



Emporium

THE GOOD, THE BAD, AND ... THE SURPRISING RESULTS

The problems

Consistency

Stark has roughly 4500 students in developmental math. With over 150 sections, taught roughly 150 ways, consistency with material and subsequent course pass rates were a serious issue. Those rates were 10% less than students who tested directly into College Algebra.



The problems

Range

We would argue that developmental math contains a more diverse range of student ability than found in college level math and higher. In a traditional lecture, it's difficult and sometimes impossible to span that range.



The problems

Not reaching the goal!

At Stark we measure not only pass rates of classes but through rates of the developmental program. In the traditional method, out of 100 students who placed in our lowest level math course, only 1-2 passed their college level math course. Don't be surprised if you find this everywhere. $0.6 \times 0.6 \times 0.6 \times 0.6 = 0.13$.

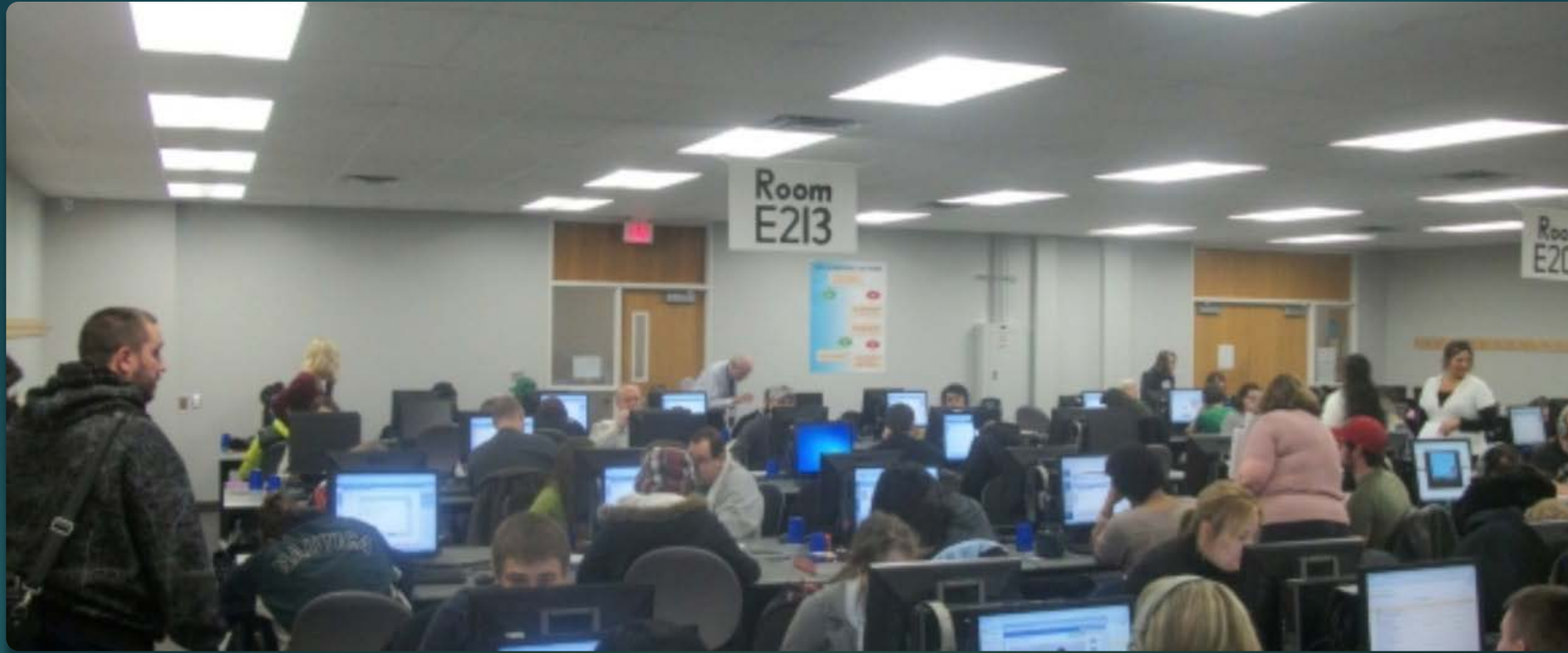


Why the department felt they needed to change?

- ▶ Low course pass rates along with relatively low subsequent course pass rates meant the program wasn't efficient or effective.
- ▶ Low through rates. Even if the pass rates are high, if the through rates are low the program isn't successful.
- ▶ They wanted a consistent product and environment that was easy to manipulate and measure.

