

29th Annual

**State
University**

Georgia Perimeter College

Mathematics Conference

February 19, 2016

**Active Learning –
Engagement and Struggle**



29th Annual Georgia Perimeter College Mathematics Conference

Conference Guest Speakers

Welcome

Peter Lyons

Vice Provost and Dean of Perimeter College

Introduction of Speaker

Thomas Gaines

Chairperson, Georgia Perimeter College Mathematics Conference

Keynote Address

Dr. Bruce Yoshiwara

About the Keynote Speaker

Bruce has been working to improve educational opportunities of students for over twenty-five years. He has served on the boards of the American Mathematical Association of Two-Year Colleges (AMATYC), the Mathematical Sciences Digital Library, the California Mathematics Council Community Colleges-South, and the Southern California-Nevada Section of the Mathematical Association of America (MAA).

He is a supporter of faculty development and proponent of service to the profession. He was the Implementation Coordinator of Beyond Crossroads (the standards document of AMATYC), panel chair of the “Before Calculus” strand for the International Conference on Technology in Collegiate Mathematics, and consultant for both the MAA Project NExT and AMATYC Project ACCESS, mentoring projects for new tenure-track faculty. He is the only community college faculty to serve as math expert on California’s primary textbook adoption process and on the California Department of Education committee charged with writing the state Mathematics Framework document.



Bruce was honored with California's 2011 Hayward Award, AMATYC's 2009 Teaching Excellence Award, and the MAA Southern California-Nevada Section's 2009 Award for Distinguished College or University Teaching of Mathematics.

Description of Keynote Address: Beyond Student Engagement: Considering Non-Cognitive Skills to Address Student Success

Curriculum and inadequate mathematical background are not the only barriers to students trying to work through developmental math. We will consider some international data suggesting key differences in math classrooms of countries considered more highly successful in math education than the US, some promising research on how to engage students in productive struggle, and some surprising research suggesting that math achievement gaps experienced by underrepresented groups might be eliminated without requiring change in math content or math pedagogy.

Announcements

Evaluation Forms

Please complete an evaluation form for the conference, which can be found at our website, depts.gpc.edu/~gpcmathc/ We value your feedback and appreciate you taking the time to submit your comments!

Name Badges

Please return your name badge to the registration table after you have attended your last conference event.

Parking

If you receive a parking ticket, turn it in at the registration table.

Handouts

Copies of handouts will be available online at the conference website, depts.gpc.edu/~gpcmathc/

Thank you for attending!
We hope that you enjoy the conference!

Thank you!

The Georgia Perimeter College Mathematics Conference Committee thanks the following for their contributions and generous support of the 29th Annual Georgia Perimeter College Math Conference.

Cengage Learning
McGraw-Hill Education
Pearson
ThinkWell

Schedule at a Glance

Time	Event	Location
8:30 AM	Registration Begins	CN building, 1 st floor
8:30 AM	Hot Breakfast	CN-2220
9:00 AM - 10:45 AM	Full Sessions	CC, CD, and CN buildings
10:55 AM	Welcome & Keynote Address	CH-2100
12:00 PM	Lunch	CN-2220
1:00 PM - 4:00 PM	Full Sessions	CC, CD, and CN buildings
2:45 PM - 3:00 PM	Snack	CN-2220
4:00 PM - 5:00 PM	Mini Sessions	CN building
5:00 PM - 5:30 PM	GMATYC Meeting	CN-2240
5:30 PM	Dinner & Raffle	CN building, 1 st floor



Detailed Schedule

Full Sessions

	Teaching with Computers CC-1140	Scholarship of Teaching CN-2210	Learning Support CN-2240	The Art of Teaching CD-1100	Using Technology CD-1120	Using Technology CD-1130
9:00 – 9:45 AM	1. Engagement in Statistics with Learning Catalytics				2. Change the Game with MindTap	3. ALEKS Adaptive Learning: The Modern Student Experience
10:00 – 10:45 AM	4. Engaging Students in Exploring Mathematics with DESMOS	5. SoTL Research to Improve Student Performance in STEM Gatekeeper Mathematics Courses	6. Math 0999: How to Best Support Students in Math 1111	7. Instructional Strategies for Creating a Culture of Grit and Growth	8. Let's have a serious discussion about discussions	9. An Interactive Flipped Classroom
10:55 AM	Keynote Address: Bruce Yoshiwara CH-2100					
12:00 PM	Lunch CN-2220					

