

How did they do that?

Successful Implementations of *Beyond Crossroads*

Bruce Yoshiwara

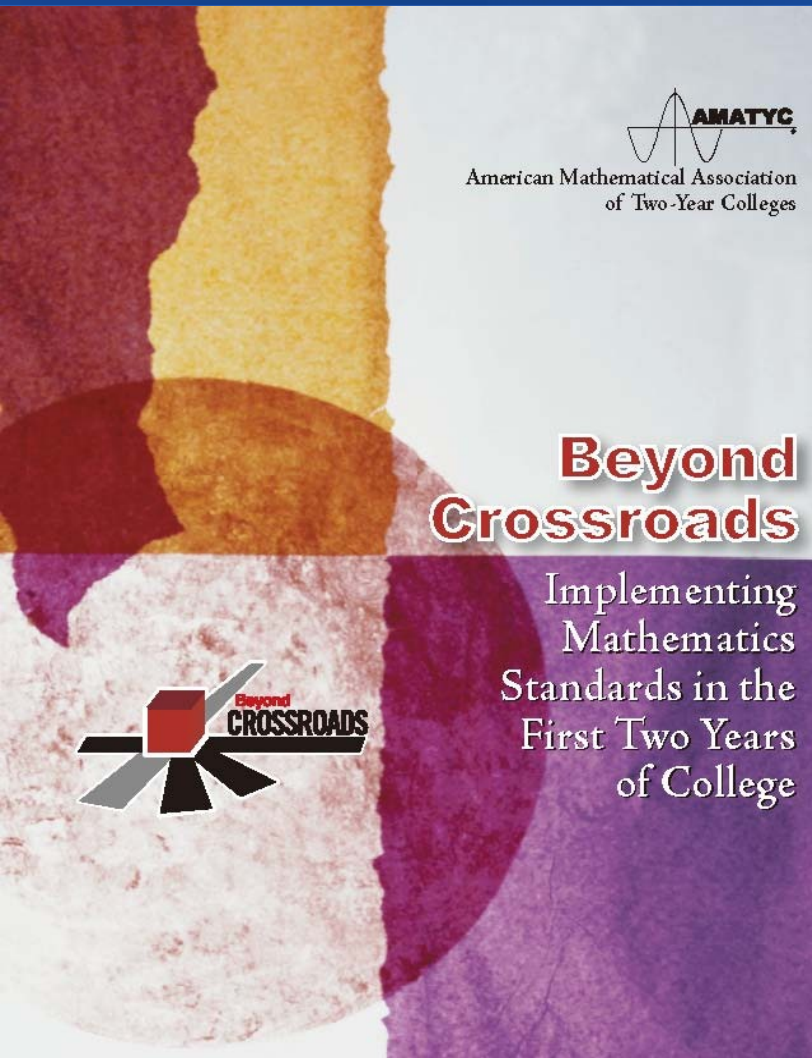
Beyond Crossroads Implementation Coordinator

AMATYC Annual Conference

November 20, 2008

Washington, DC

What is *Beyond Crossroads*?



Beyond Crossroads: Implementing Mathematics Standards in the First Two Years of College is the standards document of AMATYC, released in November 2006

What is *Beyond Crossroads*?

