Doctoral Degrees Conferred
2017–2018

ALABAMA
Auburn University (7)
Department of Mathematics and Statistics
Dempsey, Emily, Automorphisms of subspace designs
Denu, Dawit, Analysis of stochastic vector host epidemic model with direct transmission
Luo, Xin, Development of model interactions in highly heterogeneous risk environments
Liu, Jianzhen, Toepilz matrices are unitarily similar to symmetric matrices
Ford, Jeffrey, Measure-preserving dynamical systems on $\mathbb{R}^3$ with all trajectories bounded
Liu, Jianzhen, Toeplitz matrices are unitarily similar to symmetric matrices
McQuaig, Bradley, Morita-equivalence between strongly non-singular rings and the struchter of the maximal ring of quotients
Ngoma Koumba, Bertran Sedar, Inverse source problem and inverse diffusion coefficient problem for parabolic equations with applications in geology
Sun, Wei, Rank-based methods for single-index varying coefficient models

University of Alabama–Huntsville (1)
Department of Mathematical Sciences
Sewell, Jonathan, Vortex based distinguishing collections

ARIZONA
Arizona State University (22)
Mathematics, Computational and Modeling Sciences Center
Burkow, Daniel, Intramyocellular lipids and the progression of muscular insulin resistance
Espinoza, Baltazar, Consequences of short term mobility across heterogeneous risk environments: The 2014 West African Ebola outbreak
Manning, Miles, Patterns in knowledge production
Messan, Komi, Prey-predator “host-parasite” models with adaptive dispersal: application to social animals
Moreno, Victor, Understanding the impact of social factors on the transmission dynamics of infectious diseases across highly heterogeneous risk environments
Nazari, Fereshteh, Mathematical model for IL-6-mediated tumor growth, invasion and targeted treatment

School of Mathematical and Statistical Sciences
Baez, Javier, Mathematical models of androgen resistance in prostate cancer patients under intermittent androgen suppression therapy
Dassanayake, Mudiyanselage Maduranga, A study of components of Pearson’s chi-square based on marginal distributions of cross-classified tables for binary variables
Frank, Kristin, Examining the development of students’ covariational reasoning in the context of graphing
Gilg, Brady, Critical coupling and synchronized clusters in arbitrary networks of Kuramoto oscillators
Irimata, Katherine, Essays on the identification and modeling of variance
Irimata, Kyle, Three essays on correlated binary outcomes: Detection and appropriate model
Kayser, Kirk, The economics of need-based transfers
Kim, Soohyun, Optimal experimental designs for mixed categorical and continuous responses
Kim, Younghwan, On the uncrossing partial order on matchings
Kuper, Emily, Sparky the saguaro: Teaching experiments examining students’ development of the idea of logarithm
Pampel, Krysten, Perturbing practices: A case study of the effects of virtual manipulatives as novel didactic objects on rational function instruction
Scarnati, Theresa, Recent techniques for regularization in partial differential equations and imaging
Walker, Philip, Effective-diffusion for general non-autonomous systems
Wang, Bei, Three essays on comparative simulation in three-level hierarchical data structure
Wang, Zhongshen, Locally D-optimal designs for generalized linear models
Zhou, Lin, Optimum experimental design issues in functional neuroimaging studies

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 2017, to June 30, 2018) reported in the 2019 Annual Survey of the Mathematical Sciences by 263 departments in 186 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.
University of Arizona (13)

DEPARTMENT OF MATHEMATICS

Gunton, Cody, Crystalline representations and Néron component groups in the semi-stable case

Pounder, Kyle, Nearly singular Jacobi matrices and applications to the finite Toda lattice

Rossi, Daniel, Fields of values in finite groups: Characters and conjugacy classes

Shahar, Doron, Hydrodynamic limits for long range asymmetric processes and probabilistic opinion dynamics

Stone, Megan, Eigenvalue densities for the Hermitian two-matrix model and connections to monotone Hurwitz numbers

PROGRAM IN APPLIED MATHEMATICS

Henscheid, Nicholas, Quantifying uncertainties in imaging-based precision medicine

Kappler, Nicholas, Effects of parasites on the structure and dynamics of food webs

Kilen, Isak, Non-equilibrium many body influence on mode locked vertical external-cavity surface-emitting lasers

Lim, Soon Hoe, Effective dynamics of open systems in non-equilibrium statistical mechanics

McEvoy, Erica, A numerical method for the simulation of Skew Brownian motion and its application to diffusive shock acceleration of charged par

Meisken, Emily, Invading a structured population: A bifurcation approach

Nabelek, Patrik, Applications of complex variables to spectral theory and completely integrable partial differential equations

Shearman, Toby, Geometry and mechanics of leaves and the role of weakly-irregular isometric immersions

ARKANSAS

University of Arkansas at Fayetteville (2)

DEPARTMENT OF MATHEMATICAL SCIENCES

Cheng, Wanqing, II-Operators in Clifford analysis and its applications

Mahdi, Ghadeer, Hierarchical Bayesian regression with application in spatial modeling and outlier detection

CALIFORNIA

California Institute of Technology (1)

DEPARTMENT OF MATHEMATICS

He, Siqi, The Kapustin-Witten equations with singular boundary conditions

Claremont Graduate University (10)

INSTITUTE OF MATHEMATICAL SCIENCES

Allan, Collins, Probabilistic microsimulation modeling of heterogeneous traffic flow

Calhoun, Peter, Novel random forest and variable importance methods for clustered data

Cuevas, Daniel, Bridging the genomic gaps: genomicscale metabolic network tools for bioinformatics analyses

Kang, Di, Modeling and analysis of thin viscous liquid films in spherical geometry

Koblick, Darin, Re-purposing the advanced solar photon thruster as a constellation of solar reflectors to track debris in geosynchronous earth orbit

Ma, Anna, Stochastic iterative algorithms for large-scale data

Pierret, Julien, Climate data computing: optimal interpolation, averaging, visualization and delivery

Spinella, William, A systematic investigation of exotic matter in neutron stars

Waymelovich, John, Synthesis of nervous systems in hybrid roots utilizing hierarchical Q-learning and temporal shifting

Wilcox, Bruce, A time series data mining and unobserved component modeling approach to credit risk correlation

Naval Postgraduate School (2)

DEPARTMENT OF APPLIED MATHEMATICS

Martinsen, Thor, Correlation immunity, avalanche features, and other cryptographic properties of generalized boolean functions

Roginski, Jonathan, The distance centrality: Measuring structural disruption in a network

Stanford University (21)

DEPARTMENT OF MATHEMATICS

Alvarez-Gavela, Daniel, The flexibility of caustics

Cheng, Da Rong, Geometric variational problems: Regular and singular behavior

Dozier, Benjamin, Saddle connections on translation surfaces

Klang, Inbar, Factorization theory of Thom spectra, twists, and duality

Laazer, Oleq, Flexible Weinstein structures and applications to symplectic and contact topology

Li, Chao, Singularity and comparison theorems for metrics with positive scalar curvature

Madnick, Jesse, Nearly-Kähler 6-manifolds of cohomogeneity two: Local theory

Pan, Donghai, Pencils of Fermat hypersurfaces and Galois cyclic covers of the projective line

Rosengarten, Zev, Tate duality in positive dimension and applications

Savvas, Michail, Generalized Donaldson-Thomas invariants via Kirwan blowups

Szucs, Gergely, The equivariant cobordism category

Warner, Evan, Adic moduli spaces

Zhai, Lin, Asymptotics of Gaussian processes and Markov chains

Zhou, Yang, Higher-genus wall-crossing in Landau-Ginzburg theory

DEPARTMENT OF STATISTICS

Arthur, Joseph, Detection and validation of genomic structural variation from DNA sequencing data

DiCiccio, Cyrus, Hypothesis testing using multiple data splitting

Fan, Zhou, Eigenvalues in multivariate random effects models

Gau, Kelvin, Learning to generate text programs (and beyond) from weak supervision

Le, Ya (Elaine), Topics in statistical learning with a focus on large-scale data

Panigrahi, Snigdha, An approximation-based framework for post-selective inference

Sankaran, Kris, Discovery and visualization of Latent structure with applications to the microbiome

University of California, Berkeley (35)

DEPARTMENT OF MATHEMATICS

Agrawal, Shishir, Deformations of over-convergent isocrystals on the projective line

Au, Benson, Rigid structures in traffic probability: With a view toward random matrices

Bechor, Elan, Two models of coagulation with instantaneous gelation

Brereton, Justin, A method of constructing invariant measures at fixed mass

Chen, Justin, On Betti tables, monomial ideals, and unit groups

Fang, Kuan-Ying, Geometric constructions of mapping cones in the Fukaya category

Gavras, Cristian Dan, Global well-posedness and parametrices for critical Maxwell-Dirac and massive Maxwell-Klein-Gordon equations with small Sobolev data

Gerg, Christopher, Seiberg-Witten and Gromov invariants for self-dual harmonic 2-forms

Karp, Steven, Total positivity for Grassmannians and amplituhedra

Kerber, Alvin, Quasi-Fuchsian surface subgroups of infinite covolume Kleinian groups

Ladd, Watson, Algebraic modular forms on SO(2) and the computation of paramodular forms
Lin, Bo, Combinatorics and computations in tropical mathematics
Lowengrub, Daniel, Applications of the intersection theory of singular varieties
Manber, Shelly, Asymptotics of the Tate–Shafarevich group
Melvin, George, Crystals and mirror constructions for quotients
Neuman, Anh Martina, Functions of nearly maximal Gowers–Host–Kra norms on Euclidean spaces
Qadeer, Saad, Simulating nonlinear Faraday waves on a cylinder
Ramsey, Samuel Nicholas, Independence, amalgamation, and trees
Schmalz, Wolfgang, Gromov–Witten axioms for symplectic manifolds via polyfold theory
Spivak, Amel, Multisymplectic geometry in general relativity and other classical field theories on manifolds with boundaries: A deobfuscating role
Van Andel, Ethan, Eulerian simulation of elastic membranes and shells
Vargas Palleto, Franco, On renormalized volume
Williams, Brandon, Computing modular forms for the Weil representation
Wilson, Patrick, Asymptotically conical metrics and expanding Ricci solitons
Zhou, Qiao, Applications of toric geometry to geometric representation theory
Zorn, Alexander, A combinatorial model of Lagrangian skeleta

