

Governors State University

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GSU Research Day

Research Week April 5-9, 2021

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Apr 9th, 1:00 PM - 1:30 PM

### Supporting Students in Elementary Statistics

J. Christopher Tweddle

*Governors State University*, [ctweddle@govst.edu](mailto:ctweddle@govst.edu)

Maxwell Luetkemeier

*Governors State University*, [mluetkemeier@govst.edu](mailto:mluetkemeier@govst.edu)

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*GSU Research Day*. 7.

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# Supporting Students in Elementary Statistics

**Maxwell Luetkemeier,**  
Research Analyst, OIRE

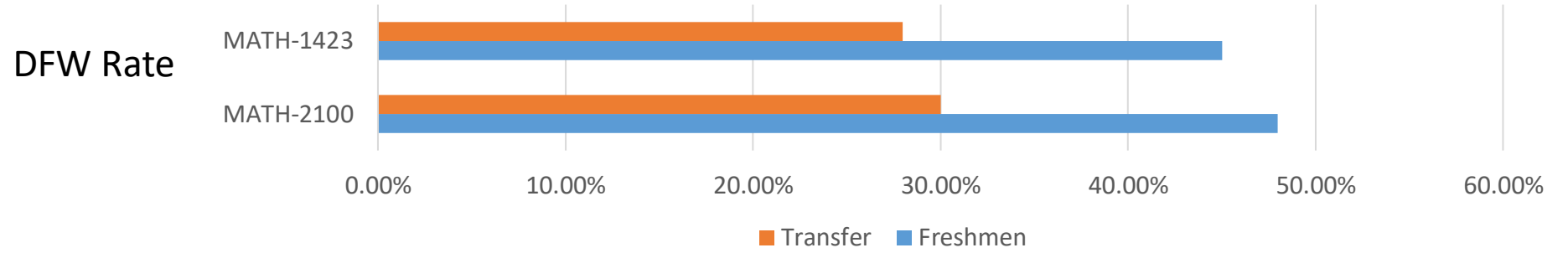
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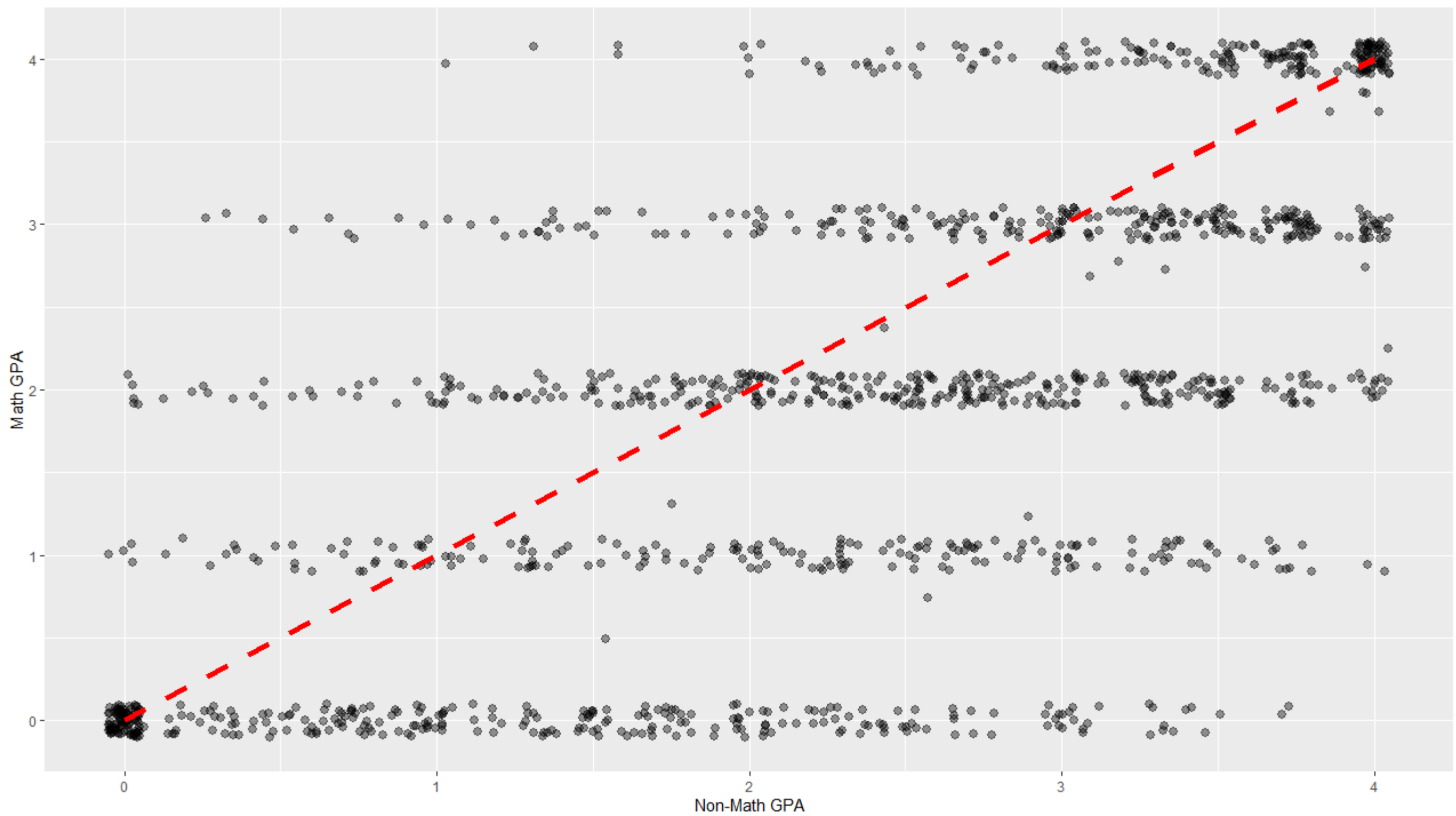
**J. Christopher Twedde,**  
Associate Professor of Mathematics  
Associate Director of General Education