Full Sessions

	Teaching with Computers CC-1140	Scholarship of Teaching CN-2210	Learning Support CN-2240	The Art of Teaching CD-1100	Using Technology CD-1120	Using Technology CD-1130
1:00 – 1:45 PM	10. Preparing to Teach Online: Challenges and Opportunities	11. Integrate Research into Teaching Mathematics	12. Discourse in the Developmental Math Classroom	13. Making it Stick	14. From Counting to Functions	15. Today's Precalculus Student
2:00 – 2:45 PM	16. Quantified Literacy	17. Different Instructional Models That Made A Difference	18. Math 0997: How to Best Support Students in Math 1001	19. Engaging the Introverted Learner	20. Personal Finance: Use the TI 84 Calculator APPS for that!	21. Implementing an Online Solution to a Low Enrollment College Algebra Learning Support Class
2:45 – 3:00 PM	Snack CN-2220					
3:00 – 3:45 PM	22. Linear Regression	23. Including Technology and Culture in One's Pedagogy	24. Two-for-One: Maximizing Success while Minimizing Cost to Students in Co-Requisite Courses	25. Active Algebra	26. Using Simulation Experiments on TI Calculators and Excel to Teach Sampling Distributions	

Mini Sessions

	CN-2210	CN-2240	CN-2250
4:00 – 4:15 PM	A. BioCalculus – A Flipped Classroom that is Reflective	B. Progress Counseling: Resources for Engaging Students in Student Success Mathematics Courses	C. Engaging Your Online Students
4:20 – 4:35 PM	D. PHANTASM: Using Mnemonics in Statistics	E. Accelerating College Completion by Enhancing Student Success	F. Motivating Students Using Online Resources
4:40 – 4:55 PM	G. What is an Actuary?	H. Engaging Corequisite College Algebra Students Using MiA (Mathematics in Action) Labs	I. Challenging Students with True or False Questions
5:00 – 5:30 PM	GMATYC Meeting CN-2240		
5:30 PM	Dinner & Raffle CN building, 1st floor		

Abstracts for Full Sessions

9:00 a.m. – 9:45 a.m.

- 1. Engagement in Statistics with Learning Catalytics** **CC-1140**
Keisha Brown, Georgia Perimeter College, Keisha.Brown@gpc.edu
Learning Catalytics is a “bring your own device” student engagement, assessment, and classroom intelligence system that is FREE through MyMathLab/MyStatLab. In this session, you will see how Learning Catalytics can be used in your classroom to grab students' attention and verify their knowledge of a topic.
- 2. Change the Game with MindTap** **CD-1120**
Kristin Cunningham, Cengage Learning, kristin.cunningham@cengage.com
Attend this eye-opening session to learn about current primary research used to build MindTap Math Foundations integrating advancements in next-gen technology to change the game for students' success. Unlike any other math program, MindTap incorporates elements of gamification and social interaction to help students stay engaged, persist through their challenges, increase their retention, learn to transfer new skills, and actually have fun learning math! MindTap Math Foundations -- Advancing Learning, One Student at a Time.
- 3. ALEKS Adaptive Learning: The Modern Student Experience** **CD-1130**
Jordan Enzor, McGraw Hill Education, jenzor@aleks.com
Leigh Jacka, leigh.jacka@mheducation.com
Kristina Parker, Kristina.parker@mheducation.com
Take a deep dive into the McGraw Hill ALEKS adaptive learning platform. ALEKS Implementation Manager Jordan Enzor will share flexible course formats using ALEKS in a traditional F2F course, Hybrid and Emporium Model. Other topics of this session include an overview of the extensive data available in ALEKS and how instructors can use this data to drive instruction. Bring your iPad or tablet in case you want to follow along for a full mobile experience.

Abstracts for Full Sessions

10:00 a.m. – 10:45 a.m.

