

## Fall 2016 Projects

M. Riley Zeigler	S*-Equivalence of Nonorientable Spanning Surfaces	Topology / Geometry
Carter Smith	Classifying an Algebraic Number Through its Sum of Divisors	Algebra / Number Theory
Ewin Tang	Ordered groups and Applications	Algebra / Number Theory, Topology / Geometry
Saira Zaman	A brief introduction of statistics and data analysis	Probability, Statistics
Grace Heineman	Set Theory and Topology	Topology / Geometry
Huy Pham	Solution to Schrodinger Equation	Mathematical Physics
Teegan Simonds	extremal graph theory	Combinatorics / Graph Theory
Wyatt Reeves	Amazing! Trump's top ten cabinet picks that will make you say: these are actually hyperbolic surface groups	Algebra / Number Theory, Topology / Geometry
Juan Lozano	Hausdorff and Lebesgue Measure on $\mathbb{R}^n$	Analysis
Tamunonye Cheetham-West	The Hilbert Space-filling curve	Analysis
Alex Buchanan	Gauss-Bonnet Theorem	Topology / Geometry
Juan Moreno	The Fundamental Group and an Application	Algebra / Number Theory, Topology / Geometry
Tomás Matzner	Hilbert's Nullstellensatz	Algebra / Number Theory, Topology / Geometry
Dylan Airey	Joinings of dynamical systems	Dynamical Systems
Isabel Cachola	Computational Linguistics	Probability, Statistics
Alex Collins	Euler Characteristic	Topology / Geometry
Edward Liu	The Friendship Theorem	Combinatorics / Graph Theory
Gabe Reichman	Knot Groups	Topology / Geometry
Jacob Caudell	What is a toric variety?	Algebra / Number Theory

Caroline Mahavier	Implied Volatility and the Black-Scholes Model	Financial Math
Cameron Darwin	Making New Spaces: Handles and Surgery on Manifolds	Topology / Geometry
Ramon Rodriguez	The Classification Theorem for Closed, Connected Orientable Surfaces	Topology / Geometry
John Carse	Deciding Freeness of a Group by Action on a Tree	Algebra / Number Theory, Topology / Geometry
Sean O'Neil	Dynamics of Chemical Reaction Networks	Dynamical Systems, Combinatorics / Graph Theory
Jenny Tang	Branching Processes and Random Graphs	Probability, Combinatorics / Graph Theory
Skyler Thomas	$SL(2, \mathbb{Z})$ acts on the Farey Tree	Algebra / Number Theory
Joshua Dong	Classification Primer	Probability, Statistics
Austin McDow	Tangles of Knots	Topology / Geometry, Combinatorics / Graph Theory
Jay Hathaway	Some Examples of Intersection Homology of Goresky-Macpherson restoring Poincaré Duality for Singular Spaces	Algebra / Number Theory, Topology / Geometry
Nicole Harrison	The Heat Equation	Mathematical Physics
Francisco Estrella	Classification of Closed Surfaces	Topology / Geometry
John Ludwig	The Group Structure of the Generalized Elliptic Curve - Unleashing the Power Within and Without	Algebra / Number Theory
Yan Cheng	Euler's Characteristics on planar graphs and its application	Combinatorics / Graph Theory
Nathan Alvarez Olson	Affine Varieties, the Zariski Topology, and the Nullestellensatz	Algebra / Number Theory, Topology / Geometry
Jeffrey Jiang	Projective Varieties	Algebra / Number Theory, Topology / Geometry
Aria Kumar	Health Care Analytics	Statistics

Alexandra Scott	Gaussian elimination with partial-pivoting	Algebra / Number Theory
Johnesha	Introduction to Graph Theory	Combinatorics / Graph Theory
Elias Sanchez	P vs NP: The decidability of mathematics	Numerical Analysis, Combinatorics / Graph Theory
Caitlin Espinosa	Predictive Modeling	Statistics, Analysis