# Math: An Obstacle to Success?

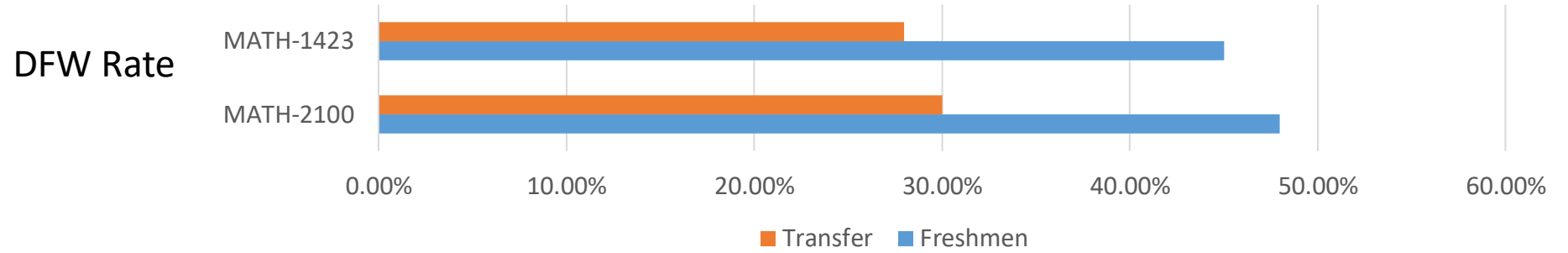
- Math is “the most significant barrier” to finishing a degree (U.S. Department of Education, 2017)
- 8 of the top 10 careers require math or science (US News, 2021)
- 40% of incoming freshmen are ready for college math (CAPR 2017)
- 50% of students fail College Algebra at 2- and 4-year colleges (Common Vision, 2015)
- National success rate for gateway math: 65—75%

