

# SIGMAA IBL

## SPEAKER SERIES

### SPRING 2024

**Wednesday, January 31 @ 5 pm EST**

**Nathaniel Miller**

A Taste of IBL (Inquiry-Based Learning)



**Friday, March 1 @ 11 am EST**

**Christine Von Renesse**

Using AI and Ungrading in Teaching Mathematics with Inquiry



**Wednesday, March 27 @ 1 pm EDT**

**Jenna P. Carpenter**

Weaving Students In Versus Weeding Them Out: Research-Based Strategies that Support Equity in the IBL Classroom



**Friday, April 26 @ 12 pm EDT**

**Danielle Champney, Todd A. Grundmeier**

Leveraging Existing Tasks into Low Floor High Ceiling Experiences



The workshop is open to everyone.

For questions, please visit our website or contact Lee.

<https://tinyurl.com/sigmaa-ibl-series>



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



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# Speaker Series Spring 2024

## Abstract and Speaker Bios

**January 31st @ 5 pm EST**

### **A Taste of IBL (Inquiry-Based Learning)**

Nathaniel Miller

**Abstract:** Inquiry-based learning (IBL) is a framework for teaching in which students engage actively with meaningful problems, collaborate with peers, and communicate their results. This talk will give an introduction to IBL teaching methods. We'll start with an activity in which attendees will play the role of students in an IBL activity. Then we will discuss what IBL is and how you might consider including it (or more of it) in your classes. No prior experience with IBL is necessary!

**Bio:** Nathaniel Miller is Professor of Mathematical Sciences at the University of Northern Colorado. He is the Modules and Reviews Editor for the Journal of Inquiry-Based Learning in Mathematics, and is a past chair of the SIGMAA IBL.

**March 1st @ 11 am EST**

### **Using AI and Ungrading in Teaching Mathematics with Inquiry**

Christine Von Renesse

**Abstract:** How can we incorporate AI into a mathematics classroom that is based on inquiry? In this workshop participants will share and brainstorm what they have tried so far, what they would like to try and what they are struggling with. I will share what my experience of including AI into my classes in Fall 2022 looked like and how it fit with my current version of ungrading.

**Bio:** Dr. Christine Von Renesse is a professor at Westfield State University. She uses open inquiry techniques in all her classes, believing that this is the most effective and enjoyable way of learning and teaching. Dr. von Renesse has been facilitating professional development workshops for K-12 teachers and higher education faculty for the past 15 years, first as part of the Discovering the Art of Mathematics project, then as part of the Academy of Inquiry-Based Learning. Since 2018 Dr. von Renesse has been on the leadership team of the New England COMMIT (Community for Mathematics Inquiry in Teaching) - as well as the national COMMIT network.

**March 27 @ 1 pm EDT**

## **Weaving Students In Versus Weeding Them Out: Research-Based Strategies that Support Equity in the IBL Classroom**

Jenna P. Carpenter

**Abstract:** An instructor focus on equity is one of the four pillars of IBL. Because students bring with them different levels of social capital, as well as different mental frameworks of success and smartness, what mathematics is, and what it takes to succeed in college, IBL approaches can introduce aspects to the classroom that actually exacerbate inequity. Fortunately, there are a number of research-based strategies that instructors can implement to increase sense of belonging and level the playing field in IBL classes.

**Bio:** Dr. Jenna P. Carpenter is Founding Dean and Professor of Engineering at Campbell University, President-Elect of the Mathematical Association of America, and Immediate Past President of the American Society for Engineering Education (ASEE). She is an expert on innovative STEM curricula and on issues related to diversity, equity, and inclusion in STEM fields. Dr. Carpenter is one of four recipients awarded the 2022 Bernard M. Gordon Prize for Innovation in Engineering and Technology Education from the National Academy of Engineering, for her contributions as one of the pioneers of the Grand Challenges Scholars Program. She received the 2023 ABET Claire Felbinger Award for Diversity and Inclusion, the 2019 ASEE Sharon Keillor Award for Women in Engineering Education and the 2018 Founders Award from WEPAN (Women in Engineering ProActive Network). She is past President of WEPAN and past First Vice President of the Mathematical Association of America. In 2015 DreamBox Learning selected her as one of 10 Women in STEM Who Rock! for her advocacy and her TEDx talk, "Engineering: Where are the Girls and Why Aren't They Here?"

**April 26th @ 12 pm EDT**

## **Leveraging Existing Tasks into Low Floor High Ceiling Experiences**

Danielle Champney and Todd A. Grundmeier

**Abstract:** Significant collections of resources have been developed for most undergraduate mathematics classes. However, many of these resources are not created with an inquiry-based learning experience, or diverse population of learners, in mind. We will describe examples of how we adapt tasks for an IBL classroom. In small groups, participants will be invited to engage in the adaptation of a task with a focus on creating a low floor, high ceiling experience for their own student populations. We will conclude with a full group discussion of the task adaptation process and provide resources to help participants do this sustainably.

**Bio:** Todd Grundmeier is faculty in the Mathematics Department at Cal Poly, SLO, where he teaches a wide range of math courses that regularly includes Math for Future Elementary Teachers. Todd has led numerous IBL workshops for college mathematics faculty and most recently is co-leading a semester-long faculty working group on rich tasks in mathematics classes for future elementary teachers.

**Bio:** Danielle Champney is faculty in the Mathematics Department at Cal Poly, SLO, where she teaches a wide range of math courses that frequently includes Math for Future Elementary Teachers. For the past eight years, Danielle has facilitated intensive IBL workshops for college faculty, traveling workshops for universities and community college districts, and district-wide K-12 active learning professional development for Cal Poly partner schools.

