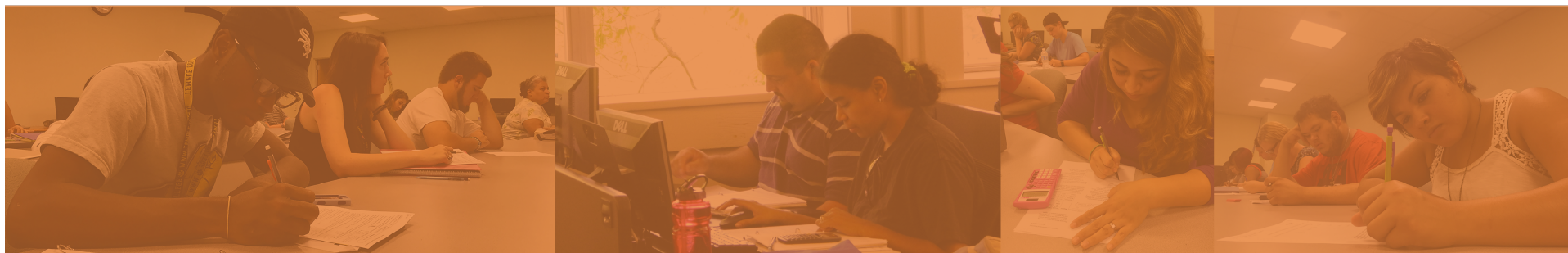


Dana Center
Mathematics
PATHWAYS

South Texas Regional Convening

March 24, 2017

The University of Texas Rio Grande Valley



Welcome and Introduction

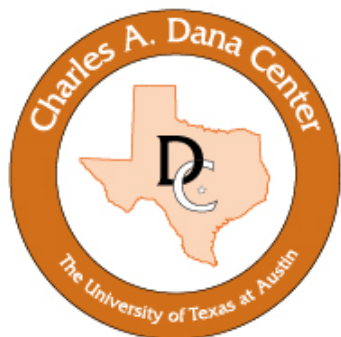
Havidán Rodríguez, *Provost and Executive Vice President for Academic Affairs, The University of Texas Rio Grande Valley*

James Hallmark, *Vice Chancellor for Academic Affairs, Texas A&M University System*

Martha Ellis, *Interim Director for Higher Education Services, The Charles A. Dana Center*

Nancy Stano, *Strategic Learning and Development Lead for Higher Education Services, The Charles A. Dana Center*

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.

Who is in the room?

Four-Year Institutions

- Texas A&M International University
- Texas A&M University-Kingsville
- Texas A&M University-Corpus Christi
- The University of Texas at San Antonio
- The University of Texas Rio Grande Valley

Dana Center Staff

Two-Year Institutions

- Coastal Bend College
- Del Mar College
- Laredo Community College
- Northeast Lakeview College (The Alamo Colleges)
- South Texas College
- Southwest Texas Junior College
- Texas State Technical College-Harlingen
- Texas Southmost College

Presenters and Guests

Who is in the room?

Four-Year Institutions	% Transfer Students
• Texas A&M International University	93%
• Texas A&M University-Kingsville	78%
• Texas A&M University-Corpus Christi	55%
• University of Texas Rio Grande Valley	86%

Goals for the Day: What will we accomplish together?



1. Develop a shared understanding of math pathways regionally.
2. Work towards regional alignment for transfer and applicability.
3. Explore data on math pathways and transfer student success.

Agenda: Regional Coordination

- Session 1:
Understanding math pathways & requirements
- Session 2: Aligning math regionally
- Session 3: Exploring data on transfer and mathematics pathways



The Dana Center Mathematics Pathways

A **partnership** of:

- The Charles A. Dana Center at The University of Texas at Austin
- All 50 community college districts in Texas, represented by the Texas Association of Community Colleges and the Texas Success Center

A **systemic approach** to improving student success by reforming developmental and gateway mathematics

DCMP Vision

All students have equitable access to and the opportunity for success in rigorous mathematics pathways that are aligned and relevant to their future aspirations, propelling them to upward economic and social mobility.

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
- **Empowered** as mathematical learners.

Dana Center Principles for Pathways

Institutions implement structural and policy changes quickly and at scale.

Mathematics pathways are structured so that:

- 1) All students, regardless of college readiness, enter directly into mathematics pathways aligned to their programs of study.
- 2) Students complete their first college-level math requirement in their first year of college.

Dana Center Principles for Pathways

Institutions and departments engage in a deliberate and thoughtful process of continuous improvement to ensure high-quality, effective instruction.

Students engage in a high-quality learning experience in math pathways designed so that:

- 3) Strategies to support students as learners are integrated into courses and are aligned across the institution.
- 4) Instruction incorporates evidence-based curriculum and pedagogy.

Dana Center Principles for Pathways

Quick structural change

Mathematics pathways are structured so that:

- 1) All students, regardless of college readiness, enter directly into mathematics pathways aligned to their programs of study.
- 2) Students complete their first college-level math requirement in their first year of college.

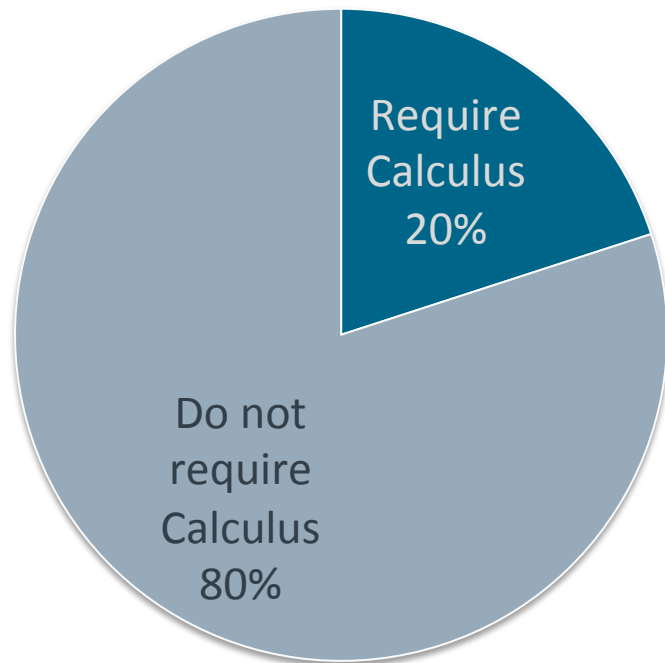
Continuous improvement

Students engage in a high-quality learning experience in math pathways designed so that:

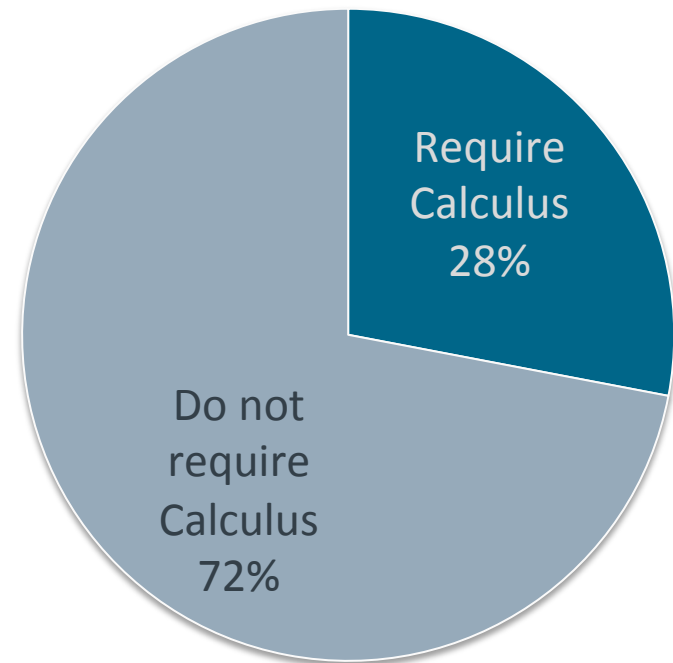
- 3) Strategies to support students as learners are integrated into courses and are aligned across the institution.
- 4) Instruction incorporates evidence-based curriculum and pedagogy.

