1. **Completions of Hypersurface Domains**
   Ji Won Ahn, Williams College, (Williams College REU)
   Feiqi Jiang, University of Michigan
   Giang Tran, Bard College

2. **The Noncommutative Geometry of Conway's Game of Life**
   Nadine Amersi, University College London

4. **Finding Factors of Factor Rings over the Eisenstein Integers**
   Valmir Bucaj, Texas Lutheran University

14. **On Li-Yorke Measurable Sensitivity**
    Jared Hallett, Williams College, (Williams College REU)
    Lucas Manuelli, Princeton University

22. **Calculating Call Blocking, Preemption Probabilities and Bandwidth Utilization for Satellite Communication Systems**
    Yacoub Kureh, Harvard College
    Leah Rosenbaum, Scripps College

44. **How does the effort a mother bird expends on her offspring depend on the attractiveness of her mate?**
    Dana-Adriana Botesteanu, Mount Holyoke College, (NIMBios, University of Tennessee, Knoxville REU)

47. **Modeling the Effect of Diversity in Host Plant-Herbivore-Predator Interactions**
    Karissa Smith, Ursinus College
    Allison Bugenis, Ursinus College

57. **Centers of Magnitude**
    Thunwa Theerakarn, Brown University

62. **Discrete Models with Proportional Harvesting**
    James Cameron, University of Texas at Austin, (Central Michigan University REU)
    Luis Granera Vega, Yale University
    Peter Jaworski, Central Michigan University
    Loren Santana, Skidmore College

64. **Independence polynomials of regular caterpillars**
    Michaela Stone, Alfred University, (UNC-Asheville REU)
    Gregory Ferrin, Western Carolina University

68. **Optimizing Algorithm for Reliability Assessment of Radial Lifeline Systems**
    Lynette Guzman, University of Arizona, (Rice University REU)

79. **The cubic formula in characteristic 3**
    Dubravka Bodiroga, Hood College, (Hood College REU)
102. Trees Fixed by Permutations and their Applications to Tree Isomorphism Classes and Other Combinatorial Objects
George Arzeno, MIT

107. Characteristics of Non-Symmetric Edge Flames in Micro-Channels
Casey McGrath, University of Redlands

114. Achievable Radio Numbers and The Radio Number Formula
Ben Sokolowsky, Bucknell University, (California State University-Channel Islands REU)

116. Propagation Time for Zero Forcing of a Graph
Shanise Walker, University of Georgia, (Iowa State University REU)

143. Cloaking Against Thermal Imaging
Maple So, Arizona State University, (Rose-Hulman Institute of Technology REU)

144. Smartphone Sensors and Detecting Road Anomalies
SaraJane Parsons, Indiana University of Pennsylvania, (Grand Valley State University REU)
Nathan Marculis, Grand Valley State University

149. An Analytical Approach to Solving Green Oxidation Processes
Diego Torrejon, George Mason University

150. Modeling the Effects of the Fukushima Daiichi Nuclear Meltdown on the Marine Environment
Bernard Lipat, New Jersey City University
Rusty Laracuenti, New Jersey City University

154. Refining the Contour Advection with Surgery Method for 3 Dimensional Flow Analysis
Peter Bradshaw, Arizona State University, (Arizona State University, Mathematical and Theoretical Biology Institute)

161. Geographic Profiling through Six-Dimensional Nonparametric Density Estimation
Austin Alleman, Santa Clara University, (Santa Clara University REU)

179. Spatial Spread of Wolbachia: A Strategy to Control Dengue Fever
Alyson Fox, Loyola University Maryland, (North Carolina State University REU)
Jared Catenacci, University of Wisconsin-Milwaukee

181. Application of a Hill Climbing Algorithm to Parallelize Graph-based Genome Assembly
Alexandra Gendreau, Wellesley College, (RIPS-Hong Kong REU)
August Guang, Harvey Mudd College

185. Chaparral Population Models in Response to Wildfires
Garrett Johns, Pepperdine University, (UCLA Applied Mathematics REU)
Wancen Jiang, Pepperdine University
Yuezhao Yang, Cal Poly Pomona

188. Heuristic Optimal Control on Polynomial Dynamical Systems Expedited by Use of Algebriac Geometry
Atsuya Kumano, Reed College, (Virginia Bioinformatics Institute REU)
Hussein Al-Asadi, University of Michigan
190. A Symmetric Intraguild Predation Model for the Invasive Lionfish and Native Grouper
Margaret-Rose Leung, Oregon State University, (Arizona State University, Mathematical and Theoretical Biology Institute)

192. Short and Long Range Population Dynamics of the Monarch Butterfly (_Danaus plexippus_)
Komi Messan, North Carolina A&T State University, (Arizona State University, Mathematical and Theoretical Biology Institute)
Shawn Tsosie, MIT

201. Social Dynamics of Gang Involvement: A Mathematical Approach
Sowmya Srinivasan, Bryn Mawr College, (Arizona State University, Mathematical and Theoretical Biology Institute)
Joshua Austin, University of Maryland, Baltimore County
Emma Smith, Linfield College

208. A Combinatorial Approach to _r_-Fibonacci Numbers
Curtis Heberle, Harvey Mudd College

217. Binomial Type Polynomial Sequences Related to Tiling Problems
Jonathan Schneider, MIT

222. The Weak Bruhat Order and Separable Permutations
Fan Wei, MIT

230. Nevanlinna-Pick problem with Boundary Conditions: minimal norm rational solutions of low degree
Stephen Cameron, The College of William and Mary, (The College of William and Mary REU)

232. On Legendre Multiplier Sequences
Katherine Urabe, California State University-Fresno, (Brigham Young University REU)

233. Operations on Solid Angles
Michelle Bodnar, University of Michigan, (University of Wyoming REU)
Aaron Mayerson

235. Maximizing Volume Ratios for Shadow Covering by Tetrahedra
Christina Chen, MIT PRIMES (Program for Research in Mathematics, Engineering and Science for High School Students)

236. Geometry of Surfaces with Density
Miguel Fernandez, Truman State University, (Williams College REU)

252. Upper Bounds on the Volume of Hyperbolic, Closed 3-Braids
Alyson Bittner, SUNY Geneseo, (California State University-San Bernardino REU)

253. On Constructible Sets
Tyler Bongers, Colorado State University-Pueblo, (California State University-Channel Islands REU)
Walter Morales, California State University-Bakersfield

254. _Γ_-Euler-Satake Characteristics of Non-Orientable 3-Orbifolds
Ryan Carroll, Rhodes College

255. Orbifolds and Buildings
Samir Chowdhury, Tufts University
258. Characterizing Moves in Hexagonal Regions of Hextile Knot Mosaics
Andreana Holowatyj, Victoria University (Wellington, New Zealand)

259. Virtual Birack Shadow Modules and their Link Invariants
Nicole Sanderson, University of California, Davis, (Claremont Colleges REU)

275. The Best Mixing Time on Trees
Jeanmarie Youngblood, Macalester College

278. Domination and Independence on the Triangular Honeycomb Chessboard
Hong Lien Tran, Kennesaw State University

305. Which Rotor-Routers are Universal?
Xiaoyu He, Acton-Boxborough Regional High School

312. Yelling in Circles: A Generalization of the Game `Look Up and Scream'
Sarah Warkentin, Harvey Mudd College, (East Tennessee State University REU)
Lucia Petito, University of Rochester