



**Whether you are new to or experienced with inquiry, come join us for an active, participatory conference to learn from and connect with fellow educators!**

The National Inquiry-Based Learning and Teaching Conference seeks to build community around learning and teaching with inquiry, especially in mathematics, to challenge each participant to grow at the boundary of their practice, and to do this work by living the value these communities place on inclusion and active, co-constructed educational experiences. This conference provides a forum for collaboration among all educators interested in teaching with inquiry, including K-16+ educators, education researchers, and both new and experienced practitioners.

## **KEYNOTE SESSION LEADERS:**



**Belin Tsinnajinnie**

*Santa Fe Community College*

### **Organizing Committee**

Brian Katz, *Co-Chair*

Christine von Renesse, *Co-Chair*

Susan Crook

Brianna Donaldson

Celil Ekici

Talithia Williams



**Darryl Yong**

*Harvey Mudd College*



## **Keynote Abstracts:**

### **From Place Values to Place Matters: An Indigenous Perspective on Calls for Diversity, Equity, and Justice in Mathematics and Mathematics Education**

**Belin Tsinnajinnie**, *Santa Fe Community College*

Abstract: Despite perspectives that view mathematics as universal and culture free, policies and practices in mathematics education continue to perpetuate forces of settler colonialism and assimilation. Failed U.S. policies in Native American education illustrate the damaging impacts of assimilation and settler colonialism in education. What practices in our mathematics programs perpetuate settler colonialism and assimilation? In what ways can attending to our sense of place better serve goals of equity, justice, and inclusion?

### **Inquiry-Oriented Instruction as Principled Improvisation**

**Darryl Yong**, *Harvey Mudd College*

Abstract: A very common IBL instructional routine involves posing tasks to students, monitoring their progress, and providing support as students tackle those tasks. The monitoring and supporting phases of instruction are often highly improvisational because they are less scripted and more dependent on what students do and say. What principles guide you during these phases of instruction? How can we work toward greater mathematical understanding, greater equity and inclusivity in our classes during this phase of instruction?

**All abstracts are available online at the following links:**

Workshops

<http://bit.ly/NIBLT2019Workshops>

Interactive Sessions

<http://bit.ly/NIBLT2019InteractiveParallelSessions>

Posters

<http://bit.ly/NIBLT2019PosterSessions>

Live Classrooms

<http://bit.ly/NIBLT2019LiveClassrooms>

Thursday, June 5

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◇ **Registration**

9:00 am — 5:00 pm *Majestic Foyer, Tower B2*

◇ **Opening Remarks**

1:00 pm — 1:35 pm *Majestic Ballroom, Tower B2*

◇ **Workshops — In parallel**

1:45 pm — 3:15 pm *Vail Room, Tower B2*

**Diving, Wading, and Dipping your Toes into I-BME**

*Jessica Hagman, Colorado State University*  
*Taylor Martin, Sam Houston State University*

*Beverly Room, Tower B1*

**An Introduction to Team-Based Learning**

*Drew Lewis, University of South Alabama*  
*Adriana Salerno, Bates College*

*Baltimore Room, Tower B1*

**Using Scholarship of Teaching on IBL to Overcome Amnesia, Fantasia, and Inertia as Pitfalls for Teaching**

*Celil Ekici, Texas A&M University — Corpus Christi*

*Capitol Room, Tower B1*

**New to Talking about Equity**

*Valerie Peterson, University of Portland*  
*TJ Hitchman, University of Northern Iowa*

*Terrace Room, Tower B1*

**Leading Mini-Workshops for Maxi Impact: Key Concepts and Practices for Sharing IBL with Colleagues**

*Stan Yoshinobu, California Polytechnic University,  
San Luis Obispo*  
*Sandra Laursen, University of Colorado Boulder*

*Majestic Ballroom, Tower B2*

**Setting the Stage for Small Group and Whole Class Discussions: Eliciting and Building on Student Thinking**

*Karen Keene, North Carolina State University*  
*Nicholas Fortune, Western Kentucky University*

*Columbine Room, Tower B1*

**New to Mastery Grading**

*Robert Campbell, College of St. Benedict and St.  
John's University*  
*Amanda Harsy, Lewis University*

◇ **Coffee Break**

3:15 pm — 3:45 pm *Majestic Foyer, Tower B2*

◇ **5-Minute Reports**

3:45 pm — 4:15 pm *Majestic Ballroom, Tower B2*

◇ **Interactive Sessions — In parallel**

4:25 pm — 4:50 pm *Vail Room, Tower B2*

**Catapult Student Understanding of Parabolic Functions**

*Kimberly Ann Currens, Texas A&M University*  
*Sandra Nite, Texas A&M University*

