
Doctoral Degrees Conferred

2015–2016

ALABAMA

Auburn University (8)

DEPARTMENT OF MATHEMATICS AND STATISTICS

Aust, Jennifer, Bounded complete embedding graphs

Bertl, Alan, Techniques for finding homeomorphisms between generalized inverse limits

Byaly, Alexander, Generalized matrix functions

Erzurumluoglu, Aras, Fair factorizations and fair holey factorizations of the complete multipartite graph and related edge-colorings

Lilly, Kristen, Robust group variable selection methods

Nwaeze, Eze, Location of zeros and growth of polynomials

Pannu, Jasdeep, Robust variable selection methods for functional regression models

Sarver, Zachary, Extensions of monotonicity results to semisimple Lie groups

University of Alabama (6)

DEPARTMENT OF MATHEMATICS

Acharyya, Soumyadip, A difference of composition operators on Bergman space

Alli, Toyin, Statistical networks with applications in economics and finance

Chataut, Laxmi, Groups with conditions on non-permutable subgroups

Duffee, Linden, On the harmonic and geometric maximal operators

Nguyen, Duc, High order FDTD methods for electromagnetic systems in dispersive inhomogeneous media

Perry, Kaitlyn, Polydegree properties of polynomial automorphisms

University of Alabama at Birmingham (7)

DEPARTMENT OF BIOSTATISTICS

Dawson, Erica L, Performance of ordinary least squares and heteroskedasticity consistent covariance matrix estimators in heteroskedastic analysis of covariance models

Jones, Lindsay, Statistical methodology to improve the understanding of DNA methylation data

Kim, Hwasoon, Evaluation of sample size re-estimation procedures for non-inferiority designs with time-to-event outcomes

Malick, Himel, Some contributions to Bayesian regularization methods with applications to genetics and clinical trials

DEPARTMENT OF MATHEMATICS

Alawam, Fatin, Subsurface parameter estimation in oilfield modeling

Barry, Brandon, On the simplest lamination of a given identity return triangle

Besing, Kyle, Spectral properties and localization of two random Laplacians on graphs

University of Alabama—Huntsville (2)

DEPARTMENT OF MATHEMATICAL SCIENCES

He, Yunzhu, Wavelet estimators in non-parametric regression model and simulation study

Marples, Pamela, Graph sharing parameters

University of Alabama—Tuscaloosa (2)

INFORMATION SYSTEMS, STATISTICS, AND MANAGEMENT SCIENCE DEPARTMENT

Michael, Semhar, The development of diagnostic tools for mixture modeling and model-based clustering

Walker, Michael, Reduced-bias prediction regions and estimators of the original response when using data transformations

ARIZONA

Arizona State University (16)

SCHOOL OF HUMAN EVOLUTION AND SOCIAL CHANGE

Barley, Kamal, Parameter estimation and mathematical modeling of visceral Leishmaniasis

Evangelista, Arlene, Characterization of the Mathematical Theoretical Biology Institute as a Vygotkian-Holzman zone of proximal development

Gonzalez, Beverly, Quantitative modeling methods for analyzing clinical to public health problems

Morales, Romarie, Robustness of contact and age-aggregation in influenza models

Murillo, Anarina, Type 2 Diabetes and obesity: A biological, behavioral and environmental context

Smith, Adrian, Biophysical mechanism for correlated spiking: Relating neural synchrony and common excitatory drive

Summer, Ilyssa, Oncolytic viral and immunotherapy models combined with strategies to ameliorate cancer burden

SCHOOL OF MATHEMATICAL AND STATISTICAL SCIENCES

Denker, Dennis, High-order methods exploiting sparsity with applications in imaging and PDEs

Evilsizor, Stephen, Evolutionary games as interacting particle systems

Ilkturk, Utku, Observability methods in sensor scheduling

Marfai, Frank, Characterizing teacher change through the perturbation of pedagogical goals

Morgan, Adam, Cuntz-Pimsner algebras of twisted tensor products of correspondences and other constructions

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 2015, to June 30, 2016) reported in the 2017 Annual Survey of the Mathematical Sciences by 266 departments in 195 universities in the United States. Each entry

contains the name of the recipient and the thesis title. The number in parentheses following the name of the university is the number of degrees listed for that university.

