Doctoral Degrees Conferred

2001–2002

ALABAMA

Auburn University (4)

DISCRETE AND STATISTICAL SCIENCES

Leach, Charles David, Hamilton decompositions of multipartite graphs.

Walsh, Matthew Phillip, A problem of network stability.

MATHEMATICS

Baggett, Donald, Short path problems in coverings and tilings.

Hill, William C., On G-invariant norms, an extension of a result of Berezin-Gel Faud via nonsmooth analysis and applications.

University of Alabama, Birmingham (4)

MATHEMATICS

Peacock, Robert, A local Borg-Marchenko theorem for complex potentials.

Sakata, Mayumi, Generalized eigenfunction expansions.


University of Alabama, Tuscaloosa (4)

MATHEMATICS

Hannoun, Noureddine, A benchmark solution for phase change with convection.

Harrison, Randall, Restricted Lie super-algebras and their universal enveloping algebras.

Monk, Barry J., A proposed theory of fuzzy random variables.

Xie, Chunping, QF spaces and their properties.

ARIZONA

University of Arizona (5)

APPLIED MATHEMATICS

Coombs, Daniel, Dynamics of travelling helicity fronts in bacterial flagella.

Gallas, Brandon, Signal detection in lumpy backgrounds.


MATHEMATICS

Agrotis, Maria Andrea, Pure and applied reflections on the reduced Maxwell-Bloch system.


CALIFORNIA

California Institute of Technology (6)

APPLIED AND COMPUTATIONAL MATHEMATICS

Craciun, Bogdan, Phase boundary propagation in heterogeneous media.

Petrasek, Danny, Diffusion mediated regulation of endocrine networks.

CONTROL AND DYNAMICAL SYSTEMS

Chang, Dong-Eui, Controlled Lagrangian and Hamiltonian systems.

Fax, Alex Joseph, Optimal and cooperative control of vehicle formations.

Murphy, Todd, Control of multiple model systems.

Claremont Graduate University (3)

BIOSTATISTICS

Henneman, Tanya, Estimating causal parameters in marginal structural models.

MATHEMATICS

Amin, Scott, Associated and attached primes over noncommutative rings.

Calef, Brandoch, Optimal sampling of the discrete Fourier transform.

Calegari, Francesco, Ramification and semistable Abelian varieties.

Cameron, Christopher D., A comparative analysis of methods for sampling stationary stochastic processes.

desJardins, David L., Precise coding with noiseless feedback.

Eiga, Tolga, Symplectic forms on product four-manifolds.

Goldberg, Michael J., Perturbation of the nonlinear Schrodinger equation from a linear perspective; vector-valued singular integrals from a scalar perspective.

Hadfield, Thomas Daniel, Fredholm modules over certain group C*-algebras.


The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 2001, to June 30, 2002) reported in the 2002 Annual Survey of the Mathematical Sciences by 217 departments in 149 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. A supplementary list, containing names received since compilation of this list, will appear in a summer 2003 issue of the Notices.
Israel, Joseph S., Amalgamation and unimodality.

Kempe, Julia, Universal noiseless quantum computation: Mathematical theory and applications.

Koev, Plamen, Accurate and efficient computations with structured matrices.

Lippel, David Andrew, Finitely axiomatizable omega-categorical theories.

Markiewicz, Daniel W., Completely positive semigroups and their product systems.

Matusevich, Laura F., Interpolation problems in local Dirichlet spaces.

Rado, Olga, Some invariants of Poisson manifolds.

Reznikoff, Sarah A., Representations of the Temperley-Lieb planar algebra.

Serra, Antonio M., Combinatorial aspects of hypergeometric functions.

Szczesny, Matthew M., Some invariants of Poisson algebras.

Whitlow, Darryl, Multivariate survival trees.

University of California, Los Angeles (10)

MATHEMATICS

Aslam, Shaqiuja, Robust testing procedures based on s-estimate for the dispersion parameter of univariate and multivariate normal distribution and for the two-way mixed effect models.

Facner, Matthew, Nonparametric surface estimation for quantitive bioassay, survival data, and location of extrema.

Su, Chun-Lung, Asymptotic posterior approximation with applications to generalized linear mixed models.

Szczesny, Matthew M., Some invariants of Poisson algebras.

University of California, Riverside (5)

MATHEMATICS

Oseledets, Cyrill, Root direct limits of Lie superalgebras.

Statistics

Chou, Daphne, Nonparametric estimation of the generating function of the intensity function process of a doubly stochastic Poisson process.


