



Georgia State University Perimeter College
34th Annual Mathematics Conference

34th Annual Mathematics Conference

Perimeter College at Georgia State University

February 12th, 2021

- 10:00 a.m. – Welcome by the Conference Chair, Keisha Brown
- 10:05 a.m. – Welcome by the GMATYC Chair, Dr. Nikita Patterson
- 10:10 a.m. – Address by the Keynote Speaker, Andrea Hendricks
- 10:45 a.m. – Q&A
- 10:55 a.m. – Closing Remarks
- 12:00 p.m. – GMATYC meeting

Andrea Hendricks "These are the Voyages"

Andrea is an Associate Professor of Mathematics at Georgia State University Perimeter College and Associate Department Chair for the Online Mathematics/Computer Science Department. After receiving a Master's of Science in Pure Mathematics from Florida State University, Andrea has devoted her entire career to higher education, teaching and serving in various leadership roles for almost 30 years. Her passion for teaching, love of technology, and willingness to mentor others were key factors in Andrea recently being named a Cole Fellow, the highest teaching honor at Perimeter College. Andrea has published four traditional developmental math textbooks and recently authored a fully online, interactive text, College Algebra with Support.



Andrea is married to another Perimeter College mathematics faculty member, Todd Hendricks. They have three sons and a dog. Outside of work, Andrea enjoys spending time with family, golfing, sailing, and playing the piano.


Recognitions and Awards

- Perimeter College Faculty Champion, 2020
- NISOD Teaching Excellence Award, 2020
- AMATYC Teaching Excellence Award, 2019
- Top Hat Author Award, 2018
- Cole Fellow Award, Perimeter College, Georgia State University, 2017
- Writing Fellowship, Georgia Perimeter College, 2009
- Georgia Perimeter College Collegiality Award, 2008
- Teaching and Service Award, Clarkston Campus, Georgia Perimeter College, 2006
- NISOD Teaching Excellence Award, 2003

Committees and Organizations

- Vice President, GOSS/GADE
- Planning Committee, GOSS/GADE Conference
- Faculty Affairs Committee
- Gateways to Completion Committee
- Gateways to Completion Steering Committee
- Member, National Association of Developmental Educators
- Member, American Mathematical Association of Two-Year Colleges

Special Thanks To:

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Abstracts for Video Sessions

Building Content Capacity	
1.	<p>Virtual Courses Require Master-Based Solutions</p> <p>Sydney Smith Hawkes Learning ssmith@hawkeslearning.com</p> <p>In today's virtual landscape, how do we ensure that students are truly grasping course content? A competency-based approach to learning is a clear solution that sets goals for students and gives them the flexibility and resources to achieve them. Discover how a mastery-based, 3-step approach fosters genuine competency by removing learning aids, adapting to individual proficiencies, providing corrective remediation, and allowing instructors to intervene before students fall behind."</p>
2.	<p>Engaging Students in Elementary Statistics and Co-Requisite Support</p> <p>Barry Monk Middle Georgia State University barry.monk@mga.edu, Charla Baker Middle Georgia State University charla.baker@mga.edu</p> <p>Professors Barry Monk and Charla Baker present strategies for engaging Elementary Statistics and Co-requisite Support students through projects, case studies, online activities, and discussion board assignments. Examples of teaching corequisite skills in a statistical context from a Statistics Co-requisite workbook they authored will also be included.</p>
3.	<p>Teaching Fractions</p> <p>Xiaoyan (Shannon) Hu Middle Georgia State University shannon.hu@mga.edu</p> <p>There are different ways to understand fractions. However, certain ways help primary school students solve middle school questions with only the most basic knowledge of fractions.</p>
4.	<p>Keeping Students Engaged with Content in Digital Learning</p> <p>Phani Duggirala Georgia State University pduggiralal@student.gsu.edu Jillian Lee Georgia State University jlee467@student.gsu.edu</p> <p>Having trouble keeping your students engaged or presenting the content virtually? Join us as we take you through a brief lesson showing you how to hook and connect with your students (Flipgrid), build rapport, give live feedback (Desmos), and assess their learning through engaging digital interactive notebooks.</p>
5.	<p>Peanut Butter and Jelly: A Recipe for Success</p> <p>Thomas Rothery Perry High School rothery.thomas@cusd80.com</p> <p>This best practice provides a valuable demonstration to students regarding the importance of communicating "entire" mathematical thoughts as they present solutions. In too many instances, statistics students place exclusive emphasis on numerical calculations when answering questions. Once students observe this activity, many will gain a deeper appreciation for the inclusion of "processes" and "details" within their own mathematical work.</p>
6.	<p>Designing Interactive Webpage to Assist Students in Exploring Mathematical Patterns and Concepts</p> <p>John Weber Georgia State University Perimeter College jweber13@gsu.edu</p> <p>The presenter will discuss how to use embedded objects (DESMOS graphs, GeoGebra applets, Python code, Mathematica code, and H5P quizzes) within a single interactive html document for students to explore mathematical patterns and concepts. The presenter will show how to create these interactive pages using the markdown markup language.</p>
7.	<p>A Two-Phase Individual and Whole Class Approach for Online Discussions</p> <p>Thomas Cooper tom.cooper@ung.edu</p> <p>The presenter will discuss two types of open-ended questions that can be used with a two-phase (Individual and Whole Class) approach to generate student participation in asynchronous online discussions in Calculus I. While the examples are from Calculus, the general approach is applicable to any introductory college mathematics course.</p>

