



# HIGHLIGHTS OF PIERCE MATH PROJECTS

**PIERCE COUNSELING DEPARTMENT  
MAY 31, 2012**

**BRUCE YOSHIWARA**



# SUMMARY OF MATH STUDENT SUCCESS INITIATIVES

## ○ Current Programs

- **ASAP** (Combined Algebra 1+2 Immersion)
- **STATWAY** (2-semester Statistics for non-STEM)
- **MAP** (Modeling and Algebra Project for Algebra 2)
- **APT** (Accelerated Precalculus and Trig)
- Re-taking the math placement test

## ○ Future Pilots

- **PI** (Prealgebra Immersion)
- Placement test workshops



# ASAP

- Algebra Success At Pierce – Get through your algebra classes ASAP!
- Learning-community-style cohorts
- Course has four components:
  - Algebra 1 (Math 115: 5 units),
  - Algebra 2 (Math 125: 5 units),
  - Math study skills unit (Math 103: 1 unit),
  - College success class (PD 40: 3 units),
  - Total units: 14



# ASAP vs. Non-ASAP Success and Persistence

	Enrolled in 115	Successful in 115	%	Enrolled in 125	%	Successful in 125	%
ASAP	535	400	74.8%	(535)		351	<b>65.6%</b>
Non-ASAP	6100	3558	58.3%	2014	33.0%	1396	<b>22.9%</b>



# ASAP MATERIALS

- **Combined textbook by Pierce faculty**
  - Directed learning activities
  - Wide variety of problems
  - Emphasis on graphical reasoning and applications
  - Rule of four: verbal, numerical, graphical, and algebraic descriptions of models
- **Graphing calculator**
- **Math Study Skills booklet for 1 unit study skills class**



# SUPPORT FOR ASAP

- **PD class taught by counselor**
- **Each class has a TA who:**
  - **Helps students with activities in class**
  - **Tutors outside of class**
  - **Advises and supports students**
  - **Paid by Basic Skills Initiative**
- **One Fall 2012 section of Math 227 is reserved for spring 2012 ASAP students:**

**0539 1:30 - 3:35 T Th TCHERTCHIAN, E A MATH 1415**



# THERE WILL BE 5 COHORTS OF ASAP FOR FALL 2012.

- Rudin/Belloso
- Martinez/Altounji
- Tabatabai (No PD 40)
- Yoder/Quintero
- Navab (No PD 40 nor Math 103)



# STATWAY™

- A project of the Carnegie Foundation for the Advancement of Teaching—Pierce is one of the 19 community colleges in the pilot.
- Students in Statway™ start at the level of Math 115 and get “to-and-through” college level statistics in one year.
- Designed for non-STEM students whose only university math requirement is a single course in statistics
- Developmental math in the service of statistics: Statway™ does NOT cover Math 115 nor Math 125.





# STATWAY™ LEARNING PHILOSOPHY PRINCIPLES

- A “rich task” or overarching question motivates the development of concepts.
- Mathematical tools are introduced as needed.
- Lessons focus on fewer topics in greater depth.
- Materials stress conceptual understanding over procedural fluency.
- Technology is used for calculation.



# STATWAY™ ISSUES FROM FIRST YEAR:

- The reading level of the materials was 12, above the comfort zone of most developmental students.
- The lessons are challenging, not easy.
- The materials provided by the Carnegie Foundation were not yet ready for wide use, so Pierce faculty had to make many modifications.



# THERE WILL BE TWO STATWAY™ COHORTS FOR FALL 2012.

<b>9:35 - 10:45 am MTWTh plus 10:45 -11:00 am MTWTh</b>	<b>Math 228A Statway I  Study Skills</b>	<b>Martinez, RM</b>	<b>Math 1400</b>
<b>11:10 - 12:20 pm MTWTh plus 12:20 - 12:35 pm MTWTh</b>	<b>Math 228A Statway I  Study Skills</b>	<b>Cain, CD</b>	<b>Math 1400</b>



# MAP MATH 125

- Modeling with Algebra Project
- Math 125 (Intermediate Algebra) paired with Math 103 (How to Succeed at Math)
- Emphasis on student engagement in group work and directed learning activities
- Graphing calculator
- De-emphasis on lecture
- Videos for skills problems
- Skills Practice problems and Reading Questions scored in computer system