Day, Steven, Estimators of long-term transition probabilities of multistate stochastic processes.

Lehr, Mark, Wavelet spectral density estimation of continuous-time stationary processes under random sampling.

University of California, San Diego (9)

MATHEMATICS

Bell, Jason Pierre, Affine rings of low GK dimension.

Dowla, Arif, Local block bootstrap based inference for nonstationary time series.

Ellis, Robert Brian, Chip-firing games with Dirichlet eigenvalues and discrete Green’s functions.

Gromoll, Hans Christian, Diffusion approximation for a processor sharing queue in heavy traffic.

Kowalski, R. Travis, Formal equivalences between real-analytic hypersurfaces.

Marcia, Roummel, Primal-dual interior-point methods for large scale optimization.

Martin, Jeremy L., Graph varieties.

Mohanty, Yana Z., Hyperbolic polyhedra: Volume and scissors congruence.

Raphael, Benjamin J., Chip-firing games.

University of California, Santa Barbara (10)

MATHEMATICS

Alexander, Peter, Math and social justice: A capstone course for undergraduates.

Collins, Giemus, The Orr-Sommerfeld equation: Classical and modern techniques.

Gleason, Jim, Subnormal and Fredholm tuples of operators.

Horton, Karen, Prime spectra of iterated skew polynomial rings of quantized coordinate type.

Hou, Songming, Solutions of multidimensional hyperbolic systems of conservation laws by discontinuous Galerkin methods and a derivation of the Moore-Greitzer equation using homogenization.
Maher, Joseph, Period three actions on the three sphere.
Svendsen, Anne Louise, Commuting squares and automorphisms of subfactors.

Statistics and Applied Probability
Hsü, Chih-wen, Bayesian estimation of a covariance matrix and its application to mixed effects models.
Yang, Yuchieh, Detecting change-points and hormone pulses using partial spline models.
You, Hua Xin, Classification and feature extraction methods with application to image database retrieval.

University of Southern California (6)
Mathematics
Bourque, Guillaume, Algorithms for phylogenetic tree reconstruction based on genome rearrangements.
Chu, Wensong, Optical orthogonal codes and cyclic t-designs.
Hubbell, Earl, Some combinatorial problems concerning DNA arrays.
Linchenko, Vitaly, Some properties of Hopf algebras and H-module algebras.
Wu, Jing, Statistical inference for molecular data: man, motifs and microarrays.
Yaralov, Georgi, Some problems in statistics arising in signal and image processing.

COLORADO
Colorado State University (5)
Mathematics
Anderle, Markus, Resource allocating radial basis function dimension reduction networks.
Badran, Abdelhamid Elmoarsi, Identification of physical properties in geology, hydrology and ecology.
Cushman, Ann Louise, Cyclotomic coset association schemes.
Erdman, Melissa Claire, Cell exclusion algorithms.
Lu, Suihua, Network multiple frame assignment architectures.

University of Colorado, Boulder (4)
Applied Mathematics
Austin, Travis, Advances on a scaled least-squares method for the 3-D linear Boltzmann equation.
Carter, John, Stability and existence of traveling wave solutions of the two-dimensional nonlinear Schrödinger equation and its higher-order generalizations.
Horne, Rudy, Collision induced timing jitter and four-wave mixing in wavelength division multiplexing soliton systems.

University of Colorado, Denver (3)
Mathematics
Holder, LeAnn, Blocking sets of conics.
Wilson, John, Efficient solver for mixed and control-volume mixed finite element methods in three dimensions.

Preventive Medicine and Biometrics
Weitzelkamp, David, Heteroscedastic models for longitudinal data.

University of Northern Colorado (1)
Mathematical Sciences

CONNECTICUT
University of Connecticut (6)
Mathematics
Horak, Jiri, Traveling waves in a nonlinear suspended beam.
Molitierno, Jason, Coefficients of ergodic-type bounds for the algebraic connectivity of graphs.
Washington, Talitha, Mathematical model of proteins acting as on/off switches.

Statistics
Agarwal, Deepak, Bayesian spatial regression analysis with large datasets.
Chen, Zhen, On modeling discrete choice data.
Micheas, Athanasios, Statistical modeling and geometry of shapes.

Yale University (2)
Mathematics
Mucnik, Roman, Semigroup actions of $T^n$.
Retakh, Alexander, Associative conformal algebras and pseudoalgebras and their representations.