What is the “Right Math”?

Community College Student Enrollment into Programs of Study



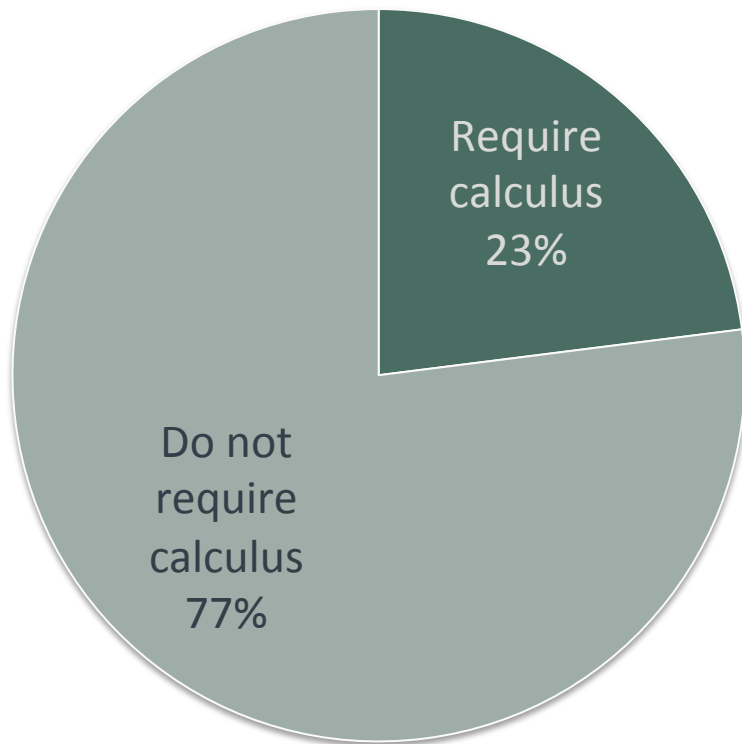
Four-Year Student Enrollment into Programs of Study



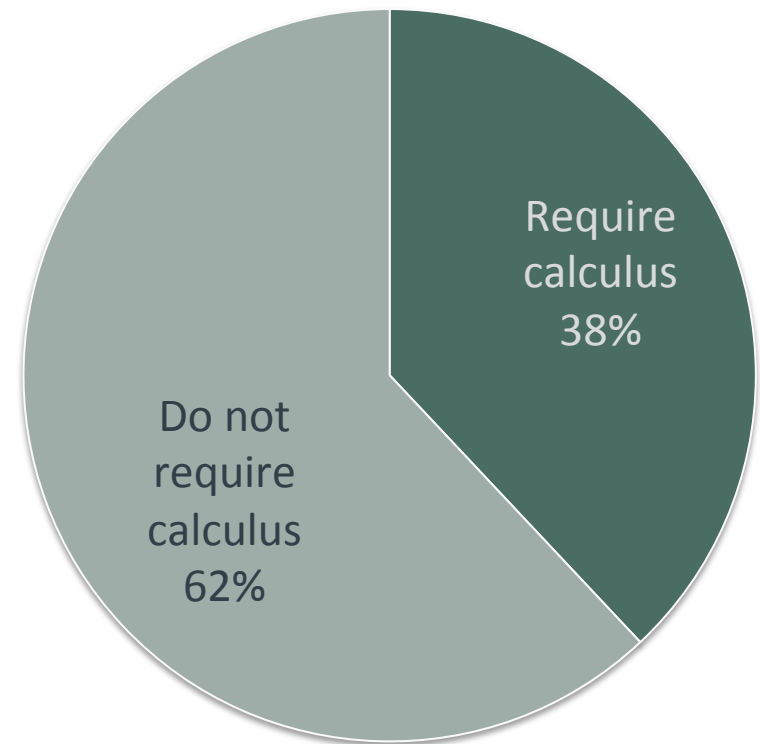
Burdman, P. (2015). *Degrees of freedom: Diversifying math requirements for college readiness and graduation*. Oakland CA: Learning Works and Policy Analysis for California Education.

What is the “Right Math”?