DEPARTMENT OF STATISTICS

Boyd, Nicholas, Sets as measures: Optimization and machine learning
Choi, Hye Soo, The Doob–Martin compactification of Markov chains of growing words
Kuang, Christine, Predictive and interpretable text machine learning models with applications in political science
Makherjee, Soumendu, On some inference problems for networks
Saha, Sujayam, Information theory, dimension reduction and density estimation
Wei, Yuting, A geometric perspective on some topics in statistical learning
Wilson, Ashia, Lyapunov arguments in optimization

GROUP IN BIOSTATISTICS

Ju, Cheng, Variable and model selection for propensity score estimators in causal inference
Perraudin, Fanny Gabrielle Solange Marie, Statistical and computational methods for single-cell transcriptome sequencing and metagenomics

University of California, Davis (19)

DEPARTMENT OF MATHEMATICS

Bassett, Robert, Stochastic and convex optimization in statistical estimation
Berrian, Alexander, The chirped quilterd synchrosqueezing transform and its application to bioacoustic signal analysis
Goh, Gabriel, Optimization with costly subgradients
Haddock, Jamie, Projection algorithms for convex and combinatorial optimization
Paramonov, Kirill, Essays in combinatorics: Crystals on shifted primed tableaux, bigraded Fibonacci numbers and data mining on social graphs
Samperton, Eric, Computational complexity of enumerative 3-manifold invariants
Smothers, Evan, Self-similar solutions and local frontwave analysis of a degenerate Schrödinger equation arising from nonlinear acoustics
Tam, Patrick, Nearly finitary matroids
Xu, Yanyuan, On several problems in random matrix theory and statistical mechanics

DEPARTMENT OF STATISTICS

Bandyopadhyay, Rohsen, Benchmarking the observed best predictor
Dai, Xiongtao, Principal component analysis for Riemannian functional data and Bayes classification
Dao, Cecilia Uyen, Goodness-of-fit tests for generalized linear mixed models
Lee, Olivia Yuh Ru, Data-driven computation for pattern information
Li, Shuyang, Joint models for partially observed longitudinal data
Namdari, Jamshid, Estimation of spectral distributions of a class of high-dimensional linear processes
Roy, Tanja, Discovery and visualization of the information content in data through histograms and phylogenetic trees
Sommek, Ozan, Structural breaks in functional time series data
Wang, Nana, Analysing dependence in stochastic networks via Gaussian graphical models
Zhang, Chunzhe, Uncertainty quantification and sensitivity analysis in statistical machine learning

University of California, Irvine (10)

DEPARTMENT OF MATHEMATICS

Chen, Taiji, Deformation quantization of vector bundles on Lagrangian subvarieties
Fang, Jun, Ray-based finite element method for high-frequency Helmholtz equations
Fider, Nicole, Color categorization: Quantitative methods and applications
Kassir, Ali, Absorbing Markov chains with random transition matrices and applications
Kelleher, Casey, On existence and regularity theory of Yang–Mills fields

Ma, Timmy, A nonlinear approach to learning from an inconsistent source (with some applications)
Porter, Michael, Graphs based on polynomials over finite fields
Rackauckas, Christopher, Simulation and control of biological stochasticity
Simonyan, Aghavni, Non-receptors, feedback, and robust signaling gradients in biological tissue patterning
Wood, Karen, Mathematical modeling of cooperation based diversification and speciation

University of California, Los Angeles (26)

DEPARTMENT OF BIOSTATISTICS, FIELDING SCH OF PUBL HLTH
Conn, Daniel, Utilization of low dimensional structure to improve the performance in high dimensions
Li, Qian, Hierarchical integration of heterogeneous highly structure data: The case of functional brain imaging
Tolkuoff, Max, Phylogenetic factor analysis and natural extensions
Wang, Lu, Bayesian curve registration and warped functional regression

DEPARTMENT OF MATHEMATICS

Azzam, Alexander, Doubly critical semi-linear Schrödinger equations
Belliis, Ben, Resolvent estimates and semigroup expansions for non-self-adjoint Schrödinger operators
Cadegan-Schlieper, William, On the geometry and topology of hyperplane complements associated to complex and quaternionic reflection groups
Cheng, Peter, Spline deferred correction
Clyde, David, Numerical subdivision surfaces for simulation and data-driven modeling of woven cloth
Fu, Chuyuan, The material point method for simulating elastoplastic materials
Gim, Geunho, Stabilization of a tower of universal deformation rings
Hughes, Joseph, Modular forms associated to real cubic fields
Laackman, Donald, Degree three cohomological invariants of reductive groups
Lagkas Nikolos, Ioannis, Localization and modules in derivators
Luo, Xiyang, Analysis and application of graph semi-supervised learning methods
Meng, Zhaoyi, High performance computing and real time software for high dimensional data classification
Menke, Michael, Some results on fillings in contact geometry
Nguyen Luu, Danh, The computational complexity of Presburger arithmetic
Norwood, Zach, Combinatorics and algebrativeness of definable sets of reals
Ntalampeskas, Dimitrios, Potential theory on Sierpinski carpets with applications to uniformization
Rooney, Jacob, On cobordism maps in embedded contact homology
Royston, Michael, A Hopf-Lax formulation of the eikonal equation for parallel redistancing and oblique projection
Siegel, Jonathan, Accelerated first-order optimization with orthogonality constraints
Yang, Yilong, Shapes of finite groups through cove properties and Cayley graphs
Zhang, Fangbo, A blob method for advection-diffusion-reaction systems with application to robotic swarm
Zhang, Yunfeng, Strichartz estimates for the Schrödinger flow on compact symmetric spaces

University of California, Riverside (9)

Department of Mathematics
 Arauzo, Andrea, Spectral triples and fractal geometry
 Chun, Daniel, Asymptotic syzygies of normal crossing varieties
 Coya, Brandon, Circuits, bond graphs, and signal-flow diagrams: A categori-cal perspective
 Murray, Kayla, Graded representations of current algebras
 Ogaga, James, Function theory on open Kähler manifolds
 Ruth, Lauren, Two new settings for examples of von Neumann dimension
 Sherbentzian, Alex, Rigidification of algebras over algebraic theories in diagram categories
 Simanyi, John, The Poisson cohomology of k-step Nilmanifolds
 Tousignant, Jordan, Koszulity of directed graded k-linear categories and their quadratic dual

University of California, Santa Barbara (19)

Department of Mathematics
 Blacker, Casey, The moduli space of flat connections over higher dimensional manifolds
 Curtis, Amanda, On projectors for the sl3 spider
 Dougherty, Michael, The geometry and topology of the dual braid complex
 Hake, Kathleen, The geometry of the space of knotted polygons
 Jin, Zhongmin, Homeomorphism finiteness theorem with integral curvature bound
 Kaminsky, John, On the stochastic closure theory of homogeneous turbulence
 Merkx, Peter, Global symmetries of six dimensional super conformal field theories
 Pankau, Joshua, On stretch factors of pseudo-Anosov maps
 Ricci, Joseph, Congruence subgroup and quantum representations of mapping class groups
 Wen, David, On minimal models and canonical models of elliptic fourfold with section

Department of Statistics and Applied Probability
 He, Jingyi, Fixing mixed effects models with big data
 Hu, Ruimeng, Asymptotic methods for portfolio optimization in random environments
 Mousavi, Seyyed Mostafa, Financial markets with delay
 Ning, Patricia, Topics in financial math (uncertain volatility, ross recovery and mean field games on random graph)
 Risk, James Kenneth, Three applications of Gaussian process modeling in evaluation of longevity risk management
 Rodriguez Hernandez, Sergio, Generalized probabilistic bisection for stochastic root-finding
 Shi, Jian, Some contributions to smoothing spline density estimation and inference
 Xu, Danqing, Fitting smoothing splines to massive data
 Yang, Xuwei, Games in energy markets

University of California, Santa Cruz (6)

Department of Mathematics
 Barsotti, Jamison, The unit group of the Burnside ring for some solvable groups
 Ferrara, Joseph, Stark’s conjectures for p-adic L-functions
 Gottesman, Richard, The algebra and arithmetic of vector-valued modular forms on $\Gamma_0(2)$
 Jackman, Connor, Free homotopy classes in some n-body problems
 Martiens, Gabriel, The Hamiltonian dynamics of magnetic confinement and instances of quantum tunneling
 Nguyen, Danquyhn, Fusion rules for the lattice vortex operator algebra $V_L$

University of Southern California (9)

Department of Mathematics
 Bhattacharjee, Chinmoy, Stein’s methods and its application in strong embeddings and Dickman approximations
 Gerhardt, Spencer, Topological generation of classical algebraic groups
 Hankin, Michael, Control of false discovery rate and related metrics for sequential testing of multiple hypotheses under arbitrary dependence conditions
 Kim, Gene B., Distribution of descents in matchings
 Nguyen, Dinh Trung, Random walks on finite groups and their irreducible representations
 Ozel, Enes, Cycle structures of permutations with restricted positions
 Sun, Rentao, Conditional mean-fields SDEs and application
 Wang, Fei, On regularity and stability in fluid dynamics
 Wu, Cong, Controlled McKean–Vlasov equations and related topics

COLORADO

Colorado State University (8)

Department of Mathematics
 Blumstein, Mark, A geometric formula for degree of equivariant cohomology rings
 Davis, Brent, The numerical algebraic geometry approach to polynomial optimization
 Emerson, Tegan, A geometric data analysis approach to dimension reduction in machine learning and data mining in medical and biological sensing
 Hashmi, Bahaaudin, Pattern formation in reaction diffusion systems and ion bombardment of surfaces
 Maglione, Josh, On automorphism groups of p-groups
 Neville, Rachel, Topological techniques for characterization of patterns in differential equations

Doctoral Degrees Conferred

NOTICES OF THE AMERICAN MATHEMATICAL SOCIETY

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Doctoral Degrees Conferred

DEPARTMENT OF STATISTICS
Fu, Ran, Improving survey estimators through weight smoothing
Scharf, Henry, Statistical models for dependent trajectories with application to animal movement

University of Colorado, Boulder (13)

DEPARTMENT OF APPLIED MATHEMATICS
Fairbanks, Hillary, Low-rank, multi-fidelity methods for uncertainty quantification of high dimensional systems
Kalchev, Delyan, Dual least squares finite element methods for hyperbolic problems
Nardini, John, Partial differential equation models of collective migration during wound healing
Southworth, Benjamin, Seeking space aliens and the strong approximation property: A disjoint study in dust plumes on planetary satellites and non-symmetric algebraic multigrid
Wills, Peter, Studies in the analysis of stochastic processes