# MAP SUCCESSES

- **High scores on MET: Average score 64.2 vs 52.6 for all Algebra 2**
- **MAP success at transfer level: 75% compared to 62.5% overall**
- **Reading Questions encourage students to read before coming to class**
- **Activities and Concept Questions engage students**
- **Focus on applications increases writing ability and critical thinking without detracting from mastery of skills**



# THERE WILL BE 3 MAP MATH 125 SECTIONS FOR FALL 2012

Class	Time	Days	Instructor	Room	Units
Math 125	8:00 – 9:10 AM	MTWTh	Tchertchian, E	MATH 1416	5
MathStudy Skills	9:10 – 9:25 AM	MTWTh	Tchertchian, E	MATH 1416	1

Class	Time	Days	Instructor	Room	Units
Math 125	9:35 – 10:45 AM	MTWTh	Yoshiwara, B	MATH 1415	5
MathStudy Skills	10:45 – 11:00 AM	MTWTh	Yoshiwara, B	MATH 1415	1

Class	Time	Days	Instructor	Room	Units
Math 125	11:10 – 12:20 PM	MTWTh	Veiga, J	AT 3805	5
MathStudy Skills	12:20 – 12:35 PM	MTWTh	Veiga, J	AT 3805	1



# APT – ACCELERATED PRECALCULUS AND TRIGONOMETRY

- 8 units (3 unit Math 240 Trigonometry plus 5 unit Math 260 Precalculus)
- Students will have online access to the textbook, videos, and slideshows of the material.
- Students work on structured activities in the classroom.
- *Precalculus* by Carlson & Oehrtman



## THERE WILL BE THREE APT MATH 240/MATH 260 SECTIONS FOR FALL 2012:

Class	Time	Days	Instructor	Room	Units
Math 260	8:30 – 9:40 AM	MTWTh	Soto, D	MATH 1402	3
Math240	9:40 – 10:25 AM	MTWTh	Soto, D	MATH 1402	5

Class	Time	Days	Instructor	Room	Units
Math 240	10:35 – 11:20 AM	MTWTh	Yoshiwara, KA	MATH 1402	3
Math260	11:20 – 12:30 PM	MTWTh	Yoshiwara, KA	MATH 1402	5

Class	Time	Days	Instructor	Room	Units
Math 240	1:30 – 2:15 PM	MTWTh	Smith, BT	MATH 1400	3
Math260	2:25 – 3:35 PM	MTWTh	Smith, BT	MATH 1400	5



# A VISION FOR FUTURE DEVELOPMENTAL MATH

## ○ **STATWAY**

- **For Humanities/Social Science students**
- **75% of all Pierce Algebra 1 students**

## ○ **ASAP**

- **For STEM, Business, Nursing**
- **25% of all Pierce Algebra 1 students**

## ○ **MAP and APT**

- **For STEM majors placing above Math 115**

## ○ **PI (Prealgebra Immersion)**



# PI: PREALGEBRA IMMERSION

- **Students enroll in 9 math units (immersion):**
  - 5 units Prealgebra
  - 1 unit Math Success
  - 3 units Arithmetic
- **Six hours of in-class directed learning activities from EMPower Math booklets**
- **Three hours of “lab” work.**
- **Instructor credited with 6 units**
- **Students take 3 additional units to be full-time**



# MATH PLACEMENT: MDTP

- Non-adaptive
- Scantron
- 4 levels
- Student should be advised to prepare because placement results are high stakes!



# MATH PLACEMENT: MDTP

- Students who are unhappy with their placement may consult with a math advisor. The students are directed to complete a set of online exercises (currently using the freely available Khan Academy online resources). After successful completion of the assignment, the students will receive a permission slip to re-take the placement test.
- The math department is developing student workshops (to launch in spring 2013) for math placement preparation.



# MATH EXIT TEST (MET)

## OVERVIEW

- **Began in Fall 2007**
- **Standardized test written by Pierce faculty and taken by all students in all sections of Algebra 1 and Algebra 2 at the end of every semester.**
- **Used as an SLO assessment tool**
- **Important:**
  - **Individual instructors are free to decide for themselves how to use the MET scores in their grading.**
  - **Many, but not all, use it as a final exam.**
  - **Free-response questions are team graded.**



# PIERCE COLLEGE MATH DEPARTMENT

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