Tallman, Michael, An examination of the effect of a secondary teacher's image of instructional constraints on his enacted subject matter knowledge

Thatcher, Andrea, Swarming in bounded domains

Wienke, Matthew, An aggregate second order continuum model for transient production planning

Yu, Wanchunzi, A test and confidence set for comparing the location of quadratic growth curves

University of Arizona (8)

DEPARTMENT OF MATHEMATICS

Chavez, Angel, Werner's measure on self-avoiding loops and representations of the Virasoro algebra

Henniges, Alex, Kisin-Ren classifications of π -divisible O -modules via the Dieudonné crystal

Thomas, Joseph, Conformal variations of piecewise constant curvature two and three manifolds

PROGRAM IN APPLIED MATHEMATICS

Armstrong (Hine), Michelle, A finite element model for mixed porohyperelasticity with transport, swelling, and growth

Berman, Benjamin, Accelerated radial magnetic resonance imaging: New application and methods

Holman, Benjamin, Analytical study and numerical solution of the inverse source problem arising in thermoacoustic tomography

Shah, Aalok, Continuous models of alpha and beta protein structures

Williams, Katherine, Anti-cancer treatment and the cell cycle: Cellular-level mathematical models

University of Arizona, Mel and Enid Zuckerman College of Public Health (1)

DEPARTMENT OF BIOSTATISTICS

Fiero, Mallorie, Statistical approaches for handling missing data in cluster randomized trials

ARKANSAS

University of Arkansas at Fayetteville (5)

DEPARTMENT OF MATHEMATICAL SCIENCES

Chung, Ming-Hua, Probabilistic graphical modeling on big data

Iwaki, Chizuko, Probabilistic graphical modeling on big data

Shabazz, Melissa, Isometries of Besov type spaces among composition operators

Thomas, Emily, The maximal Thurston-Bennequin number on grid number n diagrams

Thomas, Ryan, Effects of dynamic graphing utilities on student attitudes and conceptual understanding in college algebra

CALIFORNIA

California Institute of Technology (6)

DEPARTMENT OF COMPUTING AND MATHEMATICAL SCIENCES

Akhmetgaliyev, Eldar, Fast numerical methods for mixed, singular Helmholtz boundary value problems and Laplace eigenvalue problems

DEPARTMENT OF MATHEMATICS

Hwang, Brian, Constructing self-dual automorphic representations on general linear groups

Nastasescu, Maria, Nonvanishing of L -functions for $GL(n)$

Ni, Xiang, Rota-Baxter algebras, renormalization on Kausz compactifications and replicating of binary operads

Sinha, Gaurav, Black-box reconstruction of depth three circuits with top fan-in two

Yeo, Foo Yee, I -adic cohomology of the dual Lubin-Tate tower via the exterior power

Claremont Graduate University (16)

INSTITUTE OF MATHEMATICAL SCIENCES

Abdallah, Shaher, General stability analysis of composite sandwich plates under thermal load

Choi, Patrick, Optimization of principal eigenvalue of an elliptic operator with applications to heat conductivity problem

Garcia, Mariangel, Data assimilation unit for the general curvilinear environmental model

He, Lingjun, Semiparametric varying-coefficient mixed effects modeling approaches to longitudinal data

Herrlin, Daniel, Forecasting MLB performance utilizing a Bayesian approach in order to optimize a fantasy baseball draft

Kandes, Martin, Modeling the effects of inertial forces on Bose-Einstein condensates in rotating frames of reference

Ko, Gene, Computational approaches for descriptor optimization and model development for HIV-1 drug design

Ledahl, Jeffrey, Bayesian joint modeling of longitudinal visual field data with correlated binary and survival outcomes

Liu, Chen, Monte Carlo algorithms for American option pricing: An analysis of convergence rates and the application of backward Taylor expansion on variance reduction techniques

Michal, Matthew, Analytic and numerical analysis of lubrication coating flow models

Schuster, Micah, Systematic investigation of operators in nuclear systems

Taherian, Shahab, Computational fluid dynamics analyses of ambient particle deposition in the human respiratory system and virus transport aboard a regional aircraft

Turtle, James, Synchronization in coupled spin-torque nano oscillators: Nonlinear dynamics analysis

Wilson, Mark, Structure and rheological properties of self-associating polymer networks

Zhao, Peng, Novel random forest methods applied to medical studies

Zubairi, Omair, An investigation of deformation of the stellar structure of neutron stars

Stanford University (19)

