2025 OK-AR MAA Meeting Overview and Invited Abstracts

All times Central Daylight Time

Thursday, April 3

4:00 pm – 8:00 pm	Registration and Check-in
4:30 pm	Section NExT
6:00 pm – 8:30 pm	Team Jeopardy Competition
8:30 pm	Integration Bee

Friday, April 4

8:00 am – 3:00 pm	Registration and Check-in
9:00 am – 11:30 am	Student Workshop, *Modular Origami and Symmetric Colorings of Regular Polyhedra.* Lisa Mantini, Oklahoma State University
9:00 am – 11:30 am	Faculty Workshop, *Service Learning in Mathematics: Thinking Outside the Tutoring Box*. Lisa Marano, West Chester University, Chair – MAA Council on Sections
11:45 am – 1:00 pm	Section NExT Lunch Faculty Sponsors Lunch Department Chairs Lunch
1:00 pm – 3:15 pm	Presented Papers (including Undergraduate Students)
3:15 pm – 3:40 pm	Break
3:45 pm – 4:45 pm	Section Visitor Lecture, *Mathematics and Community Engagement.* Lisa Marano, West Chester University, Chair – MAA Council on Sections
4:50 pm – 5:50 pm	Executive Committee Meeting
5:30 pm – 7:30 pm	Student Event
6:00 pm – 7:30 pm	Banquet
7:45 pm – 9:00 pm	Plenary Session: Student Awards, immediately followed by MAA AWM Lecture, *Projective and Non-Abelian SET.* Catherine Hsu, Swarthmore College

Saturday, April 5

8:00 am – 10:00 am	Registration and Check-in
8:30 am – 9:05 am	Presented Papers
9:15 am – 10:25 am	Section Business Meeting
10:30 am – 11:25 am	Presented Papers

All times are tentative until we know the final number of papers to be presented.

Abstracts

Mathematics and Community Engagement. **(Section Visitor Lecture)**
Lisa Marano, West Chester University, Chair – MAA Council on Sections

First-year seminars, learning communities, service-learning courses, undergraduate research projects, and capstone experiences are among a list of high-impact educational practices compiled by George Kuh (2008), which measurably influence students' success in areas such as student engagement and retention. It is recommended that all college students participate in at least two of these HIPs to deepen their approaches to learning, as well as to increase the transference of knowledge (Gonyea, Kinzie, Kuh, & Laird, 2008). In Mathematics, if a student participates in service-learning, it is typically in the form of tutoring, in conjunction with a school or with an after-school program, or modeling work or statistical analysis for non-profits. Today, I will discuss a number of service-learning projects developed for mathematics courses, which do not involve these traditional opportunities. I will also describe my current research project which has potential impact on my community and yours.

Projective and Non-Abelian SET. **(MAA AWM Lecture)**
Catherine Hsu, Swarthmore College

Mathematicians love SET. On the surface, this classic game is a contest of pattern recognition, but it also presents an interesting way to visualize the geometry of a torus over a finite field. In this talk, we will discuss some of the mathematics connected to SET and then explore several new versions of the game, including one arising from projective geometry and one arising from non-abelian groups. In particular, we will see how these non-abelian variations on SET can give intuitive visualizations of abstract group structures.

Modular Origami and Symmetric Colorings of Regular Polyhedra**. (Student Workshop)**
Lisa Mantini, Oklahoma State University

Polyhedra are figures in space whose faces are polygons. The Platonic solids are the most regular polyhedra, with faces of congruent regular polygons configured in the same way at each vertex. We'll study their geometry while creating models of some of these polyhedra using modular origami, a technique of folding multiple pieces of paper in the same way to create individual modules which are assembled to create our final model. We'll create models which are colored symmetrically, that is, where the divisions into colored regions is rotationally-invariant, leading to a way to identify the object's group of rotational symmetries with a group of permutations.

Service Learning in Mathematics: Thinking Outside the Tutoring Box**. (Faculty Workshop)**
Lisa Marano, West Chester University, Chair – MAA Council on Sections

Service learning is a powerful tool for engaging students in meaningful, real-world applications of mathematics while fostering civic responsibility. In this workshop, *Service Learning in Mathematics: Thinking Outside the Tutoring Box*, we'll explore innovative approaches to incorporating service-learning projects into mathematics courses beyond traditional tutoring roles. Participants will design projects that connect mathematical concepts to community needs, such as analyzing data for local organizations, optimizing resources for nonprofit operations, or addressing public policy issues through quantitative reasoning.

Through hands-on activities, case studies, and collaborative brainstorming, faculty will learn to integrate service learning into a variety of courses—from introductory algebra to advanced statistics—while aligning with course objectives. This workshop will also address strategies for forming community partnerships, assessing student learning, and ensuring projects have lasting impact. Join us to expand your toolkit and inspire students to see mathematics as a tool for social change!