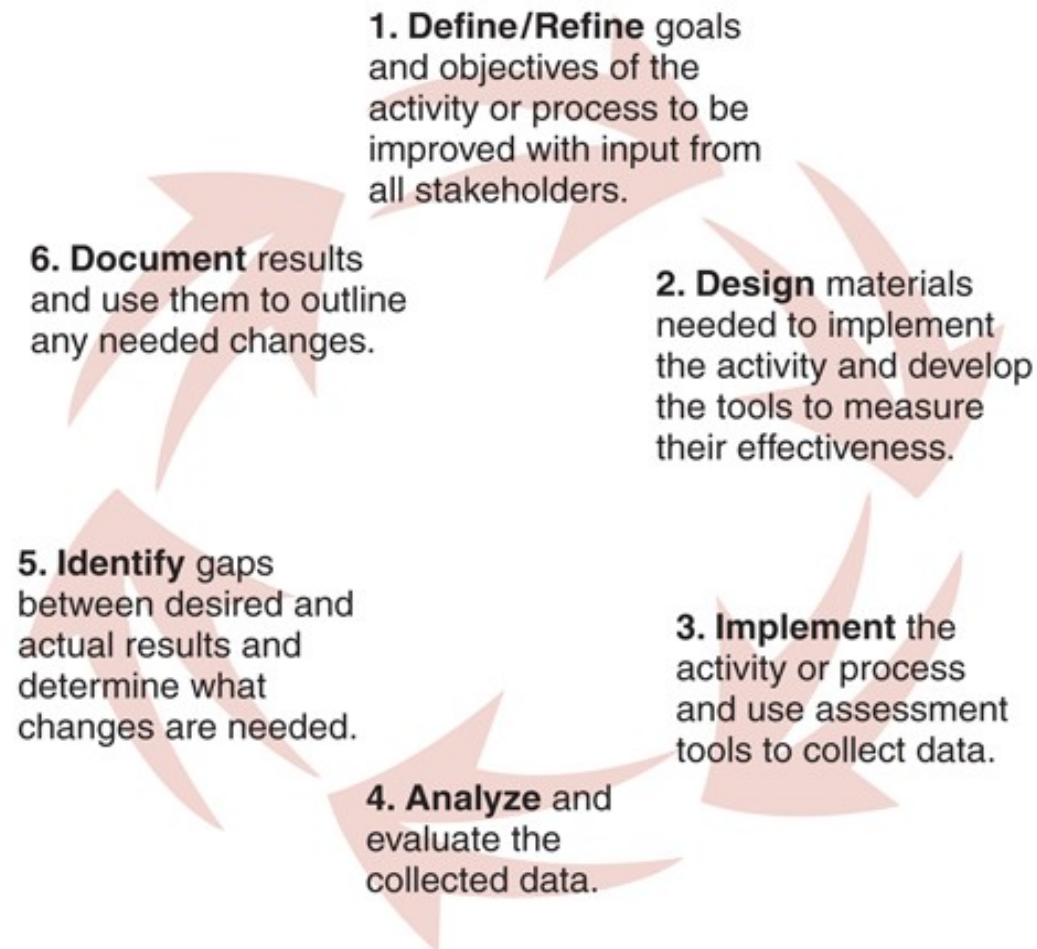
A guiding theme is *embracing change for continuous improvement and professional development.*

What is *Beyond Crossroads*?

Beyond Crossroads lists five implementation standards: Student Learning and the Learning Environment, Assessment of Student Learning, Curriculum and Program Development, Instruction, and Professionalism.

What is *Beyond Crossroads*?

Figure 1 The Implementation Cycle of *Beyond Crossroads*



The *Implementation Cycle* is a model for making change and improvement in math education.

Check it out!

At the *Beyond Crossroads Live!* site you can see an enhanced electronic version, download a pdf version, or order a free hard copy.

2008 BC Summer Workshop

Forty math educators gathered at the Centennial campus of Pikes Peak Community College in Colorado Springs June 6-7, 2008.

2008 BC Summer Workshop

The keynote speaker, **Pat McKeague**, provided many examples of slides and activities he uses to enhance the learning environment of his classes.

2008 BC Summer Workshop

Pat's key messages

- Give yourself permission to use 5 minutes of any class session for anything you find interesting in and around mathematics.
- Share with your students what you like about mathematics.
- Don't let your lack of knowledge on a subject keep you from bringing it to class.
- Start slowly.

2008 BC Summer Workshop

Pat's also provided links to websites he finds useful and links to his websites.

2008 BC Summer Workshop

Rob Farinelli spoke about *Using Beyond Crossroads to Teach the Millennial Generation*.

(Rob is AMATYC's president-elect.)

