

Conference on Inquiry-Based Learning

The Legacy of R.L. Moore conference for 2010 is in Austin 17-19 June. Beginning with a three day pre-conference IBL workshop led by Stan Yoshinobu of Cal Poly - San Luis Obispo, the meetings attract more than 250 new as well as experienced IBL users from academic institutions across the country. Honoring renowned University of Texas mathematics professor R L Moore, the program includes numerous presentations, short talks and roundtable discussions. A highlight of the event is the banquet presentation by **Cathy Seeley**, Senior Fellow at the Dana Center at the University of Texas at Austin and past president of the National Council of Teachers of Mathematics. See the newsletter page 4 on her recent book, *Faster Isn't Smarter*.

The conference program is available at legacyrlmoore.org under "Forthcoming Events." Videos of the 2009 gathering can be seen under "Past Activities Reports."

Centers of National Growth

One of the principal goals of the Legacy project is to help provide mathematics undergraduate and graduate students at most universities and colleges the opportunity to experience Inquiry-Based Learning classes. We see examples of this happening at small and large campuses where, sometimes beginning with only one person, seed money has provided an opportunity to develop a critical mass of IBL course or section offerings.

Major research universities have a substantial national impact through their mathematics and mathematics education graduates. Over the past six years mathematics departments at five such universities have given IBL a special emphasis by agreeing to develop and maintain courses and outreach projects. Taken together, on average each year at least 30 mathematics courses are taught with several hundred new students.

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Cathy Seeley
Jo Boaler

"If we do our job well and make students think just a little harder, we can prepare them to take on some of the most difficult problems we face today as well as the unknown problems we are likely to face tomorrow."

—Seeley, *Faster Isn't Smarter*, p. 90.

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Here are selections of items from recent news:

University of California, Santa Barbara
Center for Mathematical Inquiry

Visiting IBL Scholar Pawel Gladki—now at the University of Silesia in Poland—launched an IBL version of Math 8 (A Transition to Higher Mathematics) during Spring 2009. Much of his motivation came from attending the July 2008 Legacy of RL Moore Conference and his basic course outline grew from a sequence of problem sets developed by David Clark (SUNY at New Paltz) obtained at that meeting. The University of Colorado, Boulder evaluation team (Sandra Laursen and Marja-Liisa Hassi) will be studying the outcomes of the course in comparison to a non-IBL version taught by a different postdoctoral scholar.

Web site:

math.ucsb.edu/department/cmi/

University of Texas at Austin
Inquiry-Based Learning Project

While the focus of the IBL project is based in the mathematics department, it plays key roles in the nationally recognized UTeach program, in the new Center for Inquiry Learning in Science and Mathematics in the College of Natural Sciences, and in the Freshman Research Initiative (FRI) of the College. FRI is proving an effective way of introducing students early on to experience what it is to be a scientist or mathematician. An IBL or Moore Method course in mathematics puts the student in the role of discovering potentially new mathematical ideas as they are guided through standard topics. In the sciences this creative, and often inspiring, element has typically not been featured until senior or even later graduate years. Web site:

www.ma.utexas.edu/ibl/



*The **Journal of Inquiry-Based Learning in Mathematics** is a source of IBL teaching materials for university courses:*
www.jiblm.org/

A three-year assessment study of the IBL projects at four of the universities is nearing completion by the University of Colorado at Boulder, Ethnography & Evaluation Research unit.

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Harvard

At Harvard, funds have been used to support a pilot program for calculus students. This IBL program, inspired by the renowned Emerging Scholars Program, has been piloted in two courses and has garnered positive feedback from the students involved. Web site:

www.math.harvard.edu/ibl/

University of Chicago

Miklós Abért, who has taught Inquiry-Based Honors Calculus, offered a new upper-level Topics in Group Theory course. Here, not only did students work from scripts generated by Professor Abert, their culminating project was to design IBL scripts for each other to work on during the last weeks of the course

Urban Teacher Education Program (UTEP) and Young Scholars Program (YSP): As in previous years, Paul Sally introduced the use of IBL into UTEP in both the Number Theory and Geometry courses. In the summer of 2009, IBL was also utilized in the 11-12th grade component of YSP, in which Arunas Liulevicius covered the topic of knot theory.