DEPARTMENT OF MATHEMATICS

Ahuja, Saran, Mean field games with common noise

Boreico, Iurie, Statistics of random integral matrices

Chodosh, Otis, The geometry of asymptotically hyperbolic manifolds

Edelen, Nicholas, On the free boundary mean curvature flow

Furmaniak, Ralph, On the structure and complex analysis of Dirichlet series

Goodman, Elizabeth, Lagrangian tori in \mathbb{R}^4 and $S^2 \times S^2$

Hintz, Peter, Global analysis of linear and nonlinear wave equations on cosmological spacetimes

Jerison, Daniel, The drift and minorization method for reversible Markov chains

Kalishnik Verovsek, Sara, Tropical coordinates on the space of persistence barcodes

Kupers, Alexander, Some finiteness results for groups of automorphisms of manifolds

Leach, Jeremy, The vacuum Einstein constraint equations on manifolds with ends of cylindrical type

Litt, Daniel, Non-abelian Lefschetz hyperplane theorems

Nariman, Sam, Stable moduli of flat manifold bundles

Nestoridi, Evrydiki-Xenia, Rates of convergence of Markov chains to stationarity: Strong stationary times, coupling, Gelfand pairs and comparison theory

Nguyen, Khoa, On symplectic homology of the complement of a positive normal crossing divisor in a projective variety

Nolen, Samuel, The string topology of holomorphic curves in $BU(n)$

Skryzalin, Jacek, Numeric invariants from multidimensional persistence
Tsai, Li-Cheng, Weak universality of interacting particle systems
Zamorzaev Orleanschii, Alexandr, Gopakumar-Vafa conjecture for genus 0 real Gromov-Witten invariants

University of California, Berkeley (40)

DEPARTMENT OF MATHEMATICS

Bejrarnin, Natth, A study on correlation between genes' functions and evolutions
Chough, Chang-Yeon, Topological tropes of algebraic stacks
Cook, Woo-Hyun, Transformation of PDEs: Optimal transport and conservation laws
Duersch, Jed, High efficiency spectral analysis and BLAS-3 randomized QRCP with low-rank approximations
Fortunato, Meire, Curved and anisotropic unstructured mesh generation and adaptivity using the Winslow equations
Gannot, Oran, Curved and anisotropic unstructured mesh generation and adaptivity using the Winslow equations
Gillespie, Maria, A combinatorial approach to the q, t -symmetry in Macdonald polynomials
Greengard, Daniel, Complex boundary integral equation formulation and stability analysis of a Maxwell model of an elastic model of solid-solid phase transformations
Johnson, William, Fun with fields
Kominiarczyk, Jakub, Acyclic Monte Carlo: Efficient multiscale sampling of undirected graphical models through fast marginalization
Kroener, Christoph, A mathematical exploration of a PDE system for lithium-ion batteries
Kruckman, Alex, Infinitary limits of finite structures
Laine, Kim, Security of genus 3 curves in cryptography
Lee, Minjae, Spectral analysis on point interactions
Li, Penghui, Uniformation of semistable bundles on elliptic curves
Lieb, Anna, Modeling and optimization of transients in water distribution networks
Liu, Weihua, Noncommutative distributional symmetries and their related de Finetti type theorems
Mandelstam, Olya, Combinatorics of the asymmetric simple exclusion process
Mazel-Gee, Aaron, Goerss-Hopkins obstruction theory via model \mathcal{A} -categories
McMillan, Benjamin, Geometry and conservation laws for a class of second-order parabolic equations
Melgaard, Christopher, Randomized pivoting and spectrum-revealing bounds in numerical linear algebra

Robeva, Elina, Decomposing matrices, tensors and images
Schweber, Noah, Interactions between computability theory and set theory
Scott, Jacob, An I/O-complexity lower bound for all recursive matrix multiplication algorithms by path-routing
Shapiro, Alexander, Grothendieck resolution, affine Grassmannian, and Yangian
Tabrizian, Peyam, Asymptotic PDE models for chemical reactions and diffusions
Wong, Christopher, Bilinear quadratures and their applications

