

# Optimizing Math Pathways and Corequisites

## *Holistic Supports for Students at the Institution, Department, and Classroom Levels*

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April 07, 2022

@dcmathpathways

#mathpathways

@utdanacenter

## The Who

- Institution
- Department
- Classroom

## The What

- Structures (e.g., math pathways and corequisites)
- Services/Resources
- Content and pedagogy

## DCMP Vision

The DCMP seeks to ensure that **ALL** students in higher education will be:

**Prepared** to use mathematical and quantitative reasoning skills in their careers and personal lives,

**Enabled** to make timely progress towards completion of a certificate or degree, and

**Supported** and **empowered** as mathematical learners.

# Mathematics Pathways Celebration



- What is going well?
- What is not going as well?
- What are your next-generation questions and concerns about math pathways (and corequisites)?

HAPPY ANNIVERSARY!

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## The What

- Structures (e.g., math pathways and corequisites)
  - Are all students in the right math pathway?
  - Is your institution at 100% coreqs for identified students?
- Services/Resources
  - Are the services offered in a coherent manner?
  - Are faculty and students aware of them?
- Content and pedagogy

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In what ways did the pandemic:

- Reveal an area of the student support network that was working great?
- Reveal gaps in your student support network?
- How did you respond to the revelation of those gaps?



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From CCCSE:

- About 1/3 of students report financial situation has worsened.
- About 1/2 report their college does not have services to help students deal with stress

[https://cccse.org/sites/default/files/CCSSE\\_COVID.pdf](https://cccse.org/sites/default/files/CCSSE_COVID.pdf)



The Continued Impact of COVID-19  
on Community College Students



# QUIZ TIME

- What support services does your campus provide?
- Do you know where they are?
- Are they all in one place?
- Are they equitably utilized?

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From the Hope Center and Amarillo College:

- Culture of caring
- One stop shop for services
- Shared responsibility

<https://hope4college.com/supporting-community-college-completion-with-a-culture-of-caring-a-case-study-of-amarillo-college-2/>



Supporting the Whole Community College Student:  
The Impact of Nudging for Basic Needs Security

Sara Goldrick-Rab, Kallie Clark, Christine Baker-Smith, and Collin Witherspoon

October 2021

Instead of students going to multiple offices for different purposes, Georgia State consolidated “all those resources under *one request process* so that students *only have to tell their story one time* and then we can connect them with all of the resources that they may need.”

Heather Housley  
AVP for Student Engagement at Georgia State  
CCA Webinar July 2020

<https://www.youtube.com/watch?v=85k2bKGuWAU>

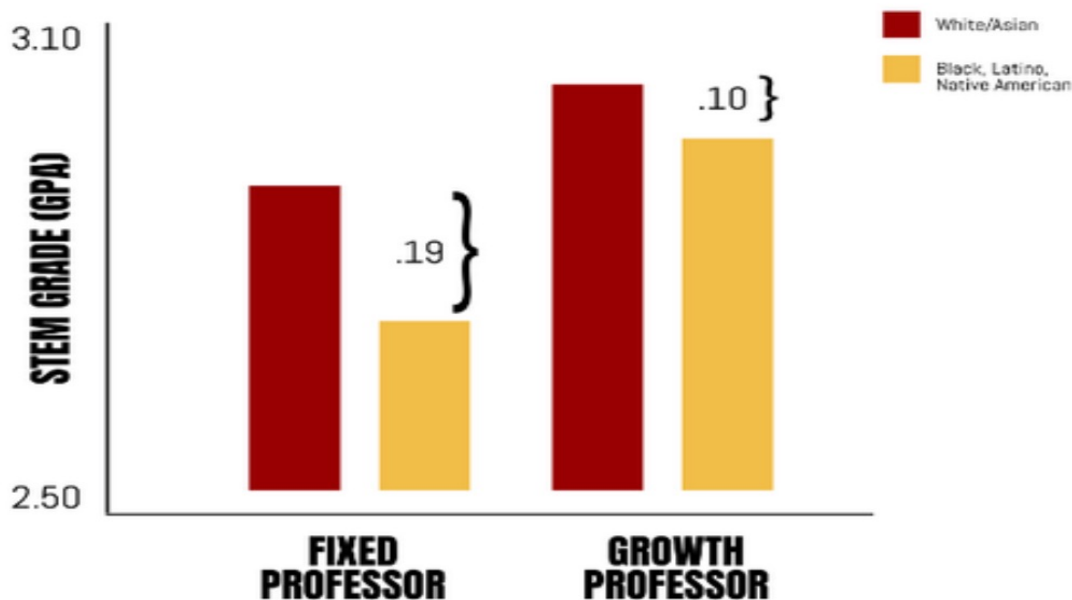
## The What

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  - Are the services offered in a coherent manner?
  - Are faculty and students aware of them?
- Content and pedagogy
  - Are faculty working together?
  - Does content include success strategies and how to access resources?

# Effect of faculty fixed mindsets

## The findings:

While all students perform better when STEM professors endorse a growth mindset belief, the racial achievement gap is almost halved when professors endorse a growth-mindset belief.



Canning, Muenks, Green, Murphy, *Science Advances*, 15 Feb 2019

## Next Steps

### The Who

- Institution
- Department
- Classroom

### The What

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## Corequisites – Distinguishing Factors of Success

Regardless of race/ethnicity, gender, math pathway, preparation level, etc.:

- 2 or 3 hours of support are better than 1 hour
- Cohort model has better results, likely due to alignment issues in the co-mingled models
- Academic mindsets

<https://completega.org/usg-corequisite-virtual-workshop-reviewing-progress>



## DCMP Principles - Empowering Students as Learners

The DCMP advocates **for instructional practices and curricular design** that

- Help students develop the skills, attitudes, and beliefs necessary to be successful, independent learners
- Help students develop persistence and skills over time. Further, students develop communication skills and have opportunities to build relationships with peers and faculty

The design standards and their research base can be found on our resource site:

[www.dcmathpathways.org](http://www.dcmathpathways.org)