

STATWAY™, QUANTWAY™ AND NEW LIFE FOR DEVELOPMENTAL MATHEMATICS

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What is coming ... this session!

- ⦿ The problems being addressed
- ⦿ Two models (Pathways; New Life)
- ⦿ Common elements
- ⦿ Unique elements
- ⦿ Who is doing this
- ⦿ How can Michigan become involved

The problems being addressed

- ◎ It's not just that developmental math classes have 'low pass rates'
- ◎ It's not just that the content is mismatched to student needs
- ◎ It's not just that students are being required to take 1 to 4 developmental math courses
- ◎ It is ALL OF THE ABOVE

Two Models

- Carnegie Pathways (Statway™, Quantway™)
- Theme: “To and thru college credit math class in two semesters”

- AMATYC New Life Project
- Theme: “Appropriate mathematical content in fewer courses, with one developmental course for many students”

(AMATYC is the American Mathematical Association of Two-Year Colleges)

The Pathways Model

- ◉ Statway ... two-semester sequence integrating developmental mathematics with statistics (intro stat, college credit)
- ◉ Quantway ... two courses, one is a new developmental math (called “Mathematical Literacy for College Students”, or MLCS) and then a quantitative reasoning course
- ◉ The Pathways are being developed by the Carnegie Foundation for the Advancement of Teaching, along with the Dana Center (University of Texas, Austin), with help from AMATYC

Carnegie Dev Math Pathways Initiative

- Target: double the number of dev math students to and through a college level math course through a one year sequence
- Statway: dev math students to and through college level statistics in one year
- Quantway: dev math students to and through college level quantitative literacy course in one year

What Makes Us Different



- Combining the worlds of research and practice
- Focus on continuous improvement science
- Building an ongoing networked improvement community focused on a high leverage problem: development math
- Changed role of faculty

Changed Role of Faculty



- Co-developers of materials
- Research partners
- Lesson study for curriculum and professional development
- Continuous improvement in a networked community

It's Not Just the Curriculum



- Unique Pedagogy – focused on active student engagement
- Productive persistence (student tenacity and good strategies)
- Attention to Language and literacy

Statway and Quantway Learning Outcomes

Developmental Mathematics Learning Outcomes

- Numeracy
- Proportional Reasoning
- Algebraic Reasoning
- Functions

The New Life model

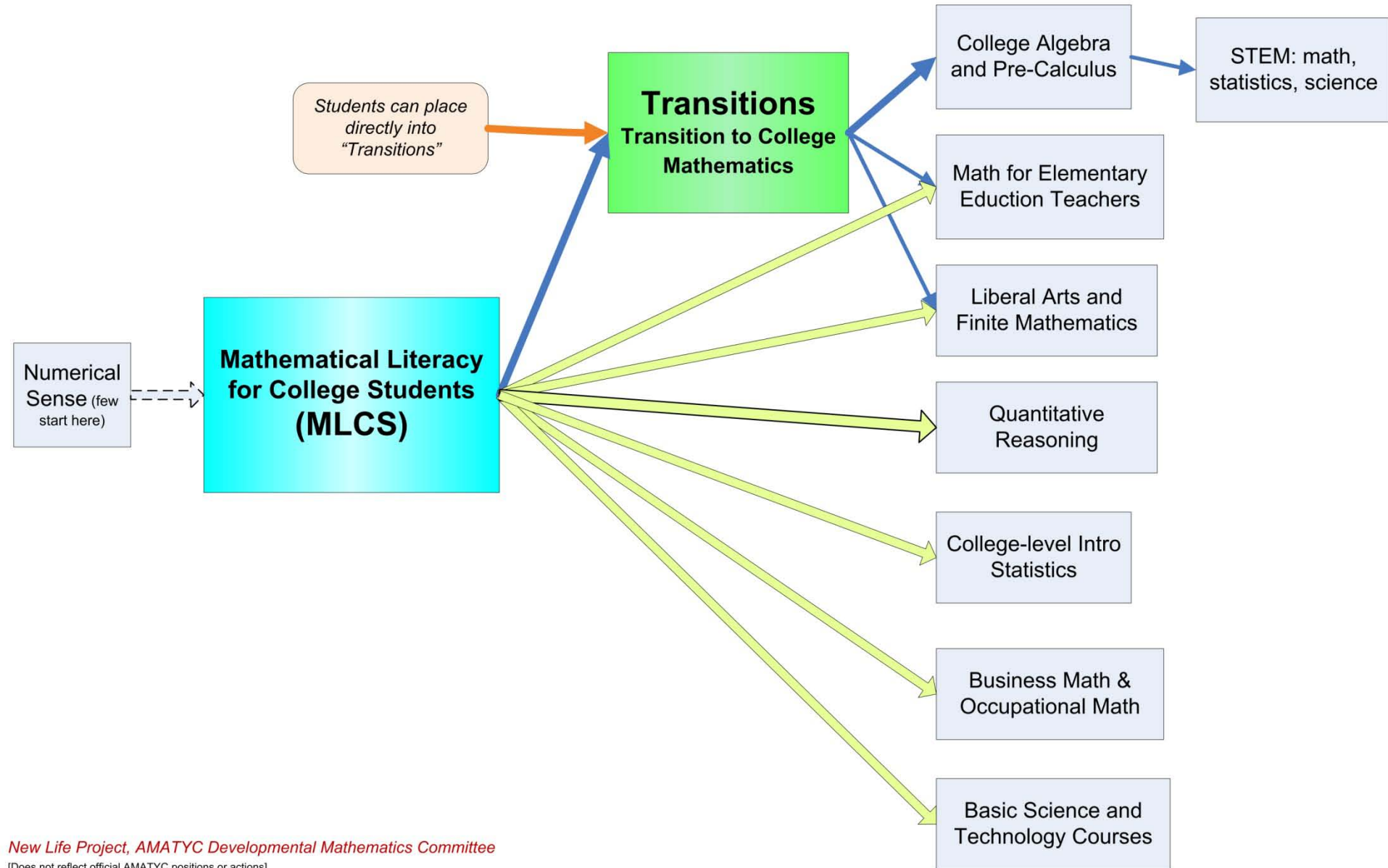
- Project of AMATYC's Developmental Mathematics Committee
- Based on *Beyond Crossroads*, as well as other professional work (MAA CRAFTY, etc)
- Multi-dimensions: Student needs, content, learning, assessment and support
- Faculty as professionals