What did they do?

- ▶ Fully scaled Emporium model.
- ▶ All students start at the lowest level and move through at their own speed.
- ▶ Mastery based system. Students can't move on until they've earned at least a B on all material.



96+ Computers; 2 full-time instructors; 4 professional tutors;
16:1 student-helper ratio



Testing Center

How does it work

- ▶ Student takes COMPASS
 - ▶ If 54 or higher on COMPASS Algebra → College Level
 - ▶ If 53 or lower on COMPASS Algebra → Module 1 in the Emporium

- ▶ Student takes Pretest for Module 1
 - ▶ If student scores 80% or above → Module 2
 - ▶ If student scores less than 80%
 - ▶ Personalized homework is generated
 - ▶ Student takes Quiz
 - ▶ Student takes Module Test
 - ▶ If 80% or higher moves to Module 2
 - ▶ If less than ...

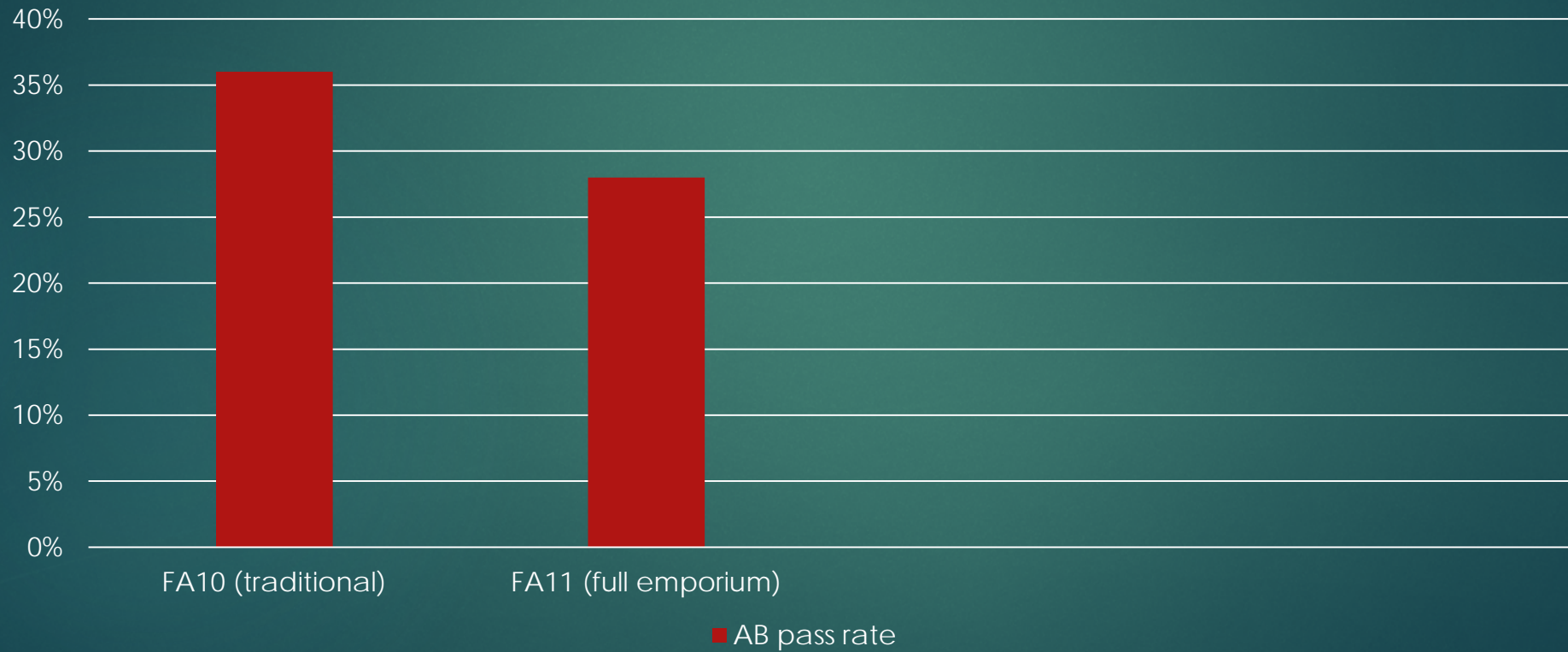
Benefits

- ▶ Student retains work done from semester to semester rather than starting over.
- ▶ Student must do the work over and over again until they get it!!! Which is what we always wanted them to do. Practice!
- ▶ Students who are struggling now have customized interventions in the classroom.
- ▶ Trade off for faculty. No more grading, test prep, syllabus prep, notes prep – must know each student personally and know where they're struggling

The Bad!!!