DELWARE
University of Delaware (4)
Mathematical Sciences
Holston, Scott, The direct method for multicriteria problems.
Mellinger, Keith, Mixed partitions and spreads of projective spaces.
Nojumi, Hassan, An extended model of asset price dynamics.
Ou, Miao-Jung, Direct and inverse acoustic scattering problems in a class of three-dimensional waveguide.

DISTRICT OF COLUMBIA
American University (6)
Mathematics and Statistics
Lotze, Conrad, Online mathematics and statistics tutoring: Effectiveness and implementation issues.
Ojeda Revah, Diana, Comparative study of stable parameter estimators and regression with stably distributed errors.
Rickert-Sharkey, Charlene, Secondary school students’ conceptions, factors behind achievement, and problem solving strategies with stochastic problems.
Schmidt, Lara, Estimation in the presence of fractionally integrated noise; An application to atomic time scales.
Wicker, Whiting, The impact of college students’ cultural and historical awareness on their perceived mathematics self-efficacy, motivation and achievement.

George Washington University (3)
Mathematics
Dimitrov, Rumen, Computably enumerable vector spaces, dependence relations and Turing degrees.
Hough, David, The genus of partitions and C-trees.
Wargon, Krzysztof, S-adic dynamical systems and Bratteli diagrams.

Howard University (5)
Mathematics
Ayine, Gabriel Bong-Baane, Topics in the differential geometry of supermanifolds.
Cameron, Naiomi Tuere, Random walks, trees and extensions of Riordan group techniques.
Matthews, Lynnell Sherri, Combinatorial interpretations of Hankel matrices and further combinatorial uses of Riordan group methods.
McLeod, Jillian Elizabeth, Notions of size in adequate partial semigroups.
Moche, Iris Gogu, The sizes of preimages of points under the natural map from $K(bN \times N)$ to $K(bN) \times K(bN)$.  

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FLORIDA

Florida Institute of Technology (3)

MATHEMATICAL SCIENCES
Clary, Scott, Building a better product despite competing objectives: A characteriza-
tion of product and process improvement techniques.
Hernandez, Jesus, On the Tikhonov regularization method for Fredholm integral
equations of the first kind with least squares solutions (in L and R).
Kim, Song Kyoo, On generalized stochastic reliability models with reserve and
super-reserve machines.

Florida State University (4)

MATHEMATICS
Pastouchenko, Nikolai, Noise from the fine scale turbulence of jets in forward flight, nonaxisymmetric jets and
installed jets.
Terzic, Balsa, Self-consistent models of triaxial elliptical galaxies with central cusps.

STATISTICS
Loizeaux, Marc, Bayesian inference for a spatial cluster model via perfect
sampling.
Whitten, Blake, Formulations of missing-data models and likelihood-based inference.

University of Florida (8)

MATHEMATICS
Bell, Gregory, Asymptotic dimension of groups.
Lataille, Jeffrey, The elementary divisors of incidence matrices between certain subspaces of a finite symplectic space.
Lokvancic, Mahir, Semigroup perturbations
of martingales.
Mocioaloa, Oana, Additive summable processes and their stochastic integral.
Sembatya, Vincent, Homeomorphisms of Knaster continua.

STATISTICS
Caffo, Brian, Candidate sampling schemes and some important applications.
Galin, Jones, Convergence rates and Monte Carlo standard errors for Markov chain Monte Carlo algorithms.
Jank, Wolfgang, Monte Carlo estimation methods in general hierarchical models.

University of Miami (1)

MATHEMATICS
Browdy, Steven, Topological censorship, the topology of black holes, and the end structure of space.

GEORGIA

Emory University (6)

BIOSTATISTICS
Hill, Elizabeth, General saddlepoint approximations to the null distributions of Moran’s I-type measures of spatial autocorrelation.

MATHEMATICS AND COMPUTER SCIENCE
Bailey, Dionne, Computational approaches to representation theorems for finitely generated real algebras.
Dementieva, Yulia, Equivalent conditions for hypergraph regularity.
Hunt, Jason, Forbidden triples in pancyclic graphs.
Peng, Yuejian, Counting small cliques in the 3-uniform hypergraph.

Georgia Institute of Technology (5)

MATHEMATICS
Burer, Samuel, New algorithmic approaches for semidefinite programming with applications to combinatorial optimization.
Martin, Russell, Paths, sampling and Markov chain decompositions.
Murali, Shobhana, Curvature, isoperimetry, and discrete spin systems.
Sitton, David, Generating random absolutely continuous distributions.
Stoyanov, Tsvetan, Isoperimetric and related constants for graphs and Markov chains.

