2020 Joint Meetings
Of The
Florida Section
Of The
Mathematical Association of America (MAA)
And The
Florida Two-Year College Mathematics Association (FTYCMC)

University of West Florida
Pensacola

February 21 & 22, 2020
Florida Section of the Mathematical Association of America

2019 - 2020

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President: Altay Özgener, State College of Florida
Past President: Penny Morris, Polk State College
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Florida Two-Year College Mathematics Association

2019 - 2020

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Membership Coordinator: Dennis Runde, State College of Florida
Historian: Robert Shollar, State College of Florida
Webmaster: Altay Özgener, State College of Florida
Tracy Leung, Mya Salas, Dylan Wilson  
(Undergraduates) – UNF  

Graph Minors and Minimally Nonembeddable Graphs  

This presentation discusses graph minors and the embeddability of a graph on a sphere with \( k \) handles. A planar graph is a graph that can be drawn in such a way in the plane, so that no edges cross each other. In other words, it is a graph that can be embedded in the plane. We discuss the conditions that make a graph embeddable on a sphere with \( k \) handles. Then, using vertex deletions and edge contractions, we examine if a graph is minimally nonembeddable on a surface. To conclude, we show that the set of minimally nonembeddable graphs on a surface is finite.

Jordan Machata  
(Undergraduate) – University of Tampa

On the Number of Components of Coherent Optimal Partitions

Motivated by the clustering problem, we study coherent network partitions, defined as partitions which yield only disconnected subgraphs in the complement. The optimal partition is a partition with the minimum edge cut. For this research, we restrict the coherent partitions by excluding partitions that contain singleton components. We examine the relationship between the number of components of a coherent partition and its edge cut, specifically when looking for the optimal coherent partition. We were expecting to find that the optimal coherent partition would always be the coherent partition with the least number of components. We proved that this is the case for a 6-vertex graph and any less than 6 vertices is a trivial case. However, we found a counterexample on a 7-vertex graph where there are two optimal coherent partitions, meaning they both have the minimal edge cut, and they each have a different number of components.

Workshop

Melanie A. Sutton and Anthony Okafor - University of West Florida  
Logan Goodson (Graduate) - University of West Florida

Visual Engagement Techniques for Motivating Students and Just-In-Time Tutoring

This workshop will provide hands-on training on techniques to visually engage students to better understand the significance of data analysis and results. Features of Excel 3D Maps will be used to plot geographic and temporal data on 3-D globes and to create shareable visual data tour movies. Screen video recording features of Microsoft PowerPoint will be covered to demonstrate how to rapidly assist a student with a generated MP4 training video. Finally, uploading created resources to a YouTube channel for easy dissemination to students will be explored alongside examples of using these tools for just-in-time tutoring.