DEPARTMENT OF STATISTICS

Basu, Riddhipratim, Lipschitz embeddings of random objects and related topics
Bloniarz, Adam, Leveraging latent structure in high-dimensional data: Causality, neuroscience, and nonparametrics
Kamm, John, One and two locus likelihoods under complex demography
Schiebinger, Geoffrey, Sparse inverse problems: The mathematics of precision measurement
Tran, Linda, Forecasting high-dimensional state-spaces in the presence of model error
Wu, Siqi, Dictionary learning: Analysis of spatial gene expression data and local identifiability theory

GROUP IN BIostatISTICS

Cotterman, Carolyn, Statistical methods for predicting dengue diagnosis using clinical and LC-MS data
Coyle, Jeremy, Towards a practical implementation of optimal treatment
Hansen, Curt, The LITSE algorithm: Theory and application
Luedtke, Alex, Evaluating the impact of individualized treatment strategies
Mejia, Robin, Estimating size of unobserved populations in human rights: Problems in Syria and El Salvador
Sofrygin, Oleg, Semi-parametric estimation network data and tools for conducting complex simulation studies in causal inference
Tran, Linh, Comparative causal effect estimation and robust variance for longitudinal data structures with applications to observational HIV treatment

University of California, Davis (12)

DEPARTMENT OF MATHEMATICS

Dutra, Brandon, Decomposition methods for nonlinear optimization and data mining
Halabi, Ryan, Surface plasmon polaritons in nonlinear media
Irion, Jeffrey, Multiscale transforms for signals on graphs: Methods and applications
Kopel, Philip, Hermitian and non-Hermitian random matrix theory

La Haye, Reuben, Quantitative combinatorial geometry with applications to number theory and optimization
Lydon, Mark, On the chromatic symmetric function of graphs
Miller, Jacob, Transportation networks and matroids: Algorithms through circuits and polyhedrality
Mossessian, George, Stabilizing Heegaard splittings of high-distance knots
Navarro, Gustavo, Local well-posedness and global stability of the two-phase Stefan problem
Qin, Chuan, Card shuffles, genome rearrangements, and social networks
Tian, Ruoguang, Top to random shuffles and characterization of rigged configurations of $b(\infty)$ in type A
Westenberger, Christopher, Knots and links from random projections

University of California, Irvine (20)

DEPARTMENT OF MATHEMATICS

Anzaldo, Leesa, Degeneracy loci in grassmannians
Asatryan, Ani, ODEs in mathematical medicine: New virus dynamics in the presence of multiple infections; Evolution of genetic instability in heterogeneous tumors
Dellaca, Roger, Growth conditions on Hilbert functions of modules
Ferrenc, Adrian, An explicit construction for homotopy monoidal structure
Gao, Hongwei, Random homogenization of coercive Hamilton-Jacobi equations in 1d
Ho, Michael, Sparse optimization methods and statistical modeling with applications to finance
Lee, Mary, Mathematical modeling of tumor growth and metabolism
Northrup, Cynthia, Toward the consistency strength of stationary set reflection on small cardinals
Northrup, Scott, Arithmetic sums of nearly affine Cantor sets
Reale, Nicholas, Deformations of manifolds of Calabi-Yau type
Sanchez, Cynthia, Fastest time to cancer by loss of tumor suppressor genes or oncogene activation
Su, Heng, Selmer parity of quadratic twists of elliptic curves
Tsang, Chi Shing, Topics on Schrödinger operators
Xu, Hang, On the spectrum and self-adjoint extension of Laplace operator on Kähler manifolds
Yin, Penghang, Non-convex optimization methods for sparse and low-rank reconstruction
Yu, Myungjun, Selmer ranks of twists of algebraic curves
Zhang, Lingxiao, Passive imaging of a spherically symmetric inclusion by elastic waves

Zhang, Shiwen, Arithmetic criterion of full spectral dimensionality for analytic quasiperiodic Schrödinger operators
Zhong, Lin, Fast solvers for numerical schemes based on finite element exterior calculus
Zu, Penghe, Global sparse basis method of solving residual KPP front speeds in time-periodic cellular flows in the small diffusion limit

University of California, Los Angeles (31)

DEPARTMENT OF BIostatISTICS, FIELDING SCHOOL OF PUBLIC HEALTH
Clark, Michelle, Statistical models for detecting transgenerational genetic effects
Estes, Jason, Time dynamic modeling and inference approaches for outcomes in patients on dialysis
Gill, Mandev, Bayesian modeling of viral phylodynamics
Lu, Xiang, Handling incomplete high-dimensional multivariate longitudinal data with mixed data types by multiple imputation using a longitudinal factor analysis model
Shih, Wendy, Ensemble based estimators of a latent variable: Application in aging research
Wu, Sheng, Optimal design of cluster randomized trials with binary outcomes