University of Georgia (3)

STATISTICS
Shao, Qin, Inference for a class of periodic time series models and their applications.
Smith, David, Bayesian and minimum Hellinger distance approaches to inference with applications.
Wei, Xin Yu, Performance of sequential sampling schemes for some independent
and dependent models.

ILLINOIS

Illinois State University (3)

MATHEMATICS
Fuller, Roberta, Assessing change in the beliefs, knowledge, and practices of an experienced elementary mathematics teacher.
Jaberg, Patricia, Elementary preservice teachers exploring teaching mathematics for understanding via action research.

University of Chicago (5)

MATHEMATICS
Ahlin, Ashley Reiter, The large scale geometry of nilpotent-by-cyclic group.
Degtni, Christopher, Positive orthogonal sets for SP(4).
Wilson, Lawrence, Powerful groups of prime power order.

Northern Illinois University (5)

MATHEMATICAL SCIENCES
Al Rawwash, Mohammed, Gaussian estimation and modelling covariance in longitudinal data analysis.
Benbourane, Djamel, Value distribution for solutions of complex differential equations on the unit disk.
Sarkissian, Danill, Theory and computations of partial eigenvalue and eigenstructure assignment problems in matrix second order and distributed parameter systems.
Sriraman, Bharath, Mathematical creativity: A qualitative study of 9th grade student’s generalization processes.
Xu, Bangteng, Blocks with Abelian defect groups.

Northwestern University (7)

ENGINEERING SCIENCE AND APPLIED MATHEMATICS
Moore, Richard, A study of optical devices with parametric gain.

MATHEMATICS
Burslem, Elizabeth, Centralizers of partially hyperbolic diffeomorphisms.
Che, Charles, Quasi-periodic Lagrangian systems on the annulus.
Meleshuk, Vadim, Embedding templates in flows.
Pevtsova, Julia, Infinite-dimensional modules for infinitesimal group schemes.
Williams, Alan, Asymptotic stability of nonsymmetric neural networks by sink symmetrization.

Southern Illinois University, Carbondale (1)

MATHEMATICS
Wang, Jiantian, Estimation of quality adjusted survival functions and mean lifetime medical cost.

Matthews, Lou Edward, Babies overboard: Complexities and challenges of incorporating culturally relevant teaching into mathematics instruction.
INDIANA

Indiana University, Bloomington (6)

MATHEMATICS

Cabral, Marco, Numerical and analytical study of attractors for some Navier-Stokes related equations.
Crowley, Diarmuid, The classification of highly connected manifolds in dimensions 7 and 15.
Hill, Ellen, A Ginzburg-Landau model for Josephson junctions in a ring.
Lee, Ha-Young, The classical limit of the relativistic Vlasov-Maxwell system in two space dimensions.

Indiana University-Purdue University (1)

MATHEMATICAL SCIENCES

Mukhin, Dmitry, Properness and von-Neumann-Morgenstern utility functions.

Purdue University (15)

MATHEMATICS

Ghosh, Yashowanto, Limit theorems for non-negative integer-valued random walks with non-localized reflection.
Kotzev, Boris, Vanishing of the first Dolbeault cohomology group of line bundles on complete intersections in infinite-dimensional projective space.
Long, Xiang, Variance reduction for numerical solutions of stochastic differential equations.
Sun, Xiaodong, Ruin probabilities for general insurance models.

IOWA

Iowa State University (12)

MATHEMATICS

Becker, Joy, Computational complexity of digraph decomposition and the congruence extension property of algebras.
Choi, Ji Young, Multi-restricted numbers and powers of permutation representation.
Chrysafinos, Konstantinos, Analysis and finite element approximation of parabolic saddle-point problems and applications to optimal control.
Ja, Lili, Probabilistic and parallel algorithms for centroid Voronoi tessellations with application to meshless computing and numerical analysis on surfaces.
Lee, Jeeyeon, Optimization-based domain decomposition methods for multidisciplinary simulation.
Vojtechovsky, Petr, Finite simple Moufang loops.

STATISTICS

Azvedo, Kari, Using factor source estimates in latent variable analysis.
Chan, Victor, Degradation-based reliability in outdoor environments.
Fernandez, Soledad, An algorithm to sample genotypes in complex pedigrees.
Liu, Xiao-Hu, Kernel smoothing for spatially correlated data.
Ryan, Kenneth, Engineering application of Bayesian statistical methods.

SinhaRay, Sandip, Bayesian factors for variance component testing in generalized linear mixed models.