# Math Performance Measures

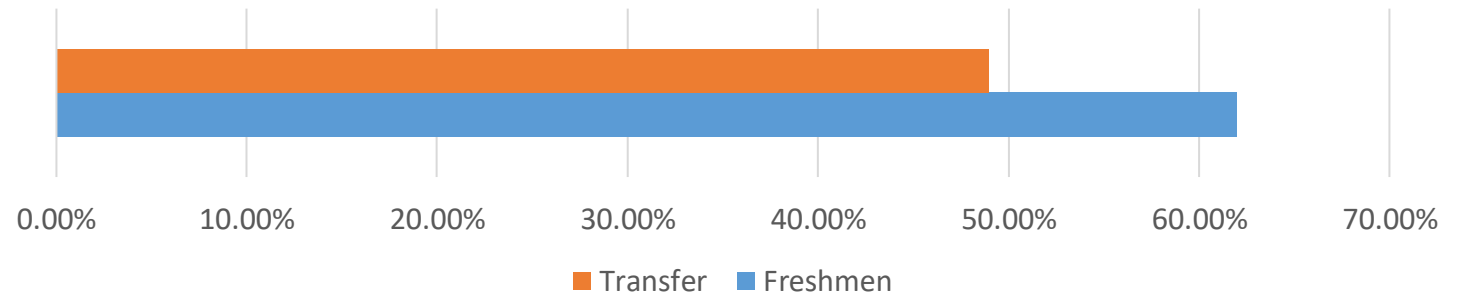




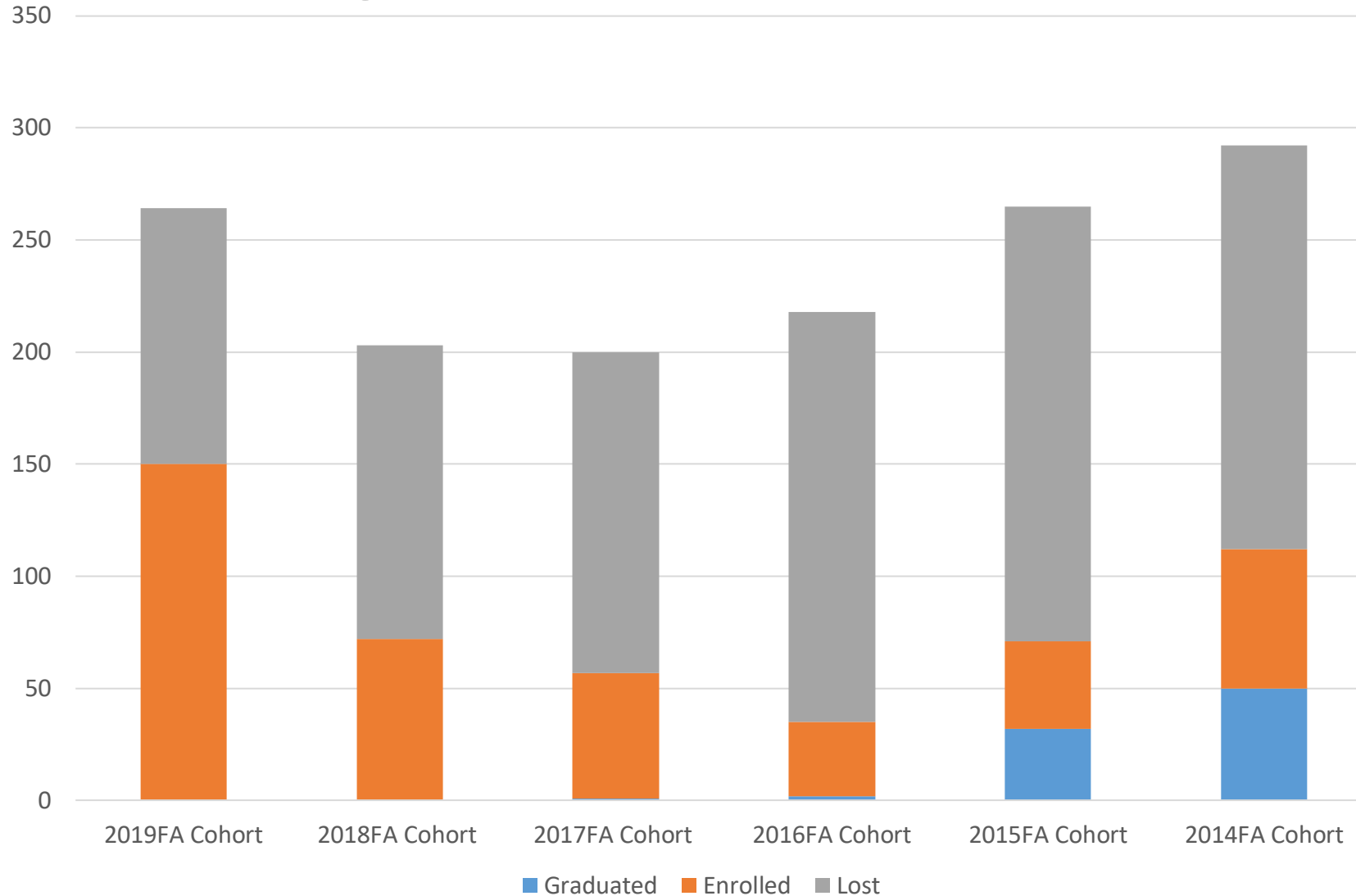
# Math Performance Measures



Percentage of students with lower math grades



# Freshmen Progression



# What goes wrong?

- Developmental Coursework (AKA, remediation)
  - BAD! Only 20% eventually complete college-level math (Bailey, Jeong, & Cho, 2010)
  - Overwhelming impacts minority and underserved students (DCMP)
- Poor placement practices:
