Modernizing Mathematics Programs

Webinar hosted by the Center for P-20 Engagement, Northern Illinois University
August 21, 2017
Presenters

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• Kathleen Almy, Northern Illinois University, KAlmy@niu.edu
• Ashley Becker, Illinois Community College Board, ashley.becker@illinois.gov
Introducing the Dana Center

The Charles A. Dana Center at The University of Texas at Austin seeks to increase equity and access for all students, working primarily in the fields of mathematics and science.
Definition of *math pathway*

... a mathematics course or sequence of courses that students take to meet the requirements of their programs of study.

The concept of math pathways applies to college-ready and underprepared students.
Reflection

What brings each of us here today?
Evolution of math pathways in higher education: Two issues converged
Once upon a time

Mathematics was a specialized subject.

- Students needed Calculus or they didn’t need math at all.
- Entry-level mathematics focused on preparing students for Calculus.

Mathematicians and mathematics educators made the case that math was essential for all educated people in modern society.
Where did those students go?

College Algebra became the default gateway course.


<table>
<thead>
<tr>
<th>Course</th>
<th>2000</th>
<th>2005</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Algebra</td>
<td>173,000</td>
<td>206,000</td>
<td>19%</td>
</tr>
<tr>
<td>Statistics</td>
<td>71,000</td>
<td>111,000</td>
<td>56%</td>
</tr>
<tr>
<td>Math for Liberal Arts</td>
<td>43,000</td>
<td>59,000</td>
<td>37%</td>
</tr>
<tr>
<td>Calculus I</td>
<td>53,000</td>
<td>51,000</td>
<td>-4%</td>
</tr>
</tbody>
</table>

Source: College Board of Mathematical Sciences 2005 Survey.
Reaffirming the role of Algebraic-Intensive Courses

Mathematical Association of America, 2004 CUPM Curriculum Guide

“Unfortunately, there is often a serious mismatch between the original rationale for a college algebra requirement and the actual needs of students who take the course.”

AMATYC Position Statement on the Appropriate Use of Intermediate Algebra as Prerequisite

“Prerequisite courses other than intermediate algebra can prepare students for courses of study not leading to calculus.”
Who takes Calculus?

2-YEAR COLLEGE STUDENT ENROLLMENT INTO PROGRAMS OF STUDY

- Require Calculus: 28%
- Do not require Calculus: 72%

4-YEAR COLLEGE STUDENT ENROLLMENT INTO PROGRAMS OF STUDY

- Require Calculus: 30%
- Do not require Calculus: 70%

Source: Burdman, 2015; Chen & Soldner, 2013
Mounting consensus on content options

Increased access to multiple gateway math courses
Small set of pathways aligned to meta-majors
The second issue

Math Pathways

Math Content

Underprepared Students
Concerns about long developmental sequences

Student Progression Through the Developmental Math Sequence:

100% (63,650) Referred to 3+ Levels of Remediation

26% Did Not Enroll in Next Course

15% Level 3+ Course

7% Level 2 Course

4% Level 1 Course

2% Gatekeeper

11% Passed Gatekeeper Math

9% Did Not Pass/Complete Course

22%

Bailey, Jeong & Cho, 2010
Multiple models for acceleration

- Modularization
- One-year pathway
- One-semester corequisite
The two issues converge

Math pathways that are aligned to programs of study AND accelerated
What we have learned

Mounting evidence shows most students benefit from corequisite models.
Completion of Gateway Math by ACT Sub-score
Community College Pre-requisite Model vs. Co-requisite Model

Results of TBR Co-requisite Full Implementation

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre-requisite Model AY 2012-13</th>
<th>Full Implementation - Fall 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>2.7%</td>
<td>27.1%</td>
</tr>
<tr>
<td>14</td>
<td>3.8%</td>
<td>33.4%</td>
</tr>
<tr>
<td>15</td>
<td>6.8%</td>
<td>42.6%</td>
</tr>
<tr>
<td>16</td>
<td>11.5%</td>
<td>51.1%</td>
</tr>
<tr>
<td>17</td>
<td>19.7%</td>
<td>61.1%</td>
</tr>
<tr>
<td>18</td>
<td>25.6%</td>
<td>65.9%</td>
</tr>
<tr>
<td>No ACT</td>
<td>13.1%</td>
<td>43.6%</td>
</tr>
<tr>
<td>Total</td>
<td>12.3%</td>
<td>51.7%</td>
</tr>
</tbody>
</table>
Completion of Gateway Math by ACT Sub-score