University of Iowa (17)

Applied Mathematical and Computational

Chen, Wei, Pricing fixed income securities with a class of Markov regime switching processes.

Daescu, Dacian, Theoretical and practical aspects of data assimilation for air pollution models.

Forman, Sean, Torsion angle selection and emergent non-local secondary structure in protein structure prediction.

Hong, Li, Nonlinear algorithms for image resolution enhancement and image compression.

Biostatistics

Dehkordi-Vakil, Farideh, A Bayesian method for estimating smooth monotone functions.

Kolluri, Sheela, A model for longitudinal Poisson count data with informative dropout.

Saha, Chandan, Quantifying the asymptotic bias in the linear mixed-effects model under informative dropout, drop-in and other missing data patterns.

Smith, Brian, A Bayesian framework for analyzing exposure data from the Iowa radon lung cancer study.

Mathematics

Beaugris, Louis, A construction of the generators of cyclic codes over \( Z_m \) and related results.

Li, Wei, Degenerated equations with diffusion and convection effects.

Smith, Eric, Weakly prime ideals.

Viola, Maria Grazia, Non-outer conjugate \( Z_3 \)-actions on a free group factor.

Yugang, Xiao, On \( S \)-automata where the lattice of right congruences on \( S \) is semiatomic.

Statistics and Actuarial Science

Bogman, Matthew A., Bayesian estimation of a potential function in a pairwise interacting point process.

Kuo, Hsuan-chih Sean, Estimation of survival functions and multinomial parameters under order constraints.

Lee, Hangsuck, Pricing exotic options with application to equity-indexed annuities.

Logue, Mark W., Complications of an unknown genetic model in the presence of heterogeneity for linkage analysis.

Kansas State University (4)

Mathematics

Narayanan, Bharath, Representations of quantized function algebras of Kac-Moody algebras.

O’Brien, Timothy, A skein-theoretic construction of invariants of 3-manifolds associated to the quantum group \( U_{Q}(G) \).

Schroeder, W. Christopher, Cyclic coverings of regular affine maps.

Statistics

Zhang, Ying, Parameter estimation in continuous and discrete-time queueing models.

University of Kansas (3)

Mathematics

Bényi, Árpád, Bilinear singular integrals and pseudodifferential operators.

Cliperca, Catalin, Generalized Hilbert coefficients and the \( S_2 \)-fication of a Rees algebra.

West, Eric, Primes associated to multigraded modules.

Wichita State University (6)

Mathematics and Statistics

Bsharat, Mohammad, On the existence of balanced arrays with two symbols.

Hervas, David, An inverse boundary value problem for a quasilinear elliptic differential equation.

Kim, Tae-Eun, Capillary surface interfaces in annular domains.

Lorenzo-Gonzalez, Edgardo, Statistical inference about some restricted classes of life distributions.

Valdivia, Nicolas, Inverse problems in scattering theory and acoustics.

Zeng, Hong-Biao, Convergence of spectra of mesoscopic system collapsing onto a graph.

Kentucky

University of Kentucky (7)

Mathematics

Davis, Anna, A relative version of the finiteness obstruction theory of Wall.

Morgan, Christopher, On univalent harmonic mappings.

Sills, Andrew, Computer assisted explorations of Rogers-Ramanujan type identities.

Sullivan, Sharon, Examples of combinatorial designs.

Statistics

Chen, Kun, Censored empirical likelihood ratio and its computation.

Díaz, Francisco, A semiparametric model to investigate growth trend of certain stochastic processes.

Pavlov, Dmitri, Identifying special disease clusters in nonhomogeneous populations.

Louisiana

Louisiana State University, Baton Rouge (5)

Mathematics

Flory, Simone, On the stabilization and regularization of rational approximation schemes for semigroups.

Guneri, Cem, Artin-Schreier families and \( 2-D \) cyclic codes.

Luttamaguzi, Jamiiyu, A monotone follower control problem with a nonconvex functional and some related problems.

Somodi, Marius, Bounding the wild set (counting the minimum number of wild primes in Hilbert symbol equivalent number fields).

Walker, Uroyoan, On \( k \)-conjugacy classes of maximal tori in semisimple algebraic groups.

Louisiana Tech University (2)

Mathematics and Statistics

Chen, Qing, Modeling and experimental verification of growth of an axisymmetric cylindrical rod by three dimensional laser induced chemical vapor deposition.

Pokorný, Kian, Fuzzy product-limit estimators: Soft computing in the presence of very small and highly censored data sets.

