

Spring 2018 Projects

Name	Talk Title	Area
Nicholas Zhao	Polynomial Rings	Algebra
Batool Abbasi	The concretes of abstract algebra	Algebra
Minh Le	Rational Points on Elliptic Curves	Algebra
Jose Luis Guzman	Representations of Algebras	Algebra
Arjun Malik	An Introduction to Representation Theory	Algebra
Guillermo Frausto	A Result of Diagonal Matrices from Two Proofs	Algebra
Wyatt Reeves	Noether's Normalization Lemma	Algebra
Naren Manoj	Blind Network-Assisted Diversity Multiple Access	Algebra, Communication
John Carse	A Finitely Generated Infinite Torsion Group	Algebra, Geometry
Connor Brubaker	At the Intersection of Probability and Modern Algebra	Algebra, Probability
Reese Lance	Developing the structure of the bordism ring	Algebra, Topology
Spencer Stubbs	The Fundamental Group	Algebra, Topology
Tomás Matzner	The Power of Barr-Beck	Algebra, Topology, Geometry
Panagiotis Koutsomitopoulos	Banach Fixed Point Theorem and Applications	Analysis
Brandon Whiteley	An Introduction to Singular Integrals	Analysis
Hunter Stufflebeam	The Fourier Multiplier Problem on the Ball	Analysis
Maxim Zelenko	Generic Continuous Functions are Nowhere Differentiable	Analysis
Ricky Runnels	Fundamental Theorems of Measure Theory	Analysis
Ricky Runnels	nonmeasurable sets	Analysis
Natasha Stewart	Fractals and Image Compression	Analysis
Keonho Lee	Analytic Number Theory - Average of Divisor Function	Analysis
Juan Lozano	The Divergence Theorem for Manifolds	Analysis, Geometry
Antonio Farah	Existence and Uniqueness of Solutions to Elliptic Partial Differential Equations	Analysis, Partial Differential Equations
Raeann Rojas	An Introduction to Graph Theory	Combinatorics / Graph Theory

Tracy Morales	Euler's Formula	Combinatorics / Graph Theory
Daniel Mancia	Solving Problems with Linear Programming	Combinatorics / Graph Theory, Algorithms
Anca Andrei	Dynamical Systems with MATLAB	Dynamical Systems, Numerical Analysis
David Green	A Tesselation Theorem for Hyperbolic Space	Geometry
Seongyong Kim	Curve	Geometry
Victor Floyd	Introduction to Knot Theory and Tricolorability	Topology
Shahwaiz Punjwani	Convolutional Neural Network	Machine Learning
Kailang Sheng	Image Style Transfer Using Deep Learning	machine learning
Cameron Walsh	Lattices without Pis: An Introduction to Post-Quantum Cryptography	Number Theory
Austin Bell	Arithmetic Ordinary Differential Equation	Number Theory
Jocelyn Sosa Ramirez	Dynamics of the Arithmetic Derivative	Number Theory
Deborah Zhuang	Finite Difference Approximations to Partial Differential Equations	Numerical Analysis
Yan Cheng	A randomly selected counterexample from the ones I've read in Stoyanov's book	Probability
Elena Pojman	Geographic Profiling	Probability
Ashish Sacheti	A simple random walk	Probability
Stephen Hughes	Yahtzov Chains	Probability, Combinatorics / Graph Theory
Isaiah Meyers	Markov Chains and Random Shuffles	Probability, Dynamical Systems
Niels Kornerup	Can Infinite Jest be a Twitter post?	Probability, Statistics
Perri Sucoff	Bayesian Statistics	Probability, Statistics
Kate (Ying) Zhou	Theory and Application of Machine Learning	Probability, Statistics, Numerical Analysis
Yifan Lyu	Minimum and Minimal	Statistics
Emily Beach	Maps on Surfaces	Topology
Joseph Downs	Transversality and Submanifolds	Topology
Victoria Tatum	Alexander Polynomial of a Knot	Topology
Courtney Smith	Into to Alexander Polynomial	Topology

Guozhong Li	Knots, knots equivalence and a knot invariant	Topology
Melanie Leason	Topology Applied to Neuroscience	Topology
Srishti Talwar	Algebraic topology and Neuroscience	Topology
Juan Moreno	Parallelizable Real Projective Spaces	Topology
Vivian Huynh	The Generalized Stoke's Theorem	Topology, Analysis
Jeffrey Jiang	An Introduction to Kähler Manifolds	Topology, Geometry
Julia Orenstein	Compressibility of surfaces around knots	Topology