

# SUnMaRC 2026 Conference Program

Unless otherwise stated, all events take place in the Lumberjack Mathematics Center (LMC).

## Friday, April 17 (tentative)

- 5:00-6:30 PM: Arrival/Welcome/Pizza! (LMC Lobby, second floor of the SAS Building)
- 6:30-7:30 PM: Plenary talk (room 211) - Dr. Kurt Herzinger  
*My Journey from Numerical Semigroups to Combinatorial Games*
- 7:30-9:00 PM: Problem Session I (LMC Lobby)

## Saturday, April 18

### Session 1 (Room 201A) – Chair: Gina Nabours

- 9:00-9:20 AM: Gabriella Stewart, Zane Padgett - NAU  
*New Results on Digraphs with Constant Cover Pebbling Numbers, Part I*
- 9:25-9:45 AM: Gabriella Stewart, Zane Padgett - NAU  
*New Results on Digraphs with Constant Cover Pebbling Numbers, Part II*
- 9:50-10:10 AM: Brandon Wang, Eli Perrine - ASU  
*Partial Results in Hub Cover Pebbling Number for High Minimum Degree Graphs*
- 10:10-10:30 AM: Break
- 10:30-10:50 AM: Niko Koers - UNM  
*Pushing the Spirit of Base Fibonacci*

### Session 2 (Room 201) – Chair: Jerry Galley

- 9:00-9:20 AM: Ernesto Morales Carrasco - UNM  
*Stopping Measles in Its Tracks: An Age-Structured SEIR-MV Model of Declining Vaccination, Waning Immunity, and Catch-Up Strategies*
- 9:25-9:45 AM: Brandon Gallegos - UNM  
*Why humanity needs a definition*
- 9:50-10:10 AM: Shaurya Chauhan - UofA  
*Simulated Adaptive Optical Super-Resolution Imaging*
- 10:10-10:30 AM: Break
- 10:30-10:50 AM: Alex Shah - UofA  
*Survival Analysis in Plant Phenology*

### Session 3 (Room 221A) – Chair: Scott Akin

- 9:00-9:20 AM: Jinwoo Choi - UofA  
*Transfer Analysis for Univ. Arizona Football Team (Churn Analysis)*
- 9:25-9:45 AM: Vanya Murzin - ASU  
*Can graph theory analysis of brain networks characterize differences in connectivity between brain regions in Alzheimer's patients versus control*
- 9:50-10:10 AM: Canyon Clark - NAU  
*Comparing Metropolis-Hastings and Hamiltonian Monte Carlo for Parameter Inference in Mechanistic Epidemiological Models*
- 10:10-10:30 AM: Break
- 10:30-10:50 AM: Abbas Hamid - CSU  
*The Cross Between Math and Music*

### Midday Break

- 10:50-11:00 AM: Break
- 11:00-12:00 PM: Plenary talk (room 211) - Dr. Hiram Beltrán-Sánchez  
*Implausibility of Radical Life Extension in Humans in the 21st Century*
- 12:00-1:30 PM: Lunch (Hot Spot at the Union)

### Session 4 (Room 201A) – Chair: David Deville

- 1:30-1:50 PM: Owen Davis, Vaughn Wilmer - NAU  
*Seymour Vertices in Toroidal Grid Graphs, Part 1*
- 1:55-2:15 PM: Owen Davis, Vaughn Wilmer - NAU  
*Seymour Vertices in Toroidal Grid Graphs, Part 2*
- 2:20-2:40 PM: Alex Shin - ASU  
*1-D Domain Wall Analysis of Graphene*
- 2:40-3:00 PM: Break
- 3:00-3:20 PM: Aldo Morelli - UNM  
*Relationships between Bond, Invasion, and First Passage Percolation*
- 3:25-3:45 PM: Billy Lippincott - NAU  
*Numerical Bifurcation Analysis of a Coupled Nonlinear System of Differential Equations*

### Session 5 (Room 201) – Chair: Matt Fazio

- 1:30-1:50 PM: Tegan Keen - CSU  
*On the Identifiability of Leak Compartments in Linear Compartmental Models*
- 1:55-2:15 PM: Weslee Nguyen - UofA  
*Topological Data Analysis in Decoding Systems Neuroscience*

- 2:20-2:40 PM: Noah Plant - NAU  
*Designing Quantum Algorithms to Maximize Fisher Information*
- 2:40-3:00 PM: Break
- 3:00-3:20 PM: Josh DeLand - ASU  
*Recurrent Neural Networks for Localized Chaotic Flows*
- 3:25-3:45 PM: Chayton Castruita - UNM  
*The Cyclic Nature of Differential Powers of Ideals in Semigroup Rings*

**Session 6 (Room 221A) – Chair: Hannah Prawzinsky**

- 1:30-1:50 PM: Christine Le, Brendan Phoebe - UofA  
*Optimal Strategies and Probabilistic Search in Battleship*
- 1:55-2:15 PM: Jing Luo, Kishan Bhatnagar - ASU  
*Modeling the Sexually Active Community*
- 2:20-2:40 PM: Jack Cerullo - UNM  
*Building the Optimal Team: Axiomatic and Data-Driven Approaches*
- 2:40-3:00 PM: Break
- 3:00-3:20 PM: Hope Winsor - CSU  
*Colorado Performance Framework: Educational Quality or a Measure of Money?*
- 3:25-3:45 PM: Lekha Shrivastava - ASU  
*Precision Under Pressure: A Comparative Analysis of Nine PLS1 Variants in Image Restoration under Multi-Model Noise Gradients*

**Evening Break**

- 3:45-4:00 PM: Break
- 4:00-5:00 PM: Plenary talk (room 211) - Dr. Kathryn Bryant  
*The Math of AI Hallucinations*
- 5:00-6:30 PM: Dinner (Hot Spot at the Union)
- 6:30-8:00 PM: Problem Session II (LMC Lobby)

**Sunday, April 19**

**Session 7 (Room 201A) – Chair: Casey Malone**

- 9:30-9:50 AM: Shaye Fordring, Seb Pardo, Elenor Rushall - NAU  
*Enumeration of pattern-avoiding Cayley permutations via species*
- 9:55-10:15 AM: Rowdy Fordney - NAU  
*Jumping Random Checkers*
- 10:15-10:35 AM: Break
- 10:35-10:55 AM: Norman Boyd - UNM  
*Randomized Least Squares Solvers for Randomized Fourier Neural Networks*

## Session 8 (Room 201) – Chair: Calder Evans

- 9:30-9:50 AM: Megan He - ASU  
*Cyclotomic Polynomials and Density of Related Diophantine Equations*
- 9:55-10:15 AM: Ryan Grimm - CSU  
*Counting Covers: A Case Study of Problem Solving in Higher-Level Math*
- 10:15-10:35 AM: Break
- 10:35-10:55 AM: Anuarzhan Seraliyev - ASU  
*Calculus Visualization & Raymarching*

## Conclusion

- 11:00–12:00 PM: Lunch (Sandwiches!) and Conference Closure

## Problem Competition Open Hours

Friday: 7:30–9:00 PM

Saturday: 6:30–8:00 PM