*Beverly Room, Tower B1*

**Reading like a Mathematician: Metacognitive Conversation in the Math Classroom**

*Alison Lynch, California State University,  
Monterey Bay*

*Baltimore Room, Tower B1*

**An Active Approach to Calculus II and How it can Help Address (and Create?) Challenges**

*Jeanette Mokry, Dominican University*  
*Aliza Steurer, Dominican University*

Capitol Room, Tower B1

**Engage me ... Students want Action**

*Shelly Ray, Community College of Aurora*

Terrace Room, Tower B1

**Exploring Co-Generative Dialogues with Undergraduates to Improve Teacher Feedback Practices in a Probability and Statistics Class**

*Mitchelle Wambua, Ohio University*

Columbine Room, Tower B1

**An Asset-Based Approach to Analyzing College Algebra Students' Reasoning on Graphing Tasks**

*Amber Gardner, University of Colorado Denver  
Amy Smith, University of Colorado Denver  
Gary Olsen, University of Colorado Denver  
Heather Lynn Johnson, University of Colorado Denver*

◇ **Poster Session & Cash Bar**

5:00 pm — 6:00 pm      *Majestic Foyer, Tower B2*

◇ **Banquet Keynote with Belin Tsinnajinnie**

6:15 pm — 8:15 pm      *Majestic Ballroom, Tower B2*

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**Friday, June 6**

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◇ **Breakfast**

8:00 am — 9:00 am      *Majestic Foyer, Tower B2*

◇ **Live Classrooms — In parallel**

9:00 am — 10:35 am      *Online*

**Using GeoGebra 3D Graphing Calculator to Facilitate Active Fun, Student-Centered Discovery Based Learning**

*Tim Brzezinski, Brzezinski Math and Central  
Connecticut State University*

Vail Room, Tower B2

**Game and Simulation Based Learning and IBL**

*Victor Piercey, Ferris State University*

Baltimore Room, Tower B1

**Polynomial Root-Dragging**

*Matt Boelkins, Grand Valley State University*

Terrace Room, Tower B1

**Modeling with Mathematics—The Skyscraper Movie**

*Scott Adamson, Chandler-Gilbert Community College*

Columbine Room, Tower B1

**Tactile Activities for Mathematical Discovery**

*Angie Hodge, Northern Arizona University  
Ellie Blair, Northern Arizona University*

Capitol Room, Tower B1

**Derangements and Random Rearrangements: An Exploration of Probability**

*Heather Danforth-Clayson, Helios School*

Beverly Room, Tower B1

**A First Day in Real Analysis**

*W. Ted Mahavier, Lamar University*

◇ **Coffee Break**

10:35 am — 11:05 am      *Majestic Foyer, Tower B2*

◇ **Roundtables**

11:05 am — 12:05 pm      *Majestic Ballroom, Tower B2*

◇ **Lunch**

12:05 pm — 1:00 pm      *Majestic Foyer, Tower B2*

◇ **5-Minute Reports**

1:00 pm — 1:30 pm *Majestic Ballroom, Tower B2*

◇ **Interactive Sessions — In parallel**

1:40 pm — 3:15 pm\* *Vail Room, Tower B2*

**Repeated Live Classroom: Game and Simulation Based Learning and IBL**

*Victor Piercey, Ferris State University*

1:40 pm — 3:15 pm\* *Baltimore Room, Tower B1*

**Repeated Live Classroom: Polynomial Root Dragging**

*Matt Boelkins, Grand Valley State University*

1:40 pm — 2:40 pm\* *Beverly Room, Tower B1*

**Orchestrating Productive Mathematical Discussion**

*Elizabeth Thoren, Pepperdine University*

1:40 pm — 2:05 pm *Columbine Room, Tower B1*

**Using Social Media to Improve Student to Student and Student to Instructor Interaction**

*Kimberly McHale, Heartland Community College  
Heather Chapman, Heartland Community College*

*Capitol Room, Tower B1*

**Faculty Collaboration on Developing Academic Success Skills in Inquiry-Based Learning**

*Michael Oehrtman, Oklahoma State University  
Michael Tallman, Oklahoma State University  
William Jaco, Oklahoma State University  
Allison Dorko, Oklahoma State University  
John Paul Cook, Oklahoma State University  
Josiah Ireland, Oklahoma State University  
April Richardson, Oklahoma State University*

*Terrace Room, Tower B1*

**What Would the Nautilus Say? An Investigation of the Golden Spiral for Middle Schoolers to Undergrads and Beyond**

*Megan Selbach-Allen, Stanford University  
Cathy Williams, youcubed at Stanford University*