Community College Pre-requisite Model vs. Co-requisite Model

Results of TBR Co-requisite Full Implementation - URM Students

<table>
<thead>
<tr>
<th>ACT Sub-score</th>
<th>Pre-requisite Model AY 2012-13</th>
<th>Full Implementation- Fall 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>1.7%</td>
<td>32.8%</td>
</tr>
<tr>
<td>15</td>
<td>5.1%</td>
<td>34.0%</td>
</tr>
<tr>
<td>16</td>
<td>8.3%</td>
<td>47.6%</td>
</tr>
<tr>
<td>17</td>
<td>13.2%</td>
<td>55.9%</td>
</tr>
<tr>
<td>18</td>
<td>18.6%</td>
<td>61.6%</td>
</tr>
<tr>
<td>No ACT</td>
<td>6.4%</td>
<td>32.7%</td>
</tr>
<tr>
<td>Total</td>
<td>6.7%</td>
<td>42.6%</td>
</tr>
</tbody>
</table>
One example is Logue, Watanabe-Rose, & Douglas (2016), in *Educational Evaluation and Policy Analysis*.

907 students assessed as needing elementary algebra were randomly assigned to:

- **Group EA**: Traditional remedial elementary algebra
- **Group EA-WS**: Traditional remedial elementary algebra with a weekly workshop
- **Group Stat-WS**: Introductory, college-level, statistics with a weekly workshop
Logue, Watanabe-Rose, & Douglas Randomized Controlled Trial (conducted Fall 2013) – Course Pass Rates

<table>
<thead>
<tr>
<th>Group</th>
<th>% Passed</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA (Traditional Remediation)</td>
<td>39.3%</td>
<td>244</td>
</tr>
<tr>
<td>EA-WS (Traditional Remediation + Workshop)</td>
<td>44.9%</td>
<td>227</td>
</tr>
<tr>
<td>Stat-WS (College-Level Course + Workshop)</td>
<td>55.7%</td>
<td>246</td>
</tr>
</tbody>
</table>
Logue, Watanabe-Rose, & Douglas Randomized Controlled Trial (conducted Fall 2013) – Status of Students in Spring 2016

Enrollment Status in Spring 2016

- Graduated, Original CUNY
- Enrolled, Original CUNY
- Graduated, Another CUNY
- Enrolled, Another CUNY
- Graduated, Non-CUNY
- Enrolled, Non-CUNY
- Not Enrolled

<table>
<thead>
<tr>
<th>Enrollment Status</th>
<th>EA (N=297)</th>
<th>EA-WS (N=313)</th>
<th>Stat-WS (N=297)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduated, Original CUNY</td>
<td>8.8%</td>
<td>9.9%</td>
<td>16.5%</td>
</tr>
<tr>
<td>Enrolled, Original CUNY</td>
<td>26.3%</td>
<td>25.6%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Graduated, Another CUNY</td>
<td>9.4%</td>
<td>4.5%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Enrolled, Another CUNY</td>
<td>51.5%</td>
<td>56.5%</td>
<td>46.5%</td>
</tr>
<tr>
<td>Graduated, Non-CUNY</td>
<td>4.0%</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>Enrolled, Non-CUNY</td>
<td>5.4%</td>
<td>3.4%</td>
<td></td>
</tr>
<tr>
<td>Not Enrolled</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

51.5% of students from EA and 56.5% of students from EA-WS are enrolled in Spring 2016, compared to 46.5% of students from Stat-WS.
Evidence of Math Pathways Success

1 Year
Math Initiatives

- California Acceleration Project (CAP)
  - 49%
- Texas, NMP Curriculum with back-to-back strategies
  - 43%
- Statway
  - 51%

1 Semester Corequisite Initiatives

- Tennessee West Virginia
  - 64%

- Indiana
  - 61%

Other

- 20% Traditional Developmental-to-College Level Completion in 3 Years
What we’ve learned

Many more students can be successful than we originally thought.

• Placement tests are not a predictor of who will be successful.

Effective practice in design of corequisites:

• Combined effect of corequisite structure with content that is relevant and useful to students.
• Narrow the gap between the mathematics classroom and student supports.
• Backwards mapping from the gateway course.
What we don’t know

No evidence of impact of differences in design:

- Cohort versus no cohort.
- One instructor or two.
- Scheduling of supports and college-level course.
- Mixed college-level course or separate.