Associate's Degrees Awarded



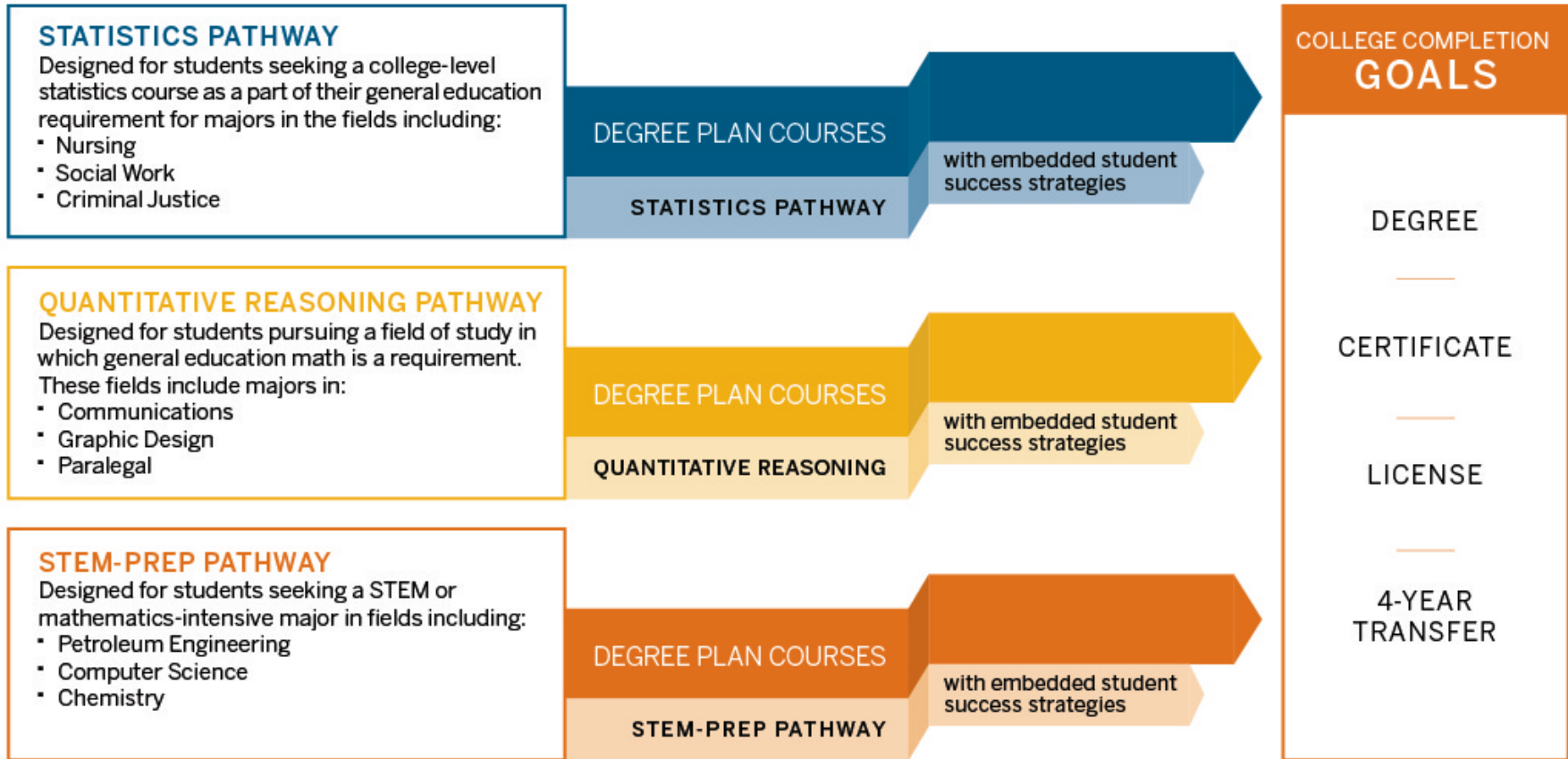
Bachelor's Degrees Awarded



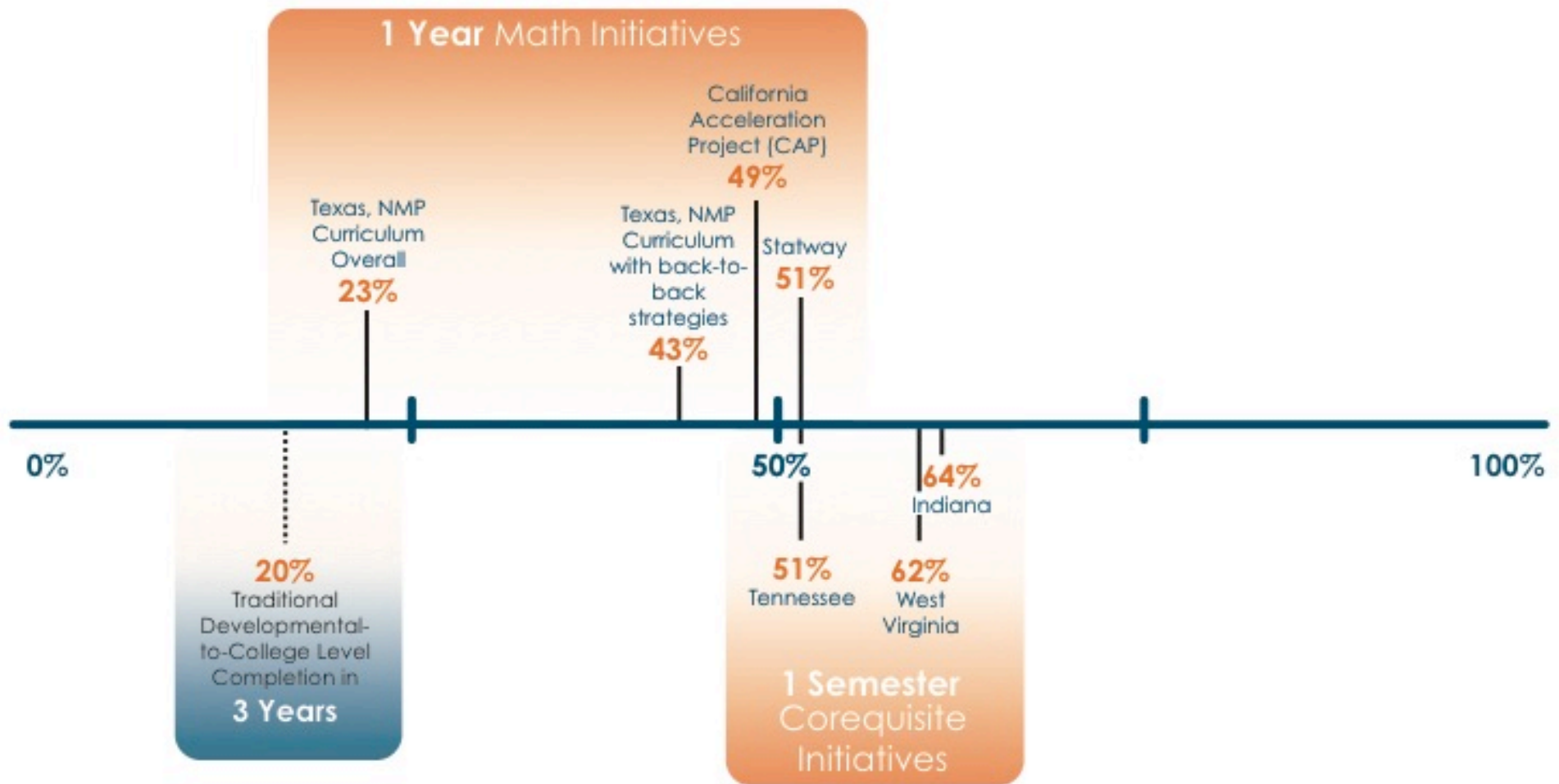
Author's calculations based on data from the Texas Higher Education Coordinating Board, 2013: Degrees Earned by CIP code