DEPARTMENT OF MATHEMATICS
Aaserud, Andreas, Weak and approximate equivalence of group actions in the framework of ultrapower Cartan inclusions
Carolino, Pietro, The structure of locally compact approximate groups
Chen, William, Mutal and tight stationarity
Chongchitmate, Wutichai, New models for practical secure computation
Dragomiretskiy, Konstantin, Variational methods in signal decomposition and image processing
Galatan, Alin, Smooth bimodules and cohomology of II_1 factors
Garrabrant, Scott, P-recursive integer sequences and automata theory
Gast, Theodore, Numerical simulation of elastic, viscoelastic and granular materials
Greenblatt, Jordan, Asymptotic maximal operator norms for Cartesian powers of finite groups
Hernandez, Joshua, Models and methods for sensor-based environment exploration
Jao, Casey, Energy-critical and mass-critical nonlinear Schrödinger equations with variable coefficients
Keranen, Jukka, Compact support cohomology of Picard modular surfaces
Lang, Jaclyn, Images of Galois representations associated to p-adic families of modular forms

Li, Zhiqiang, Ergodic theory of expanding Thurston maps
Lin, Jianfeng, The unfolding Seiberg-Witten-Floer spectrum: Definition, property and applications
Lynn, Melissa, Sums-of-squares formulas over arbitrary fields
Pauwels, Bregje, Quasi-Galois theory in tensor-triangulated categories
Peng, Zhimin, Asynchronous parallel algorithms for large scale problems
Ram, Daniel, A material point method for complex fluids
Rosenbaum, William, Distributed almost stable matchings
Soffer, Andrew, Combinatorics of conjugacy classes in $U_n(\mathbb{F}_q)$
Tran, Giang, Sparsity-inducing methods in imaging sciences and partial differential equations
Wang, Teng, Population genetics in a single organism: Models of neurospora crassa nuclear dynamics
Woodworth, Joseph, Numerical optimization methods for image processing and machine learning
Yin, Changyong, Geometry of Calabi-Yau moduli

University of California, Merced (1)

DEPARTMENT OF APPLIED MATHEMATICS
Martin, David, Accounting for surface concentrations using a VOF front tracking method in multiphase flow

University of California, Riverside (5)

DEPARTMENT OF MATHEMATICS
Dusel, John, Combinatorics of crystal folding
Navas, Esteban, A Priori bound on the velocity in axially symmetric Navier-Stokes equations
Schneider, Lisa, Multiplicities associated to Demazure flags of $sl_2[t]$ -modules
Shereen, Peri, A Steinberg type decomposition theorem for higher level Demazure modules
Wand, Jeffery, Demazure flags of local Weyl modules

University of California, San Diego (18)

DEPARTMENT OF MATHEMATICS
Aisenberg, James, The proof and search complexity of three combinatorial principles
Behzadan, Ali, An analysis of the conformal formulation of the Einstein constraint equations on asymptotically flat manifolds
Cheung, Man Wai, Tropical techniques in cluster theory and enumerative geometry
Cummings, Jonathan, Flips and juggles

Das, Shaunak, Vector bundles on perfectoid spaces
Elle, Susan, A study of dimension 5 Ore extensions
Hoff, Daniel, Some structural results for measured equivalence relations and their associated von Neumann algebra
Longo, Brian, "Super-approximation" in absolutely almost simple groups over the field of rational functions with coefficients in a finite field
Moody, John Brogan, Discrete differential structures on simplicial complexes
Palmer, Joseph, Symplectic invariants and moduli spaces of integrable systems
Semko, Jeremy, Controlled rough paths on manifolds
Sergel, Emily, The combinatorics of nabla p_n and connections to the rational shuffle conjecture
Tait, Michael, Connections between graph theory, additive combinatorics, and finite incidence geometry
Tong, Pun Wai, Classical limit on quantum mechanics for unbounded observables
Tully-Doyle, Ryan K, On the representation and boundary behavior of certain classes of holomorphic functions in several variables
Wang, Liang, Topics in transformation-based statistical method
Wilkins, Gautam, An empirical chaos expansion method for uncertainty quantification
Won, Robert, The graded module category of a generalized Weyl algebra