2:15 pm — 2:40 pm *Capitol Room, Tower B1*

**Developing Academic Success Skills in a Gateway Mathematics Course: Precalculus**

*Ahlam Tannouri, Morgan State University*

*Terrace Room, Tower B1*

**Cut and Paste Proofs in Proof-Based Courses**

*Taylor Martin, Sam Houston State University*

2:50 pm — 3:15 pm *Beverly Room, Tower B1*

**The Case of the Missing Vertex: An Example of an IBL Activity from Graph Theory**

*Suzanne Dorée, Augsburg University*

*Columbine Room, Tower B1*

**Rethinking Assessment Strategies for the IBLT Environment**

*Teresa Magnus, Rivier University*

*Capitol Room, Tower B1*

**Supporting Underrepresented Minority Students in STEM Through in-Class Peer Tutoring**

*Tara C. Davis, Hawaii Pacific University*

*Terrace Room, Tower B1*

**Dilution of Poisons as a Tool for Understanding Proportions More Deeply**

*Ali Bicer, University of Wyoming  
Sandra Nite, Texas A&M University*

◇ **Coffee Break**

3:15 pm — 3:45 pm *Majestic Foyer, Tower B2*

◇ **Common Active Component**

3:45 pm — 5:30 pm *Majestic Ballroom, Tower B2*

**Building and Sustaining Local IBL Communities**

*Patrick Rault, University of Nebraska at Omaha*

*Brian Katz, Conference Co-Chair*

◇ **Dinner — On Your Own**

Saturday, June 7

◇ **Breakfast**

8:00 am — 9:00 am *Majestic Foyer, Tower B2*

◇ **Interactive Sessions — In parallel**

9:00 am — 10:00 am\* *Columbine Room, Tower B1*

**AIBL Workshop: Build Your IBL Communities**

*Patrick X. Rault, University of Nebraska at Omaha*  
*Ryan Gantner, St. John Fisher College*

9:00 am — 10:00 am\* *Vail Room, Tower B2*

**Get the Facts Out**

*Judith Covington, Northwestern State University of Louisiana*  
*Ben Ford, Sonoma State University*  
*Christina Eubanks-Turner, Loyola Marymount*  
*Timothy Hendrix, Meredith College*  
*Rose Mary Zbiek, Penn State*

9:00 am — 9:25 am *Majestic Ballroom, Tower B2*

**Team-Based Learning in a Large Calculus Class**

*Heather Bolles, Iowa State University*  
*Amanda Baker, Iowa State University*  
*Travis Peters, St. John's University*  
*Elgin Johnston, Iowa State University*  
*Darin Wohlgemuth, Iowa State University*

*Baltimore Room, Tower B1*

**Incremental, Layered Problem-Based Curriculum Design**

*Diana Davis, Swarthmore College*

*Capitol Room, Tower B1*

**Using Graphs to Engage Students in Calculus Classrooms**

*Anne M. Ho, University of Tennessee*  
*Antonio E. Martinez, San Diego State University*  
*Mary E. Pilgrim, San Diego State University*

*Beverly Room, Tower B1*

**A Prisoner's Showdown: Introducing Game Theory through Competition**

*Kevin Gerstle, Hillsdale College*

*Terrace Room, Tower B1*

**Hercules and the Hydra**

*Alex Rennet, University of Toronto—Mississauga*

9:35 am — 10:00 am *Terrace Room, Tower B1*

**Designing and Implementing Active Learning Reform for Calculus 3**

*Lee Roberson, University of Colorado-Boulder*  
*Faan Tone Liu, University of Denver*  
*Cherry Ng, University of Colorado-Boulder*

*Capitol Room, Tower B1*

**What Do You Mean When You Say IBL? A Systemic Functional Linguistic Approach**

*Saba Gerami, University of Michigan*  
*Vilma Mesa, University of Michigan*

*Beverly Room, Tower B1*

**An Intuitive Approach to Calculus**

*Alessandra Pantano, University of California—Irvine*

*Baltimore Room, Tower B1*

**Disseminating IBL via Geometry**

*David M. Clark, SUNY New Paltz*  
*Samrat Pathania, Walkkill High School*

◇ **5-Minute Reports**

10:05 am — 10:30 am *Majestic Ballroom, Tower B2*

◇ **Networking Coffee Break**

10:30 am — 11:00 am *Majestic Foyer, Tower B2*

◇ **Keynote with Darryl Yong**

11:00 am — 12:00 pm *Majestic Ballroom, Tower B2*

◇ **Closing Remarks**

12:00 pm — 12:15 pm *Majestic Ballroom, Tower B2*

# Acknowledgements

## Mathematics Learning by Inquiry

William Jaco, *Executive Director*

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*With special thanks to...*

*Harry Lucas Jr.*

*&*

*The Education Advancement Foundation*

*...for their support*