How do we support the other 40% – 50%?

- Do not know how to identify who will not succeed.
- Do not know the right mix of content and other types of support.
The two issues converge

Math pathways that are aligned to programs of study AND accelerated
The Dana Center Mathematics Pathways 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
- **Empowered** as mathematical learners.

It takes coordinated action across all...

- Levels of the system (national, state, institution, classroom)
- Sectors of education (universities, colleges, K-12)
- Roles (policy, administrators, faculty, student services)

In order to...

- Redesign course and institutional structures that deter success;
- Modernize mathematics content and instruction;
- Eliminate policy barriers in placement, transfer, and applicability.
DCMP Resource Site

The DCMP  Learn About  Take Action  Where We Work  Resources

Search All Resources

FILTER RESULTS

LEVELS
- State
- Institution
- Classroom

PROCESSES
- Getting Started
- Planning
- Implementing
- Continuously Improving

ROLES
- Advisors and Coordinators
- Researchers
- Policy
- Institutional Leadership
- Math Department
- Partner Disciplines

Dana Center Mathematics Pathways
8 Results Page 1 of 1

Advising and Multiple Math Pathways (video)

Webinar that examines why it is important to focus on advising when implementing math pathways at scale and explores a step-by-step guide to develop a comprehensive advising plan using Dana Center resources and tools (45:16)

LEVEL: INSTITUTION
PROCESS STAGE: IMPLEMENTING
ROLE: INSTITUTIONAL LEADERSHIP, ADVISORS AND COORDINATORS

DOWNLOADABLE FILE(S)
- POWERPOINT
- WEB LINK

Spotlight

What Students Need to Know: Mathematics Concept Inventories for Community College Workforce Education Programs

The Charles A. Dana Center at The University of Texas at Austin and Ivy Tech Community College of Indiana

This publication includes a 2-page summary for each of the 34 programs of study available at Ivy Tech Community College of Indiana that offer certificates, technical certificates, and/or associate's degrees in a wide range of workforce education disciplines. Each summary details which mathematics concepts (from a comprehensive list developed by Ivy Tech) are highly relevant, somewhat relevant, minimally relevant, or not relevant for
Questions?
High School to College Mathematics Transition

**READY**

- Dual Credit
- Advanced Placement
- Early College High Schools

**NOT READY BY 12TH GRADE**

- Transition Mathematics Course
Transition Course Considerations

Adapted from the Community College Research Center

1. Secondary and postsecondary collaboration

2. Policy goal of the course and how to measure its effectiveness

3. Course objectives, content, curriculum, and format

4. Teacher selection and support

5. Student placement into the course
Transition Course Considerations

Community College Research Center

- California, Florida, Illinois, New Jersey, New York, Tennessee, West Virginia

- Promising results in California, New York – City University of New York, and Tennessee

- More research underway
Texas Transition Course: College Prep Mathematics Course

Designed for students who are not yet college ready in mathematics by 12th grade.

- Districts partner with at least one institution of higher education.

- Students who successfully complete the course are granted a college readiness exemption at the partner institution.
Transition Course Considerations

1. Secondary and postsecondary collaboration

2. Policy goal of the course and how to measure its effectiveness

3. Course objectives, content, curriculum, and format

4. Teacher selection and support

5. Student placement into the course
Transition Course Considerations

2. Policy goal of the course and how to measure its effectiveness

- Readiness for all entry-level college mathematics courses
- Pass the course
- Pass the final exam
- Texas Success Initiative Assessment
3. Course objectives, content, curriculum, and format

- Readiness for all entry-level mathematics courses
- Multiple mathematics pathways
- Year-long course
3. Course objectives, content, curriculum, and format

- Content aligned to higher education mathematics pathways
- Embedded non-cognitive and college cultural capital content

\[ \text{Preparation for ALL entry-level mathematics courses} \]
\[ \text{re-engagement in mathematics} \]

**Transition Course Considerations**
Transition Course Considerations

3. Course objectives, content, and format

Reflects modern mathematics

- Applying mathematical processes
- Numeric reasoning
- Proportional reasoning
- Algebraic reasoning
- Probabilistic reasoning
- Quantitative reasoning

Content aligned to higher education mathematics pathways

Texas Success Center

Mathematics Pathways

Dana Center
3. Course objectives, content, curriculum, and format

**Academic knowledge and skills**
- Key content
- Critical thinking

**Non-cognitive skills**
- Time management
- Perseverance
- Goal setting

**College cultural capital**
- Tools, and assets required to navigate the transition to college
- Exposure to college norms
Transition Course Considerations