DEPARTMENT OF MATHEMATICS
Burkett, Shawn, Subnormality and normal series in supercharacter theory
Coston, Natalie, Spectral properties of products of independent random matrices
Frinak, Joshua, Degeneration of Prym varieties: A computational approach to the inderterminacy of the Prym period map and degenerations of cubic threefolds
Lamar, Jonathan, Lattices of supercharacter theories
Ledbetter, Sion, Heisenberg codes and channels
Long, Ian, Spectral Hutchinson-3 measures and their associated operator fractals
Rosenbaum, Ryan, On the poles of Mellin transforms of principal series Whittaker functions
Shriner, Jeffrey, Hardness results for the subpower membership problem

University of Colorado, Denver (5)

DEPARTMENT OF BIOSTATISTICS AND INFORMATICS
Dalwani, Manish, Machine learning in neuroimaging based modalities using support vector machines with wavelet kernels
Vestal, Brian, A computationally efficient spatial point process framework for characterizing lung computed tomography scans

DEPARTMENT OF MATHEMATICAL AND STATISTICAL SCIENCES
Sigler, Devon, Multi-objective optimization under uncertainty
Walsh, Scott, Simulation-based optimal experimental design: Theories, algorithms and practical considerations
Yorgov, Daniel, Combined admixture and association mapping for complex traits

University of Northern Colorado (2)

SCHOOL OF MATHEMATICAL SCIENCES
Hancock, Brent, Undergraduates’ collective argumentation regarding integration of complex functions within three worlds of mathematics
Hancock, Emilie, The sociocultural mediation of metacognition in undergraduate mathematics classroom communities of practice

CONNECTICUT

University of Connecticut, Storrs (18)

DEPARTMENT OF MATHEMATICS
Dong, Mengxia, Best constants, extremal functions and stability for geometric and functional inequalities
Evans, Kyle, Investigating the relationship between mathematics education and global citizenship education through K-12 mathematics teacher perspectives
Feng, Qi, Topics in stochastic analysis and Riemannian foliations
Lemay, Steven, Teachers’ navigation of mathematical representations of argumentation
Martin, Daniel, Mass in general relativity
Moran, Rebecca, Traveling waves in a suspension bridge
Nicholson, Marie, Applications of computability theory to partial and linear orders
Rabideau, Michelle, Continued fractions in cluster algebras, lattice paths, and Markov numbers
Tang, Huili, National retirement sustainability index

DEPARTMENT OF STATISTICS
Bapat, Sudeep, Multistage sampling strategies and inference in health studies under appropriate Linex loss functions
Bishoyi, Abhishek, Application of Gaussian process priors on Bayesian regression
Deshpande, Ved, Statistical methods for analyzing bivariate mixed outcomes
Jiang, Yujing, Marginal score equations for spatial extremes modeling with latent signals and applications in fingerprinting changes in climate extremes
Luo, Chongliang, On integrative reduced-rank models and applications
Mishra, Aditya, On sequential estimation of multivariate associates
Shi, Daoyuan, Statistical methods for information assessment and data compatibility with applications
Vaughan, Gregory, Stagewise estimating equations
Zhang, Yaohua, Structure learning and break detection in high-frequency data

Yale University (16)

BIOSTATISTICS DEPARTMENT
Cameron, Briana, Extensions to the two-stage randomized trial for testing treatment, self-selection, and treatment preference effects
DeVeaux, Michelle, Innovative statistical methods for early phase clinical trials
Hu, Yiming, Integrative analysis of multiomics data improves genetic risk prediction and transcriptome-wide association analysis
Jung, Taehyun, A joint model for recurrent events and semi-competitive risk in the presence of multi-level clustering: An application to HIV-infected US veterans from OPTIMA trial
Liu, Yiyi, Statistical methods for cell heterogeneity and cell drug-response study

DEPARTMENT OF MATHEMATICS
Abrikosov, Efim, Potentials for moduli spaces of $A_m$-local systems on surfaces
Corey, Daniel, Initial degenerations of Grassmannians
Monteallegre, Daniel, Probabilistic methods in combinatorics
Pan, Wenyu, Dynamics of Kleiman groups
Shen, Jifeng, Break divisors and compactified Jacobians
Sheydvasser, Arseny, Classifying integral crystallographic packings
Weng, Daping, Cluster Donaldson–Thomas transformations of Grassmannians and double Bruhat cells

DEPARTMENT OF MATHEMATICS AND DATA SCIENCE
Brinda, William D., Adaptive estimation with Gaussian radial basis mixtures
Klusowski, Jason, Density, function, and parameter estimation with high-dimensional data
Lu, Yu, Statistical and computational guarantees for learning latent variable models
Zhang, Anderson Ye, Community detection: Fundamental limits, methodology, and variational inference
McGinnis, Matthew, A qualitative simulation of blood flow through an elastic cerebral saccular aneurysm using an immersed boundary method

Xu, Penglong, Iteration based temporal subcycling finite-difference time-domain algorithm and through-the-wall radar detection analysis

Xu, Yaman, Optical soliton propagation in metamaterials; evolutionary pattern formation for competing populations under seasonal forcing

University of Delaware (7)

Bailey, Zachary, Some inverse problems for hyperbolic partial differential equations

DeTeresa Trueba, Irene, A symptotic methods in inverse scattering for inhomogeneous media

McGinnis, Matthew, Combinatorial and spectral properties of graphs and association schemes

Qirko, Klaudia, A saddle point least squares method for systems of linear PDEs

Rezac, Jake, Direct methods for inverse scattering with time dependent and reduced data

Yuan, Tao, Radon transform spherical means and an inverse problem for the wave equation

Zhou, Yingxiang, Estimation and inference in problems from imaging and biophysics

DISTRICT OF COLUMBIA

George Washington University (2)

Bedi, Harpreet, Cohomology of line bundles of rational degree over perfectoid space

Lu, Jiajun, Pattern formation in binary systems with inhibitory long-range interaction

FLORIDA

Florida Atlantic University (6)

Gallolu Kankamalage, Hasala Senapathy, Output stability analysis for nonlinear systems with time delays

Joseph, Jean, A constructive theory of ordered sets and their completions

Kepley, Shane, The circular restricted four body problem is non-integrable: A computer assisted proof

Langenberg, Brandon, Quantum circuits for symmetric cryptanalysis

Robinson, Angela, Quantum-resistant key agreement and key encapsulation

Thomack, Andrew, Random harmonic polynomials

Florida Institute of Technology (5)

Aal Rkhaib, Habeeb, On the qualitative theory of the nonlinear degenerate second order parabolic equations modeling reaction-diffusion-convection processes

Alharbi, Majed, On logconcavity of multivariate discrete distributions

Aljaber, Noha, Boundary value problems in a multidimensional box for higher order linear and quasi-linear hyperbolic equations

McDougall, Jeffrey, The capacitated transfer point covering problem (TCPF): Expanding delivery network coverage with minimal resources

Onyjejikwe, Osita, Parametric and nonparametric regression models with applications to climate change

Florida State University (42)

Almalki, Yahya, Sorvali dilatation and spin divisors on Riemann and Klein surfaces

Cellat, Serdar, Metric learning for shape classification: A fact and efficient approach with Monte Carlo methods

Dobreva, Atanaska, Using mathematical tools to investigate the autoimmune hair loss disease alopecia areata

Ebadi, Sepideh, Evolutionary dynamics of bacterial persistence under nutrient/antibiotic actions

Flores Diaz, Diana, An electrophysiological and mathematical modeling study of developmental and sex effects on neurons of the zebra finch song system

Galvis, Daniel, Distributed neural network models for birdsong production

Hancock, Matthew, Algorithmic lung module analysis in chest tomography images: Lung nodule malignancy likelihood prediction and a statistical extension of the level set image segmentation method

Imamoglu, Erdal, Algorithms for solving linear differential equations with rational function coefficients

Khammohamadi, Omid, High-order, efficient, numerical algorithms for integration in manifolds

Li, Jian, Modeling of biofilms with implementations

Lin, Hua-Yi, Optimal portfolio execution under time-varying liquidity constraints

Marchand, Melissa Sue, Low-rank Riemannian optimization approach to the role extraction problem

Pei, Chaoux, Space-time spectral element methods in fluid dynamics and materials science

Shen, Yunchi, Landscapes in non-commutative geometry

Sparaco, Leon, Character varieties of knots and links with symmetries

Tsai, Wan-Yu, Monte Carlo scheme for a singular control problem: Investment consumption under proportional transaction costs

Tzenq, Yu-Ying, Quasi-Monte Carlo and Markov chain quasi-Monte Carlo methods in estimation and prediction of time series models

Valdes, Yaimeli, The 1-type of k-theory for Waldhausen category as a multifactor

Wang, Jian, Ensemble methods for capturing dynamics of limit order books

Wesołowski, Sergiusz Jan, Developing SRSF shape analysis techniques for applications in neuroscience and genomics

Williams, Ethan, Affine dimensions of smooth curves and surfaces

Xu, Wen, Third order A-hypergeometric functions

Zhang, Xiping, Characteristic classes and local invariants on determinantal varieties (temperate)

Zhou, Chenchen, On the multidimensional default threshold model for credit risk model

DEPARTMENT OF MATHEMATICS

Ahm, Kyungmin, Elastic functional regression model

Baker, Danisha, A Bayesian wavelet based analysis of longitudinally observed skewed heteroscedastic responses

Bhingare, Apurva, Semiparametric Bayesian regression models for skewed responses

Chen, Qisheng, Tests and classifications with application in adaptive designs

Duncan, Adam, Statistical shape analysis of nueral tree structures

Duncan, Megan, Elastic functional principal component analysis for modeling and testing of functional data

Geneus, Vladimir, Nonparametric change point detection methods for profile variability

Guo, Ruite, Testing for the equality of two distributions on high dimensional object space

Hu, Guanyu, Spatial statistics and its applications in biostatistics and environment statistics