University of California, Santa Barbara (9)

DEPARTMENT OF MATHEMATICS
Comelli, Silvia, Hartree-Fock theory with a self-generated magnetic field
Coté, Benjamin, A complex Euclidean reflection group and its braid
Cui, Xingshan, Higher categories and topological quantum field theories
Delgadillo, Ricardo, Semiclassical methods for high frequency wave propagation in periodic media
Karimi, Shahab, Stochastic 2D Navier-Stokes equation and applications to 2D turbulence
Smith, Derek, Propagation of regularity within solutions to Korteweg-de Vries type equations
Tsang, Sin Yi Cindy, On the Galois module structure of the square root of the inverse different in abelian extensions
Wang, Changliang, Linear stability of Einstein metrics and Perelman's lambda-functional for manifolds with conical singularities
Wirts, Shawn, Poincare inequalities under gauge transformations

**University of California,
Santa Cruz** (6)

APPLIED MATHEMATICS AND STATISTICS
DEPARTMENT

Betancourt Canizales, Brenda, Modeling and prediction of time series of directed binary networks

Lopez Arriaza, Juan, Unraveling steel-head life history complexity through mathematical modeling

Pourmohamad, Tony, Combining multi-variate stochastic process models with filter methods for constrained optimization

Soper, Braden, Non-zero-sum, adversarial detection games in network security

White, Katelyn, Numerical investigations of spherical boundary-driven dynamos

DEPARTMENT OF MATHEMATICS

Beloi, Aleksander, Shinani's method: Zeta values and stark units

**University of Southern
California** (11)

DEPARTMENT OF MATHEMATICS

Abram, Michael, Symmetries of categorified quantum groups

Kang, Yongjian, Large-scale inference in multiple Gaussian graphical models

Karnam, Chandrasekhar, Dynamic approaches for some time inconsistent problems

Keller, Christian, Pathwise stochastic analysis and related topics

Ren, Haining, The cycle convergence rate of cyclic permutations

Tucker, Henry, Frobenius-Schur indicators for near group and Haagerup-Izumi fusion

Ugurlu, Kerem, Some mathematical problems for the stochastic Navier-Stokes equations

Wang, Jian, On the torsion structure of elliptic curves over cubic number fields

Williams, Andrew, On the Giroux correspondence

Yang, Fan, Entry times statistics on metric spaces

Zhang, Tian, Optimal investment and reinsurance problems and related non-Markovian FBSDEs with constraints

COLORADO

**Colorado School of
Mines** (2)

DEPARTMENT OF APPLIED MATHEMATICS
AND STATISTICS

Alyoubi, Ahmad, High performance computational algorithms for a class of integer and fractional evolutionary models

Maestas, Joseph, Long-range shock propagation in ocean waveguides

**Colorado State
University** (19)

DEPARTMENT OF MATHEMATICS

Alsaker, Melody, Computational advancements in the D-bar reconstruction method for 2-D electrical impedance tomography

Chepushtanova, Sofya, Algorithms for feature selection and pattern recognition on Grassmann manifolds

Cooper, Benjamin, Abstract hyperovals, partial geometries, and transitive hyperovals

Hanson, Eric, Algorithms in numerical algebraic geometry and applications

Ho, Anne, Counting Artin-Schreier curves over finite fields

Ihde, Steven, Preconditioning polynomial systems using Macaulay dual spaces

Mikucki, Michael, Electromechanical and curvature driven molecular flows for lipid membranes

Sadre-Marandi, Farrah, Mathematical modeling for HIV-1 viral capsid structure and assembly

DEPARTMENT OF STATISTICS

Alsaker, Cody, Statistical innovations for estimating shape characteristics of biological macromolecules in solution using small-angle x-ray scattering data

Edmondson, Stacy, Adjusting for capture, recapture, and identity uncertainty when estimating detection probability from capture-recapture surveys

Hunter, Brett, Modeling the upper tail of the distribution of facial recognition non-match scores

Russell, Brook, Understanding extreme behavior by optimizing tail dependence with application to ground level ozone via data mining and spatial modeling

Sienkiewicz, Ela, Analysis of structured data on big data with application to neuroscience

Sun, Libo, Parameter inference and model selection for differential equation models

Tan, Hongyu, Modulated renewal process models with functional predictors for neural connectivities

Tipton, John, Improved estimation and prediction for computationally expensive ecological and paleoclimate models