4. Teacher selection and support

- Austin: 14 districts, 2 colleges
- Houston: 14 districts, 2 colleges
- San Antonio: 14 districts, 2 colleges
- Corpus Christi: 8 districts, 4 colleges
- Rio Grande Valley:
Transition Course Considerations

5. Student placement into the course

- Students who are deemed “not ready for college mathematics”

- Algebra I, Geometry, and a third mathematics course

- Students who earn just below or above a 70 in previous mathematics courses
Transition Course Considerations

Adapted from the Community College Research Center

1. Secondary and postsecondary collaboration

2. Policy goal of the course and how to measure its effectiveness

3. Course objectives, content, curriculum, and format

4. Teacher selection and support

5. Student placement into the course
Developmental and Transitional Math Initiatives in Illinois

1. Developmental math pathways
2. Corequisite courses
3. Transitional high school courses
Developmental and Transitional Math Initiatives in Illinois

1. Developmental math pathways
2. Corequisite courses
3. Transitional high school courses
Developmental math (DM) pathways

Courses other than beginning and intermediate algebra that accelerate developmental math*

• Use updated content based on contextualized learning and problem solving
• Look forward to college-level courses
• Develop critical thinking, literacy, college readiness, and 21st century skills
• Differentiate content based on STEM vs. non-STEM
• Complement corequisite remediation

NOTE: Developmental math refers to courses that remediate high school deficiencies such as prealgebra, beginning algebra (Algebra 1), intermediate algebra (Algebra 2), and geometry
Implementation options for DM pathways: augment traditional sequence

Prealgebra

Beginning Algebra

Intermediate Algebra

Pathways Course

STEM & non-STEM College Level Math

Non-STEM College Level Math (Statistics, Liberal Arts Math)
Implementation options for DM pathways: replace beginning algebra

- Prealgebra
- Pathways Course
- Intermediate Algebra
  - STEM & non-STEM College Level Math
  - Non-STEM College Level Math (Statistics, Liberal Arts Math)
Traditional Algebra vs. Pathways Approach

Graph 1: Linear relationship between two points (0, 4) and (3, 5)

Graph 2: Acetaminophen concentration over time for different formulations of Tylenol.
Students who can:

- Read and think critically
- Apply numeracy
- Use algebra
- Understand functions
- Use technology
- Solve problems with words
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>AMATYC DM pathways initiative</td>
</tr>
<tr>
<td>2010</td>
<td>Work on IL DM pathways begins</td>
</tr>
<tr>
<td>2011</td>
<td>DM Pathways pilots begin in IL</td>
</tr>
<tr>
<td>2012</td>
<td>Interest grows; pilots planned and/or begin</td>
</tr>
<tr>
<td>2013</td>
<td>IL approves DM pathways</td>
</tr>
<tr>
<td>2013-17</td>
<td>Pathways scale nationally and in IL; expand to high schools</td>
</tr>
</tbody>
</table>
Illinois DM Pathways Option: PMGE

**Preparatory Mathematics for General Education**

- 3-4 semester hours
- Non-STEM intermediate algebra
- Develops conceptual understanding and problem solving abilities
- Satisfies the Common Core Standards for Mathematical Practice
- Flexible implementation
Modalities of Implementation

PMGE

1. 2 semesters: Beginning algebra + PMGE
   - #1

2. 1 semester: Beginning algebra + PMGE (8 weeks each)
   - #2

3. 1 semester: Integrated model of Beg. Alg. + PMGE (Math Literacy)
   - #3

4. 1 semester: Flipped model using PMGE
   - #4
Math Literacy: A DM pathways example

In one semester and 5 - 6 credits, Math Literacy for College Students gives a student at the beginning algebra level the mathematical maturity to be successful in statistics, liberal arts math, or intermediate algebra.