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NOTICES OF THE AMERICAN MATHEMATICAL SOCIETY

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Doctoral Degrees Conferred
Department of Statistics
Bhattacharjee, Abhishek, Identifying active factors in multi factor trials and empirical Bayes intervals for the selected mean
Myung, Jiyoung, Small area estimation, nonparametric median estimation and measurement error models: A Bayesian approach
Rahman, Syed, Cholesky-based model selection and estimation in graphical models
Shi, Runmin, Statistical computing methods for big data problems
Skrzypek, Andrey, Topics in joint estimation of vector autoregressive models
Tang, Xueying, Bayesian data analysis under shrinkage priors
Wang, Pei-Li, Identifying active factors in multi factor trials and empirical Bayes intervals for the selected mean
Zhang, Liyuan, Trace class Markov chains for Bayesian shrinkage models

University of Florida College of Public Health (4)

Department of Biostatistics
Liu, Jing, Improving power for testing genetic effects on binary and survival outcomes using auxiliary information
Sharker, M. A. Yushuf, Pairwise accelerated failure time models for infectious disease transmission data
Siddar, Sinjini, Statistical methods for analyzing genomics data
Xu, Suwa, Learning high-dimensional Bayesian networks for general types of random variables

University of Miami (3)

Department of Mathematics
Bajo Caraballo, Carlos, Fluid limit and stochastic stability for a genetic model
Ellsey, Brittney, On chronic quasimetric functions of directed graphs
McKeown, James, On the combinatorics of the Waldspurger decomposition

University of South Florida (12)

Department of Mathematics and Statistics
Churchill, Gregory, On extending Hansel's theorem to hypergraphs
Churchill, Indu Rasika, Contributions to quandle theory: A study of f-quandles, extensions and cohomology
Devamitta Perera, Maditha, Statistical analysis and modeling of ovarian and breast cancer
Gao, Chao, Statistical analysis and modeling of stomach cancer data
Garapati, Kumar Vijay, Structural analysis of poloidal and toroidal plasmons and fields of multilayer nanorings

GEORGIA

Augusta University (3)

Department of Population Health Sciences
Daniel, Jeannie, A modified bump hunting approach with correlation-adjusting kernel weight for detecting differentially methylated regions on the 450K array
Lee, Jaeun, A modified information criterion in the 1d fused lasso for DNA copy number variant detection using next generation sequencing data
Lee, Taekin, Mathematical and stochastic modeling of HIV immunology and epidemiology

Emory University (18)

Department of Biostatistics and Bioinformatics
Ainslie, Kylie Ellen, Estimation of the effectiveness of influenza vaccination from observational studies
Deng, Yi, Statistical methods for incomplete big data
He, Qian, Machine learning methods in large scale neuroimaging study
Jeffers, Caprichia, Statistical methods for correlated count data
Jin, Zhuxian, Statistical methods for omics data integration
Li, Ben, Novel model-based methods for high-throughput genomics data analysis
Li, Ziyi, Statistical learning methods for big biomedical data
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Zhu, Wanzhe, Statistical methods for handling missing data in functional data analysis

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
Haase, Bastian, Patching and local-global principles for gerbes with an application to homogeneous spaces
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Shull, Warren, On spanning trees with few branch vertices
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Georgia Institute of Technology (14)

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Dang, Thanh, Minors of graphs of large path-width
de Viana, Mikael, Results on invariant whiskered tori for fibered holomorphic maps and on compensated domains
Du, Rundong, Nonnegative matrix factorization for text, graph, and hybrid data analytics
Hou, Yanxi, Statistical inference for some risk measures
Kunwar, Ishwari, Multilinear dyadic operators and their commutators
Mena Arias, Dario, Characterization of matrix valued BMO by commutators and sparse domination of operators
Ralli, Peter, Curvature and isoperimetry in graphs
Sampson, Donald, Inflation of a planar domain
Spencer, Timothy Scott, Weighted inequalities via dyadic operators and a learning theory approach to compressive sensing
Tossounian, Hagop, Mathematical problems concerning the Kac model
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Wang, Yan, Subdivisions of complete graphs

Zhang, Lei, Analysis and numerical methods in solid state physics and chemistry

Georgia State University (12)

DEPARTMENT OF MATHEMATICS AND STATISTICS
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He, Xiuqin, Integrated mathematical and experimental study of cell migration and shape
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Liu, Bing, Bayesian methods in brain connectivity change point detection in EEG data and genetic algorithm
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Ng, Shuenn Siang, Characterizing F-rationality of Cohen–Macaulay rings via canonical modules
Reimbayev, Reimbay, Synchronization in neuronal networks with electrical and chemical coupling
Rui, Shuwen, Characterizing F-rationality of Cohen–Macaulay rings via canonical modules

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DEPARTMENT OF STATISTICS
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Zhang, Wei, Optimal designs for the panel mixed logit model

HAWAII
University of Hawaii at Manoa (2)

DEPARTMENT OF MATHEMATICS
Guillen, Alejandro, On the generalized word problem for finitely presented lattices
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ILLINOIS
Illinois Institute of Technology (7)

APPLIED MATHEMATICS DEPARTMENT
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Northern Illinois University (3)

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Konter, Johan, The Goodwillie tower of infinite loops as derived functors
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DEPARTMENT OF STATISTICS
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ENGINEERING SCIENCE AND APPLIED MATHEMATICS DEPT
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DEPARTMENT OF MATHEMATICS
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Malik, Amita, Partition asymptotics and zeros of zeta functions
Meng, Xianchang, The distribution of k-free numbers and integers with fixed number of prime factors
Michiels, Daan, Symplectic foliations, currents, and local Lie groupoid
Obiero Oyengo, Michael, Chebyshev-like polynomials, conic distribution of roots, and continued fractions
Panagiotopoulos, Aristotelis, Structures and dynamics
Pandey, Ashish, Partition asymptotics and zeros of zeta functions
Shields, Jacob, Intrinsic random functions on spheres: Theory, methods, and application

**Indianapolis**

**Indiana University-Purdue University Indianapolis (4)**

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Chen, Yinghan, Sampling for network motif detection and estimation of Q-matrix and learning trajectories in DINA model
Huang, Weihong, Statistical algorithms using multisets and statistical inference of heterogeneous networks
Huang, Xichen, Fast algorithms for Bayesian variable selection
Kinson, Christopher, Longitudinal principal components analysis for binary and continuous data
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Park, Yeon Joo, Effect size estimation and robust classification for irregularly sampled functional data
Paul, Subhadeep, Consistent community detection in uni-layer and multi-layer networks
Tang, Xiwei, Individualized learning and integration for multi-modality data
Yang, Fan, Statistical inference based on characteristic functions for intractable likelihood problems
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Zhu, Xiaolu, Heterogeneity modeling and longitudinal clustering

**Department of Mathematical Sciences**

Behrouzvaziri, Abolhassan, Thermoregulatory effects of psychostimulants and exercise: Data-driven modeling and analysis
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Xu, Heng, Universally optimal designs for the two-dimensional interference model

**Indiana University, Bloomington (15)**

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Hwang, Won Tae, On a classification of the automorphism group of a polarized abelian surfaces over finite fields
Lam, Wai Kit, Topics in critical and first passage percolation
Nie, Hongmin, Iteration at the boundary of Newton maps
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Xu, Chen, Wavelet analysis of financial time series in asset pricing theory and power law exponent estimation
Yang, Ruiyu, Differential methods for phylogenetic reconstruction and their properties
Zuñiga, Andres, Geometric problems in the calculus of variations

**Department of Statistics**

Shields, Jacob, Intrinsic random functions on spheres: Theory, methods, and application

**Purdue University** (24)

**Department of Mathematics**

Barrios, Alexander, Minimal models of rational elliptic curves with non-trivial torsion
Bond, Jacob, On the computation and composition of Belyi maps and dessins d’enfants
He, Cuiyu, Robust a posteriori error estimation for various finite element methods on interface problems
Kepley, Paul, Techniques for the reconstruction of a Riemannian metric from boundary data via the boundary control method
Li, Qinfeng, Geometric measure theory with applications to shape optimization problems
Miller, Nicholas, Some geodesic theorems for arithmetic orbifolds
Ng, Njig Fung, Properties of caratheodory measure hyperbolic universal covers of compact kähler manifolds
Sammartano, Alessio, Infinite free resolutions and blowup algebras
Shapiro, Jacob, Semiclassical resonant bound and wave decay in low regularity
Solapurkar, Partha, Some new surfaces of general type with maximal Picard number
Wang, Yingwei, Fast structured spectral methods
Department of Statistics
Chen, Chen, Parallel construction of large-scale gene regulatory networks
Cheng, Lin-Yang, Pragmatic statistical methods for effective protein biomarker discovery
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Feldman, Guy, Sampling laws for multi-objective simulation optimization on finite sets
Harry, April, Design and statistical analysis of mass spectrometry imaging experiments
Hass, Zachary, Division of credit modeling for team sports with an emphasis on NCAA women’s volleyball
Henry, Courtney, The design and analysis of calcium-41 clinical trials to study treatments for bone loss
Huang, Whitney, Statistics of extremes with climate applications
Li, Cheng, Optimal interative threshold kernel estimation of jump-diffusion processes
Liu, Yaowu, Advanced statistical tests for large-scale genomic data analysis
Medina, Patrick, Wave TDA: Bayesian statistics, wavelets, and topological data analysis to assess statistical shape
Oh, Ji Hwan, Graphical models for non-Gaussian continuous data with applications to genomics datasets
Schloerke, Barret, Generalized plot matrices, automatic cognostics, and efficient data exploration

University of Notre Dame (10)

Applied and Computational Mathematics and Statistics
Bowen, Claire, Data privacy via integration of differential privacy and data synthesis
Liddell, Alan, Applications of Newton homotopies
Lu, Dong (Dawn), Krylov integration factor method for high spatial dimension convection-diffusion problems on sparse grids
Pancaldi, Francesco, Mathematical models of bacteria polarity and fibrin network mechanics

Department of Mathematics
Culver, Dominic, On the cooperations algebra for the second Brown-Peterson spectrum at the prime 2
Garbett, Jennifer, A vertex superalgebra via spin factorization algebras with point defects
Kao, Lien-Yung, Thermodynamic formalism and its applications to deformation spaces
Lewis, Benjamin, Quantization commutes with reduction on compact Lie groups under the adjoint action
Lichtenfeld, Leandro, The geometry of the Euler and the Navier–Stokes equations
Saumell, Luis, Perverse sheaves and hyperplane arrangements

Iowa

Iowa State University (36)

