

FRIDAY SESSIONS

FRI - S1 | Oceanic 1 | 10:30 AM - 11:15 AM

Interactive Digital Content for Multi-touch Devices

Lila Roberts, *Clayton State University*

Because of new publishing and content viewing tools from Adobe, multi-touch mobile devices are poised to have an even more profound impact on how students consume printed materials. This presentation will focus on interactive digital content for mathematics developed using Adobe InDesign CS5.5 and its built-in publishing tools.

TRACK: EMERGING TECHNOLOGIES

FRI - S2 | Oceanic 2 | 10:30 AM - 11:15 AM

Good Practice #2 - Reciprocity Among Students—How Do I Do This in an Online Class?

Shawna Haider, *Salt Lake Community College*

Getting students to interact and learn from each other can be very beneficial but challenging—especially in an online class. This session will cover ideas on getting students involved with each other, sharing ideas and helping each other in an online environment.

TRACK: ONLINE TEACHING

FRI - S3 | Oceanic 4 | 10:30 AM - 11:15 AM

Comparing Trigonometric Sketches and Computations in Geometer's Sketchpad vs GeoGebra

Jane Gower, *Francis Marion University*

We teachers like to make our work look professional and ready to go when our students arrive in the classroom. This presentation will demonstrate some basic vector sketches in trigonometry with two different pieces of software, Geometer's Sketchpad and GeoGebra, and let you decide which one will work best for you.

TRACK: BEFORE CALCULUS

FRI - S4 | Oceanic 3 | 10:30 AM - 11:15 AM

Statway and Quantway—Networked Improvement Communities in Developmental Mathematics

Julie Phelps, *Valencia College*, and Bruce Yoshiwara, *Los Angeles Pierce College*

The Carnegie Foundation, in conjunction with the Charles A. Dana Center, is committed to doubling the number of students successfully completing developmental mathematics. Gain insights into the Carnegie Collaboratory network improvement community, and hear updates on the development and implementation of the Statway and Quantway mathematics pathways. Participants will come away with a better understanding of how a networked improvement community can be used to foster collaboration that results in meaningful and high quality opportunities for our students. In particular, participants will learn about Statway and Quantway as two examples of such communities, and they will explore the design, development, technology and implementation challenges of this novel approach. It is our hope that this will foster the creation of new networks centered around important issues in mathematics education.

TRACK: BEFORE CALCULUS

FRI - S5 | Oceanic 5 | 10:30 AM - 11:15 AM

What it's Like to Teach Calculus I When Everyone Has an iPad

Sallie Paschal, *Georgia Perimeter College*

Learn how the "Teach Academy" program at Georgia Perimeter College trained teachers to teach sections of mathematics in which the instructor and each student had a college-issued iPad. The instructor conducted formal and anecdotal research during the semester. Come see what we did and what we learned!

TRACK: CALCULUS

FRI - S6 | Oceanic 6 | 10:30 AM - 11:15 AM

Applications of the Reflection of a Curve with Respect to a Line in Optics

Wei-Chi Yang, *Radford University*

We first generalize the concept of inverse images with respect to the line $y = x$ to the inverse images with respect to $y = mx + b$, and we extend the idea to three dimensions. We find the locus of the point P , which links to the concept of orthotomic and caustic curves. It is interesting to see how technological tools have prompted us to relate mathematics to similar concepts used in physics.

TRACK: BEYOND CALCULUS

FRI - S7 | Oceanic 7 | 10:30 AM - 11:15 AM

Moving the Graphing Calculator to the Mobile Platform: Results of a Two Year Study

John Ehrke, *Abilene Christian University*

In this presentation, we will share the results of a two year pilot study comparing student performance data and student perceptions of usability in a general education mathematics course across two platforms: the SpaceTime mobile computing app and the Texas Instruments TI-84 series of graphing calculator.

TRACK: PEDAGOGY & RESEARCH/ASSESSMENT

FRI - S8 | Oceanic 8 | 10:30 AM - 11:15 AM

Understanding Three Dimensions

Frank Wattenberg and Chris Weld, *United States Military Academy*, Aaron Elliott, *United States Army*, Erica Slate-Young, *University of Alabama-Huntsville*, and Jack Bookman, *Duke University*

Part 1: Many students have real difficulty understanding and working with three dimensions. This difficulty causes problems in multivariable calculus and also in developing three-dimensional simulations. We have developed two technology-based exercises to help students build three-dimensional understanding. In the first exercise we give students a set of photographs and ask them to reproduce those photographs using digital cameras. In the second exercise students develop flight plans for an autonomous unmanned aerial vehicle (AUAV) performing photographic reconnaissance.

Part 2: The use of technology in mathematics classes can be very beneficial in helping students develop an understanding of complex concepts such as three-dimensional space. However, it is very important that such technology be used to address well-articulated learning goals rather than have the learning goals be developed to fit the available technology. In this talk we will discuss some of the challenges faced in designing and implementing the technology-based lessons described in the preceding session as well as some of the student outcome data.

TRACK: REAL WORLD APPLICATIONS

FRI - MML1 | Asia 2 | 10:30 AM - 11:15 AM

Re-energizing Online Learning through the Interactive Virtual Text: a Trigsted Pilot

Amanda Hanley and Donald Gabriel, *Cuyahoga Community College*

Data illustrating the difference in student achievement for online trigonometry courses driven by the new Trigsted approach versus software previously used at Cuyahoga Community College will be presented and discussed. The presentation will include a sample MyMathLab site of the course as well as student survey results.

TRACK: MYMATHLAB