- 4. Engaging Students in Exploring Mathematics with DESMOS** **CC-1140**
John J Weber III, Georgia Perimeter College, John.Weber@gpc.edu
The presenter will demonstrate how to use the free online DESMOS calculator to encourage students to explore mathematical concepts. Specific examples (from college algebra and above) showing how students can explore the relationships among various concepts will be discussed.
- 5. SoTL Research to Improve Student Performance in STEM Gatekeeper Mathematics Courses** **CN-2210**
John D. King, Georgia Perimeter College, john.king@gpc.edu
Research has shown that lack of perseverance or "grit" and lack of understanding of algebraic concepts serve as deterrents to students' performance in gatekeeper mathematics courses. This presentation discusses two SoTL projects that investigate the effect of intervention strategies to improve students' perseverance and algebraic skills in PreCalculus and Calculus I courses.
- 6. Math 0999: How to Best Support Students in Math 1111** **CN-2240**
Andrea Hendricks, Georgia Perimeter College, andrea.hendricks@gpc.edu
Teach Math 0999 and have something you would like to say to Math 1111 instructors? Teach Math 1111 and have something you want to say to Math 0999 instructors? This session will provide an opportunity for instructors to openly discuss the support class and to share their suggestions, concerns, and/or questions.
- 7. Instructional Strategies for Creating a Culture of Grit and Growth** **CD-1100**
Ayodele Harrison, The Lovett School, ayodele.harrison@lovet.org
Come experience 10 instructional design principles and delivery strategies that invite students to take an active role in their learning and push for deeper thinking. Through a series of interactive math exercises, participants will explore the use of social interaction and movement to strengthen self-efficacy and enhance communication skills.
- 8. Let's have a serious discussion about discussions** **CD-1120**
Erin Cooke, Georgia Perimeter College, erin.cooke@gpc.edu
Usually, online math discussions are intended to have students learn, interact and build a sense of community. However, "typical" discussions can feel dry and unenjoyable. Changing the focus of the conversation can realign discussion with their goals, build better students, and sometimes help students be more successful people.
- 9. An Interactive Flipped Classroom** **CD-1130**
Michael Sullivan, Joliet Junior College, sullystats@gmail.com
The inverted classroom allows for a dynamic and interactive experience for students in Introductory Statistics. The presenter will discuss how he flips his statistics classroom including out of class requirements, in-class activities, and an introduction to Learning Catalytics. Data will be shared regarding the efficacy of the approach. Please bring your own web-enabled device (tablet, smartphone). Don't worry if you don't teach stats, you will walk away with plenty of ideas for flipping your classroom!

Abstracts for Full Sessions

1:00 – 1:45 p.m.

- 10. Preparing to Teach Online: Challenges and Opportunities** **CC-1140**
Robert Blumenthal, Georgia College, robert.blumenthal@gcsu.edu
This presentation will consider some of the issues faced by faculty as they undergo training to teach online and will address some of the pedagogical opportunities and challenges associated with online instruction. Some advice will be offered to those faculty who are just beginning to explore online teaching.
- 11. Integrate Research into Teaching Mathematics** **CN-2210**
Dr. Shinemin Lin, Savannah State University, lins@savannahstate.edu
The National Science Foundation sponsors many intervention grants that require integrating undergraduate research into education programs. Education programs related to grant objectives are one of the key factors of successful grant proposal or not. In this paper I define lower level undergraduate research as an exploration of application problems. Through observation, pattern recognition and exploring acceptable conclusions, freshman or sophomore students unpacked their talents. Students got to know “HOW and WHY” other than just to know “WHAT”. Later they will have experiences and skills to explore more challenging problems. Finally, I will provide several sample research projects for readers’ reference.
- 12. Discourse in the Developmental Math Classroom** **CN-2240**
Tonia Faulling, Tri-County Technical College, tfaullin@tctc.edu
Viraj Mehta, Greenville Technical College, Viraj.Mehta@gvltec.edu
This presentation will start with brief discussion of why discourse is important in Developmental Math. The presenters will present activities that help to promote discourse in the classroom. Activities are designed for Basic Math through Intermediate Algebra, but the ideas can be generalized to all levels of math.
- 13. Making It Stick** **CD-1100**
Andrea Hendricks, Georgia Perimeter College, andrea.hendricks@gpc.edu
Todd Hendricks, Georgia Perimeter College, todd.hendricks@gpc.edu
Do your students learn to learn or learn to pass a test? How effective are their strategies in making the material stick? How effective are you as an instructor in guiding students in the learning process? The presenter will share methods for increasing the stickiness of your content along with methods that are not as effective as we might think.
- 14. From Counting to Functions** **CD-1120**
Nikita Patterson, Gordon State College, npatterson@gordonstate.edu
Solomon Betanga, Gordon State College, sbetanga@gordonstate.edu
Participants will engage in a task to create a pattern using multiple representations (pictures, tables, graphs, and algebraic rules). Participants will then generate various ways to describe the pattern depending on how they visualize the situation, leading to a discussion of functions.
- 15. Today's Precalculus Student** **CD-1130**
Donna Gerken, Miami Dade College, dgerken@mdc.edu
Leigh Jacka, leigh.jacka@mheducation.com
Come hear McGraw Hill Author Donna Gerken talk about the new Miller/Gerken Precalculus series and how it helps students be more successful in their STEM courses and better prepared for Calculus. Donna will discuss the various features, resources and supplements available with this new series including best practices for teaching these courses.

Abstracts for Full Sessions

2:00 – 2:45 p.m.