  - Single standardized testing under-places students
  - 25% could pass a college-level mathematics course with a B or better (Scott-Clayton 2012)
- “Algebra for All”

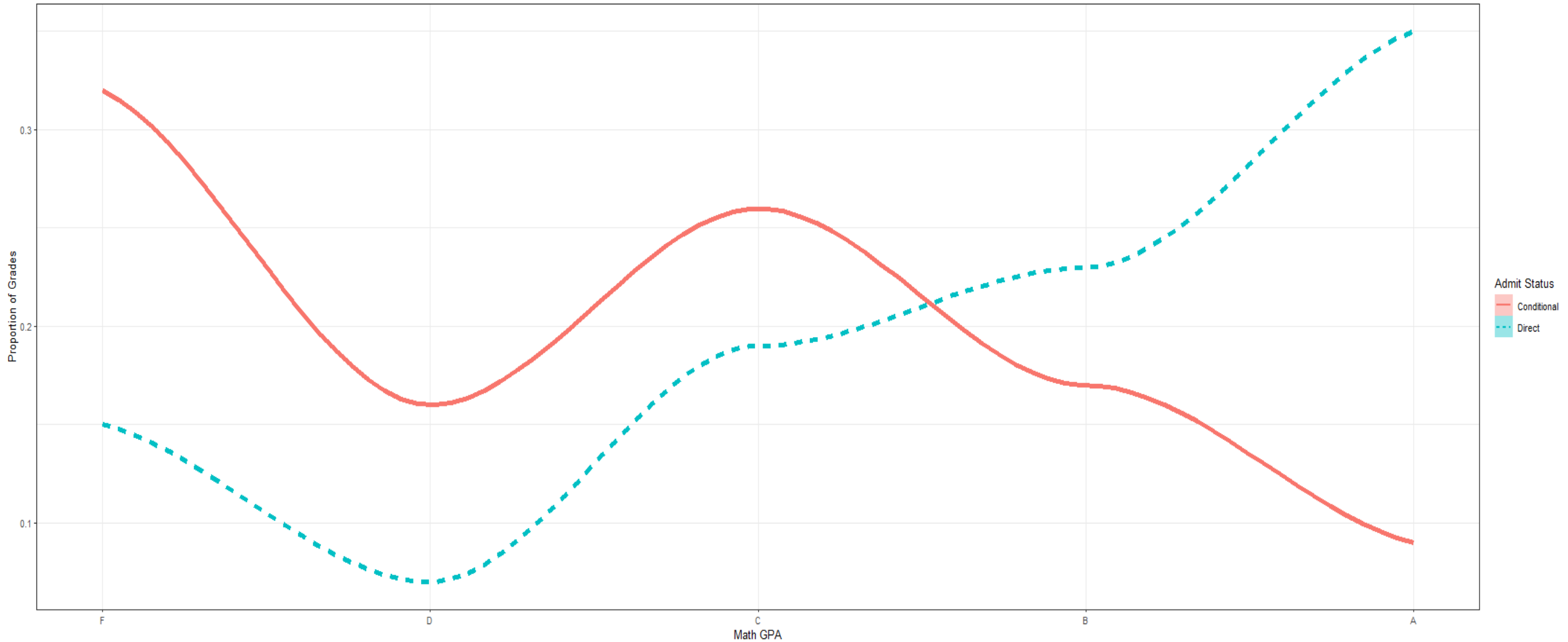


# What works better?

- Multiple measures for placement
- Multiple pathways: Statistics & Quantitative Literacy
- Co-requisite Support
- Eliminate long developmental sequences
  - Place students directly into college courses, or
  - Limit to 2-course sequence