8.	Statistics - Insights and Review for the First-Time Teacher Barry Monk Middle Georgia State University barry.monk@mga.edu In this presentation, Barry Monk – experienced instructor and author – will talk about approaches and strategies that he's found to be successful when teaching Elementary Statistics. Key takeaways and a review of topics that students find challenging will be included. This session is intended for the first-time teacher or anyone wishing to brush up on their Statistics teaching skills.
9.	Teaching Tips to Help You Get Organized Sharon Weltlich Perimeter College at Georgia State University sweltlich@gsu.edu In this teaching tips segment recorded for AMATYC in June 2020, Sharon Weltlich shares her tips and tricks of staying organized using a simple notebook. She will discuss several documents that help with her organization. She will describe how to create the forms and discuss why they are helpful.

Reach Then Teach	
1.	PRACTIS (Precalculus Review and Calculus Topics in Sync): A Linked Remediation Program for Calculus I Marilyn Reba Georgia State University Perimeter College mreba@gsu.edu Diana McGinnis Georgia State University Perimeter College dmcginnis@gsu.edu Many students in Calculus I struggle due to missing or inadequate prerequisite skills. Our PRACTIS videos and worksheets decompose calculus problems to reveal embedded precalculus concepts. Students have an incentive to remediate because they must implement these precalculus skills within their current assignment. We will share preliminary results and future plans.
2.	Building a Sense of Community through Collaborative STEAM-based Community Art Projects John Weber Georgia State University Perimeter College jweber13@gsu.edu Sahithya Reddivari Georgia State University Perimeter College sreddivari@gsu.edu Art can make STEM concepts more visible. We will discuss past Community Art Projects designed to foster a collaborative community that welcomes everyone to enjoy the process of constructing STEM-based art objects. We will discuss the plans for how the collaborative effort can be adapted for social distancing this year.
3.	Where Do We Go From Here? COVID's Emotional Toll on Instructors and Students Lynda Cain Perimeter College at Georgia State University lcain3@gsu.edu This presentation brings to light many aspects of the emotional toll that COVID-19 has had on instructors as well as students. Each of us has been impacted by the pandemic. How do we as instructors cope? How do we put on the "teacher facade" and get students interested in learning? How can we help each other? How do we identify students who are suffering and need help? How can we effectively teach when students and instructors are in despair? Let's navigate through these unprecedented times together!
4.	How Can I Use Twitter to Engage my Online Students? Tosha Lamar Perimeter College at Georgia State University tlamar2@gsu.edu Twitter can have many uses in an online course. Twitter can significantly improve communication with students. This presentation will explain the many ways one can use Twitter in an online course, where to embed a Twitter feed, how to embed the feed, how to schedule tweets in advance. The many reasons using Twitter helps students and can save instructors time will also be discussed.
5.	Make Math What It Already Is: Relevant Dashie Young-Saver Skew The Script youngsaver@skewthescript.org Data is at the center of discussions about police use of force & race, climate change, educational inequity, and many other important social issues. As math teachers, how can we lead meaningful discussions on such topics while teaching in the often tech-issue-ridden, awkward, and dehumanizing online setting? Together we'll tackle this challenge by exploring the #1 predictor for students' ability to succeed while learning online: their genuine interest in the content.

