



SIGMAA IBL

Fall Speaker Series 2023

WORKSHOP SERIES

SIGMAA IBL hosts workshop series each fall and spring. Each interactive workshop is 50 minutes long. All levels of IBL practitioners (including beginners) are welcome! Please visit our website for more details including abstracts and speaker bios.

AUGUST 29 @ 3 PM EDT

Stan Yoshinobu

"IBL and Large Classes"



SEPTEMBER 26 @ 1 PM EDT

Valerie Peterson

"Inquiry-Oriented Instruction:
What It Is (and Isn't) and
Where to Start"



OCTOBER 27 @ 1 PM EDT

David Clark and Robert Talbert



"Supporting IBL with Alternative Grading"

NOVEMBER 29 @ 1 PM EST

Christine Andrews-Larson

"Aligning *how* we teach
with IBL with *why* we teach
with IBL"



<http://sigmaa.maa.org/ibl/>



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FALL SPEAKER SERIES 2023

ABSTRACT AND BIO

Stan Yoshinobu

"IBL and Large Classes"

TUESDAY, AUGUST 29 @ 3 PM EDT

Abstract: In this 45-minute session, participants will watch video footage of a large IBL class. Participants will discuss IBL methods that work for large classes. We will also discuss an IBL handout approach, and share resources about IBL teaching.

Bio: Stan is a teaching stream associate professor at the University of Toronto and Director of the Academy of Inquiry Based Learning. He has been teaching courses via IBL in undergraduate mathematics and mathematics education for more than 20 years. Stan earned his Ph.D. from UCLA with John Garnett. His scholarly interests include active learning, inquiry-based learning, professional development in higher education, and diversity, equity, and inclusion. Stan enjoys spending time with his wife and two children, hiking, photography, and rooting for the LA Dodgers.

Valerie Peterson

"Inquiry-Oriented Instruction: What It Is (and Isn't) and Where to Start"

TUESDAY, SEPTEMBER 26 @ 1 PM EDT

Abstract: There are many flavors of instruction that fall under the heading "inquiry-based mathematics education," including IBL. In today's workshop, we'll dive into the world of inquiry-oriented instruction, exploring how it resembles and differs from IBL. In addition to working through a rich, open-middle task from linear algebra, participants will be introduced to materials from differential equations and abstract algebra, as well as a more general inquiry-oriented mindset that can be infused into any course.

Bio: Having been auspiciously launched into her faculty career via Project NExT (Pine '09), Valerie Peterson has benefitted from the content and wise counsel of MAA programming and members ever since. In recent years, she has particularly enjoyed developing and facilitating numerous professional development workshops for collegiate STEM faculty and is always happy to talk about making classrooms more student-centered and inclusive. Valerie is currently an Associate Professor of Mathematics at the University of Portland in Portland, Oregon, where her experiments expand beyond the classroom into her kitchen and garden.

David Clark and Robert Talbert

"Supporting IBL with Alternative Grading"

FRIDAY, OCTOBER 27 @ 1 PM EDT

Abstract: Do your assessments send the same message as your pedagogy? Many IBL classes work to develop norms of valuing productive struggle and failure. Students can get a mixed message if the same classes involve one-and-done exams or homework. Alternative approaches to grading and inquiry-based learning can support and reinforce the student-centered focus of our classes. In this interactive session, we'll give a brief introduction to the world of alternative grading, give concrete examples of how it can work in an IBL setting, and answer your questions.

Bios:

David Clark is an Associate Professor in the Department of Mathematics at Grand Valley State University. David is a leading proponent of alternative grading in higher education. His book *Grading for Growth* (co-authored with Robert Talbert) will be published in mid 2023. Over his 17-year teaching career, David has won numerous teaching awards, including the Mathematical Association of America's national Alder Award. As a classroom teacher, his classes are active, engaging, and highly student-centered. His research also centers on students, especially projects that introduce them to mathematical research through puzzles and games. David is an avid photographer, backpacker, gardener, and boardgamer (although he usually loses).

Robert Talbert is a Professor in the Department of Mathematics at Grand Valley State University. Robert has experimented with and advocated for innovation in teaching and learning throughout his 25-year career in higher education. He has also served as Scholar-in-Residence at Steelcase, Inc. and as Presidential Fellow for the Advancement of Learning in the GVSU President's Office. He is the author of *Flipped Learning: A Guide for Higher Education Faculty* (Stylus Publications, 2017) and the co-author (with his GVSU colleague Dr. David Clark) of *Grading For Growth*. Robert aspires to spend more time playing bass guitar and riding bicycles than being in front of a computer.

Christine Andrews-Larson

"Aligning *how* we teach with IBL with *why* we teach with IBL"

WEDNESDAY, NOVEMBER 29 @ 1 PM EST

Abstract: Current research leaves little doubt that student-centered approaches to instruction are related to greater student interest, persistence, and learning gains in STEM fields when compared with more traditional, lecture-based modes of instruction. However, there is incomplete and inconsistent evidence regarding the benefits of various active learning practices for historically marginalized groups of students. While many studies of active learning in STEM have identified improved student outcomes, few disaggregate these outcomes by demographic markers like race, ethnicity, gender, or socioeconomic status. In this talk, I will invite participants to reflect on their personal motivations for implementing IBL and other approaches to active learning in mathematics, as well as their assumptions and evidence about how these choices impact their students. I will then draw discuss available evidence tying instructional practices to student outcomes for various student groups. A core goal of this presentation is to discuss the motivations, affordances, and constraints of practices that are linked to greater variation in student outcomes and experiences. Universal Design for Learning will be briefly discussed as a productive framework that can help instructors design for learner variation.

Bio: Dr. Christine Andrews-Larson is an Associate Professor of Mathematics Education in the College of Education and Department of Mathematics at Florida State University. Dr. Andrews-Larson's work is broadly structured around three interrelated foci. First, she studies student reasoning and instructional design that leverages that reasoning (e.g., in the context of inquiry-oriented mathematics instruction, particularly in the area of undergraduate linear algebra). Second, she studies supports for instructors to productively elicit and build on student reasoning. Finally, she is interested in exploring the ways in which inquiry-oriented instructional approaches may provide different kinds of learning experiences and outcomes for different groups of students.