Tu, Yan, A penalized estimation procedure for varying coefficient models

Wu, Jiwen, Penalized isotonic regression and an application in survey sampling

Young, Gabriel, Inference for functional time series with applications to yield curves and intraday cumulative returns

**University of Colorado,
Boulder** (13)

DEPARTMENT OF APPLIED MATHEMATICS

Ali, Ashar Fawad, ULF waves and diffusive radial transport of charged particles

Bao, Lei, Efficient time-integration schemes for discontinuous Galerkin non-hydrostatic atmosphere models

Barnett, Gregory, A robust RBF-FD formulation based on polyharmonic splines and polynomials

Cheng, Ze, Qualitative analysis of some non-linear PDE

Nieves, David J, Investigations of reduced equations for rotating, stratified and non-hydrostatic flows

Wong, Anthony, The impact of stable water isotopic information on parameter calibration in a land surface model

DEPARTMENT OF MATHEMATICS

Grimes, Matt, Compactifications of universal moduli spaces of vector bundles and the log-minimal model program on \overline{M}_g

Havasi, Krisztian, Geometric realization of strata in the boundary of the intermediate Jacobian locus

Linman, Julie, Minimal functions on the random permutation

Nishikawa, Jared, Applications of cryptographic hash functions

Nita, Alexander, Self adjointness of the symplectic dirac operators

Scherer, Charles, Maximal comparable and incomparable sets in Boolean algebras

Shannon, Erica, Computing invariant forms for Lie algebras using heaps

**University of Colorado,
Denver** (2)

DEPARTMENT OF MATHEMATICAL AND
STATISTICAL SCIENCES

Brandt, Axel, Computational approaches in graph theory

Thomas, Brent, Saturation spectrum for trees

University of Denver (2)

DEPARTMENT OF MATHEMATICS

Ash, Drew, Topological speedups

French, Thomas, Follower and extender sets in symbolic dynamics

**University of Northern
Colorado** (3)

SCHOOL OF MATHEMATICAL SCIENCES

Roach, Catherine, A study of novice instructors' questioning techniques and classroom discourse surrounding those questions

Troudt, Melissa, Mathematicians' evolving personal arguments: Ideas that move proof constructions forward

Troup, Jonathan, "Students" development of geometric reasoning about the derivative of complex-valued functions

CONNECTICUT

University of Connecticut, Storrs (13)

DEPARTMENT OF MATHEMATICS

Asaad, Malva, Hypoelliptic heat kernel on nilpotent Lie groups

Judge, Jonathan, Modules over rank-two KLR algebras

Lorincz, Andras, Bernstein-Sato polynomials for quivers

Mackenzie, Michael, Unitary k -Hessenberg matrices

Pellico, Ryan, Multiple periodic solutions of a nonlinear suspension bridge system of partial differential equations

Serhiyenko, Khrystyna, Induced and coinduced modules over cluster-tilted algebras

DEPARTMENT OF STATISTICS

Goh, Gyuhyeong, Applications of Bergman divergence measures in Bayesian modeling

Joeng, Hee-Koung, Theory and methods for modeling and fitting discrete time survival data

Larose, Chantal, Model based clustering of incomplete data

Ouyang, Guang, Social network community detection

Serhiyenko, Volodymyr, Dynamic modeling of multivariate counts: Fitting, diagnostics and applications

Wang, Zhuo, Estimating equations for spatial extremes with applications to detection and attribution analysis of changes in climate extremes

Zhao, Bo, Scan statistics for detecting a local change in variance for normal data

Wesleyan University (2)

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Karker, Mary Leah, Two applications of topology to the study of non-classical logics

Liu, Jingho, Representations of integral hermitian forms by sums of norms

Yale University (9)

BIostatistics DIVISION

Zhao, Qing, Integrative analysis of multi-dimensional cancer genomic data

DEPARTMENT OF MATHEMATICS

Allegretti, Dylan G, The geometry of cluster varieties from surfaces

Cheung, Rex, Integrability estimates on the space of S -arithmetic lattices

Faonte, Giovanni, Nerve construction, A -infinity functors and homotopy theory of differential graded categories