PMGE Modality #3
DM Pathways Status in Illinois

- ICCB has supported pathways courses since 2010
- IMACC, ISMAA, and IAI approved PMGE in April 2013
- Many IL schools teaching or will teach a pathways course – most use Math Literacy

<table>
<thead>
<tr>
<th>Blackhawk College</th>
<th>Heartland College</th>
<th>Lewis &amp; Clark College</th>
<th>Rock Valley College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carl Sanburg College</td>
<td>Highland College</td>
<td>Lincoln Land College</td>
<td>South Suburban College</td>
</tr>
<tr>
<td>College of DuPage</td>
<td>Illinois Central College</td>
<td>Moraine Valley Community College</td>
<td>Triton College</td>
</tr>
<tr>
<td>College of Lake County</td>
<td>Kankakee Community College</td>
<td>Olney Central College</td>
<td>Truman College</td>
</tr>
<tr>
<td>Danville Area Community College</td>
<td>Kaskaskia College</td>
<td>Parkland College</td>
<td>Wabash Valley College</td>
</tr>
<tr>
<td>Elgin Community College</td>
<td>Kishwaukee College</td>
<td>Prairie State College</td>
<td>Waubonsee Community College</td>
</tr>
<tr>
<td>Harper College</td>
<td>Lake Land College</td>
<td>Richland Community College</td>
<td>Wilbur Wright College</td>
</tr>
</tbody>
</table>
Some data from around the state

At Illinois Central College:
• Math Literacy pass rate: 71%
• Pass rate in transfer-level course: 70%

At Parkland College:
• Math Literacy pass rate: ≈72% in each half – 52% overall
• Pass rate in Liberal Arts math: 72%
• Pass rate in Statistics: 55%

At Rock Valley College:
• Math Literacy pass rate: 60%
• Pass rate in Liberal Arts math: 84%
• Pass rate in Statistics: 51%

One and Done
Majority of students complete DM & college-level math in one year.

NOTE: Data collection is ongoing as pilots expand and continue.
Developmental and Transitional Math Initiatives in Illinois

1. Developmental math pathways
2. Corequisite courses
3. Transitional high school courses
Complete College America IL Pilot

Illinois’ Focus

The ICCB and the IBHE have committed to using data gathered to advance an agenda of scale that impacts the vast majority of students deemed underprepared for college-level work by spring of 2018. Through the pilot, IBHE and ICCB will produce Illinois data on co-requisite and pathway remedial programs. At this time, IBHE and ICCB will work to scale this work, by doubling the number of institutions offering co-requisite and pathways remedial programs in the state, which will ultimately reduce the time-to-completion rates of students entering postsecondary education.

The primary focus of Illinois’ CCA Co-requisite Pilot is to begin collecting baseline data across math and English co-requisite and pathway remedial programs. Second, it is to implement co-requisite and pathway remedial programs in community college and university Math and English departments. The ultimate goal is to scale across all public institutions in both disciplines.

Co-requisite Definition

A course design in which students who are assessed below college-ready in Math, English, or Reading are enrolled in a first-year college credit-bearing course and receive additional academic support or otherwise are instructed in college-level content and receive additional academic support concurrently with the college-level material. The model ensures that a student has the opportunity to complete a college-level gateway course within one academic year.
CCA Co-Requisite to Scale Pilot

1. **Data Collection:** Collect Baseline data across math and English co-requisite and math pathway programs.

2. **Implementation:** Implement co-requisite and pathway remedial programs in participating community college Math and English departments.

3. **Scale:** Use the data to advance an agenda focused on scale.
## Participating Institutions

<table>
<thead>
<tr>
<th>Universities</th>
<th>Community Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Illinois University Carbondale</td>
<td>Heartland Community College</td>
</tr>
<tr>
<td>Southern Illinois University Edwardsville</td>
<td>Joliet Junior College</td>
</tr>
<tr>
<td>University of Illinois at Urbana-Champaign</td>
<td>Lewis &amp; Clark Community College</td>
</tr>
<tr>
<td>University of Illinois at Chicago</td>
<td>William Rainey Harper College</td>
</tr>
</tbody>
</table>
Baseline Data

• All eight pilot institutions began collecting data in the Fall of 2016. During year two, all pilot institutions will report all co-requisite/pathway remedial program data to IBHE and ICCB. Each agency will compile the data and conduct maintenance work to make the data ready for eventual public release.

• IBHE and ICCB will then use this data to assist with the state’s efforts to scale.

• Current co-requisite data at SIUC and SIUE:
  – The co-requisite class structure is in place at SIUC, with roughly 150 students having taking the class during the Fall 2015 semester.
  – These students at SIUC took exactly the same common final as the standard College Algebra students, and performed in a statistically equivalent way.
  – In fact, the mean score of the co-requisite classes, was slightly higher than that of the standard College Algebra students (70% vs 67%).