- 16. Quantified Literacy** **CC-1140**
Andy Imm, Georgia Perimeter College, Andrew.Imm@gpc.edu
Over the years, Andy Imm has integrated several programs that use technology to assist students in learning more about math concepts. This session will feature methods to assist faculty and students in understanding key math concepts during the writing process. Exercises in visual representations and interactive mobile apps help explore the deeper connections of enumerating media and art applications.
- 17. Different Instructional Models That Made A Difference** **CN-2210**
Dr. Man M. Sharma, Clark Atlanta University, mms1948@aol.com
Ashim Chowdhury, Educo International, Inc., ashim@educo-int.com
Instructional Models, Structured and Redesign, have resulted in significant difference in student success rates. Outcomes are attributed to factors including: interactive learning resources, customization of courses, 24 X 7 support, and powerful grading and assessment options.
- 18. Math 0997: How to Best Support Students in Math 1001** **CN-2240**
Cindy Box, Georgia Perimeter College, Cynthia.box@gpc.edu
Wendy Davidson, Georgia Perimeter College, wendy.davidson@gpc.edu
Ouida Johnson, Georgia Perimeter College, ouida.johnson@gpc.edu
This is an open forum discussion about the Math 0997 course. Members of the Math 1001/0997 committee will explain the purpose and design of the Math 0997 course. Then there will be an opportunity for attendees to exchange ideas about what is working and what isn't working in the support class. Attendees are encouraged to bring questions and suggestions for improving the course.
- 19. Engaging the Introverted Learner** **CD-1100**
Dr. Terry (Tee) Barron, Georgia Gwinnett College, tbarron@ggc.edu
Dr. Mary Saunders, Georgia Gwinnett College, msaunders@ggc.edu
Introverted learners do not often actively participate in traditional lectures. Extroverted, gregarious students typically answer most questions even when engaging teachers try everything possible to actively involve introverted learners. This study focuses on engaging introverted learners using methods that focus on introverted personality traits, which directly contributes to higher achievement.
- 20. Personal Finance: Use the TI 84 Calculator APPS for that!** **CD-1120**
Rusandica (Sanda) Manole, Georgia Perimeter College, Rusandica.Manole@gpc.edu
Students struggle with selecting, substituting into, and calculating financial concepts using formulas. This interactive session will guide on how to teach the students use the TI 84 calculator APPS for calculating almost every financial concept. Attendees have the opportunity to participate in the hands-on activities in this session. NOTE: Attendees are encouraged to bring a TI 84 calculator to fully participate in portions of this session.
- 21. Implementing an Online Solution to a Low Enrollment College Algebra Learning Support Class** **CN-2240**
Mary Dwyer Wolfe, Middle Georgia State University, mary.wolfe@mga.edu
When faced with a mandate to implement a new learning support class with low enrollment across campuses, an online solution seemed in order. Vendor online solutions were selected so that the support course complemented the gateway course while engaging the students. Data collected was analyzed. Lessons learned will be discussed.

Abstracts for Full Sessions

3:00 – 3:45 p.m.

- 22. Linear Regression** **CC-1140**
Amos Darrisaw, Georgia Perimeter College, amos.darrisaw@gpc.edu
In this presentation we will examine some of the mathematics underlying linear regression. We will also consider several examples where the application of regression is appropriate. The discussion and examples will be facilitated through MyMathLab and Stat_Crunch.
- 23. Including Technology and Culture in One's Pedagogy** **CN-2210**
Lauren Frazier, Georgia Perimeter College, Lauren.Frazier@gpc.edu
Learn how to use an engaging polling software and/or culture in one's teaching.
- 24. Two-for-One: Maximizing Success while Minimizing Cost to Students in Co-Requisite Courses** **CN-2240**
Sandee House, Georgia Perimeter College, sandee.house@gpc.edu
Susan Keith, Georgia Perimeter College, susan.keith@gpc.edu
An important consideration for 1-hr Math0997, Support for Quantitative Reasoning, was that the additional expense to students be kept to a minimum. Both static and algorithmic assignments parallel to committee created worksheets that are auto-graded by MML were created. This presentation will showcase the worksheets and parallel online assignments that were created with the MyMathLab Custom Question Builder (CQB).
- 25. Active Algebra** **CD-1100**
Emily Whaley, Georgia Perimeter College, ewhaley@gsu.edu
Active learning can replace lecturing in College Algebra. Group activities and guided notes will be presented. Grading and student participation will be discussed.
- 26. Using Simulation Experiments on TI Calculators and Excel to Teach Sampling Distributions** **CD-1120**
Gerald Agbegha, Georgia Gwinnett College, gagbegha@ggc.edu
Anthony Thomas, Georgia Gwinnett College
Joshua Roberts, Georgia Gwinnett College
Simulation is a useful tool for understanding sampling distributions. In this presentation, we show how the concept of fanout distributions along with simulation is used to enable the students to see that results hold true for any population. The students are enabled to do the exploratory exercises using easily accessible technologies.