Example Pathways

MODERN MATHEMATICS PATHWAYS CONNECTED TO PROGRAMS OF STUDY



Evidence of Math Pathways Success



Scaling the DCMP Model in Texas



+ broader engagement with

all 50 community college systems and 29 four-year institutions

A Regional Approach to Scaling



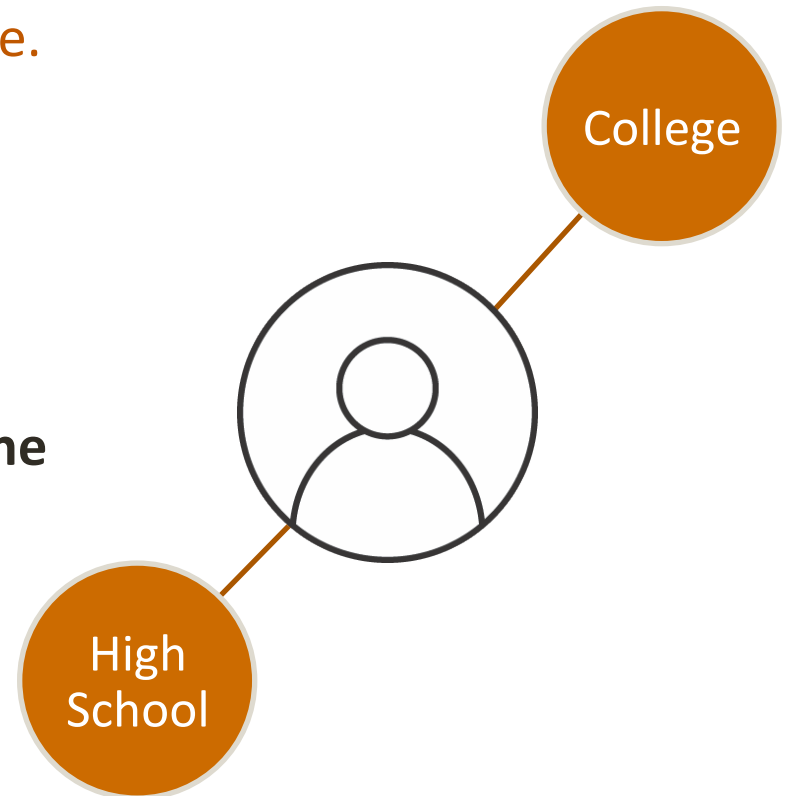
Regional Coordinators

- Foster connections
- Synchronize mathematics pathways information and services

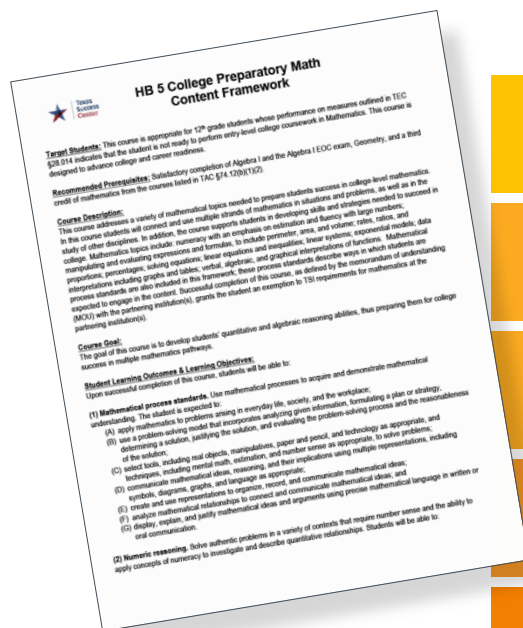
College Prep Mathematics Course

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 TSI exemption at the partner institution.**



The Dana Center offers the following supports...



- INSTRUCTIONAL MATERIALS
- PROFESSIONAL DEVELOPMENT
- ASSESSMENT RESOURCES
- TEMPLATE MOU
- EVALUATION



All students are prepared, enabled, and empowered.

Transfer & Applicability

Texas Transfer Context

78

149

Texas Transfer Context

78

...the percent of bachelor's completers that had community college credit on their transcripts. Almost 40% had 30+ SCH.

149

...the average number of credits accumulated by a bachelor's degree completer

National Student Clearinghouse Research Center. (2012). Transfer and mobility: A national view of pre-degree & student movement in postsecondary institutions. Retrieved from <http://nscresearchcenter.org/signaturereport2/#more-1580>

Complete&College&America. (2012). *Time is the enemy*. Washington, DC: Complete College America.

Texas Transfer Context

78

Highest in U.S.
according to National
Student Clearinghouse

...
ha
tran
...ers that
their
... 50+ SCH.

149

Highest in 36-state
sample according to
Complete College
America

...
ac
com

Supporting a Coherent System

Tools and Resources

- Transfer Inventory
- Transfer and Applicability FAQ
- Program of Study Briefs

Transfer Champions Initiative

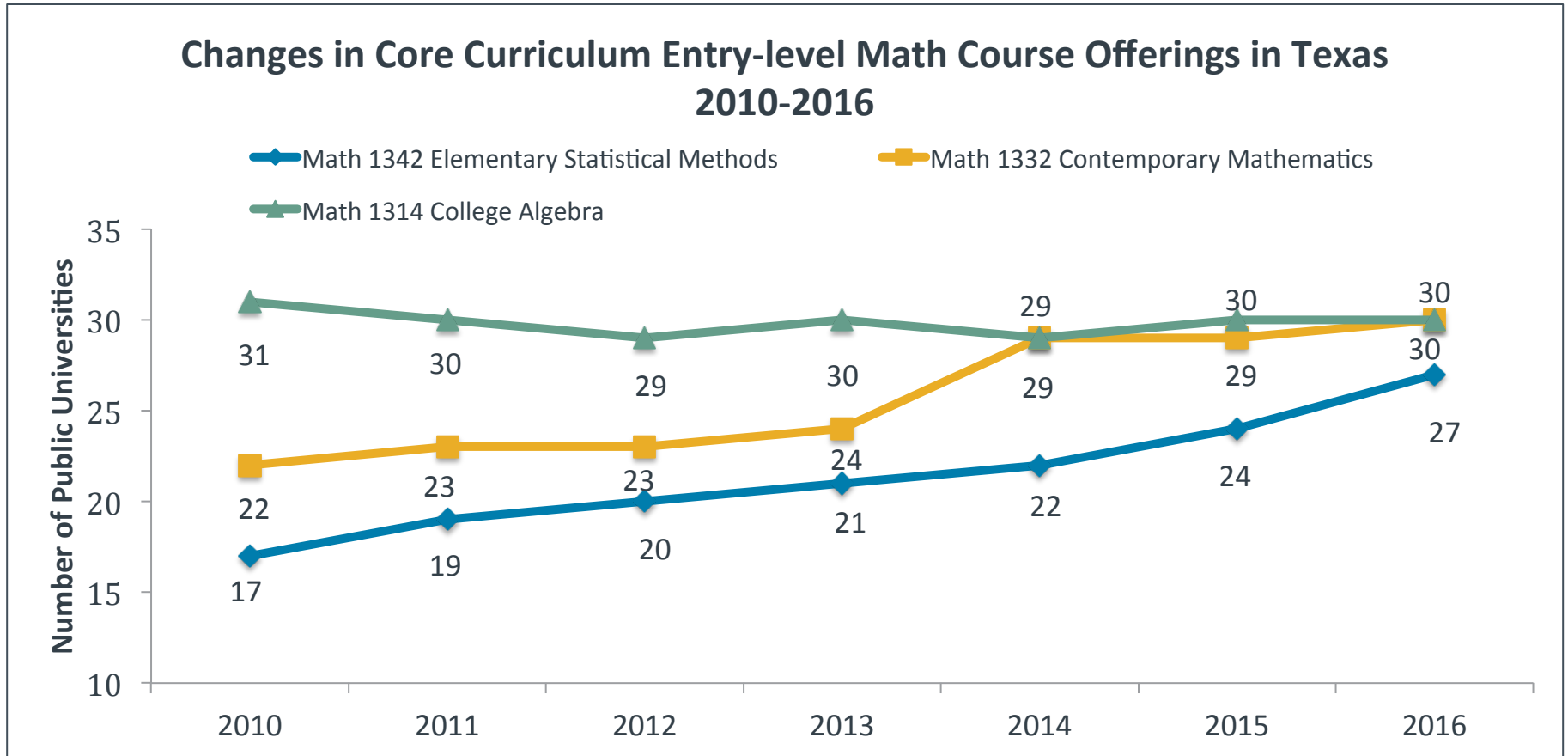
- Engaging all universities through regional convenings
- 17 Transfer Champions with exemplary math pathways
- More than 20 MOUs

Lessons Learned: Regional Coordination Enables Institutional Change



- Common mathematics pathways framework
- Ensure transferability
- Map math pathways to programs of study for applicability

Trends Across Texas Universities



Session 1: Understanding Math Pathways in the South Texas Region

Session Details:

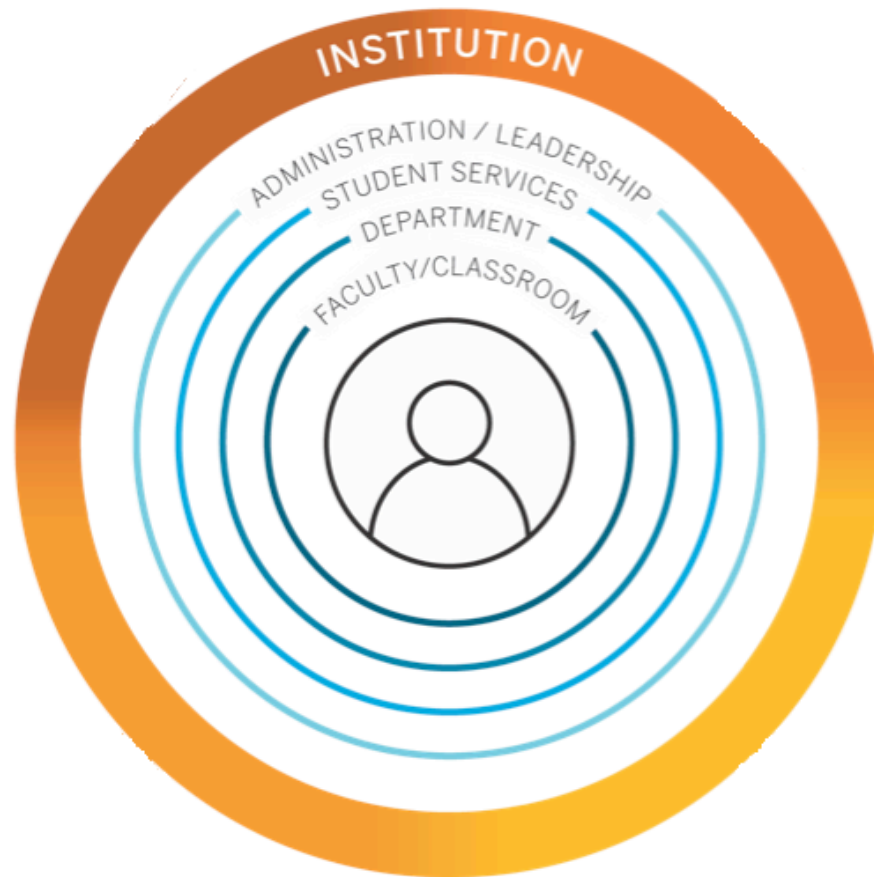
- Progressive small group discussions
 - Phase 1 - Your institution
 - Phase 2 - Your sector
 - Phase 3 - Across sectors
- Resources
 - **Session 1 Discussion Template**
 - Regional Analysis Brief
 - Transfer Inventory



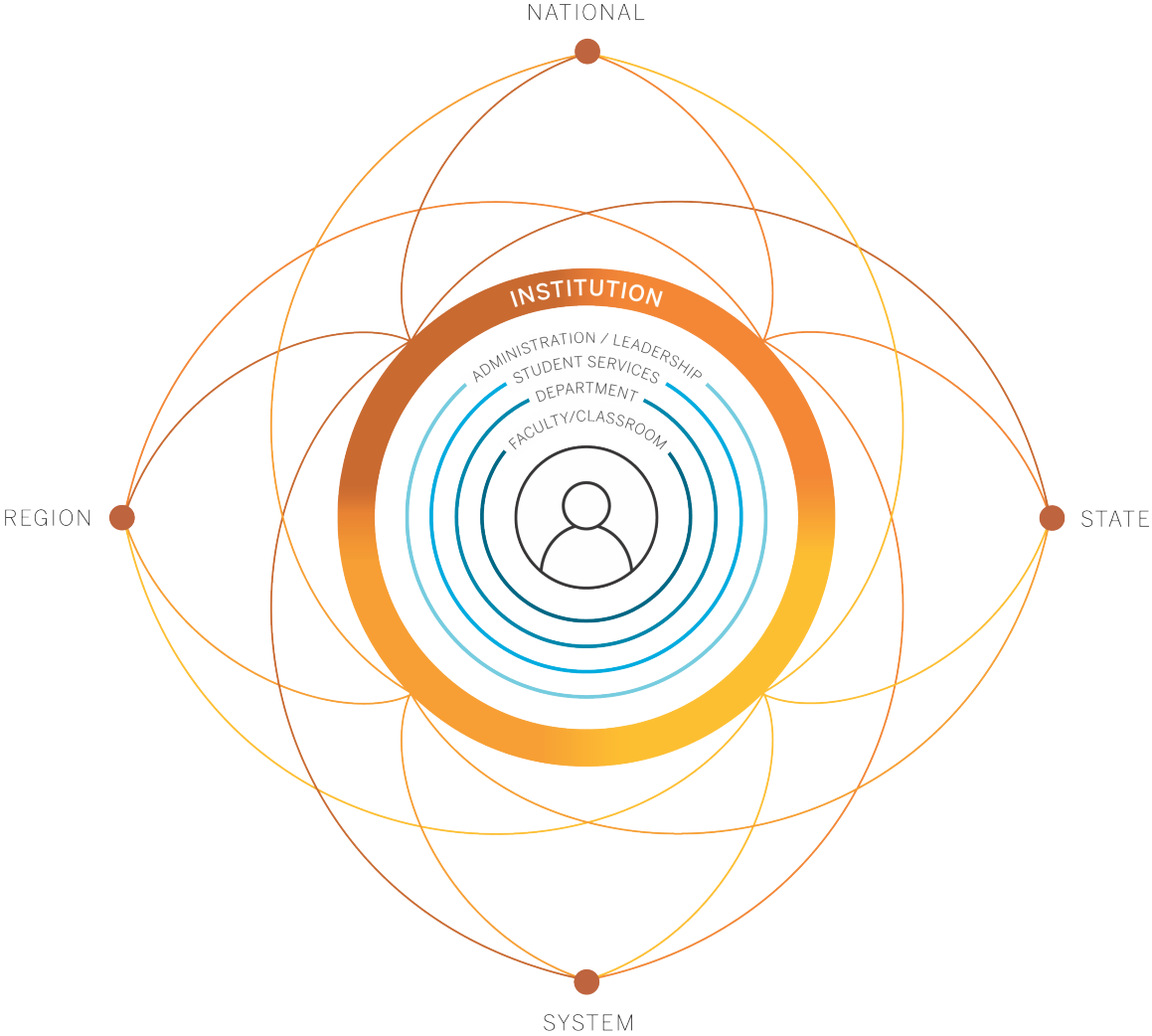
Session 2: Cross-Departmental and Cross-Institutional Mathematics Pathways Alignment

- Jeremy Martin, *Policy Specialist, The Charles A. Dana Center*
- Shanna Banda, *Learning Resource Director and Lecturer, Department of Mathematics, The University of Texas at Arlington*