AB pass rate for arithmetic class



The Bad!!!

- ▶ Culture Change!
- ▶ Implementation Issues
- ▶ Administrative Pressure
- ▶ Departmental Pressure
- ▶ Lack of training
- ▶ Luckily, we were ready for each issue that arose.

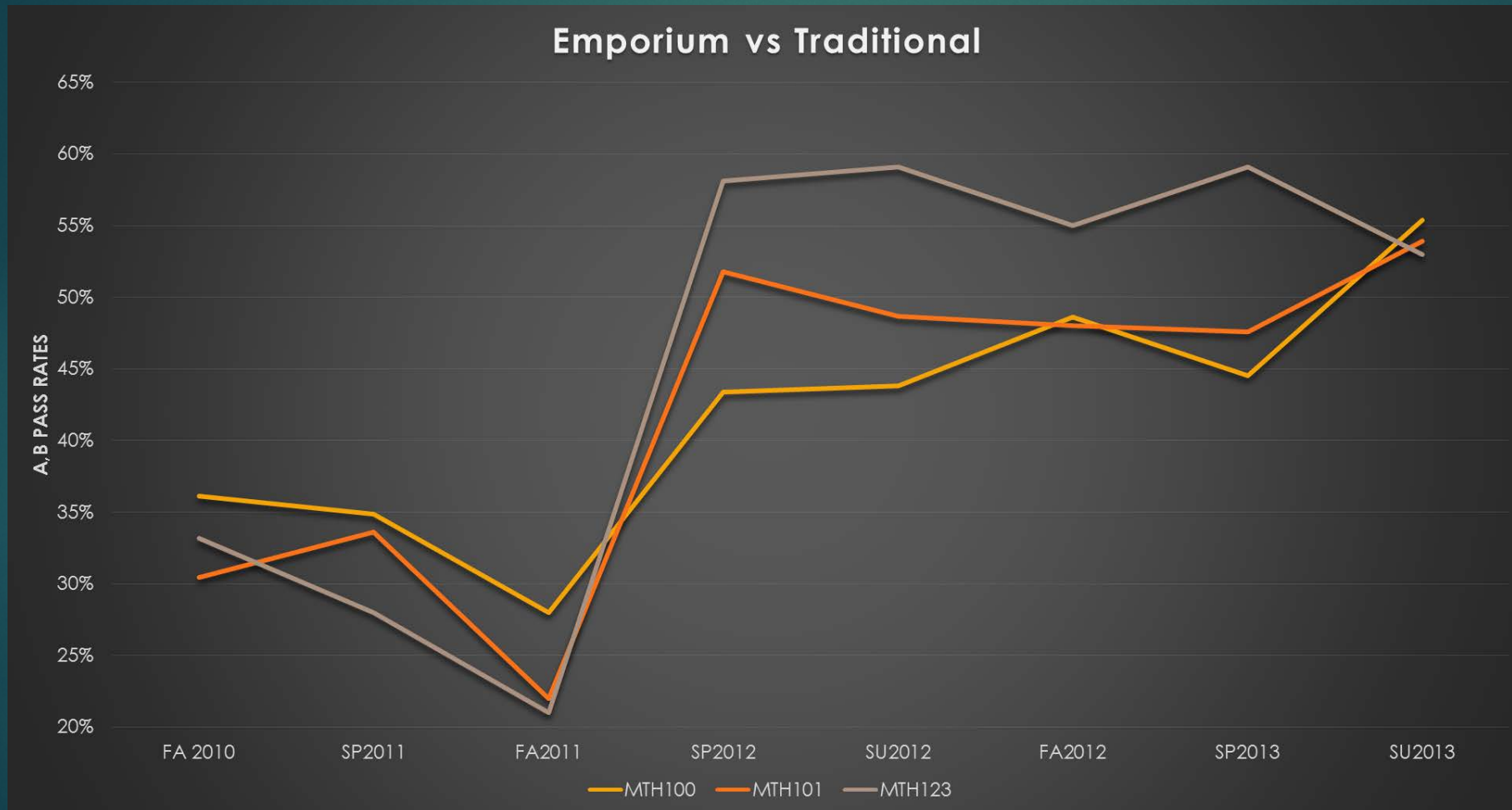
Measure, Manipulate, and Measure

MTH100		2256				
Modules 1-6						
	# Completed	% Completed	# lost	% lost	% After log jam	
Mod1	1592	70.6%	-664	29.4%		
Mod2	906	40.2%	-686	43.1%		
Mod3	775	34.4%	-131	14.5%	85.5%	
Mod4	601	26.6%	-174	22.5%	66.3%	
Mod5	505	22.4%	-96	16.0%	55.7%	
Mod6	470	20.8%	-35	6.9%	51.9%	