Abstracts for Mini Sessions

4:00 – 4:15 p.m.

- A. BioCalculus – A Flipped Classroom that is Reflective** **CN-2210**
Rebecca L. Rizzo, Ph.D., Georgia State University, rlrizzo@gsu.edu
This presentation examines strategies used in a BioCalculus course sequence to increase student engagement, understanding, and confidence in the material. A combination of lecture, grading, and pedagogical shifts is used to create a classroom that invites student reflection and measures their ability to apply their learning to their lives.
- B. Progress Counseling: Resources for Engaging Students in Student Success Mathematics Courses** **CN-2240**
Dr. Terry (Tee) Barron, Georgia Gwinnett College, tbarron@ggc.edu
Student Success Mathematics Courses present unique challenges across many levels that even transcend the classroom. As engaged teachers, we have so many opportunities to interact with students and positively hold them accountable for their learning and success. This mini session will offer resources “that worked for me” and my students!
- C. Engaging Your Online Students** **CN-2250**
Allison Williams, Georgia Perimeter College, allison.williams@gpc.edu
The speaker will share how she works to help her online students feel more engaged in and responsible for their course. Ideas ranging from engaging discussion board topics to pop-up surveys will be shared. The ideas shared can be put to use in a face-to-face classroom as well.

Abstracts for Mini Sessions

4:20 – 4:35 p.m.

- D. PHANTASM: Using Mnemonics in Statistics** **CN-2210**
Ginny Powell, Georgia Perimeter College, ginny.powell@gpc.edu
Inspired by Advanced Placement exam requirements and instructors, mnemonics that can be used to walk students through hypothesis testing and confidence intervals will be presented.
- E. Accelerating College Completion by Enhancing Student Success** **CN-2240**
Lee Ann Roberts, Georgia Gwinnett College, Lrobert2@ggc.edu
Alvina Atkinson, Georgia Gwinnett College, Aatkinso@ggc.edu
Sarah Park, Georgia Gwinnett College, Spark3@ggc.edu
Angela Lively, Georgia Gwinnett College, Alively@ggc.edu
Aris Winger, Georgia Gwinnett College, Awinger@ggc.edu
In Spring 2012, the authors' institution launched a new course that was designed to "fast-track" students through developmental math and college algebra. The course has been modified and expanded to include two co-requisite courses (for College Algebra and Quantitative Reasoning). The model and results will be shared.
- F. Motivating students using online resources** **CN-2250**
Ashraful A Chowdhury, Georgia Perimeter College, ashraful.chowdhury@gpc.edu
The presenter will demonstrate online resources that are currently being used in his courses. His intention is to encourage students to stay committed and not to give up. The presenter will share students' comments and discuss the effectiveness of the online resources. The presenter greatly appreciates any feedback from the audience.

Abstracts for Mini Sessions

4:40 – 4:55 p.m.

G. What is an Actuary?

CN-2210

John Fulk, Georgia Perimeter College, jfulk@gpc.edu

Forbes lists Actuary as the top job for 2015, and it has been ranked very highly many other years too, but what is an actuary? Come get some insight into a not-so-well known career that you could suggest to math majors.

H. Engaging Corequisite College Algebra Students Using MiA (Mathematics in Action) Labs

CN-2240

Alvina Atkinson, Georgia Gwinnett College, aatkinso@ggc.edu

Angela Lively, Georgia Gwinnett College, alively@ggc.edu

Lee Ann Roberts, Georgia Gwinnett College, lrobert2@ggc.edu

Sharron Jenkins, Georgia Gwinnett College, sjenkin2@ggc.edu

Aris Winger, Georgia Gwinnett College, awinger@ggc.edu

The authors have incorporated the use of real world laboratories into their co-requisite college algebra sections to engage students in active learning laboratories in STEM fields. The courses are taught in a physics lab/ computer lab environment. The course model and results will be presented.

I. Challenging Students with True or False Questions

CN-2250

Stephanie Garofalo, Georgia Perimeter College, stephanie.garofalo@gpc.edu

Sure students can guess, but can they explain why a statement is True or False? Can they even read the statement correctly? See examples of True/False questions used on projects and exams in Calculus I and II, and some interesting answers.