

Reenvisioning the Pathway to Calculus

Dana Center Mathematics Pathways

The Dana Center Mathematics Pathways (DCMP)¹ offers a unique opportunity to evaluate the effectiveness of the course sequence that has traditionally led from developmental mathematics to calculus. The Dana Center has started a process to design a new course sequence called the *STEM Prep Pathway*.

Why a new pathway?

A new opportunity . . .

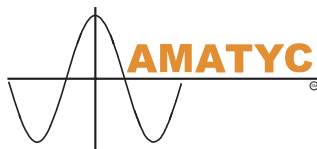
The DCMP seeks to give students access to mathematics that is appropriate to their academic and career goals. Many non-STEM students who have historically been enrolled in college algebra or precalculus will now move into statistics or quantitative reasoning courses. This allows us to reenvision the “algebra-intensive” sequence in terms of what will best serve students going on to calculus or needing strong algebraic skills required in technical fields.

A professional obligation . . .

As mathematics educators, we have an obligation to periodically examine our own practice. Recent research about the conceptual understanding and skills necessary for calculus and how students learn can help us design a more effective and efficient pathway.

Drawing upon faculty knowledge and leadership . . .

The Dana Center’s design and development process for the STEM Prep Pathway draws on contributions from a diverse group of researchers and faculty from two- and four-year colleges and universities, including representatives of professional associations. The American Mathematical Association of Two-Year Colleges (AMATYC) strongly supports the project and will host a summit at the 2015 AMATYC National Conference, in order to share the findings.



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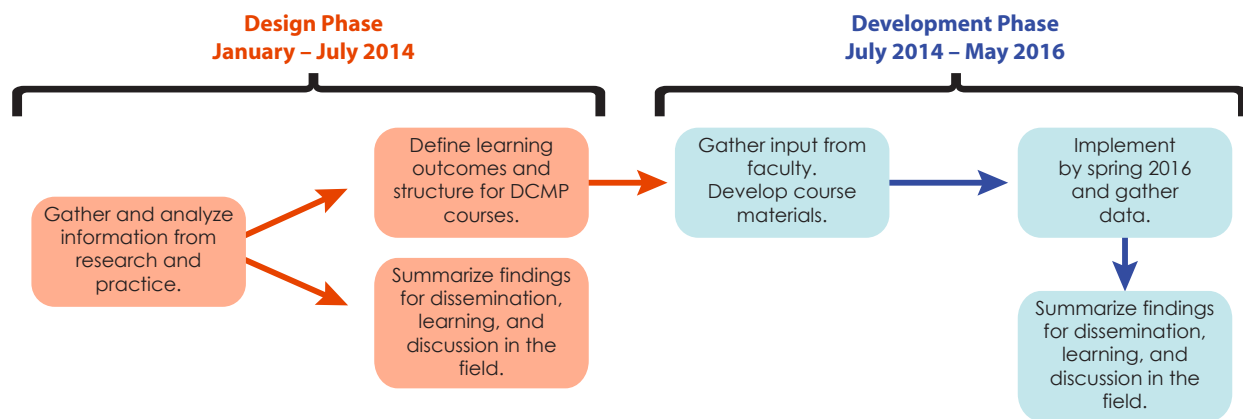
Michael Pearson
Executive Director, MAA



Michael Pearson, Executive Director of the Mathematical Association of America (MAA) sees this work connecting to the MAA’s efforts to improve mathematics programs through the Curriculum Renewal Across the First Two Years (CRAFTY) subcommittee and the Characteristics of Successful Programs in College Calculus study. “The MAA’s efforts to strengthen the undergraduate program in mathematics remain central to who we are as an organization. Efforts such as those of the Dana Center are essential to understanding how to help students succeed in school and beyond,” said Pearson.

¹Find more information on the DCMP at www.dcmathpathways.org.

The Dana Center has organized the work into two phases, both structured to engage faculty directly in the work and to provide opportunities for general input.



In the Design Phase, two working groups are collecting and analyzing information from research and practice to identify content and structures that prepare students for success in calculus. The findings will be summarized and shared with the field to spur discussion, innovation, and further research. The Dana Center will then use the information to inform the Development Phase, which consists of writing curriculum for the DCMP STEM Prep courses.

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To receive updates on events and releases of materials through the monthly Dana Center Higher Ed In Brief, email us at dcmathpathways@austin.utexas.edu.