Department of Mathematics
Bozeman, Chassidy, Connections to zero forcing: Tree covers and power
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Guthrey, Pierson, Regionally implicit discontinuous Galerkin methods for solving the relativistic Vlasov–Maxwell system
Hotchkiss, Calvin, Fourier bases on the skewed Sierpinski gasket
Hu, Junzhhao, Numerical solutions for the deterministic and stochastic Allen-Cahn equation and the mean curvature flow
Huang, Keguo, Topics in queueing theory
Lazar, Robert, Association schemes and designs in symplectic vector spaces over finite fields
Munsie, Monalisa, Magneto-hydrodynamic flow in closed channels
Noren, Steven, Topics in self-interacting random walks
Walker, Shane, Problems in extremal graphs and poset theory
Zhou, Sen, Estimation of the risk-neutral density from option prices

Department of Statistics
Alvarez-Castro, Ignacio, Bayesian analysis of high-dimensional count data
Cheng, Hao, Contributions to improve the accuracy and computational efficiency of genomic prediction
Clark, Nicholas, Self-exciting spatio-temporal statistical models for count data with applications to modeling the spread of violence
Curley, Brenna J., Nonlinear models with measurement error: Application to vitamin D
DaSilva, Natalia, Bagged protection methods for supervised classification in big data
Downey, Jillian, Accounting for structure in education assessment data using hierarchical models
Hellams, Luvenia, Leveraging genetic time series data to improve detection of natural selection
Johnson, Margarett, Methods for analysis and uncertainty quantification for processes recorded through sequences of images
Kaplan, Andrea, On advancing MCMC-based methods for Markovian data structures with applications to deep learning, simulation, and resampling
Liu, Yihua, Investment decision-making in clean energy under uncertainties: A real options research
Lithio, Andrew, Statistical methods for estimation, testing, and clustering with gene expression data
Reboreda, Chih, Three essays on crash frequency analysis
Martin-Schwarze, Adam, Extending removal and distance-removal models for abundance estimation by modeling detections in continuous time
Mei, Yong, Modeling and control to improve blood glucose concentration for people with diabetes
Mittman, Eric, Application of Bayesian hierarchical models in gene expression and product reliability
Nguyen, Yet Tien, Multiple hypothesis testing and RNA-seq differential expression analysis accounting for dependence and relevant covariances
Pan, Lanfang, Mixture model and subgroup analysis in nationwide kidney transplant center evaluation
Peng, Lihua, Topics in statistical inference for massive data and high-dimensional data
Price, Michael, Penalized B-splines and their application with an in depth look at the bivariate tensor product penalized B-spline
Ries, Daniel C., Measurement error modeling of physical activity data
Sage, Andrew, Random forest robustness, variable importance, and tree aggregation
Sun, Yaxuan, Statistical methods in modeling disease surveillance data with misclassification
Tyner, Samantha C., Graphical discovery in stochastic actor-oriented models for social network analysis
Wakeland, Kenneth, Exploring dependence in binary Markov random field models

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Applied Mathematical and Computational Sciences
Aiello, Gordon, The classical moment problem and scattering asymptotic in Euclidean relativistic quantum theory
Bao, Minli, A moving-window penalization method and its applications
Cai, HanQin, Accelerating truncated singular-value decomposition: A fast and provable method for robust principal component analysis
Capes, Christine, A tabulation of tangle families
Czuprynski, Kenneth, Numerical analysis in energy dependent radiative transfer
Rhomberg, Patrick, On the parallelization of network diffusion models
Stiegler, Cole, Efficient local optimization for low-rank large-scale instances of the quadratic assignment problem
Wang, Tianming. Non-convex methods for spectrally sparse signal reconstruction via low-rank Hankel matrix completion

DEPARTMENT OF BIOSTATISTICS
Barnes, Janel. Regression and boosting methods to inform precisionized treatment rule using data from crossover studies

Ghattas, Andrew. Medical imaging segmentation assessment via Bayesian approaches to fusion, accuracy and variability estimation with application to head and neck cancer

Langenfeld, Natalie. A novel sequential ABC algorithm with applications to the opioid epidemic using compartmental models

Lou, Yiyou. Principal stratification: Applications and extensions in clinical trials with intermediate variables

Riedle, Benjamin N. Probabilistic pairwise model comparisons based on discrepancy measures and a reconceptualization of the p-value

Seedorff, Michael. Methods for testing for group differences in highly correlated, nonlinear eyetracking data

Tamegnon, Monelle. Avoiding the redundant effect on regression analysis of including an outcome in the imputation model

Zahrieh, David. Bayesian point process modeling to quantify excess risk in stillbirths with a maternal contextual spatial epidemiology: An analysis of the stillbirth rate using maternal contextual environmental variables

Zeng, Yaohui. Scalable sparse machine learning methods for big data

DEPARTMENT OF MATHEMATICS
Ardila, Rene. Morita equivalence of W*-correspondences and their Hardy algebras

De Santiago, Rolando. Structural results for von Neumann algebras of polyhedral groups

Kindred, Thomas. Checkerboard plumbings

Liu, Suhui. Projected Wirtinger gradient descent for spectral compressed sensing

Pant, Sujan. Structural results in group von Neumann algebras

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
Wang, Xiao. On pricing barrier options and exotic variations

KANSAS

Kansas State University (13)

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Aryal, Ashok. Geometry of mean value for uniformly elliptic divergence from operators

Chen, Hui. Counting representations of deformed preprojective algebras

Flesher, Paul. Proof validation in Euclidean geometry: A comparison of novices and experts using eye tracking

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DEPARTMENT OF STATISTICS
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Li, Xiongya. Robust multivariate mixture regression models

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University of Kansas (6)

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Chen, Wei-Da. Reimannian geometry on some noncommutative spaces

Claassen, Kyle. Stability of periodic waves in nonlocal dispersive equations

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Wang, Bin. Balancing domain decomposition by constraints algorithms for incompressible Stokes equations with nonconforming finite element discretizations

Zhou, Hongjuan. Parameter estimation for stochastic differential equations driven by fractional Brownian motion

University of Kansas Medical Center (2)

DEPARTMENT OF BIOSTATISTICS
Karanevich, Alex. Novel statistical methodology development and applications in ALS research

Zhong, Yi. Feature selection and classification for high-dimensional biological data under cross-validation framework

University of Kentucky (10)

DEPARTMENT OF BIOSTATISTICS
Liu, Meng. A predictive probability interim design for Phase II clinical trials with continuous endpoints

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Happ, Alexander. A combinatorial miscellany: Antipodes, parking cars and descent sets

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DEPARTMENT OF STATISTICS
Ellis, Amanda. Accounting for matching uncertainty in photographic identification studies of wild animals

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University of Louisville (10)

DEPARTMENT OF BIOINFORMATICS AND BIOSTATISTICS
Kendrick, Sarah. Functional data analysis methods for predicting disease status

Li, Xiaohong. Sample size calculations and normalization methods for RNA-seq data

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You, Wu. Bayesian approach on short-time-course data of protein phosphorylation, casual inference or ordinal outcome and casual analysis of dietary and physical activity in T2DM using NHANES data
Tulane University (8)

Department of Global Biostatistics and Data Science

Xu, Chao, Hypothesis testing for high-dimensional regression under extreme phenotypic sampling continuous traits

Department of Mathematics

Borojeni, Asma Azizi, Mathematical models for predicting and mitigating the spread of chlamydia sexually transmitted infection

Fenske, Ellis, Anonymity and linkability

Gossman, Roseannu, The elastodynamics of a simplified model of human birth

Kesarwani, Aashita, Theory of the generalized modified Bessel function \( K_{\lambda}(x) \) and 2-acid valuations of integer sequences

Nguyen, Hung, Anomalous diffusion and the generalized Langevin equation

Sun, Fang, Topological symmetries of \( \mathbb{R}^3 \)

Ugurlu, Ozlem, Counting Borel orbits in classical symmetric varieties

University of Louisiana at Lafayette (3)

Department of Mathematics

Heider, Blaise John, Annihilators and extensions of idempotent generated ideals

Petrovic, Vojislav, The \( K(n) \)-local \( E_n \) Adams spectral sequence and a cohomological approximation of its \( E_2 \)-term

Zhao, Lihong, Modeling, estimation and approximation in structured models

Maryland

Johns Hopkins University (8)

Department of Biostatistics

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Lenis, David, Estimating causal effects with non-experimental data

Myint, Leslie, Evidence-based methods in studies of biology and data anlaysis

Prior, Thomas, Novel statistical methods in conjoint analysis and Pade approximation of the profile likelihood

Johns Hopkins University, Baltimore (7)

Department of Applied Mathematics and Statistics

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Department of Mathematics

Diamond, Benjamin, Smooth surfaces in smooth fourfolds with vanishing first Chern class

Kauffman, Christopher, Global stability for charged scalar fields in space times close to Minkowski

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University of Maryland, Baltimore County (9)

Department of Mathematics and Statistics

Boukouvalas, Zois, Development of ICA and IVA algorithms with application to medical image analysis

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Maggino, Mark, Constant amplitude zero autocorrelation sequences and single pixel camera imaging
Maschal, Robert, Parabolic higgs bundles and Deligne–Simpson problem for loxodromic conjugacy classes in PU(n, 1)
Moon, Eun-Young, The consistency of spectral clustering with IMRI data
Nogkas, Dimitrios, Non-linear geometric PDEs: Algorithms, numerical analysis and computation
Punshon-Smith, Samuel David, Capturing the large scale behavior of many particle systems through coarse-graining
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Sun, Chunting, A latent variable modeling framework for analyzing neural population activity
Yao, Xuan, Extended estimating equations and empirical likelihood

Boston University (7)

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Lavtas, Lilija, On some new advances in self-normalization approaches for inference on time series
Li, Jun, Statistical methods for certain large, complex data challenges
Mottet, Clementine, Optimization-based approaches to non-parametric extreme event estimation
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DEPARTMENT OF BIOSTATISTICS
Ananthakrishnan, Revathi, On the designs of early phase oncology studies
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Gerlovin, Hama, Effective exposure lag-parameterized exponential models for exposure risk
Ghosh, Pranab, Design of adaptive multi-arm multistage clinical trials
Yao, Baiyun, Bayesian approaches to address the issue of high placebo response in clinical trials using sequential parallel comparison design

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Grove, Ryan, Discretizations and efficiently linear solvers for problems related to fluid flow
Knoll, Fiona, Johnson–Lindenstrauss transformations