University of Michigan Center for Inquiry Based Learning

Honors freshman at Michigan had the opportunity to take Cryptography taught entirely using inquiry-based techniques. Taught by post-doctoral assistant Francois Dorais, the course proved so popular it had to be offered in two sections. Other freshman IBL courses are likewise taught in multiple sections and include Explorations in Topology and Analysis (Professor Alejandro Uribe) and main stream calculus.



For pre-service teachers several courses are being presented using an IBL approach while upper level undergraduate courses for mathematics majors include Choice and Chance taught by Professor Ralf Spatzier, Principles of Analysis which was revised by Professor Mort Brown and taught by Professor William Breslin, and Explorations in Mathematics. Web site: www.math.lsa.umich.edu/ibl/

Networking

The **Academy of Inquiry-Based Learning (AIBL)** is an association of professors, instructors, teachers and non-teaching supporters (such as retired professors/teachers having IBL experience, administrators, foundation personnel) who are committed to developing and disseminating inquiry-based learning (IBL) techniques. AIBL offers programs to support new or experienced faculty interested in learning to implement IBL or to develop new IBL

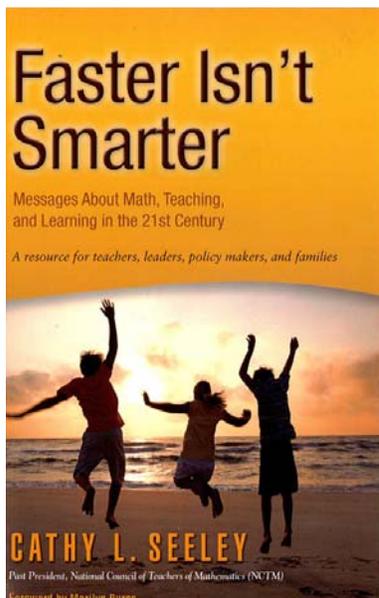
materials. AIBL also supports (or will support soon) "community-like" activities such as mentoring, sharing teaching ideas and tips, and providing information about the latest related news and events. For more information please go to the AIBL Website:

www.inquirybasedlearning.org

or contact styoshin@calpoly.edu

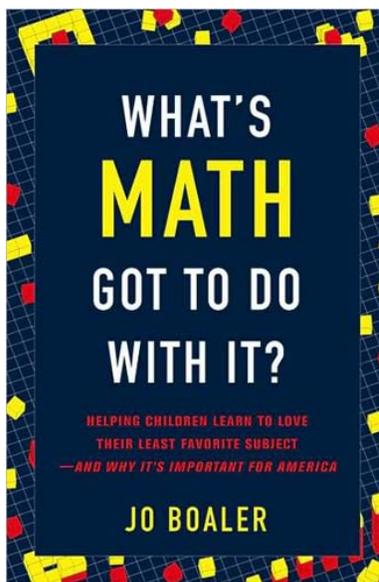
Featured Books

Cathy Seeley, a senior fellow at the Charles A. Dana Center at the University of Texas at Austin, works on state and national policy and improvement efforts in mathematics education. Dr. Seeley is an active member of the National Council of Teachers of Mathematics, serving as the Council's president from 2004 through 2006 and on the writing team for the 1989 *Curriculum and Evaluation Standards for School Mathematics*.



“At a time when we want to help every student learn challenging, rigorous, and relevant mathematics, we must look for ways to tap into each student’s strengths, not fall into the trap of believing that timed tests are the way we identify our good mathematics students.” (p. 95)

“Boaler does not find her data by gazing at a computer screen. She goes out and talks to the people education is all about: the students and those who were students. I ask you, which is the more important information: the score on a standardized, written test taken at the end of an educational episode, or the effect that educational episode had on the individual concerned?” –Keith Devlin, Devlin’s Angle, June 2010.
www.maa.org



Jo Boaler is the Marie Curie Professor of Mathematics Education at the University of Sussex and is former president of the International Organization for Women and Mathematics Education. In September 2010 she will be returning to her position as professor of mathematics education at Stanford University.

A Gift to the Future

If you are interested in providing financial support for the continuing use of Inquiry-Based Learning and the Moore Method in meeting the challenges that face education, one effective means is through a gift to the Educational Advancement Foundation.

During the calendar year 2010 your gift will be matched one-to-one by EAF.

For information on how to implement this and how to incorporate your support as part of an estate plan please contact the EAF or visit:

eduadvance.org/bequest.html