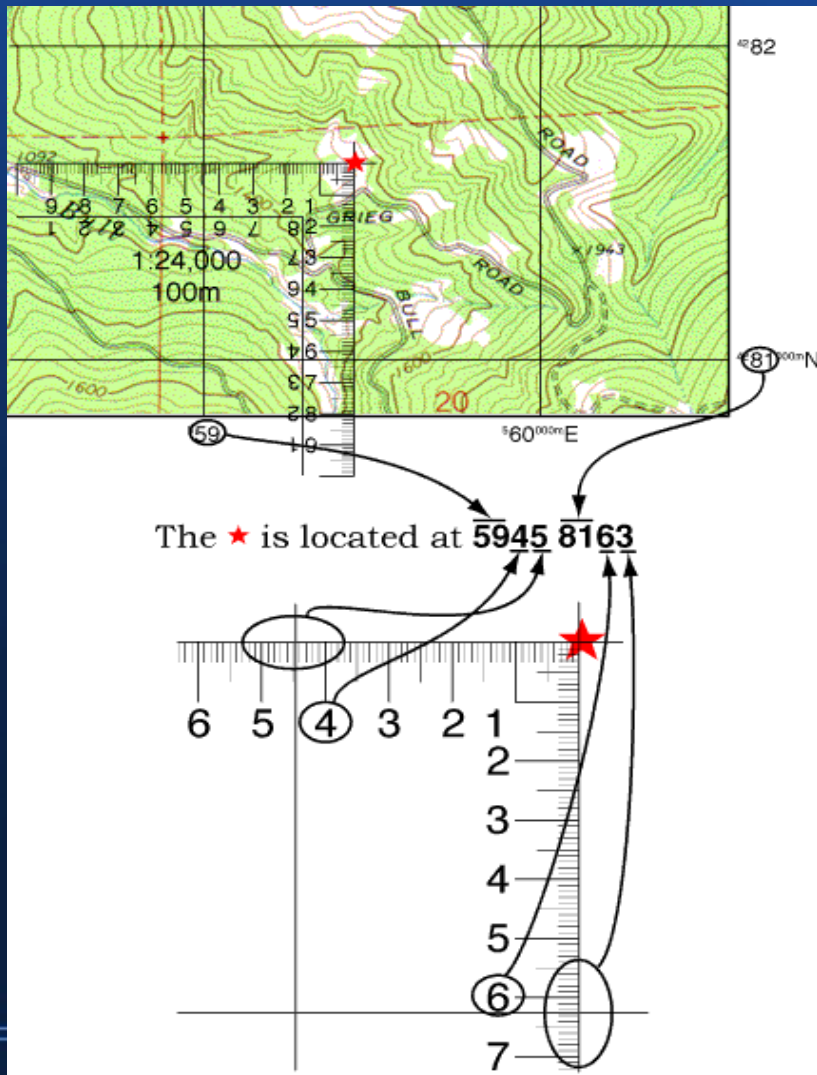
2008 BC Summer Workshop

Matures	Boomers	Gen X	Millennial
Before 1946	1946 – 64	1965 – 79	1980 – 2000
Thrifty	Buy now/pay later	Save	Earn to spend
Work fast	Efficiency	Every job is a contract	Tech has all the answers
Hard work	Personal fulfillment	Live with uncertainty	Work should be fun

2008 BC Summer Workshop

Valerie Harris explained how students at Central Wyoming College are integrating Geology and Mathematics in her presentation, “Where in the World Am I?”

2008 BC Summer Workshop



The students learn to use a compass, GPS, and the Universal Transverse Mercator (UTM) coordinate system.

2008 BC Summer Workshop

Rob Kimball spoke on “Implementing *Beyond Crossroads* with the Right Stuff” and on “Implementing Promising Practices - doing the Right Thing with the Right Stuff”.