Liu, Yan, A Bayesian generalized additive model for group testing data
Mohebujjaman, Muhammad, Efficient numerical methods for magnetohydrodynamic flow
Nyström, Emily, Predictor omission for linear and logistic regression models
Ramirez Flores, Aaron, Localization of generalized frames in Hilbert spaces: Symptolic behavior of compact and Toeplitz operators sampling and interpolation density results
Ruiz Ramirez, Javier, Time-dependent Stokes–Darcy flow with deposition
Staskelis, Kara, Properties of certain Markov extensions on linear extensions of posets

Medical University of South Carolina (6)

DEPARTMENT OF PUBLIC HEALTH SCIENCES
Bauza, Colleen, Determining the potential joint effect of obesity and diabetes on clinical outcomes following an ischemic stroke and issues related to the measures of obesity
Dai, Lin, Multilevel modeling of zero-inflated count data from complex surveys using pseudo-likelihood and Bayesian methods
Davis, Melanie, Addressing geographic confounding through spatial propensity score analysis for hierarchical data
Jiang, Yunyun, Bayesian response adaptive randomization in phase III confirmatory clinical trials with a binary endpoint
Small, James, Personal and family history of skin cancer: A possible marker for increased internal cancer risk and mortality
Speiser, Jaime, Decision tree and random forest methodology for clustered and longitudinal binary outcomes

University of South Carolina (7)

DEPARTMENT OF MATHEMATICS
Ahmed, Sameed, Theory, computation, and modeling of cancerous systems
Cochran, Garner, Quick trips: On the oriented diameter of graphs
University of Tennessee, Knoxville  (18)

**DEPARTMENT OF MATHEMATICS**

Cummins, John, Mathematical modeling of mixtures and numerical solution with applications to polymer physics

Feng, Wenqiang, Linearly preconditioned nonlinear solvers for phase field equations involving p-Laplacian terms

Heines, Elizabeth, Assessing the economic tradeoffs between prevention and suppression of forest fires

Higginbotham, Logan, Coarse constructions

Jantsch, Peter, Efficient methods for multidimensional global polynomial approximation with applications to random PDEs

Jensen, Ryan, Localization of large scale structures

Marchese, Andrew, Statistical and topological techniques for classification and clustering

McClurkin, Grace, Generalizations and variations of zero-divisor graphs

Mike, Joshua, Understanding data through computational topology and geometry

Rooker, Kelly, Modeling the evolution of visual sexual signaling, receptivity, and sexual signal reliability among female primates

Schmoke, Stefan, Numerical methods for non-divergence form second order linear elliptic partial differential equations and discontinuous Ritz methods for problems from the calculus of variations

Sinclair, Kevin, Generalizations of coarse properties in large scale spaces

Somnanburg, Kevin, Blow-ups of two-convex, type-I mean curvature flow

Starnes, Andrew, Investigating hulls from the Loewner equation

Tu, Eddie, Dependence structures in Levy-type Markov processes

Weber, Darrin, Various topics on graphical structures placed on commutative rings

Worley, Chase, Construction and classification results for commuting squares of finite dimensional \ast\-algebras

Yilmaz, Faruk, Approximation of invariant subspaces

**Vanderbilt University, School of Medicine  (4)**

**DEPARTMENT OF BIOSTATISTICS**

D’Agostino McGowan, Lucy, Improving modern techniques of causal inference: Finite sample performance of ATM and ATO doubly robust estimators, variance estimation for ATO estimators, and contextualized tipping point sensitivity analyses for unmeasured confounding

Mercaldo, Nathaniel, Design and analysis consideration for complex longitudinal and survey sampling studies

Mercaldo, Sarah, On optimal prediction rules with prospective missingness and bagged empirical null inference in large-scale data

Tripp Saunders, Christina, On estimating causal mediation effects from a single regression model

**TEXAS**

**Baylor University  (14)**

**DEPARTMENT OF MATHEMATICS**

Armour, David, Similarity of blocks in parabolic category \textit{O} and a wonderful correspondence for modules of covariants

Courtermance, Jordan, Local automorphisms of finitary incidence algebras

Frymark, Dale, Boundary conditions associated with left-defined theory and the spectral analysis of iterated rank-one perturbations: Operator theory and functional analysis

Jones, Tiffany, Conventional and asymptotic stabilities of decomposed compact methods for solving highly oscillatory wave problems

Osborn, John, Moment representations of exceptional orthogonal polynomials

Padgett, Joshua, Solving degenerated stochastic Kawarada partial differential equations

Pennington, Brian, Boundary data smoothness for solutions of nonlocal boundary value problems for nth order differential equations

**DEPARTMENT OF STATISTICAL SCIENCES**

Casement, Chris, Graphical methods in prior elicitation

Drews, Madeline, Bayesian inference for bivariate Poisson data with zero-inflation

**Doctoral Degrees Conferred**

Farman, Blake, Geometry of derived categories on noncommutative projective schemes

Musulin, Rade, Classical and quantum Kac’s chaos

**DEPARTMENT OF STATISTICS**

Huang, Songqiao, Functional data smoothing methods and their applications

Qiang, Beidi, Improved simultaneous estimation of location and system reliability via shrinkage ideas

Tang, Chuan-fa, Nonparametric inference for orderings and associations between two random variables

**SOUTH DAKOTA**

South Dakota State University  (6)

**DEPARTMENT OF MATHEMATICS AND STATISTICS**

Aburweis, Mohamed, Comparative study of the distribution of repetitive DNA in model organisms

Armstrong, Douglas, Development and properties of kernel-based methods for the interpretation and presentation of forensic evidence

Elmesmari, Nasir, Threshold models for genome-wide association mapping of familial breast cancer incidence in human

McDermaid, Adam, Statistical algorithms and bioinformatics tools development for computational analysis of high-throughput transcriptomic data

Owen, Danica, Approximate statistical solutions to the forensic identification of source problem

Robertson, Joseph, The impact of data sovereignty on American Indian self-determination: A framework proof of concept using data science

**TENNESSEE**

Middle Tennessee State University  (1)

**DEPARTMENT OF MATHEMATICAL SCIENCES**

Alrowaili, Dalal, Mathematical modeling for ring systems in molecular networks

University of Memphis  (2)

**DEPARTMENT OF MATHEMATICAL SCIENCES**

Carraway, Latvia, New procedures of estimation for binary data

Poppelarz, Kamil, Problems in extremal graph theory

Michaels, Timothy, Node generation on surfaces and bounds on minimal Riesz energy

O’Connell, Kelly, Characterisation and Hamiltonicity of K_{1,1,n}-minor-free graphs: A fan-based approach

Petrosyan, Armanak, Dynamical sampling and systems of lectors from iterative actions of operators

Ren, Yuxiang, Skein theory of planar algebras and some applications

**University of Memphis, Knoxville  (18)**

**DEPARTMENT OF MATHEMATICS**

Cummins, John, Mathematical modeling of mixtures and numerical solution with applications to polymer physics

Feng, Wenqiang, Linearly preconditioned nonlinear solvers for phase field equations involving p-Laplacian terms

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Yilmaz, Faruk, Approximation of invariant subspaces

**Vanderbilt University, School of Medicine  (4)**

**DEPARTMENT OF BIOSTATISTICS**

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**TEXAS**

**Baylor University  (14)**

**DEPARTMENT OF MATHEMATICS**

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Padgett, Joshua, Solving degenerated stochastic Kawarada partial differential equations

Pennington, Brian, Boundary data smoothness for solutions of nonlocal boundary value problems for nth order differential equations

**DEPARTMENT OF STATISTICAL SCIENCES**

Casement, Chris, Graphical methods in prior elicitation

Drews, Madeline, Bayesian inference for bivariate Poisson data with zero-inflation
King, Clay, Applications of Bayesian quantile regression and sample size determination
Nelson, Tyler, Multilevel binomial and Poisson regression with misclassified outcomes and binary covariates: A Bayesian approach
Odom, Gabriel, Three applications of linear dimension reduction
Stanley, Sarah, Beta regression for modeling a covariate-adjusted ROC
Zhou, Kate (Qi), Bayesian propensity score analysis for clustered data with misclassified response and its sensitivity to unmeasured confounding

Rice University (17)

DEPARTMENT OF COMPUTATIONAL AND APPLIED MATHEMATICS
Brinikov, Boris, Graph coloring, zero forcing, and related problems
Hendryx, Emily, Subset selection and feature identification in the electrocardiogram
Takhtaganov, Timur, Efficient estimation of coherent risk measures for risk-average optimization problems governed by partial differential equations with random inputs
Terentyev, Igor, Nonlinear waveform inversion with surface-oriented extended modeling
Zhai, Jian, Analysis of inverse boundary value problems for elastic waves

DEPARTMENT OF MATHEMATICS
Bernazzani, Daniel, Interval exchange transformations
Bucaj, Valmir, Anderson localization for discrete one-dimensional random operators
Li, Chao, Global regularity for Euler vortex patch in bounded smooth domains
Nakahara, Masahiro, Cohomology classes responsible for Bauer–Manin obstructions, with applications to rational and K3 surfaces
VandenBoom, Thomas, Isospectral dynamics of reflectionless Jacobi operators

DEPARTMENT OF STATISTICS
Baker, Yulia, Methods and applications for mixed graphical models
Campbell, Frederick, Statistical machine learning methodology and inference for structured variable selection
Chapple, Andrew, Bayesian models for clinical trials and survival analysis
Ginley, Matthew, An old dog learns new tricks: Novel applications of kernel density estimators on two financial datasets
Kosar, Robert, Methods and applications in multivariate analysis: Skewering, the Carnegie classification, and stochastic regularization
Melnikov, Oleg, Dynamic characterization of multivariate time series
Zhang, Liangcai, Statistical applications in cancer genomics and Bayesian statistical modeling in early phase clinical trials

Southern Methodist University (2)

DEPARTMENT OF MATHEMATICS
Juhneke, Fritz, High-order implementations of the double absorbing boundary
Swenson, Jennifer, Swelling as a stabilizing mechanism during ion bombardment of thin films: An analytical and numerical study

Texas A&M University (26)

