opportunities for practice and feedback
  - Responses to poor performance
  - End-of-semester comments: who should continue

# Current and Future Work Inside Classroom



- Videotaping 60+ Intro STEM classes
  - Faculty self-reported mindset
  - Students' perceptions of the professor's mindset
  - Verbal/nonverbal faculty behavior
- Over 1300 faculty interested in participating at a single R1 university!

# Current and Future Work Inside Classroom



- Videotaping 60+ Intro STEM classes
  - Faculty self-reported mindset
  - Students' perceptions of the professor's mindset
  - Verbal/nonverbal faculty behavior
- Designing and testing faculty-focused interventions
  - Educate faculty about role of mindset culture
  - Help identify and adopt 2-3 flagship practices to create a growth mindset culture in classroom
  - Evaluate intervention
- New faculty orientation; Graduate student teaching orientation; ~25 most influential faculty

# Current and Future Work Outside Classroom



Working with Advisors, Administrators, Staff to  
Create Growth Mindset College Cultures

- Educate about role of mindset culture and how it is communicated to students
- Help identify places where growth mindset messaging can infuse their practice and interactions with students
- E.g., choosing courses, selecting majors, navigating financial aid, convocation addresses

# Conclusion



- Situational cues shape students' experiences in academic environments
  - Fixed mindset culture
- Instructors, Administrators, Advisors, and Staff who communicate a growth mindset of ability:
  - Reduce identity threat
  - Increase comfort and performance
  - Reduce racial and gender inequalities



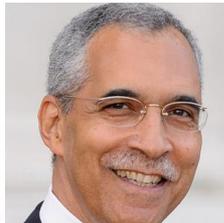
- What if we created environments that minimized threats to belonging and potential?
- What if we reduced interpersonal and institutional signs that you don't belong and can't cut it?
- What would our inequalities look like? How much human potential could be unleashed?

# Thank You



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Thank You

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