Effective Technology Tools

1.	<p>Thriving Virtually with MATHCOUNTS Games and Activities</p> <p>Taren Long DoD STEM Ambassador Program tmlong@smcps.org Genevieve Esmende DoD STEM Ambassador Program gesmende@sandi.net</p> <p>The mission of MATHCOUNTS is to build students' confidence with middle school math and problem-solving. Presenters will share virtual MATHCOUNTS activities and games that have been adapted for an online environment, and how to engage students in these collaborative activities through apps like Google Slides.</p>
2.	<p>Using Online Assessment Tools to foster Active Learning in a Virtual Classroom</p> <p>Alvaro Ortiz Lugo Georgia Gwinnett College aortizlugo@ggc.edu</p> <p>Engaging students in a virtual classroom is challenging. In this video, I introduce the use of online tools such as Desmos Teacher, Geogebra, Poll everywhere, and Quizziz as means to produce active learning situations in a synchronous online classroom. We will consider summative and formative assessment strategies.</p>
3.	<p>Kaltura to the Rescue: Using Video Quizzes to Increase Engagement</p> <p>Keisha Brown Perimeter College at Georgia State University klanier1@gsu.edu</p> <p>In this session, we will discuss how Kaltura can be used to create a video lecture and assess student's knowledge simultaneously. We will explore the analytics provided by Kaltura and learn how to import the grades easily into your iCollege grade book. You will also be advised of various caveats that you should know to utilize this powerful tool effectively.</p>
4.	<p>A Look at the Path to Co-Requisite College Algebra</p> <p>Dr. Alana McAnally University of Central Oklahoma amcanally@uco.edu</p> <p>Hear from Dr. Alana McAnally, Director of Developmental Mathematics at the University of Central Oklahoma, on her institution's journey to a successful implementation of Co-Requisite College Algebra. UCO is a 4-year regional university with a large commuter student population (about 70% of the 15,000 undergraduate students). The state of Oklahoma adheres to the following initiatives: 15 to Finish, Math Pathways, and At-Scale Co-Remediation. Since the Spring of 2017, Dr. McAnally and her peers have worked to boost pass rates in Corequisite College Algebra from 53.2% to 70.9%.</p>
5.	<p>Proctoring Exams in MyLab Math</p> <p>Ben Piercy Pearson Education ben.piercy@pearson.com</p> <p>Pearson Product Manager introduces the first remote proctoring service built-in directly into your MyLab Math courses. How it works and how it can help you administer and monitor your online tests!</p>
6.	<p>Gradescope – Deliver and Grade Your Assessments Anywhere</p> <p>Chelsea Kharakozova Pearson Education Chelsea.Kharakozova@pearson.com</p> <p>Gradescope and Pearson's MyLab Math helps you seamlessly administer and grade all of your assessments, including handwritten answers, whether online or in-class. Save time grading and get a clear picture of how your students are doing.</p>
7.	<p>Visualizing Calculus in MyLab Math</p> <p>Aaron Warnock Pearson Education aaron.warnock@pearson.com</p> <p>Pearson Faculty Advisor will share Effective Learning tools and questions types used in his Calculus courses: including conceptual question library, set-up and solve exercises, interactive figures, NEW Geogebra exercises, and Gradescope.</p>
8.	<p>Integrating MyLab Math with iCollege</p> <p>Hong Du Perimeter College at Georgia State University hdu7@gsu.edu</p> <p>In this presentation, Dr. Du will demonstrate how MyLab math can be integrated with iCollege and how the integration makes the students' registration process and access MyLab components easier. It also allows easy grades transfer of MyLab grades to iCollege gradebook.</p>

Undergraduate Student STEM Presentation

1.	<p>A Brief Survey of List-Edge-Critical Graphs</p> <p>Hannah Reavis Middle Georgia State University hannah.reavis@mga.edu Advisor: Dr. Joshua Harrelson Middle Georgia State University Joshua.Harrelson@mga.edu</p> <p>For a graph G and nonnegative integer k, we say G is a k-list-edge-critical graph if $\chi'_{-1}(G) > k$, but $\chi'_{-1}(G-e) \leq k$ for all $e \in E(G)$. We survey a few known lemmas for $(\Delta + 1)$-list-edge-critical graphs and show how these lemmas achieve $\chi'_{-1}(G) \leq \Delta + 1$ for certain families of G.</p>
2.	<p>Improving De-novo Protein Design Success with a Machine Learning Model</p> <p>Susan C. Kleinfelter Georgia State University skleinfelter2@student.gsu.edu Advisor: Dr. Brian Koepnick Institute for Protein Design, University of Washington koepnick@uw.edu</p> <p>Tr-Rosetta, a machine learning model, was used with Rosetta fastdesign for focused redesign of problem areas in 4000 de-novo protein designs by players of the citizen science game Foldit. Tr-Rosetta improved fragment quality, a predictor of design success, allowing 'rescue' of designs that would otherwise not fold as intended.</p>
3.	<p>Riemann Hypothesis</p> <p>Gabriel Gillott Georgia State University ggillott1@student.gsu.edu</p> <p>I would like to present the history and ramifications of the Euler-Riemann zeta function and the Riemann Hypothesis.</p>
4.	<p>Riemann's Rearrangement Theorem</p> <p>Garrethe Edge Middle Georgia State University brianna.edge@mga.edu Advisor: Dr. Duane Day Middle Georgia State University duane.day@mga.edu</p> <p>Riemann's Theorem details an interesting phenomenon among conditionally convergent series. It presents us with the fact that any series of this nature can be rearranged to converge to any real number. In this presentation we shall review what a series is, how to determine whether its convergent, and how to determine if it converges absolutely or conditionally. We will lastly explore how conditionally convergent series connect to divergent permutations and what theorems follow from those connections.</p>