Tulane University (3)

Biostatistics and Epidemiology

Khader, Yousef, Factors associated with gingivitis and periodontitis in a dental teaching clinic population in northern Jordan.

Mathematics

Liu, Hong, Goodness-of-fit tests for accelerated life models with right censored data.

Macías-Díaz, Jorge, Generalizations of the Pontryagin-Hill theorems to projective modules.

University of Louisiana at Lafayette (5)

Mathematics

Arayzam, Alvard, Inferences on the reliability of a series system.
Munoz, Humberto, Interval slopes and twin slope arithmetic in nonsmooth optimization.

Jones, Julie, Protopological groups and other generalizations of topological groups.

Tian, Haiyan, Single-point blow-up of solutions for degenerate nonlinear parabolic problems.

Thomson, Jessica, Inferential procedures for some discrete distributions.

**MARYLAND**

**Johns Hopkins University** (10)

**BIOSTATISTICS**

Fan, Ming-Yu, Measures of relative importance and related statistics.

Huang, Chiung-Yu, Multipoint linkage, disequilibrium mapping approaches based on the case-parent trio design.

Huang, Chiung-Yu, Modeling and estimation for recurrent event data with dependent censoring.

Lu, Shou-En, Marginal analysis and cohort case-control design for clustered failure time data.

Travison, Thomas, Global effects estimation for multidimensional outcomes data.

**MATHEMATICAL SCIENCES**

Lim, Alvin, Transportation network design problems: An MPEC approach.

Tzitzouris, James, Numerical resolution of multi-rigid body systems with spatial Coulomb friction via NCP-based fully-implicit time-stepping methods.

**MATHEMATICS**

Harvey, Matthew, Adams operations in the topological K-theory of orbifolds.

Lee, Jung-Jo, Bounding ranks of elliptic curves.

Yang, Hemin, The hit problem for w(4) over F_2 by differential operator algebra.

**University of Maryland, Baltimore** (2)

**MATHEMATICS AND STATISTICS**

Dajani, Aref, Contributions to statistical inference for some fixed and random models.

Song, Yoon, The p and globally uniquely solvable properties in semidefinite linear complementarity problems.

**University of Maryland, College Park** (23)

**MATHEMATICS**

Ball, Karen, Entropy and sigma-algebra equivalence of random walks on random scenes.

Dolich, Alfred, On independence relations in model theory.

Ely, Wayne, Moment version of the Pompei problem on Heisenberg group.

Giacobbe, Andrea, Convexity of multivalued momentum maps and the Gel’fand-Cetlin system.

Jae-Hong, Pyo, The Gauge-Uzawa and related projection finite element method for the Navier-Stokes equations.

Jang, Jeong-Hwan, Geometrical properties of curves and surfaces on the boundary of two-dimensional complex hyperbolic space.

Janjic, Tijana, Error due to unresolved scales in estimation problems for atmospheric data assimilation.

Kofman, Ilya, Vassiliev invariants of knots and links in S^3 and other 3-manifolds.

Konstantinidis, Ioannis, The characterization of multiscale generalized Riesz product measures.

Lee, Yong-Seok, HP estimates for multiplicity operators and their applications.

Liao, Xiaohai, Local a posteriori error estimates and adaptive control of pollution effects in the finite element method.

Lin, Chao-Hui, Semiconjugacy and Kaku-tani equivalence for dyadic endomorphism.

Mont, Linda, Convergence of dynamically defined upper surfaces.

Patil, Dhanurjay, Applications of chaotic dynamics to weather forecasting.

Shashoua, Yvonne, Algebras of basic logic: A classification and related decidability results.

Sumetkijakan, Songklat, A fractal set constructed from a class of wavelet sets.

Trappe, Wade, Multi-user security: A signal processing and networking perspective.

Triplett, Lawrence, Finite group actions on complex hyperbolic spaces.

Vas, Lia, Torsion theories for group von Neumann algebras.

Vertgeim, Lev, Integral geometry of tensor fields and matrices.

Wagner, Bernard, The symplectic geometry of arc-length parametrized loops in hyperbolic space.

Wu, Rongwen, Applications of Monte Carlo simulation in derivative securities pricing.

Zavorin, Ilya, Analysis of GMRES convergence by spectral factorization of the Krylov matrix.

**MASSACHUSETTS**

**Boston University** (8)

**MATHEMATICS AND STATISTICS**

Dukes, Kimberly, Factor analysis: The effects of distribution type, number of factors, factor loadings, number of variables per factor and sample size.

