Who we are

The Charles A. Dana Center works to strengthen American education systems so that they provide a reliable path to upward mobility for all students. Our work focuses on mathematics and science education, with an emphasis on strategies for improving student engagement, motivation, and persistence. We are dedicated to nurturing students’ intellectual passions and ensuring that every student leaves school prepared for success in postsecondary education and the contemporary workplace.

We have significant experience and expertise in the following:

- Standards development and implementation, systemic reform, and district capacity building
- Research, content development, and publishing
- K–14 course design and development, learning networks, and programs for bridging critical transitions
- Education leadership, instructional coaching, and teaching

How we work

We advocate for high academic standards and build the capacity of education systems to ensure that all students can master the content described in these standards. We help our partners adapt promising research to meet their local needs.

We develop innovative curricula, tools, protocols, instructional supports, and professional development systems that we implement through multiple channels, from the highly local and personal to the regional and national. Our work includes providing long-term technical assistance to school and district leadership teams, advising community colleges and states, and collaborating with national partners on work such as our Urban District Leadership Networks, Academic Youth Development project, and Advanced Mathematical Decision Making course.

Our strategies respect unique local contexts and preferences, but three key approaches guide our work:

1. We translate scholarly research into practical applications that can be put to immediate use in classrooms, schools, districts, and communities to improve teaching and learning for all.
2. We work across disciplines to design and synthesize new approaches to difficult problems in education—drawing, for example, on current practices in neuroscience, psychology, and the learning sciences.
3. We seek out promising practices to reengineer—in collaboration with the practices’ originators and other constituencies—for use at scale.
The problem

Developmental education is intended to help underprepared students gain the skills needed for college success. These developmental courses are much needed—about 60 percent of community college students place into one or more developmental courses (Atwell, 2006). In some community colleges, more than 90 percent of students must enroll in such courses (Kerrigan and Slater, 2010).

Yet, developmental education is a burial ground for the aspirations of a myriad of students seeking to improve their lives through education. The problem is urgent:

- A growing number of studies indicate that about 55 percent of all community college mathematics enrollments are in noncredit-bearing remedial courses (Bailey, Joeng, and Cho, 2010; Letzer et al., 2007).
- Only about 25 percent of the students referred to developmental education even attempt a “gateway” college credit course within their first academic year (Achieving the Dream, 2011).
- At many Texas community colleges, only very small percentages of students who begin in the lowest levels of developmental mathematics ever complete a gateway course successfully.
- Developmental math students in Texas (32 percent) are less likely to transfer or complete a certificate, license, or degree than are students who met college readiness standards (62 percent; Texas Higher Education Coordinating Board, 2011).

Our response

The Dana Center recognized the need to accelerate developmental mathematics courses and ensure developmental mathematics content aligns to the programs and careers student seek, while increasing the quality of materials for faculty and students. We began creating a set of new academic pathways to enable students to address mathematical deficiencies and complete a credit-bearing, transferable college mathematics course, all in one year. This initiative, the New Mathways Project™, supports the development and implementation of three mathematics courses:

Statway, Quantway, and STEMway™ (described below). Statway and Quantway are under development. We are planning for the development of STEMway and a New Mathways Success Course.™

Each course in the New Mathways Project is designed to aligned to the mathematics that students need for their majors and careers.

- Statway is a yearlong statistics-intensive pathway that teaches statistics along with the requisite arithmetic and algebra so that students interested in humanities or social sciences move directly to the mathematics that is relevant to their educational and career goals.
- Quantway is a yearlong pathway that provides students with foundational quantitative literacy that enables them to then take a transferable, credit-bearing general education mathematics course that will be meaningful to their professional, civic, and personal lives.
- STEMway™ is a yearlong pathway designed as a strong alternative to the traditional community college mathematics sequence that leads to introductory calculus.
• The New Mathways Success Course™ is envisioned as a one-semester course students will take concurrently with the appropriate Mathways course. This Success Course will help students develop productive persistence and other beliefs, skills, and behaviors to succeed in college.

To foster the implementation and spread of Statway and Quantway, we formed partnerships with national organizations that share our mission to increase college completion, including the Carnegie Foundation for the Advancement of Teaching, with whom we cocreated the Statway and Quantway courses. In coordination with other community college and higher education initiatives, we are also working to create the enabling conditions for the redesign of developmental education at scale.

Change of this magnitude requires addressing the interrelated set of problems that surround core curriculum and instructional practice, including policies and practices regarding placement, advising, articulation and transfer, professional learning for faculty, and financing. We are working with individual colleges, such as South Texas College, the Statway pilot colleges (including Austin Community College, El Paso Community College, Houston Community College, Richland College of the Dallas Community College System, and Northwest Vista Community College of the Alamo system), and with groups of faculty such as the mathematics chairs from all 50 community colleges in the state. These engagements are laboratories for our course development work, and we, in turn, provide the technical assistance necessary for colleges and faculty to move forward.

Next steps

We believe it is critically important to ensure coherence among the various national and state change initiatives designed to increase the number of students who complete credentials with labor market value. The Dana Center is committed to working in partnership to improve developmental education, especially in Texas. We can be most effective in this role by developing innovative curricular materials and closely coordinating and aligning our work with other large-scale initiatives in this arena.

We’ve set three strategic priorities for which the Dana Center’s strengths complement those of other important actors in community college reform and on which we will focus our higher education work in the next three to five years.

**Strategic Priority: The New Mathways Project Course Design and Delivery:** Complete development of field-ready Statway, Quantway, and STEMway courses, which will serve as strong alternatives to the traditional community-college mathematics course sequence.

**Strategic Priority: Strategies for Supporting Student Success:** Develop an evidence-based student success course that supports students transitioning into college-level mathematics courses and explicitly challenges deep-seated, debilitating misconceptions about the nature of mathematical learning.

**Strategic Priority: Support for Scaling Up New Initiatives:** Develop technical assistance infrastructure to support colleges adopting new pathways to and through credit-bearing, transferrable courses in mathematics.