• At SIUE, the success rate for a two-semester sequence of Intermediate Algebra (remedial) and College Algebra has had a combined success rate of 36% (60% x 60%), with the one semester co-requisite success rate of 58%.
Developmental and Transitional Math Initiatives in Illinois

1. Developmental math pathways
2. Corequisite courses
3. Transitional high school courses
Transitional math courses

Where we are

- Some IL high schools have been offering 4\textsuperscript{th}-year courses for seniors not taking dual credit or AP courses to reduce college remediation

- Natural evolution of DM redesigns & pathways pilots

- Doing so with local partnerships
  - Example: Rockford 205 & Rock Valley College Math Literacy pilot

Issues

- Not at scale
- No consistent requirements
- No portability
Postsecondary Workforce Readiness Act
PWR Act (Public Act 99-0674, HB 5729)

1. Postsecondary and Career Expectations (PaCE)
2. Pilot of Competency-based High School Graduation Requirements
3. College and Career Pathway Endorsements on High School Diplomas
4. Transitional Math Courses

For more information: pwract.org
PWR Act Transitional math courses

Comprised of 3 pathways related to career pathways:
STEM, Technical Math, and QL/Statistics

- High school courses designed to provide guaranteed placement at IL colleges and universities
- **Reduce remediation** needed when students go to college
- Take existing 4\textsuperscript{th}-year course pilots to portability beyond local colleges when they meet statewide criteria
- Designed for seniors to give them a different experience their last year (from first 3 years or DM)
- Integrate contextualized learning, problem solving, and **college and career readiness**
- Align with the Common Core and the New Illinois Learning Standards
Postsecondary Math Pathways

STEM
Career goals that require application of calculus or advanced algebraic skills

Technical
Career goals in technical fields that do not require application of calc, advanced algebraic, or advanced stats skills

Quantitative Literacy/Stats
Career goals outside of STEM or Technical – focus on general stats, data analysis, quant. literacy, problem solving

College & Career Readiness Committee
Transitional Math Pathways into Credit-Bearing Postsecondary Courses – Draft Aug 2017

Community College
- College Algebra
- Credit-Bearing General Ed Math
  - Gen Ed Statistics
  - General Math
  - Quantitative Literacy
  - Elementary Math Modeling
- Credit-Bearing Technical Math
  in the same CTE Career Pathway

High School
- Transitional STEM Math
- Transitional Quantitative Literacy/Statistics
- Transitional Technical Math – within a Career Pathway

Guaranteed placement
Transitions Courses & Policy Development

Includes administration, faculty, policy experts, and agency personnel at the K-12, community college, and university levels.

Meeting since March, again in August to work on recommendations for entrance, exit, and portability.

Faculty who are creating competencies to define required objectives in the courses.

- STEM
- Technical Math
- QL/Statistics
Statutory Timelines for Implementation

By 6/30/18
- Statewide panel defines transitional math competencies and statewide criteria
- Development of model instructional units (subject to resources)
- IBHE adopts requirements for public universities to provide transparent criteria for student placement into college-level math courses; public universities publicize criteria

By 6/30/19
- ISBE and ICCB establish a phased implementation plan and benchmarks leading to full statewide implementation in all school districts
- Note: school districts can opt out of implementation by local board action

In 19-20 School Year
- School board of any district may elect to implement transitional math instruction, and community college must partner if it receives an implementation grant from ICCB
Status of IL Transitions Courses

• Public commenting period to come

• ICCB and Illinois 60 by 25 Network supporting pilot implementation in 11 community college districts

• ICCB has issued new round of funding for additional support
  – BTG funds 10 – 15 colleges per year for math initiatives like co-requisite courses, summer bridge courses, and transitions courses
    – BTG funded 10 colleges in FY17; 7 doing transitions
    – BTG is funding 15 colleges in FY18; 12 doing transitions
What’s next?

- Sample materials and syllabi for transitions courses
  - QL/Stats has the most progress, STEM and Tech math follow
- Sample Memos of Understanding between HS and colleges
- Professional development
- Support for high schools and colleges as they implement and scale

NOTE: Schools should not wait to develop and pilot transitions courses.
About the Dana Center

The Charles A. Dana Center at The University of Texas at Austin works with our nation’s education systems to ensure that every student leaves school prepared for success in postsecondary education and the contemporary workplace.

Our work, based on research and two decades of experience, focuses on K–16 mathematics and science education with an emphasis on strategies for improving student engagement, motivation, persistence, and achievement.

We develop innovative curricula, tools, protocols, and instructional supports and deliver powerful instructional and leadership development.