Fortuna, Natercia, Local and global rank tests with applications to demand systems.

Khan, Amina, Comparison of tests of homogeneity in R×C contingency tables with small sample sizes.

Lee, Jennifer, Influence of floor effects on the area under the receiver operating characteristic curve.

Morales, Carlos, Wavelet-based multifractal spectra estimation: Statistical aspects and applications.

Moreno-Rocha, Monica, Indecomposable subsets of the Julia set for unstable exponentials.

Nicolaou, Michael, Comparison of study designs and model-free methods of linkage analysis for a qualitative trait using sib pairs.

Pipiras, Vladas, Stable self-similar processes with stationary increments.

**Brandeis University** (5)

**MATHEMATICS**

Berger, Laurent, Limits of absolutely crystalline representations.

Milishnikov, Kirill, Maximum adjusted density estimator for structural equation models.

Teixeira, Pedro, p-fractals and Hilbert-Kunz series.


Wang, Xiaowei, Canonical metrics and stability of vector bundles over a projective manifold.

**Harvard University** (22)

**BIOSTATISTICS**

Kammann, Erin, Geoadditives and robust mixed models.

Birmingham, Jolene, Methods for analyzing longitudinal and clustered binary responses.

Balasubramanian, Rajalakshmi, Estimation of a failure time distribution based on imperfect diagnostic tests, with application to HIV vertical transmission studies.

Ganguli, Bhaswati, Feature significance and geo-additive models.


Stephenson, Patricia, Noncompliance in randomized clinical trials and the potential benefit of early detection of ovarian cancer.

Su, Maxwell, Methods for the analysis of quality-of-life outcomes in clinical trials.

**ENGINEERING AND APPLIED SCIENCES**

Dimock, Allyn, Type and flow directed compilation for specialized data representations.
Liang, Xiangsan, Wavelet-based multiscale window transform and energy and vorticity analysis.
Ruml, Wheeler, Adaptive tree search.
Wang, Ce, Face detection and pose estimation for multimedia applications.

MATHEMATICS
Arinkin, Dmitro, Fourier transform for quantized completely integrable systems.
De Marco, Laura, Holomorphic families of rational maps: Dynamics, geometry, and potential theory.
Grushevsky, Samuel, Effective Schottky problem.
Libine, Matvei, A localization argument for character formula for reductive groups.
Liu, Chiu-Chu (Melissa), Moduli of J-holomorphic curves with Lagrangian boundary conditions.
Mantovan, Elena, On certain unitary group Shimura varieties.
Triplikovic, Mark, On μ-invariants of elliptic curves over Q.
Yang, Huan, Hecke algebra action on Siegel modular forms.

Massachusetts Institute of Technology (20)
MATHEMATICS
Bauer, Tilman, p-compact groups as framed manifolds.
Biss, Daniel, The homotopy type of the matroid Grassmannian.
Cao, Xiaodong, Ricci flow on 3-manifolds with symmetry.
Castrave, Ana-Maria, Rational families of vector bundles on curves.
Degeratu, Anda, Eta-invariants and Molien series for unimodular groups.
Dunagan, John, A geometric theory of outliers and perturbation.
He, Li, Modeling and prediction of sunspot cycles.
Holm, Tara, Equivariant cohomology, homogeneous spaces and graphs.
Joseph, Benjamin, The involution principle for h-positive symmetric functions.
Liu, Xiangwei, Spectrum of some regular graphs with widely spaced modifications.
McCarty, Kevin, Affine quantum algebra, Weyl groups and constructible functions.
Poulin, Francis, The instability of time-dependent jets.
Vetta, Adrian, Graph connectivity: Relaxations and algorithms.
Weatherwax, John, Mathematical modeling of shock induced martensitic phase transitions.
Wen, Tong, Support vector machine algorithms: Analysis and applications.
Yang, Xiaochun, Geometry of cone-beam reconstruction.
Yau, Donald, Localization genus of classifying spaces.
Zhang, Liezhao, Rigidity and invariance properties of certain geometric frameworks.
Zinger, Aleksey, Enumerative algebraic geometry via techniques of symplectic topology and analysis of local obstructions.

Northeastern University (1)
MATHEMATICS
Korobelnikova, Tatiana, Modeling of individual protein molecule dynamics.

Tufts University (1)
MATHEMATICS
Thomas, Christopher, Surface-realizable finite groups of outer automorphisms of finitely-generated free groups.