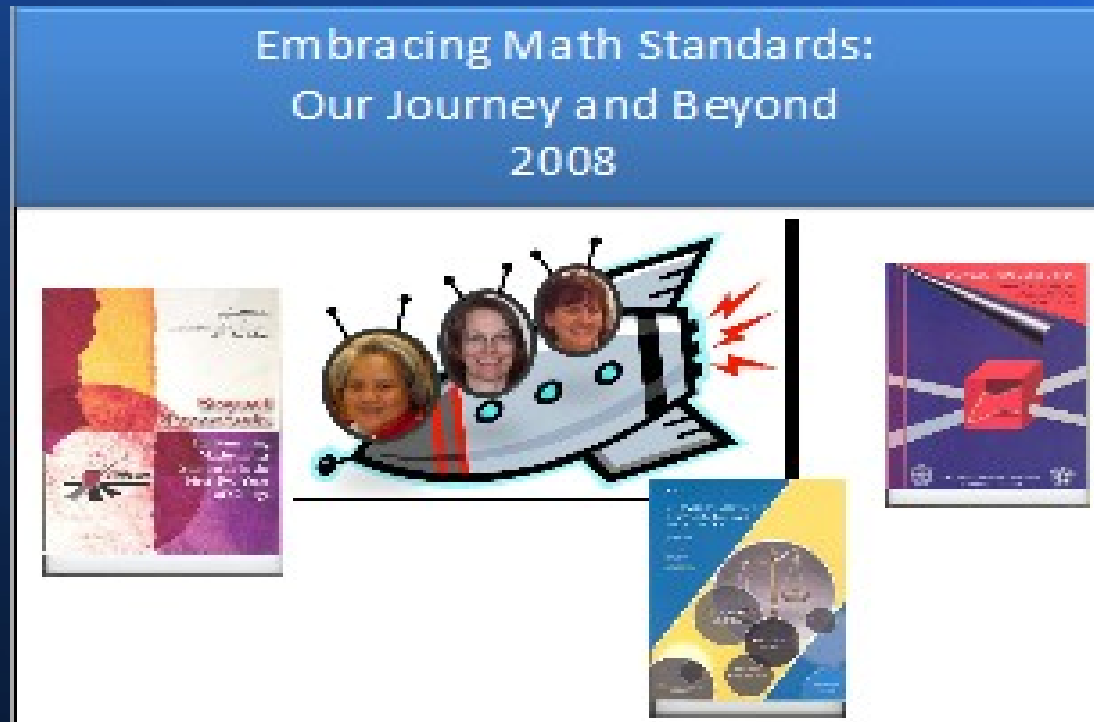
(Rob is the project director of **The Right Stuff**, an AMATYC project funded by the NSF.)

2008 BC Summer Workshop

Rob provided examples of college algebra lessons designed not simply to help students master algorithms but rather to foster changes in the student's way of thinking and/or habits of mind.

His **BC wiki site** includes links for his presentations and related resources.

2008 BC Summer Workshop



The team of **Holly Ashton**, **Jenny Dorrington**, and **Gwen Wiley** gave two presentations.

2008 BC Summer Workshop

Their first **presentation** explained how Pikes Peak Community College embraced the *Beyond Crossroads* implementation standard of Professionalism (Chapter 12).

The second **presentation** described how PPCC embraced the BC implementation standard of Assessment of Student Learning (Chapter 5).

2008 BC Summer Workshop

A team of **Wyoming educators** have declared 2008-2009 the Year of Algebra.

The team hopes to...

2008 BC Summer Workshop

1. Design a task that has multiple entry points and presents an engaging challenge for students at different levels in their education.
2. After gathering some student data on own campuses, complete with rubric that reflects our combined experience and the work.
3. Continue refining this first assessment task using the implementation cycle outlined in BC.

2008 BC Summer Workshop

4. Have a work session in September to establish the rubric, a baseline of data, and to make plans for data to be collected Fall 2008.
5. Make plans for more tasks and the comparison of results at the February 2009 annual meeting, this year being hosted by Casper College.

Los Medanos College

In 2006-2007, the **Los Medanos College** Mathematics Department began an overhaul of their developmental math program.

Changes were based on **research/effective practices** of developmental education.

Department members embraced the Scholarship of Teaching and Learning (SoTL).