Intra-institutional Implementation: Math Pathways Within An Institution



Inter-institutional Implementation: Math Pathways Across Institutions



UTA General Facts

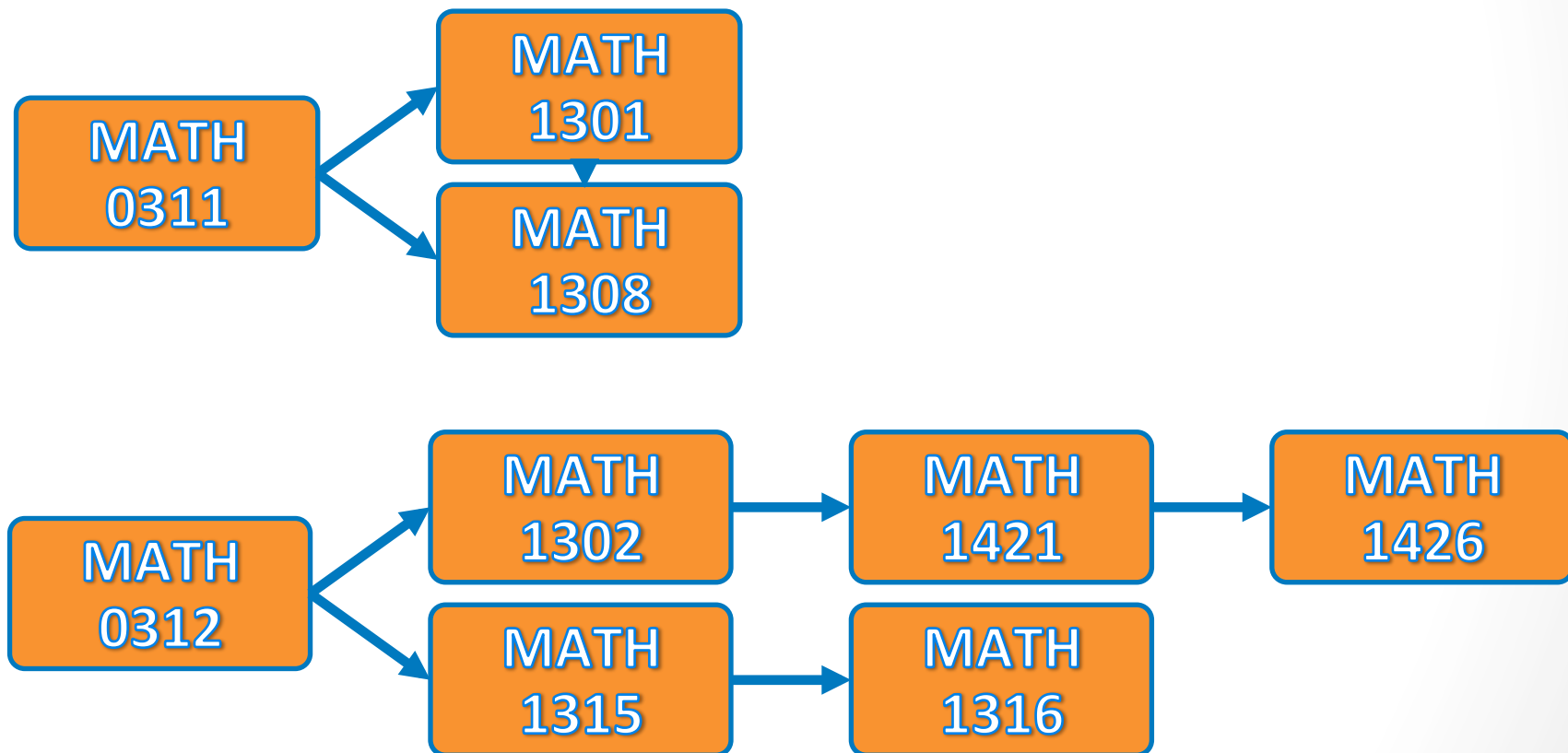
About The Mavericks

- **Degrees Offered (Fall 2016)**
 - 85 Bachelor's
 - 74 Master's
 - 26 Doctoral
 - 1 Professional
- **Enrollment (Fall 2016)**
 - 39,714 total
 - 28,218 undergraduate
 - 11,496 graduate
 - > 55,000 campus/online
- **Diversity (Fall 2016)**
 - 25 % Hispanic
 - 15 % African American
 - 10 % Asian
 - 12 % International



Redesign of Gateway Courses

- Pathway Based on Degree Plan.



Successful Shift

Enrollment Fall 2014

- MATH 1302 – around 750 students.
 - Previously greater than 1000 students each semester.
- MATH 1301 – around 780 students.
 - Previously around 240 students each semester.

Enrollment Fall 2015

- MATH 1302 – around 650 students.
- MATH 1301 – around 820 students.
- An online version of MATH 1301 is now available as well.

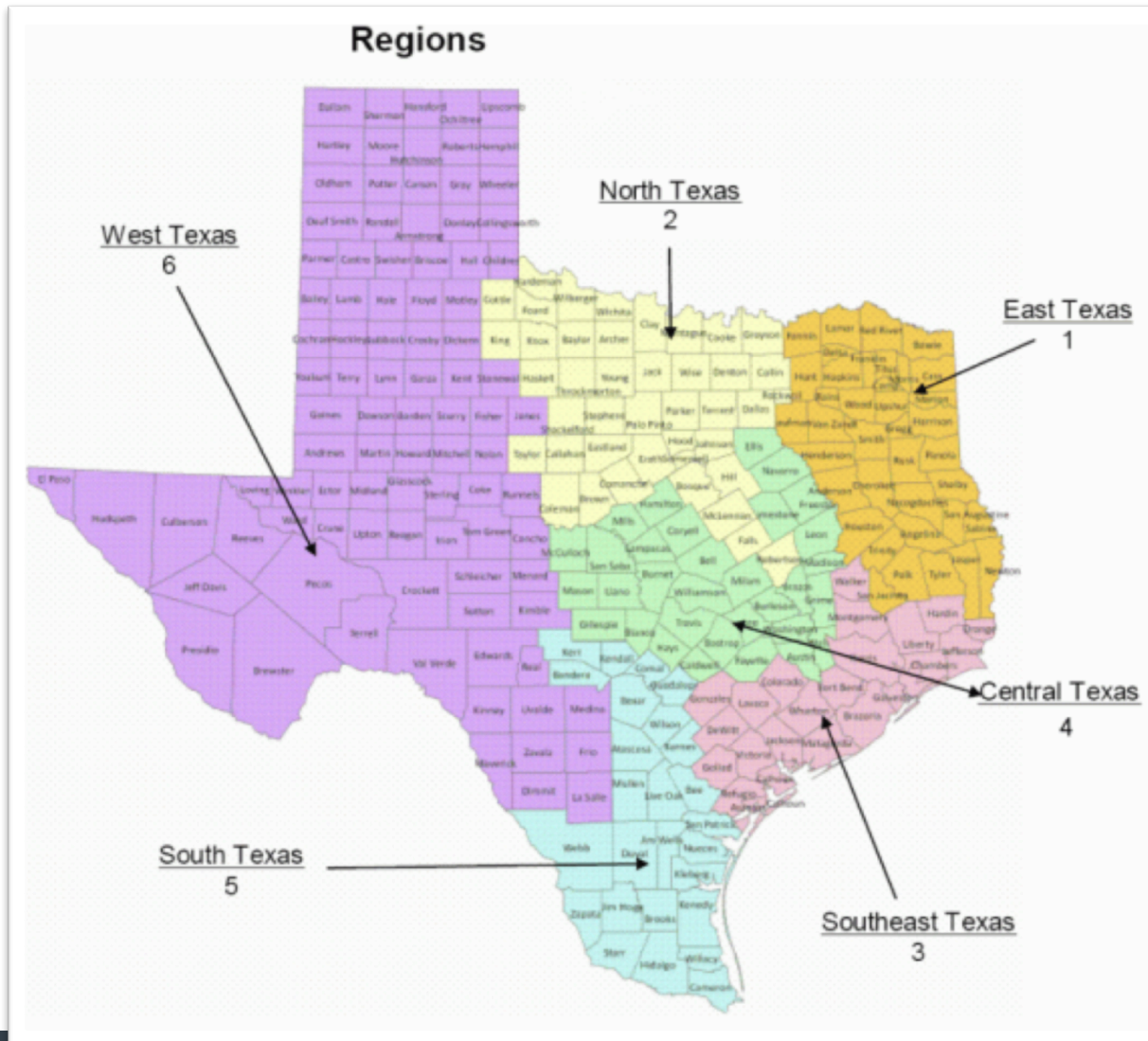
Success!!!