Pimenov, Syatoslav, Kostant's theorem for Lie superalgebra $\mathfrak{gl}(m,n)$

Ranganathan, Dhruv, Skeletons, degenerations, and Gromov-Witten theory

Rao, Anup, Algorithms for Lipschitz extensions on graphs

DEPARTMENT OF STATISTICS

Gao, Chao, Frequentist justifications of Bayes procedures

Rush, Cynthia, Iterative algorithms for inference and optimization, with applications in communications and compressed sensing

DELAWARE

Delaware State University (2)

DEPARTMENT OF MATHEMATICAL SCIENCES

Hui, Pengrui, Moving window finite-difference time-domain method based on space-time coordinate transformation

Zhao, Yingxue, Finite-difference time-domain method for hydrodynamic electron fluid Maxwell equations

University of Delaware (8)

DEPARTMENT OF MATHEMATICAL SCIENCE

Alexander, James, Selected results in combinatorics and graph theory

Castillo, Christopher, A method for constructing groups of permutation polynomials and its applications to projective geometry

Evans, Ryan, A mathematical journey through optical biosensors

Li, Jiange, Some topics in probability theory, combinatorics and information theory

Li, Weiqiang, Algebraic methods in graph theory

Meng, Shixu, Inverse scattering for a penetrable cavity and the transmission eigenvalue problem

Qiu, Tianyu, Time domain in boundary integral methods in acoustics, heat diffusion and electromagnetism

Yang, Fan, Scattering and inverse scattering in the presence of complex background media

DISTRICT OF COLUMBIA

George Washington University (3)

DEPARTMENT OF MATHEMATICS

El Sherif, Lara, Matchings, intersection graphs, and the maximum genus of graphs

Hu, Yeyao, Disc assemblies and spike assemblies in inhibitory systems

Marshall, Leah, Computability-theoretic properties of partial injections, trees and nested equivalences

Howard University (3)

DEPARTMENT OF MATHEMATICS

Alberto, Genesis, The division polynomials for the Holm curve and their properties

Arienmughare, Martin, Three, four-wave HLLC Riemann solver for single and multiphase flow, and the classical and semi-relativistic CGL-MHD

Siewe, Nouridine, Granuloma formation and immune response to infection by Leishmania: Mathematical models

FLORIDA

Florida Atlantic University (5)

DEPARTMENT OF MATHEMATICAL SCIENCES

Fontaine, Marcus, Nonlinear phenomena from a reinjected horseshoe

Ippolito, Stephen, Kicks and maps: A different approach to modeling biological systems

Rutherford, Vermont, Negligible variation, change of variables, and a smooth analog of the Hobby-Rice theorem

Sharma, Madhav, Maximally Prüfer rings

Thapa Magar, Krishna, Low rank transitive representations, primitive extensions, and the collision problem in $\text{PSL}(2,q)$

Florida Institute of Technology (1)

DEPARTMENT OF MATHEMATICAL SCIENCES

Goldfarb, Jonathan, On the optimal control of the free boundary problems for the second order parabolic equations

Florida State University (26)

DEPARTMENT OF MATHEMATICS

Adams, Bill, Lagrangian specialization via log resolution and Schwartz-MacPherson-Chern classes

Ballenger-Fazzone, Brendon, An analysis of conjugate harmonic components of magnetic functions and lambda harmonic functions

Cole, Justin, Non-linear Schrödinger-type systems: Complex lattices and non-paraxiality

Diaz-Martinez, Diego, Multiscale summaries of probability measures with applications to plant and microbiome data

Ekrut, David, Symmetry solutions of the multiphase model with biological applications

Fletcher, Patrick, Theoretical, computational, and experimental topics in anterior pituitary cell signaling

Han, Daozhi, Diffuse interface method for two-phase incompressible flows

Jarrett, Angela, Investigating persistent infections using mathematical modeling and analyses

Jones, Dawna, Asset pricing equilibria for heterogeneous limit-information agents

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Liu, Bo, Energy commodity price analysis and trading strategies

Yoder, Jordan, On model-based semi-supervised clustering

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DEPARTMENT OF STATISTICS

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Ouyang, Wei, Well-posedness properties in variational analysis with applications

Tian, Yuan, Finite-difference methods in optimal control of differential inclusions

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Zabka, Matthew, Cohomology operations on random spaces

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DIVISION OF BIostatISTICS, SCHOOL OF PUBLIC HEALTH

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Ray, Debashree, Statistical modeling and testing for joint association in genome-wide association studies

SCHOOL OF MATHEMATICS

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