

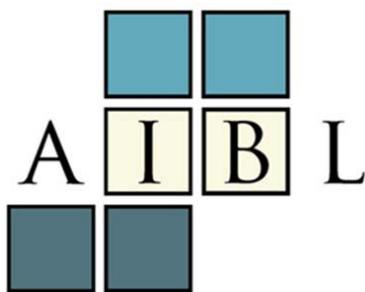
## The Stories We Share

One of the greatest values of the annual Legacy conference, and the various workshops and networking opportunities offered by AIBL, is the chance to convert personal experiences into shared stories.

A popular handout of the Legacy project, also available on its web site, is *Christmas in Big Lake*, by Sam Young. It is a brief account of one student's all-out effort to take advantage of a holiday break to finally start proving theorems in a class of Dr. Moore which before had been simply mystifying to him.

Such an account from the student's point of view is inspiring for students and teachers alike. Stories of teaching experiences can also play an important role in in-service workshops. Teachers aspiring to make use of inquiry methods — especially those who may not have experienced it themselves as students — need to have examples of what others have done, the difficulties and the rewards. Such workshops are typically one to three days of fairly intensive immersion and, valuable though that can be, the important thing is what happens next. Will there be changes for the better in the classrooms of the participants?

Please see *Stories*, p. 2.



The Academy of Inquiry-Based Learning is a community of instructors, teachers, and supporters of inquiry-based learning

## News Items

An NSF supported **IBL workshop** will be conducted 3-6 August 2014 preceding the MAA MathFest in Portland, Oregon. **MathFest** itself runs from 6 to 9 August and will feature a poster session on IBL best practices. Look also for the AIBL exhibit booth. [www.iblworkshop.org](http://www.iblworkshop.org) Also at MathFest, **Randy Cone** and **Angie Hodge** will be giving a presentation in the Active Learning session on "Creating Collaborative Learning Environments Outside of the Classroom."

**Angie Hodge** held the attention of 150 participants in her "Hands-On, Minds-On Calculus Activities" workshop at the meeting of the **National Council of Teachers of Mathematics (NCTM)** in April 2014 in New Orleans. "How can a calculus class look like an art class where students are working hard to finish their projects, while discovering new ideas through guided problem solving?"

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The follow-up after a workshop is, therefore, a vital factor for its success. Sharing accounts of “real-life” efforts to put inspirational workshop ideas into action is essential to keeping the discussion and encouragement going.

The following extract from a discussion in a recent on-line exchange seems a good illustration. (Thanks to Professor Anne Sinko, College of Saint Benedict and St. John’s University.) The general topic of the moment had to do with the many ways of addressing the skepticism some students have towards a learning experience that is new to them.

During Calculus 1 in the fall, I also had a number of students frustrated with IBL and saying they’d “learn the material better with lecture”. To respond to this (after acknowledging that I “heard” their frustrations), I took the top 10 skills listed by our Career Services as necessary for future employment and presented them to the class.

After some brief exaggeration that in their first real job interview they better be able to point to examples of how they embodied these skills, I had them talk in their groups about which skills this particular course with this particular pedagogical style would, in fact, serve as a good example of their personal experience using these skills. I also had them imagine that, if I had taken a traditional lecture approach, which skills could they use from that lecture course as an example.

Every group decided that every skill was an integral part of the IBL experience and, at best, a traditional lecture course would only cover critical thinking and use of

- \* *Ability to work in a team structure*
- \* *Ability to make decisions and solve problems*
- \* *Ability to plan, organize, and prioritize work*
- \* *Ability to verbally communicate with persons inside and outside the organization*
- \* *Ability to obtain and process information*
- \* *Ability to analyze quantitative data*
- \* *Technical knowledge related to the job*
- \* *Proficiency with computer software programs*
- \* *Ability to create and/or edit written reports*
- \* *Ability to sell or influence others*

*Job Outlook 2014: The Candidate Skills/Qualities Employers Want*, National Association of Colleges and Employers

technology. The end result is that I could speak to the frustrated students about how content wasn’t the sole purpose, even of calculus.