- **Numerous academic achievements**

(Emporium implementation and Advising adjustment)

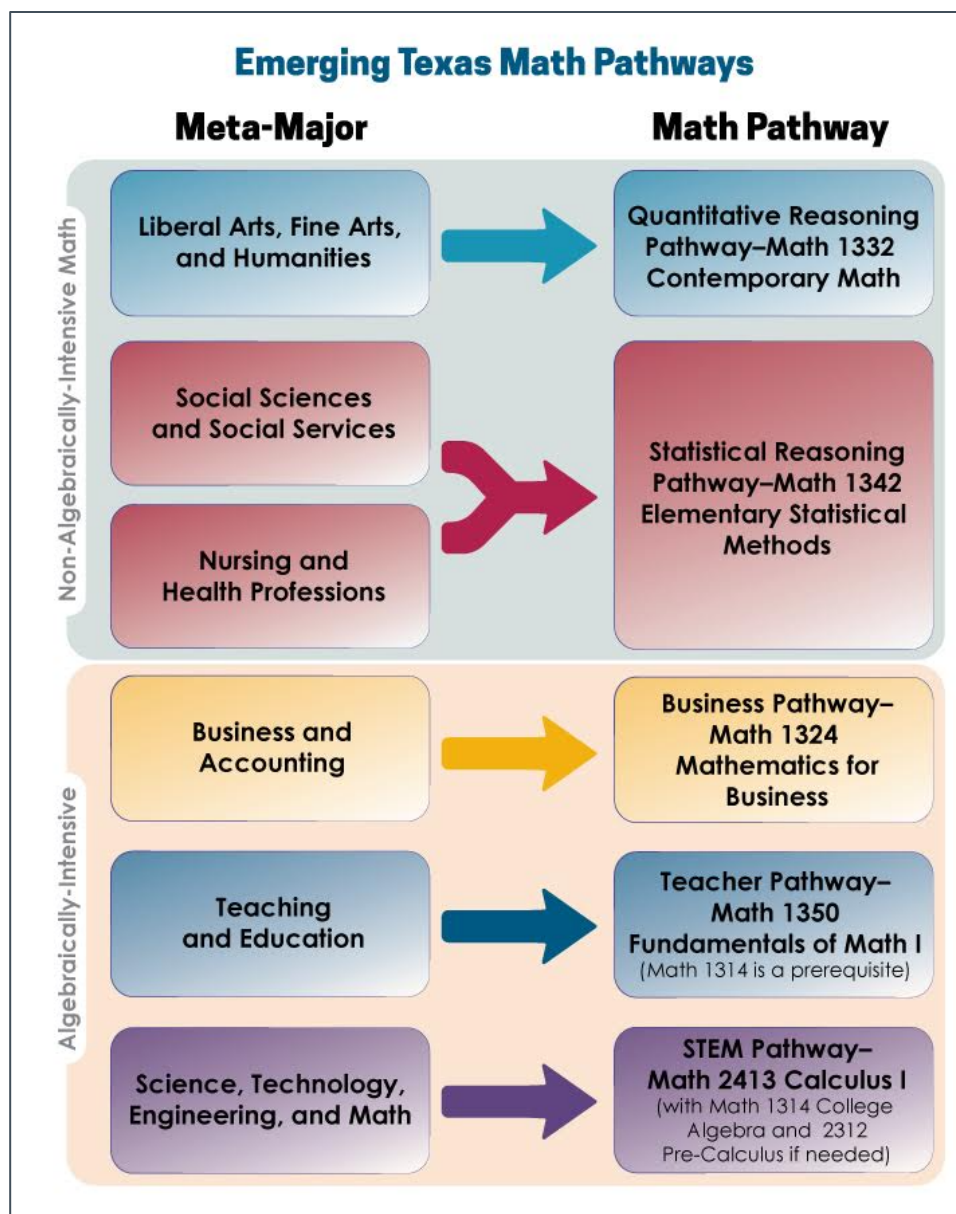
- MATH 1301 passing rate increase from **75%** (Fall 2012) to **83%** (Fall 2015)
- MATH 1302 passing rate increase from **47%** (Fall 2012) to **63%** (Fall 2015)
- MATH 1308 passing rate increase from **63%** (Fall 2012) to **68%** (Fall 2015)
- Algebra completers (MATH 1301/1302) increase from **630** (Fall 2012) to **966** (Fall 2015)

Texas Regional Transfer Convenings

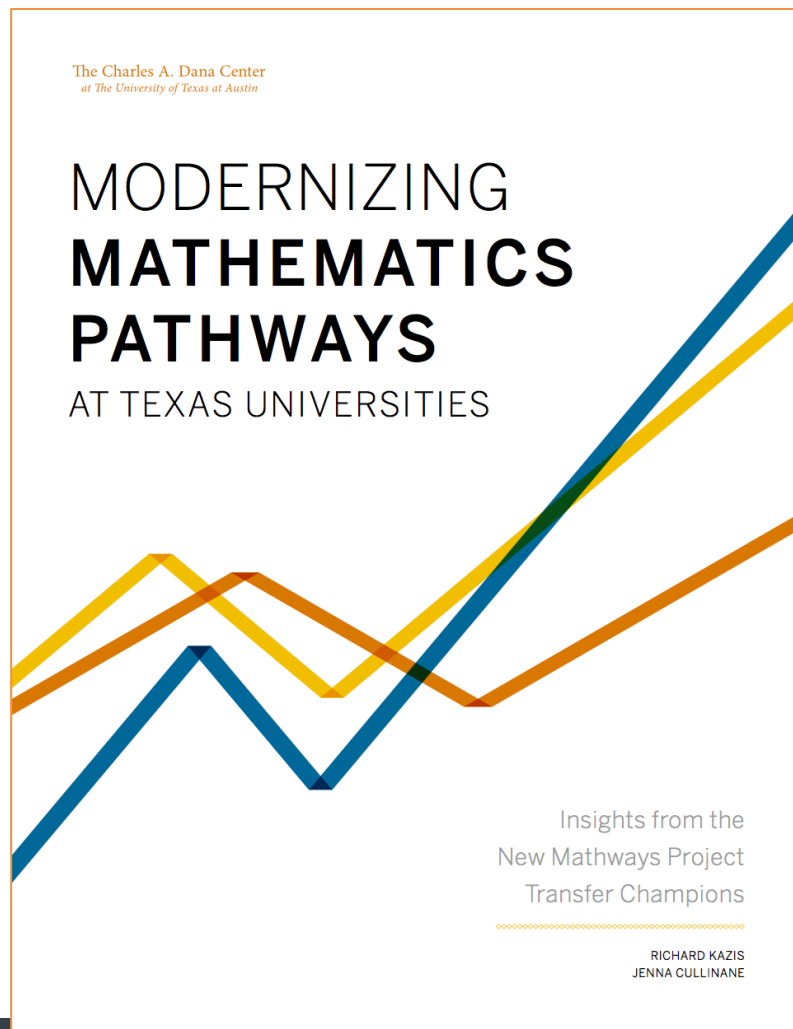


Lessons Learned:

Results of Regional Analysis



University Redesign



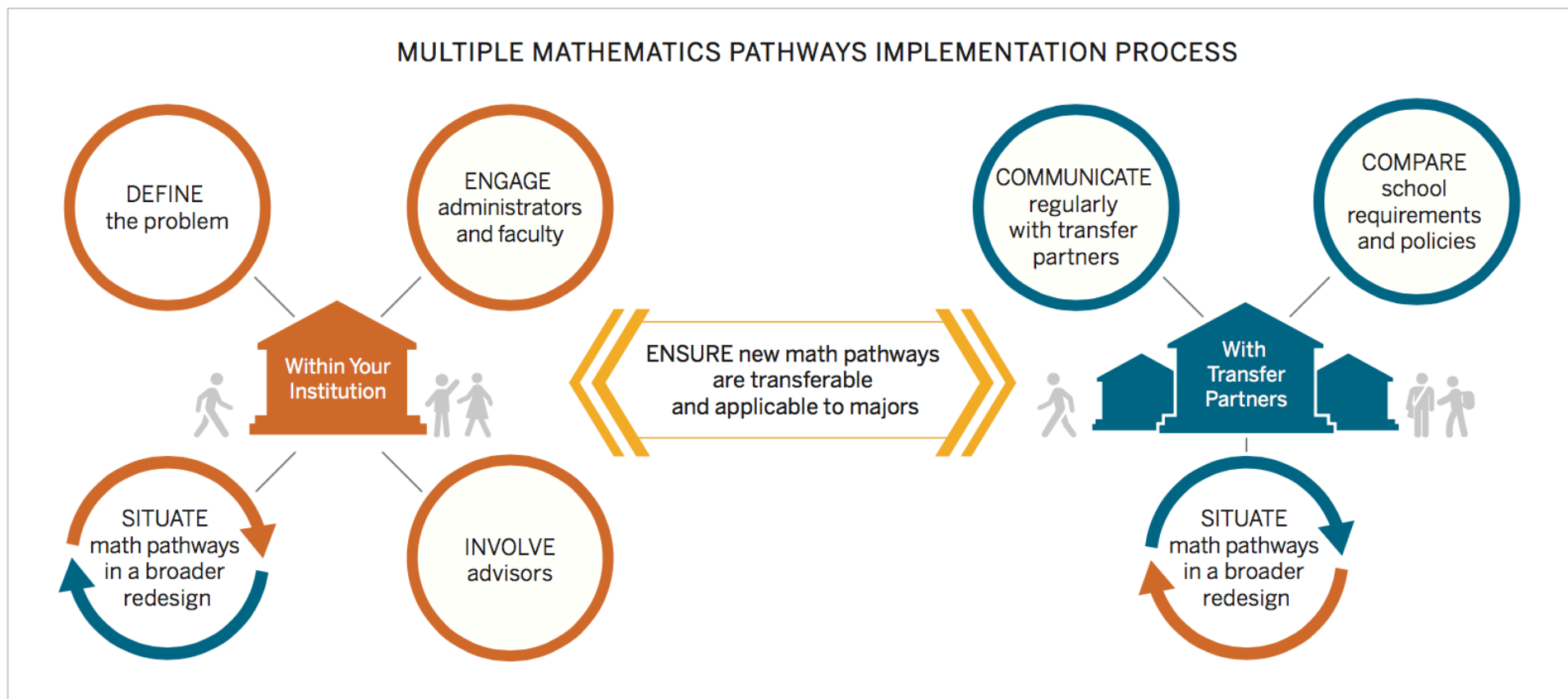
Transfer Champions

- Stephen F. Austin State University
- Texas Tech University
- University of Houston-Downtown
- University of North Texas
- The University of Texas at Austin
- The University of Texas-Pan American
- The University of Texas at Tyler

Challenges

- Building ownership for change; creating new courses and requirements
- Offering new courses is no guarantee of uptake; small numbers of sections
- Mobility and transfer; advising and program alignment

Recommendations



Session 3: Exploring Data on Transfer and Mathematics Pathways

- Lucy Kellison, *Graduate Research Assistant, The Charles A. Dana Center*

Session Details

- Goal: use data to create actionable steps for improving transfer and pathways implementation within and across institutions.
- Resources
 - **Session 3 Discussion Template**
 - South Texas Transfer Metrics
 - Math Pathways Data Sheets

Institutional Transfer Data Sheet

Statewide Average	<p><i>In Fall 2015, <u>74.1%</u> of all bachelor's completers in Texas carried credit from 2-year colleges on their transcripts. <u>35.3%</u> of bachelor's completers had more than 30SCH and <u>38.8%</u> of bachelor's completers had between 1-29SCH from 2-year colleges. (A)</i></p>								
	Transfer Student Success Metrics								
		Top transfer partners			Developmental education prior to transfer		Persistence		Graduation rates
		Top 3 transfer institutions	Total student transfers in Fall 2015 (B)	Percentage of university's total transfer population that come from sending college cohort, Fall 2015	Total transfer students who took developmental education prior to transfer, Fall 2015 (B)	Percentage of developmental students in transfer cohort, Fall 2015	Total number of transfer students still enrolled in Fall 2016 (B)	Percentage of transfer students still enrolled in Fall 2016	4-year graduation rate for 2-year college transfer students from Fall 2012 cohort (C)
	1	College A							
	2	College B							
	3	College C							
	Total from all transfer institutions		36,690	N/A	16,872	46.0%	27,542	75.1%	60.50%
	Top 5 declared majors, Fall 2015 (D)					Native v. transfer student graduation rates (E)			
	Curriculum area		Student enrollment			Percentage of transfer students with junior standing in Fall 2011 graduating in 4 years		Percentage of native students with junior standing in Fall 2011 graduating in 4 years	
1. Interdisciplinary Studies		24,783			N/A		N/A		
2. Biology/Biological Sciences, General		24,708							
3. Registered Nursing/Registered Nurse		22,806							
4. Psychology, General		21,971							
5. Kinesiology and Exercise Science		18,881							
Institution Specific					65%		83%		
Statewide average									

Closing

Goals for the Day: What have we accomplished together?



1. Develop a shared understanding of math requirements regionally
2. Work towards regional agreement for transfer and applicability
3. Explore data on transfer and math pathways

Next Steps

Dana Center

- Follow up with institutions' point of contact
- Document institutional challenges and assets

Institutions

- Continue the dialogue with transfer partners
- Connect with regional coordinator

Meeting Evaluation

www.bit.ly/southtexasevaluation



A Closer Look: What's the real problem?

It's NOT

Developmental math...

College-level
mathematics courses...

Student supports...

Programs of study...

Transfer or policy...



A Closer Look:
What's the real problem?

It IS the

DISCONNECT
between all these things

Contact Information

- General information about the Dana Center
www.utdanacenter.org
- Dana Center Mathematics Pathways Resource Site
www.dcmathpathways.org
- To receive monthly updates about the DCMP, contact us at
dcmathpathways@austin.utexas.edu

Support your work

Dana Center Mathematics Pathways Resource Site:

<http://www.dcmathpathways.org/>

Dana Center
Mathematics
PATHWAYS

The DCMP Learn About Take Action Where We Work Resources

The Right Math for the Right Student at the Right Time

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.

Staff Contacts

- Martha Ellis (interim director, higher education services)
mellis@austin.utexas.edu
- Amy Getz (state expansion)
getz_a@austin.utexas.edu
- Jeremy Martin (policy)
jeremyryanmartin@austin.utexas.edu
- Connie Richardson (curriculum development)
cjrichardson@austin.utexas.edu
- Nancy Stano (professional learning)
nk.stano@austin.utexas.edu