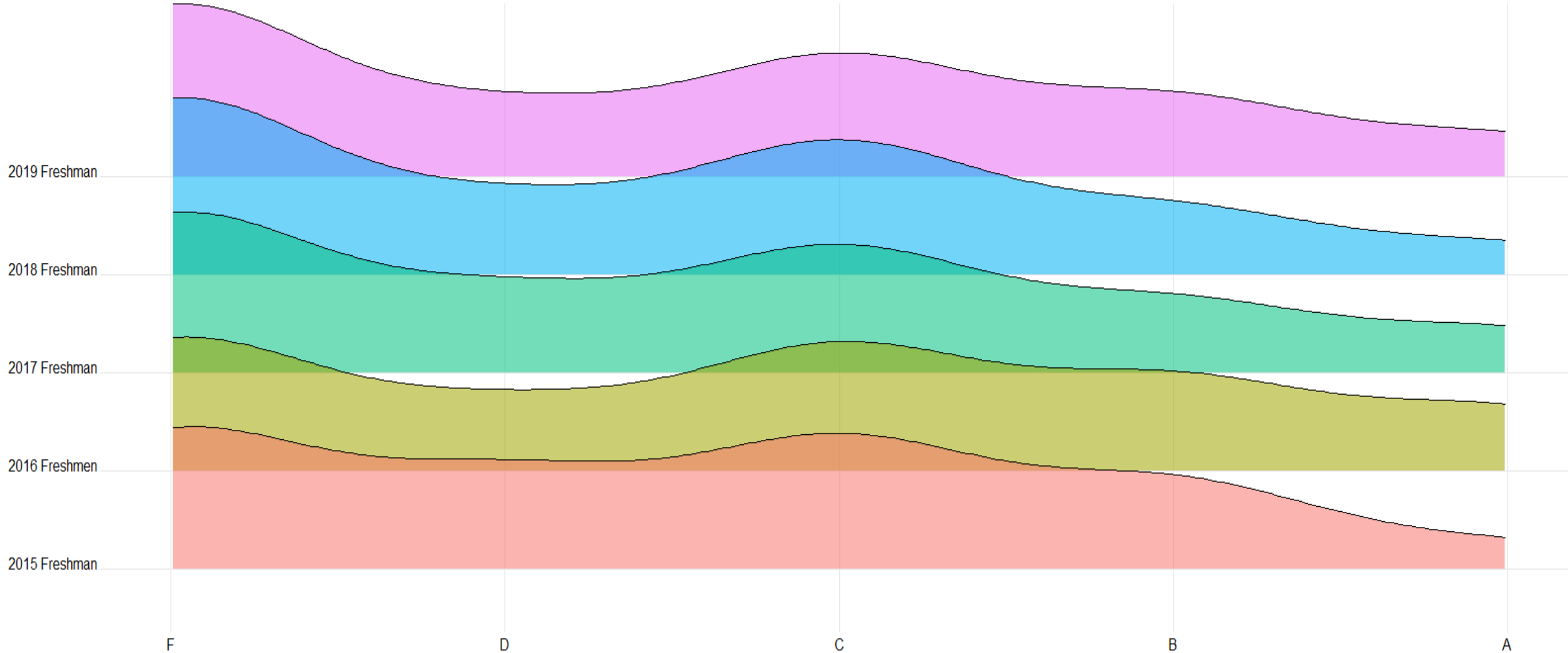
# Reaching high-risk students

Distribution of Math Grades by Admit Status



# Reaching at-risk students

Conditional Admit Grades by Cohort



# GSU implements multiple practices

- Multiple pathways
  - Math 2100: Elementary Statistics
  - Math 2137: Mathematical Foundations
  - Math 2281: Applied Calculus
- Student support
  - Supplemental Instruction
  - Smart Start (math and writing)
  - Mastering College
- Ease financial burden

# What's next?

- Statistics Corequisite (Spring 2021 pilot)
  - Embedded Peer Mentoring
  - Relevant, engaging, real-world data analysis projects
  - Individualized, guided and supported self-study (Emporium Model)
- Multiple measures for placement
  - Transitioning to holistic admission
  - Reduced reliance on standardized test scores
- Develop robust tutoring support
- Gateway Course (1 semester) for students needing additional support

# Thank you

- Questions?
- Resources:
  - “The Case for Mathematics Pathways” The Charles A. Dana Center ([dcmathpathways.org](http://dcmathpathways.org))
  - Complete College America
  - Community College Research Center (Columbia University)
  - Center for the Analysis of Postsecondary Readiness (CAPR)