“And that means looking for some of the best models out there. There are community colleges like Tennessee's Cleveland State that are redesigning remedial math courses and boosting not only student achievement but also graduation rates. And we ought to make a significant investment to help other states pick up on some of these models.”

- President Barack Obama
Houston, We Have A Problem

- The Problem – Developmental Math
- TBR Involved In System-Wide Redesign (Spring 2008)
- The Solution – Course Redesign
- National Center for Academic Transformation
  - [www.thenca.org](http://www.thenca.org)
- Attitude Adjustments
Redesign – Round One

- **3 Developmental Math Classes**
  - Basic Math, Elementary Algebra, Intermediate Algebra
  - Emporium Model (1 + 1 + 1)
  - Mastery Learning

- **7 College Math Classes**
  - College Algebra, Finite Math, Statistics (1 + 1 + 1)
  - Precalculus I & II, Applied Trig, Business Calculus (2 + 1)
  - Emporium Model
  - Mastery Learning
TBR A-100 Guidelines

- 5 Competencies for Learning Support Math
- Mandatory Secondary Diagnostic Testing
- One Semester Completion Goal
- No More Intermediate Algebra
- Remediation for < ACT 13
- No Double Jeopardy
- Fully Implemented by Fall 2013
Redesign – Round Two

- **2 Developmental Math Classes**
  - Shell Course Concept
  - Math 1 for Learning Support, Math 2 for Learning Support (1 + 2)
  - Emporium Model
  - Mastery Learning

- **8 College Math Classes**
  - *Algebra Essentials*, College Algebra, Finite Math, Statistics (1 + 2)
  - Precalculus I & II, Trigonometry, Basic Calculus (2 + 1)
  - Emporium Model
  - Mastery Learning
Our Little Twists*

- **Course Layout**
  - Each course consists of 10 – 12 mini-modules*
  - 1 hour class meeting each week – students work in class*
  - 2 hours work outside class each week – at least 1 hour in lab
  - Students expected to complete one module each week*

- **Course Grade**
  - 10% Attendance Grade - class & lab attendance, module finished
  - 30% Homework Sets – 2 to 5 sections per module
  - 60% Quiz and Exam Grades – 1 quiz each module, 2 exams

- **Course Standards**
  - Students must complete every homework set (70 or better)
  - Students must pass every module quiz and exam (70 or better)
  - Students must pass attendance grade (70 or better)
  - Students may take each quiz and exam multiple times

- *Our Little Twists On NCAT Recommendations*
Our Little Twists* Redesigned

- **Course Layout**
  - Each course consists of 10 – 12 mini-modules*
  - Must complete at least 3 units each semester
  - 1 hour class meeting each week – students work in class*
  - 2 hours work in the Math Lab each week
  - Students expected to complete one module each week*

- **Course Grade**
  - 10% PARTICIPATION Grade - class & lab attendance, module finished
  - 25% Homework Sets – 2 to 6 sections per module
  - 50% Quiz Grades – 1 quiz each module
  - 15% Unit Exam Grades – 3 exams, 4 modules

- **Course Standards**
  - Students must complete every homework set (90 or better)
  - Students must pass every module quiz and exam (80/75 or better)
  - Students must pass participation grade (70 or better)
  - Students may take each quiz and exam multiple times

- *Our Little Twists On NCAT Recommendations*
Lessons Learned – Then and Now

- Weekly Expectations
- Mastery Learning
- Points for Everything
- High Tech – High Touch
- Freshmen Don’t Do Optional
- Additional Assignments
- Rules are Rules
- Work Begins on Day 1
- Quality Matters
Results Update - Developmental Math

- Cost/FTE has been reduced by over 40%

- Success Rates for Developmental Math averages 67.5% for 4 fall semesters since redesign began (compared to 51% traditional)

- Achievement gaps were closed
TBR Study (Schutz & Tingle) - Cleveland State Redesign

- Students tracked 3 semesters before and after redesign
- Students tracked from dev math into college math
- Examined impact on course success & next course success
- Logistical regression, significance level 95%

The Results

- Redesign had a strong positive impact on course success
- Redesign had a strong positive impact on next course success, including both dev math and college math
- Gender and race were not factors in predicting course success - achievement gaps were closed
Results Update - College Level Math

- Math department has grown 40% since redesign (from 1100- to 1600+)
- College Math (MATH) enrollment is 800+ S2011 – more than Dev Math
- Students taking MATH increased by 58%
- Students passing MATH increased by 71%
Reap the Benefits

**Scheduling Benefits**
- One Room Schoolhouse
- Math on Demand

**Continuous Enrollment Plan**
- Numerous students have completed multiple courses

**Dual Enrollment**
- Passing rates often 100% in these courses
- Our campus or yours; our instructor or yours
- Expanded to 6 high schools
Questions?

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