Los Medanos College

Meaningful Student Learning Outcomes:

Courses are designed to help students learn to solve problems in real world contexts that require more than algorithmic approaches and to use multiple representations of mathematical ideas in order to build quantitative literacy.

Los Medanos College

Collaborative investigations into student learning:

Teaching Communities meet weekly with the goal of developing effective curriculum and pedagogy that support our program's SLOs. Teaching Communities are based on the theory that idiosyncratic efforts, while sometimes brilliant and inspiring, cannot affect the same kind of sustainable innovation fostered by a community of practice.

Los Medanos College

Integration of research and best practices:

Major influences include Trends in International Mathematics and Science Study (TIMSS), the research into effective Developmental Education Programs outlined by Hunter Boylan in *What Works: Research-based Best Practices in Developmental Education*, the National Research Council's *How Students Learn: Mathematics in the Classroom*.

Los Medanos College

Integrated assessment of student learning for the purpose of program improvement:

Holistic assessment of student achievement of program learning outcomes by analyzing a cross-section of final exams every semester.

Los Medanos College

Integration of student support services:

Math Lab, peer tutoring, and partnership with Counseling.

Los Medanos College

Departmental commitment to developmental math:

Over 90% of the full-time math faculty teach developmental courses on a regular basis, with approximately 75% devoting the majority of their teaching load to developmental courses. (Still, adjuncts teach the majority of developmental sections.)

Los Medanos College

Contact: Myra Snell

MSnell@losmedanos.edu

Los Angeles Pierce College

5 new programs:

- Freshman Success
- ASAP
- Math Jam
- Math/Automotive
- MAP

Los Angeles Pierce College

Freshman Success

A learning community—new students concurrently enrolled in a 5-unit math class, 3-unit Personal Development class, and 1-unit directed math study for study skills.

Los Angeles Pierce College

Freshman Success

The 5-unit math class is non-transferable (pre-algebra, elementary algebra, or intermediate algebra).

The other 4 units are transferable.

Los Angeles Pierce College

Freshman Success issues

- Logistics of concurrent enrollment
- Counselor-math faculty collaboration
- Success rate in elementary algebra declined in one section.

Los Angeles Pierce College

ASAP: Algebra Success at Pierce

- 10 unit class covering both elementary and intermediate algebra.
- Combined with 3-unit personal development class.
- Students take no other units.

Los Angeles Pierce College

ASAP issues

- Ridiculous achievement by students may be attributed to herculean efforts of the instructor.
- Logistics of scheduling.
- Recruitment.

Los Angeles Pierce College

Math Jam

- One-week summer class just before the start of the fall semester
- Study skills, handling math anxiety
- All developmental math students are eligible.

Los Angeles Pierce College

Math Jam issues

- No data yet on effect of participation on future success
- Funding is temporary

Los Angeles Pierce College

Math/Automotive

- Elementary algebra section specifically for automotive students
- The automotive department funds the section and provides the students.

Los Angeles Pierce College

Math/Automotive issues

- No data (Fall 2008 is first semester).
- Initial feedback indicates that the course goes too fast for the students.

Los Angeles Pierce College

Mediated Algebra Project (MAP)

A comprehensive project to revamp the developmental mathematics curriculum at Pierce

Los Angeles Pierce College

MAP

- Reading component for students to complete before class
- Skill warm-ups for the upcoming lesson
- Classroom learning activities for each topic
- Concept questions (for “clickers”)
- Study skills section in each lesson
- Two-part homework: skills and in-depth

Los Angeles Pierce College

MAP issues

- In progress—only a few lessons have been prepared.
- Choice of electronic delivery system: free or open source vs commercial
- Faculty training
- Development time

Los Angeles Pierce College

Contact: Bob Martinez
martinrm@piercedcollege.edu

MAP contact: Kathy Yoshiwara
yoshiwka@piercedcollege.edu

Initiatives from the Audience

Ideas?!

How did they do that?

Successful Implementations of *Beyond Crossroads*

Thank you!

Bruce Yoshiwara

yoshiwbw@piercecollege.edu