DEPARTMENT OF MATHEMATICS
Barrera, Roberto, Local cohomology: Combinatorics and D-modules
Chung, Yeong Chyuann, Quantitative K-theory for Banach algebras and its applications
Dutta, Sourav, Mathematical models and numerical methods for porous media flows arising in chemical enhanced oil discovery
Fu, Shubin, Some applications of the generalized multiscale finite element method
Ghessmati, Arezou, Residual and goal-oriented h and hp-AFEM; applications for elliptic and saddle point problems
Ji, Bingbing, A local minimax method using the generalized Nehari manifold for finding differential saddles
Kha, Minh, Spectral edge properties of periodic elliptic operators
Kogan, Roman, Measures induced by automata and their actions
Leung, Wing-Tat, Adaptivity and online basis construction for generalized multiscale finite element methods
Li, Meiqing, Finding multiple saddle points for defocused nonlinear problems and G-differentiable functionals
Noles, Joseph, On upper-triangular forms in tracial von Neumann algebras
Patty, Spencer, An energy formulation for surface tension or Willmore force for two phase flow
Samarkas, Saleymann, Bounds for the rank of the finite part of operator K-theory and polynomially full groups
Scholze, Sam, Signal construction from frame and sampling erasures
Terzioğlu, Fatma, Compton camera imaging and the cone transformation
Williams, Robert, Restrictions on Galois groups of Schubert problems
Zeng, Guochao, Theta operators on v-adic modular forms and v-adic families of Goss polynomials and Einstein series
Zhang, Zhidong, Inverse problems for fractional diffusion equations

Texas Christian University (2)

DEPARTMENT OF MATHEMATICS
Aguirre, Luis, On linking multiple lines
Smith, Jeremy, Indices of algebraic integers in cubic fields

Texas State University (4)

DEPARTMENT OF MATHEMATICS
Akbuga, Enes, Motivation intervention through science and engineering integrated calculus tasks
Cheshire, Daniel, On the axiomatic formalization of mathematical understanding: Continuous functions in the transition to topology
Hurdle, Zachariah, Aspects that arise in the transition from the Montessori method to a traditional method: Fourth grade mathematics view
Lindsey, Joni, Evolving mathematical identity in post-secondary students

Texas Tech University (16)

DEPARTMENT OF MATHEMATICS AND STATISTICS
Acharya, Gangadhar, A study of university mathematics outreach programs—findings and implications
Bandara, Dhanamalee, A neighborhood hypothesis test for high dimensional object data analysis
Calandrini, Sara, Fluid-structure interaction simulations for medical applications
Capodaglio, Giacomo, Multigrid methods for finite element applications with arbitrary-level hanging node configurations
De Silva, Mihiri, Continuous-time models of plankton interactions and a discrete system of Larch Budmoth population
Huff, Krystin, Modeling the early states of within-host viral infection and clinical progression of hantavirus pulmonary syndrome
Jayawardhana, Rangana, Iterative learning control for discrete-time MIMO systems and applications in cooperative learning control
Karunarathna, Sanjeewa, Customized contact lens design for regular and irregular vision defects
Mayer, Joshua, Modeling drug sensitivity: Variable selection, inference and prediction
Premaratna, Iresha, Classification of protein binding ligands using their structural dispersion
Rai, Shiva, Cardinality of pseudo-endpoints of chainable continua
Rush, Simon, Reconstruction of fluid flow using discrete data to determine wake location
Wally, Michelle, Integer representations of small groups and their cohomology
Wang, Hongwei, The action of Kauffman bracket skein algebra on the torus on skein module of 3-twist knot complement
Zhang, Wei, Analytic continuation of Laurent series to domains of minimal capacity
Zhang, Yang, An investigation of some public key exchange cryptosystems

University of North Texas (7)

DEPARTMENT OF MATHEMATICS
Allen, Cristian, An analysis of the homogeneity of countable products of subsets of real numbers
Kuhn, Nehemiah, Uniserial representations of Vec(R)
O’Dell, Connor, Non-resonant uniserial representations of Vec(R)
Puente, Philip, Crystallographic complex reflection groups and the Braid conjecture
Reid, James, Numerical values of the Hausdorff and packing measures for limit sets of iterated function systems
Yan, Yujie, A general approach to Buhmann credibility theory
Ziegler, Caleb, On factors of rank one subshifts

University of Texas at Arlington (15)

DEPARTMENT OF MATHEMATICS
Bolat, Emel, A study on the rotational B-family of equations
Campbell, Robert, Characterizing college algebra students’ mathematical problem solving
Cavaness, Andrew, Simple weight modules of the Lie algebra of vector fields on C^2
Choi, Si Ghi, Image reconstruction from incomplete radon data and generalized principal component analysis
Dong, Yinlin, Mathematical methods for vortex identification with applications on shock wave vortex ring interaction
Ercan, Ramazan, Scattering and inverse scattering on the line for a first-order system with energy-dependent potentials
Karaduman, Gul, Numerical solution of saddle point problems by projection method
Luo, Ting, A study on traveling wave solutions in the shallow-water-type systems
Ojeda Ruiz, Ivan, Normalized cut problems with generalized linear constraints
Seo, Sat byul, Evoked and spontaneous neurotransmitter releases for independent synaptic currents: Mathematical modeling and analysis
Smith, Hillary, Discrete time risk models with random premiums
Sun, Junwei, A study on the nonlocal shallow-water model arising from the full water waves with the Coriolis effect
Tang, Jie, Stability study on shear flow and vortices in a boundary layer transition
Tomlin, Derek, Projective geometry associated to some quadratic, regular algebras of global dimension four

Yang, Yong, High order DNS for vortex structure in late flow transition

University of Texas at Austin (26)

INSTITUTE FOR COMPUTATIONAL ENGINEERING AND SCIENCES
Crestel, Benjamin, Advanced techniques for multi-source, multi-parameter, and multi-physics inverse problems
Fuentes, Federico, Various applications of discontinuous Petrov–Galerkin (DPG) finite element methods
Gholaminejad, Amir, Fast algorithms for biophysically-constrained inverse problems in medical imaging
Hawkins, John, Investigations in integrative and molecular bioscience
Le, Ellen, Data-driven strategies for Bayesian inverse problems
Malhotra, Dhairya, Fast integral equation solver for variable coefficient elliptic PDEs in complex geometries
Nagaraj, Sriram, DPG methods for non-linear fiber optics
Tao, Zhen, Numerical analysis of multiphase flows in porous media on non-rectangular geometry
Zhu, Hongyu, Inverse problems for basal properties in a thermomechanically coupled ice sheet model

DEPARTMENT OF MATHEMATICS
Carson, Timothy, Pinched manifolds becoming dull
Chu, Michelle, Quantifying virtual properties of Bianchi groups
de Azvedo Sobre, Antonio Carlos, Three essays on dynamics on point processes and unimodular networks
Derryberry, Richard, Towards a self-dual geometric Langlands program
Duque Alvarez, Luis Felipe, The double obstacle problem and the two membranes problems
Fayvisovich, Roman, Martingale-generated control structures and a framework for dynamic programming principle
Guadagni, Roberta, Lagrangian torus fibrations for symplectic torid degenerations
Hunt, Joseph, Academic math mindset interventions in first year college calculus
Li, Zheng, Optimal investment with high-watermark fee in a multi-dimensional jump diffusion model
Magee, Timothy, GHK mirror symmetry, the Knotson–Tao hive cone, and Littlewood–Richardson coefficients
Mihailescu, Corinela, Stability and behavior of critical points in the capillary droplet problem
Miller, Allison, Metaball techniques in knot concordance
Neumayer, Robin, Stability and minimality in Sobolev and isoperimetric inequalities
Rezende de Macedo, Alessandro, Differential fppf descent obstructions
Yang, Yunan, Optimal transport for seismic inverse problems
Zakharevich, Valentin, K-theoretic computation of the Verlinde ring
Zhong, Yimin, Inverse problems in photoacoustic imaging: Analysis and computation

University of Texas at Dallas (12)
Department of Mathematical Sciences
Adjei, Francis Kwabenya, Inversion of the covering map for indefinite spin groups
Arenas-Navarro, Isnardo, Numerical simulations for turbulent drag reduction using liquid infused surfaces
Bilson-Darku, Francis, Study on parameter estimation via multistage sampling with applications
Chowdhury, Marzana, Prediction of individualized risk of contralateral breast cancer
Huang, Xin, Robust analysis of non-parametric space-time clustering
Kaderli, Jordan, An analytic solution to a coupled system of equations for modeling photoacoustic trace gas sensors and a full waveform inversion approach to microseismic source estimation
Kwame, Eyram, Dynamics of macroeconomic models with hysteresis operators
Perez-Nagera, Pedro, Numerical solutions for a class of singular neutral functional differential equations
Tian, Yahui, Nonparametric and robust methods for community detection in complex networks
Wang, Cheng, Extensions of semiparametric single index models
Wu, Hao-pin, Applications of degree theory to dynamical systems with symmetry (with special focus on computational aspects and algebraic challenges)
Wu, Jiayi, Wavelet analysis of big data contaminated by large noise in an FMRI study of neuroplasticity

UTAH
Brigham Young University (1)
Department of Mathematics
Zhao, Junyilang, Dynamics for a random differential equation: Invariant manifolds, foliations, and smooth conjugacy between center manifolds

University of Utah (13)
Department of Mathematics
Brooks, Heather, Dynamics and structure: From microtubule networks to population networks
Bydlon, Andrew, Counterexamples of Bertini theorems for test ideals
Carapezza, Leonard, Minimal sequences in finite graphs and unique equilibrium states for some βx shifts
Carroll, Samuel, Spatiotemporal dynamics of orientation-selective neural populations in the visual cortex
Gupta, Radek, Relative currents and loxodromic elements in the relative free factor complex
Lau, Chung Ching, On positive properties of algebraic subvarieties
Levien, Ethan, Noise propagation in biochemical reaction networks
Ma, Jie, Stochastic modeling of random drug taking processes and the use of singular perturbation methods in pharmacokinetics
Miles, Christopher, A hop, switch, and jump: Stochasticity in models of motor-mediated intracellular transport
Miller, Anna, Mathematical modeling of epithelial cell division: Evaluating the effects of human papillomavirus infection
Romanov, Anna, A Kazhdan-Lusztig algorithm for Whittaker modules
Samson, Christian, Multiscale models of sea ice phenomena
Wigglesworth, Derrick, CT’s and the geometry of Out(Fn)