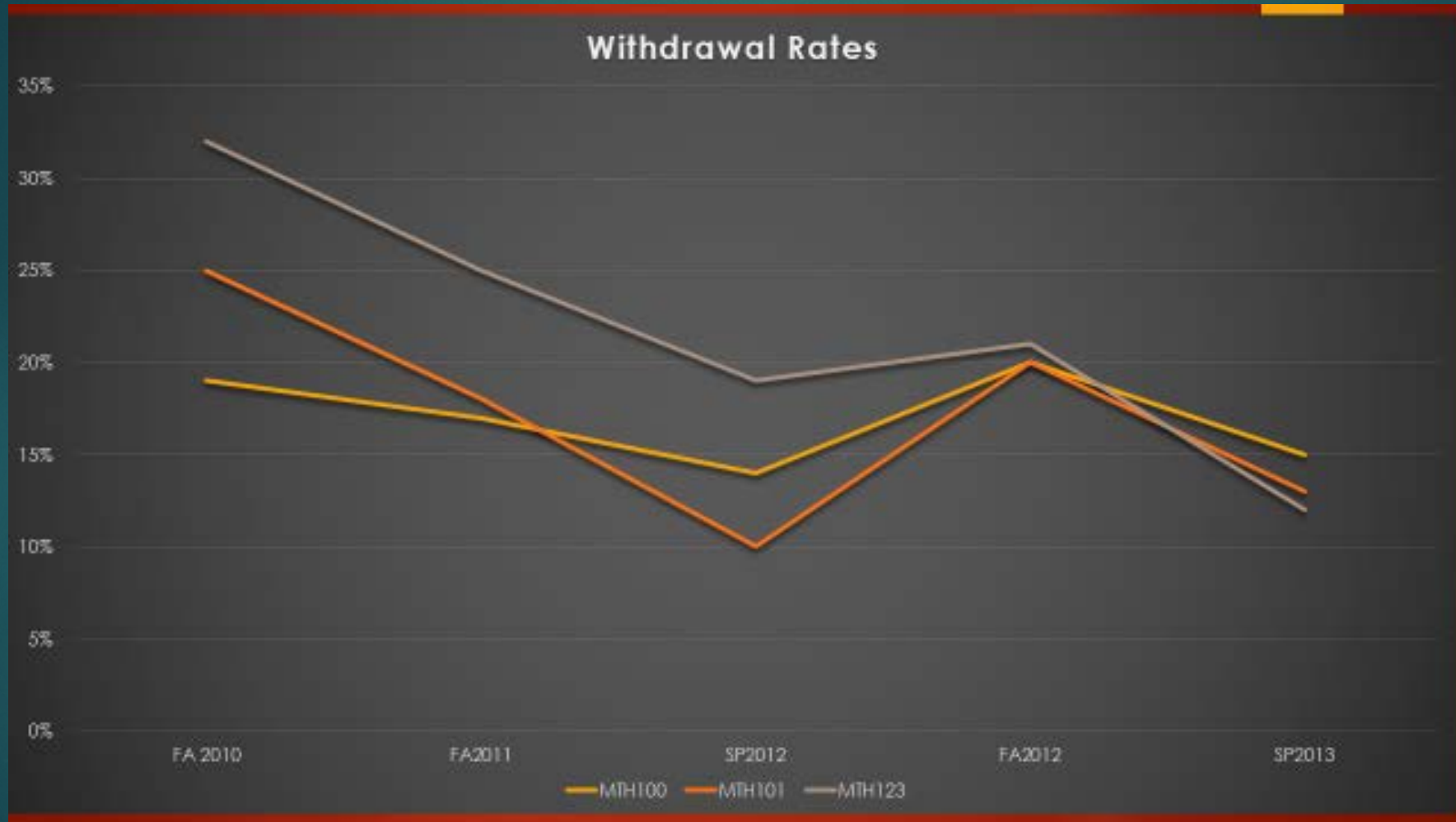
Other responses

- ▶ Attendance Policy
- ▶ Contextualized and Concept Problems
- ▶ Better training