The New Life model: Goals

- ⦿ Address the needs of ALL students
- ⦿ Reflect accumulated wisdom about mathematics
- ⦿ Reflect accumulated wisdom about learning mathematics
- ⦿ One developmental course for most students
- ⦿ Second course for those needing 'college algebra' (Transitions)

New Vision of Mathematics Pathways: Fewer non-credit math courses for most students

from the New Life Project



The New Life Model ...

- At approximately the level of beginning algebra ...
- **Start with a mathematical literacy course**
- Emphasize general mathematics useful for all students and for many courses
- **Highlight critical concepts from the beginning:** relationships, quantities, proportionality, rate of change, and multiple representations

Common Elements: High Overlap

- Share a set of math outcomes ... in MLCS
- One developmental course for more students
- Focus on much more than 'just content': Teaching pedagogy, student support, building capacity
- Share a focus on professional development and networking for faculty

Unique Elements – Pathways

- Designed for specific groups of students
- Pathways involves a college being included in the “Networked Improvement Community” (NIC)
- Every college implements the same essential curriculum; the same instructional materials
- Grant money supports the current work
- Current work is ‘state based’

Unique Elements – New Life

- ⦿ Can be implemented for specific groups of students, OR can be used to totally replace the existing developmental courses
- ⦿ **New Life work is supported by an informal community (on-line)**
- ⦿ Work is based on local initiatives, with natural collaboration
- ⦿ **Each college adapts the curriculum**
- ⦿ No grant money involved (currently)

Who is currently ‘doing this’?

- ◎ Pathways – see next slide
- ◎ New Life – various colleges. Illinois: college is doing “MLCS” and developing materials, as is another in New York. Texas: college replacing developmental math with “New Life” courses.
- ◎ New Life materials are being developed by traditional publishers; Pearson and Cengage have current projects ... McGraw Hill is planning

New Mathematics Pathways

Two 1-year pathways

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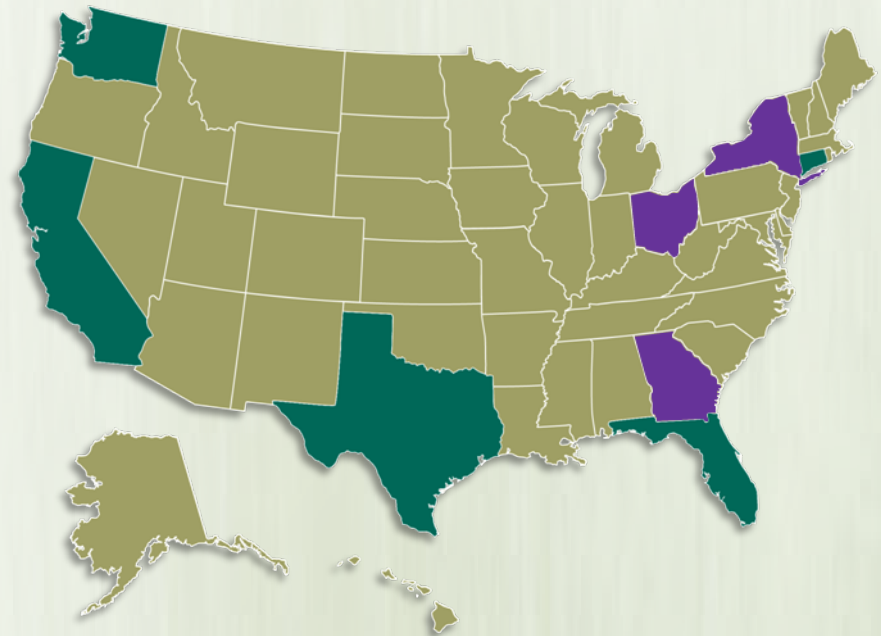
STATWAYSM

- **19** Community colleges
- **3** California State universities

2

QUANTWAY

8 Community colleges



How can Michigan become involved?

- Pathways AND New Life offer similar advantages, with comparable content
- Pathways materials are currently limited to those accepted by the Carnegie Foundation (into the “NIC”)
- New Life is open to any institution
- Michigan’s “Center for Student Success” may be able to provide coordination & networking for New Life work

How You Can Get Involved



- Submit letter of interest with evidence of college's culture of evidence, including:
 - demonstration of institutional research capacity and expertise;
 - evidence of the math department's interest in committing to a common curriculum and assessments, and
 - focus on conceptual understanding, student engagement and language;
 - and an overall institutional commitment to continuous improvement
- pathways@carnegiefoundation.org

How You Can “Join” New Life

- ◎ Curricular information on the wiki:
<http://dm-live.wikispaces.com>
- ◎ Further information on the blog:
<http://www.devmathrevival.net>
- ◎ Talk to your Pearson or Cengage representative about text materials

For more information ... or questions ...

- Jack Rotman rotmanj@lcc.edu
- See the 'wiki' (dm-live.wikispaces.com)
and the 'blog' (www.devmathrevival.net)