



## 2022 MAA MathFest

### Undergraduate Student Poster Session

#### Outstanding Posters

##### 28, Applying Optimal Control With SQP to Cycling Performance Represented by Constituent Course Elements

Trevor Loe, Madison Lytle, Callan Whitney

##### 2, Actions and Factorizations

Gradmar Maldonado Marti, Reyes Ortiz Albino

##### 3, Zero Divisor Graphs of Certain Matrices

Wiley Debs

##### 11, Existence of Optical Vortex Solitons in Photorefractive Media

Zihan Zhang

**12, Mathematically Modeling Virus Propagation on Social Media Networks with the SMIRQ Model**

Justin Browning, Arnav Mazumder, Gowri Nanda, Noelle West

**17, Optimal control applied to wolf and moose population dynamics**

Maya Bocanegra, James Kessinger

**18, 3-Dimensional Agent-based Model of Neural Activity in the Central Nucleus of the Amygdala During Pain**

Carley Reith

**21, Music Feature Classification: Using Techniques of Machine Learning to Detect Genre**

Ashley Mullan

**34, An Agent-Based Model of Environmental Transmission of *C. difficile* in Healthcare Settings**

Malen De la Fuente, Maximus Lewis

**41, A Shortcut to Cutting Triangles**

Olivia Sylvester

**43, All Tangled Up: Geometry of Tangloid Curves**

Kyle Kelley

**44, Euclidean Theorems in Spherical and Hyperbolic Geometries**

Kai Williams, Michael Perez Palapa

**47, Efficiently Computable, Stable Metrics on the Space of Chiral Merge Trees - Does One Exist?**

Zach Schlamowitz, Charley Kirk, Jose Arbelo, Antonio Delgado

**50, Spanning Trees of Random Cubic Graphs with Many Leaves**

Sarah Acquaviva

**54, Packing Edge-Colorings of Graphs**

Cicely Henderson, Camille Kennedy

**56, Fault-Free Tilings Using Polyominoes**

Anika Homan, Samuel Webb

**59, Analyzing the Impact of Alternate Assessment on Growth Mindset in Mathematics Courses**

Dayanna Sanchez

**69, Good Elliptic Curves**

Elise Alvarez-Salazar, Miguel Aparicio, Calvin Henaku, Summer Soller