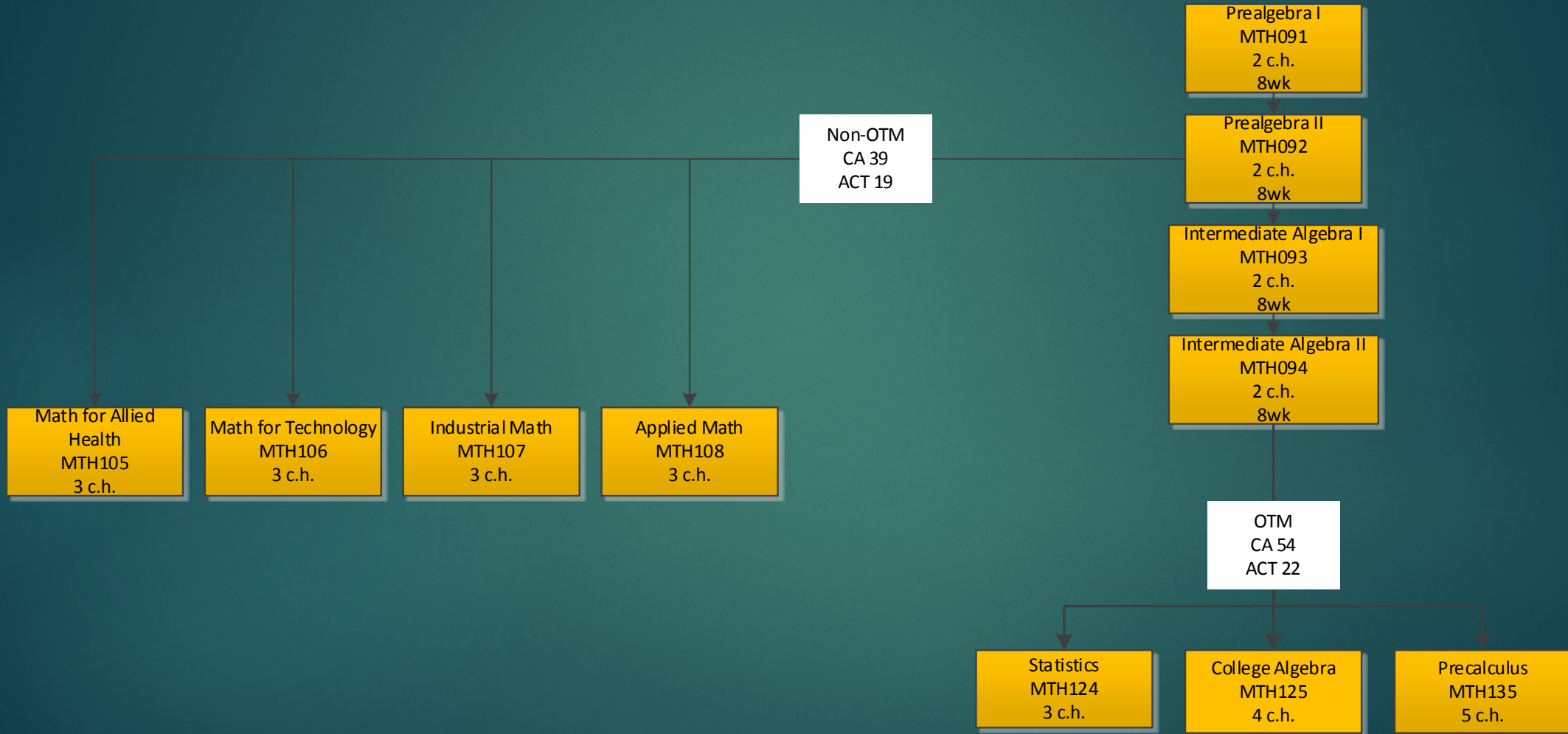
Surprising but Welcome Results



Surprising but Welcome Results



Next Steps



If you're interested.

- ▶ Determine the percentage of students starting in your lowest level developmental math class and even attempting a college level course.
- ▶ Go big! It's hard to achieve the culture change necessary without doing so.
- ▶ Visit a school that has implemented the program. Make sure to understand and ask about the good and the bad.
- ▶ Make sure you have support from your faculty, staff, and administration, otherwise the project is doomed from the start.