While I don’t personally agree that any student “learns material better” with lecture, I could at least say to those hold outs that even if they were to learn the material better with lecture, my goal isn’t just content. My goal encompasses far more than just the course, but also how I can provide them with a complete experience to help them in the future. If nothing else, it did help put into perspective for some of those students that, in some sense, more was at stake than just a single course.

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## Paul J. Sally, Jr. (1933–2013)

Paul Sally was the recipient of the inaugural American Mathematical Society Award in 2014 for Impact on the Teaching and Learning of Mathematics. He was told about this honor shortly before his death, 30 December 2013. As a long-time member of the University of Chicago faculty, and leader of the Chicago IBL Center, Sally epitomized the aim of this award: “to encourage research mathematicians to be actively engaged in replicable activities that improve mathematics learning and teaching, especially at the precollege level and in the first two undergraduate years” (*Notices of the AMS*, May 2014, 515-6). He attended most Legacy conferences since 2006 where he was always a vigorous exponent of the benefits of IBL and will be greatly missed.



Professor Sally engaging at the 2012 Legacy Conference in Austin,



The Legacy and AIBL booth at the 2014 Joint Mathematics Meetings, Baltimore.

*News* continued from p. 1

With close to 6,500 attending the **Joint Mathematics Meetings** in Baltimore in January 2014, this annual meeting continues to be the largest mathematics meeting in the world. Over 30 IBL-related presentations were made in various sessions. Among the highlights were the MAA sessions on *Mathematics and Effective Thinking* which included as presenters Edward Burger, Michael Pearson, Stan Yoshinobu, Jodi Cotten, Sandra Laursen, David Bressoud, Paul Zorn, Katherine Socha, Deborah Bergstrand, Carol Schumacher, and Francis Su. As usual, the Legacy project sponsored an exhibit booth and a reception for Project NExT members.

**Stephen I. Brown** has published a new book, *Insights into Mathematical Thought: Excursions with Distributivity*, (NCTM, 2013). Dr. Brown, Professor Emeritus from the University at Buffalo, SUNY, was a student of Dr. Moore's student, E.E. Moise, at the Harvard Graduate School of Education and has been a consultant to the Legacy of R.L. Moore Project. By means of the distributivity property, the reader is encouraged to find new ways of understanding the significance and limitations of mathematics.

**Alan H. Schoenfeld** and **Jeremy Kilpatrick** discuss whether the kind of cross-national European adoption of IBL could happen in US schools in their article “A US Perspective on the Implementation of Inquiry-Based Learning in Mathematics” (*ZDM Mathematics Education*, 2013, 45:901-909.)

## Media

### MATH ED MATTERS

*Math Ed Matters is a monthly column sponsored by the Mathematical Association of America and authored by Dana Ernst and Angie Hodge.*

*The column explores topics and current events related to undergraduate mathematics education. ... The coauthors' interest in and engagement with inquiry-based learning will color the column's content.*

[maamathedmatters.blogspot.com](http://maamathedmatters.blogspot.com)

### Launchings

by David Bressoud



David Bressoud is DeWitt Wallace Professor of Mathematics at Macalester College in St. Paul, Minnesota, and former president of the Mathematical Association of America.

Topics have included the Common Core, high school and college calculus, "The Worst Way to Teach," and "Collective Action by STEM Disciplinary Societies."

[launchings.blogspot.com](http://launchings.blogspot.com)

## The IBL Blog



Stan Yoshinobu, Director of the Academy of Inquiry-Based Learning, produces The IBL Blog which focuses on promoting the use of inquiry-based

learning methods in the classroom at the college, secondary and elementary school levels.

[theiblblog.blogspot.com](http://theiblblog.blogspot.com)



YouTube

Jo Boaler - Enquiry Based Learning for Mathematics.

Professor Jo Boaler of Stanford University works with secondary school students in the inQbate at the University of Sussex in the UK using inquiry based learning methods.

## *A Gift to the Future*

The Foundation is grateful for recent contributions from individuals. Such gifts help to shape our response to the urgent need to improve student performance in science, technology, engineering, and mathematics. Guided inquiry, as part of the total learning environment, improves students' creativity and problem solving abilities. Your support will help us increase the impact of our existing programs and extend efforts to new initiatives.

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