Utah State University (7)
Department of Mathematics and Statistics
Dai, Xiaotian, Novel statistical models for quantitative shape-gene association selection
Furtak-Cole, Eden, Three environmental fluid dynamics papers
Jordan, Scott, Modeling the spread of alfalfa stem nematode: Insights into their dynamics and control
Li, Chunyaoy, Extracting and visualizing data from mobile and static eye trackers in R and Matlab
Quach, Anna, Extensions and improvements to random forests for classification
Schwartz, Sarah, Exact approaches for bias detection and avoidance with small, sparse, or correlated categorical data
Scott, Marcus, A series of papers on detecting examinees who used a flawed answer key

VERMONT
University of Vermont (1)
Department of Mathematics and Statistics
Morse, Ada, Networks, (K)nots, nucleotides, and nanostructures

VIRGINIA
George Mason University (6)
Department of Mathematical Sciences
Jensen, Alathea, Self-polar polytopes and sequential importance sampling algorithms
Revy, Shaun, Unions of Reisz bases of exponentials for bandlimited signals
Torreslon, Diego, Generalized master equations for continuous time random walks and their application to modeling coarsening

Department of Statistics
Du, Chengan, Networks analysis with nodal covariates
Marchese, Scott, Semiparametric regression models for mixed-type data analysis
Yin, Lixuan, Semiparametric transformation models with applications to diagnostic biomarker data and clinical trials

Old Dominion University (2)
Department of Mathematics and Statistics
Timalsina, Asim, A partitioned approach for computing fluid-structure interactions with application to tumor modeling and simulation
Working, Amanda, Methods for analyzing attribute-level best-worst discrete choice experiments

University of Virginia (12)
Department of Mathematics
Berman, John, Categorified algebra and equivariant homotopy theory
Courtney, Kristin, C*-algebras and their finite-dimensional representations
Gates, Zachary, Finite presentability of groups acting on locally finite twin buildings
Mak, Kin Hei, Constraints on basic classes of Lefschetz fibrations
Osborne, Christina, Decomposing the classifying diagram in terms of classifying spaces of groups
Rebelo Grito Pires, Eloisa, Symbolic powers and the containment problem
Reeks, Michael, The trace and center of the twisted Heisenberg category
Shalotenko, Veronika, In search of bounds on the dimension of ext between irreducible modules for finite groups of Lie type
Simone, Jonathan, Cut-and-paste operations and exotic 4-manifolds
Wan, Xiang, Global well-posedness and exponential stability for a nonlinear thermoelastic Kirchhoff-Love plate system
Virginia Commonwealth University (5)

Department of Biostatistics

Kang, Jian, Estimating the respiratory lung motion model using tensor decomposition on displacement vector field

Lehman, Rebecca, The generalized monotone incremental forward stagewise method for modeling longitudinal, clustered, and overdispersed count data: Application predicting nuclear bud and micronuclei frequencies

Virginia Polytechnic Institute and State University (15)

Department of Mathematics

Grant, Holly, A viscoelastic constitutive model for thixotropic yield stress fluids: Asymptotic and numerical studies of extension

Grimm, Alexander, Parametric dynamical systems: Transient analysis and data driven modeling

Kromets, Justin, A Bayesian approach to estimating background flows from a passive scalar

Krueger, Justin, Parameter estimation methods for ordinary differential equation models with applications to microbiology

Marx, Gregory, Noncommutative kernels

Nikin-Beers, Ryan, Immunoepidemiological modeling of Dengue viral infection

Sariaydin, Selim, Randomization for efficient nonlinear parametric inversion

Swirydowicz, Katarzyna, Strategies for recycling Krylov subspace methods and bilinear form estimation

Virginia Commonwealth University, Medical Center (2)

Department of Biostatistics

Piri, Sepehr, Parametric, nonparametric and semiparametric approaches in profile monitoring of Poisson data

Saleck Pay, Babek, Decomposition algorithms in stochastic integer programming: Applications and computations

Salmani-Jajaei, Ghasemali, Decomposition algorithms for ordinary differential equations: Transient analysis and data driven modeling

Sorrell, Toni, Tuning optimization software parameters for mixed integer programming problems

Withrow, Camron, The moment graph for Bott–Samelson varieties and applications to quantum cohomology

Department of Statistics

Chu, Shuyu, Change detection and analysis of data with heterogeneous structures

Crandell, Ian, Semi-supervised anomaly detection and heterogeneous covariance estimation for Gaussian processes

Gao, Zhenguo, Variance change point detection under a smoothly-changing mean trend with application to liver procurement

Guan, Ting, Novel statistical methods for multiple-variant genetic association studies with related individuals

Zhang, Lin, Semiparametric Bayesian kernel survival model for highly correlated high-dimensional data

Zhao, Meng, Analysis and evaluation of social network anomaly detection

WASHINGTON

University of Washington (22)

Department of Applied Mathematics

Buvoli, Tommaso, Polynomial-based methods for time-integration

Harris, Cameron, The brain is a mess: Inference, random graphs, and biophysics to disentangle neuronal networks

Price, Jacob, Multiscale techniques for nonlinear dynamical systems: Applications and theory

Wang, Yue, Some problems in stochastic dynamics and statistical analysis of single cell biology of cancer

Ye, Xiaofeng, Stochastic dynamics: Markov chains, random transformations and applications

Department of Biostatistics

Haris, Asad, Toward more flexible models in high dimension

Marsh, Tracey, Distribution-free approaches to assessing the potential clinical impact of biomarkers

Shi, Xu, Multivariate inference and surveillance using population scale data

Zhuang, Yingying, Evaluation of treatment effect modification by post-randomization biomarker-defined principal strata with application to vaccine efficacy trials

Department of Mathematics

Bragg, Daniel, Twistor spaces for super-singular K3 surfaces

Cameron, James, On the Duflot filtration in equivariant cohomology

DeVleming, Kristin, Compact moduli of surfaces in three-dimensional projective space

Iyer, Karthik, Inverse problems for linear and non-linear elliptic equations

Palacios, Benjamin, The inverse problem of thermoacoustic tomography in attenuating media

Roy, Scott, Algorithms for convex optimization with applications to data science

Scholl, Travis, Abelian varieties with small isogeny classes and applications to cryptography

Zheng, Haifan, On the $g_2$-number of various classes of spheres and manifolds

Department of Mathematics

He, Yanjun, Coevolution regression and composite likelihood estimation for social networks

Lin, Lina, Methods for estimation and inference for high-dimensional models

Wan, Yali, Topics in graph clustering

Wang, Yu-Hsuan, Linear structural equation models with non-Gaussian errors: Estimation and discovery

Weiss, Luca, Parameter identification and assessment of independence in multivariate statistical modeling

Washington State University (5)

Department of Mathematics and Statistics

Higgins, Abigail, Examining student agency in an active-learning business calculus class

Hu, Yunfeng, Median shapes

Kasisu, Michael, Eventual cone invariance

Noorazar, Hossein, An energy-based interaction model for population opinion dynamics with topic coupling

Torres, Patrick, Stability analysis, convex hulls of matrix powers and their relations to p-matrices

WEST VIRGINIA

West Virginia University (9)

Department of Mathematics

Cheng, Jian, Integer flows and circuit covers of graphs and signed graphs

Elkharra, Farida, Existence of global solutions for nonlinear magnetohydrodynamics with finite Larmor radius correction

Ghaderi, Shadisadat, On the matroid intersection conjecture

Han, Miaomiao, Graph coloring problems and group connectivity

Li, Jiaao, Group connectivity and modulo orientations of graphs

Mohamed, Fatma, On some parabolic type problems from thin film theory and chemical reaction-diffusion networks
Short, Christopher, Reducing spatial stochastic models of membrane receptors to approximately equivalent chemical reaction networks through coarse graining
Solomon, Daniel, A new compactification for celestial mechanics
Xu, Murong, A study on graph coloring and digraph connectivity

WISCONSIN

Marquette University (4)

Department of Mathematics, Statistics and Computer Science
Ahsan, Golam Mushih Tanimul, Motivational and intervention systems and monitoring with mHealth tools
Rizzo, Benjamin, Compressed sensing for few-view multi-pinhole SPECT with applications to preclinical imaging
Rutarindwa, Regis, Computational strategies in uncertainty quantification for hazard mapping
Savena, Piyush, Feature space augmentation: Improving prediction accuracy of classical problems in cognitive science and computer vision

Medical College of Wisconsin (1)

Division of Biostatistics
Sahr, Natasha, Variable screening and selection for survival and competing risks data with grouped covariates

University of Wisconsin, Madison (23)

Department of Mathematics
Biswas, Chandan, Sharp inequalities in harmonic analysis
Brunner, James, Polynomial dynamical systems and interaction networks
Charles, Zachary, Algebraic and geometric structure in machine learning and optimization algorithms
Cheng, Jingrui, Some study on semi-geostrophic equations and related models
Han, Jhyuan, Deformation theory of asymptotically locally Euclidean Kähler surfaces
Johnston, Reese, Computability in uncountable binary trees
Kim, Jongchon, Endpoint estimates for multiplier transformations
Lim, Tau Shean, Propagation of reactions in Lévy diffusion
Liu, Liu, Uncertainty quantification for multi-scale kinetic equations and quantum dynamics
Makuluni, Tamvana, Complexity classifications in model theory and computable structures
McCarthy, Ethan, Some results and applications of computability theory
Mitchell, Will, Analysis and computation of sedimentation and erosion in viscous flow
Ramos, Eric, Homological invariants of FI-modules and FLc-modules
Shu, Ruiven, Uncertainty quantification and sensitivity analysis for multiscale kinetic equations with random inputs
Xi, Haokai, Anisotropic local law and its application in random matrix theory
Yang, Yang, Some problems related to the equitable presentation for the quantum algebra
Ye, Dongxi, Modular forms, Borcherds lifts and Gross–Zagier type CM value formulas
Yu, Peng, CM values of Green functions associated to special cycles on Shimura varieties with applications to Siegel 3-fold case

Department of Statistics
Li, Xiaomao, Optimal recommendation of individual dose intervals
Nguyen, Duy, Statistical methods for differential analysis of Hi-C and ChIP-Seq Data
Song, Xinyu, Volatility analysis with unified discrete and continuous time models by combining low-frequency, high-frequency and option data
Xie, Bingyin, Nonparametric estimation of conditional expectation with auxiliary information and dimension reduction
Zhang, Ying, Efficient treatment effect estimation with dimension reduction

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