

# IBL TRAINING AND OUTREACH AT UNIVERSITY OF MICHIGAN

>>The best way to learn is to do,  
the worst way to teach is to talk<<  
Paul Halmos (1961-67 at University of Michigan)



[Isa.umich.edu/math/centers-outreach/](http://Isa.umich.edu/math/centers-outreach/)  
[ibl-center-for-inquiry-based-learning.html](http://ibl-center-for-inquiry-based-learning.html)



## GENERAL INTRO TRAINING

### General Teaching Training

For all entering post-docs & grad students  
Week-long training  
Focus on teaching intro courses (Pre-Calc, Calc I & II)

## RECENT IBL VISITORS

William "Bus" Jaco (Oklahoma State), 2017  
Brian Katz (Augustana), 2016  
Jeff Adler (American), 2015

## SUMMER IBL TRAINING

To complement our introductory summer training program, the department started an advanced summer teaching training--- focused on IBL teaching--- in Summer 2015.

### Participants:

advanced graduate students with an interest in teaching,  
post-docs and faculty teaching IBL courses  
faculty and graduate students from nearby institutions

### Program Aims:

Using observation of real teaching and in-depth follow-up discussion, the program aims to:  
Help participants develop a reflective teaching practice  
Create a space to talk about common struggles with IBL teaching

## MATH TEACHERS' CIRCLE

- Founded August 2015
- Whole-day meeting in August and monthly, 3-hour problem sessions lead by math faculty
- Participants: K-12 teachers in Wayne County
- Sessions use IBL teaching
- Most of the time is spent doing math, but some time is also spent on teachers discussing ways to make their own classrooms for problem-solving based and student-centered.
- Over 80 teacher participants so far
- Over 20 math faculty, post-docs, and grad students have participated as session facilitators or helpers

## TEMACC CONFERENCE

For the past three years our department has organized a local conference on the topic of "Teaching Mathematics Content Courses" aimed at instructors of math content courses for future teachers, often taught within departments of mathematics. In addition to sessions on content, many sessions focus on pedagogical choices, and sessions on IBL teaching have been included each year.

## SHARED MATERIALS

Course materials are shared on a Google Drive folder. Contact [spatzier@umich.edu](mailto:spatzier@umich.edu) for access.

## IBL COURSES

### IBL-y Intro Courses

Pre-Calculus  
Calculus I  
Calculus II

### Lower Division Undergraduate:

Introduction to Cryptology (Freshman honors seminar)  
Explorations in Calculus (Freshman honors seminar)  
Honors Multivariable Calculus (some sections)  
Linear Algebra and Introduction to Proof  
(large multi section course and stepping stone to the math major)

### Honors Math

Honors Analysis I & II (modules)

### Upper Division Undergraduate

Choice and Chance (Content: randomness, fairness, coincidence, and bias.)  
Topology  
Principles of Analysis

### Elementary Teacher Education

Number and Operation  
Geometry and Proportional Reasoning  
Topics in Elementary and Middle School Mathematics

### Secondary Teacher Education

Euclidean Geometry  
Concepts Basic to Secondary Mathematics  
Number Theory and Abstract Algebra for Secondary Teachers

### Other

Explorations in Mathematics (project-based course, research in groups)

### Next up..

Lab sections of second-year Multivariable Calculus and Differential Eqs.

## POST-DOC & GRAD STUDENT ALUMNI

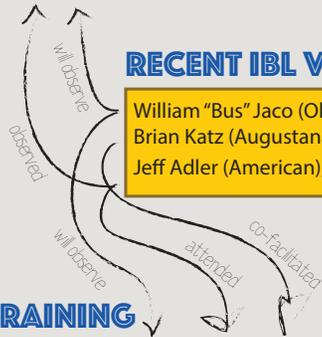
(As of 2015)

Of the 26 former postdocs who taught courses in the IBL program,  
- 17 report regularly using IBL  
- 4 report using some IBL  
- 1 reports using no IBL,  
- 2 left mathematics,  
- 2 did not respond.

Furthermore, 7 have helped other faculty with teaching IBL.

Of the 17 former graduate students trained in IBL classes  
- 7 are teaching with IBL  
- 8 have left academia  
- 2 were not able to be contacted

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