University of Massachusetts, Amherst (5)
MATHEMATICS AND STATISTICS
Auth, Matthew, Quaternionic Riemann-Roch theorem.
Chen, Zhiqiang, Stability of traveling waves for Hamilton-Jacobi equations and mesoscopic modeling for diffusion dynamics.
Li, Zhi, Undulating coherent structures in two-dimensional turbulence: A quasi-equilibrium approach.
Stein, Benjamin, Signal formulation, segmentation, and lesion volume estimation in magnetic resonance images.
Stovall, Idris, Numerical methods for Rayleigh-Bréard convection inside a Hele-Shaw cell.

University of Michigan, Ann Arbor (22)
BIOSTATISTICS
Cayetano, Shari, Nonparametric paired tests for censored survival data incorporating prognostic covariate information.
Douglas, Julie, Methods for resolving genotype and haplotype ambiguity in human genetic data.
Kacroti, Niko, Modeling nonignorable missing data for clustered longitudinal discrete outcomes: A Bayesian approach.
Lange, Ethan, Methods for mapping disease susceptibility genes using allele-shaving statistics.

Michigan State University (13)
MATHEMATICS
Celik, Canan, Solutions to a nonlinear heat equation with critical exponent.
Chae, Gab-Byung, Enumeration of general cubic graphs.
Ghezzi, Laura, The depth of blow-up rings of ideals.
Jabuka, Stanislav, Graffiti Seiberg-Witten monopoles.
Kim, Jintae, Infinitely many periodic solutions of nonlinear wave equations of 5th.
Kuennen, Eric, Three-dimensional rough surface growth: A radial continuum equation and a discrete off-lattice Eden cluster growth model.
Lee, Junho, Family Gromov-Witten invariants for Kähler surfaces.
Lim, Hyeona, Time discretization of transition layer dynamics in viscoelastic systems.
Minat, Aurelia, Mathematical analysis of Maxwell’s equation.
Siu, Wai Cheong, Hypertrees in d-uniform hypergraphs.
Sucovia, Dragos-Bogdan, New Riemannian and Kahlerian curvature invariants and strongly minimal submanifolds.

STATISTICS AND PROBABILITY
Polverejan, Elena, Regression models for analysis of medical costs.

Oakland University (1)
MATHEMATICS AND STATISTICS
Roy, Anuradha, Some contributions to discrimination and classification with repeated measures data with special emphasis on biomedical applications.

University of Michigan, Flint (13)
MATHEMATICS
Al-Halees, Hasan, Banach-Stone theorems for nice operators on Banach function modules.
Bollman, Mark, Some Diophantine equations involving Fibonacci numbers and consecutive factorials.
Egleston, Patricia, Nonnegative matrices with prescribed spectra.
Eugene, Nicholas, A class of generalized normal distributions: Properties, estimation, and applications.

Moenk, Sr. Jeanne, Subject matter preparation of pre-service elementary teachers in mathematics.
Li, Lang, Population pharmacokinetic models with time-dependent covariates.

Peng, Yuhong, Causal inference for discrete outcomes with missing values and non-compliance.

Tang, Gong, Pseudo likelihood selection models for nonrandomly missing data.

**Mathematics**

Blickle, Manuel, The intersection homology $D$-module in finite characteristics.

Correll, William, Jr., The Smith normal form and kernel of the Varchenko matrix.

Ehsani, Dariush, The solution of the $d$-bar Neumann problem on non-smooth model domains.

Eneescu, Florian, A study of $F$-rationality and $F$-injectivity.

Hagerty, Patrick, Radiation induced instability.

Howald, Jason, Calculations with multiplier ideals.

Koelling, Melinda, Dynamics of generalizations of the toda lattice.

Popa, Mihnea, Linear series on moduli space of vector bundles on curves.

Retert, Kimberly, Noncommutative curves in Grothendieck categories.

Schwider, Timothy, The classification of essential laminations in Dehn surgeries on the figure eight knot.

Sutton, Craig, A study of $F$-injectivity and $F$-rationality for the Smitten normal module.

**Statistics**

Gupta, Jayanti, Bayesian inference on symmetric groups.

Katskyy, Vadim, Modeling and inference for spatial processes with ordinal data.

Wang, Jing, Uniform bounds for the Smitten normal module.

**Wayne State University**

Ojino, Liu, $G'$ interpolation of mesh curves.

Wang, Bingwu, Sequential normal compactness with applications to optimization in infinite dimensions.

**Western Michigan University**

Atwood, Peter, Learning to construct proofs in a first course on mathematical proofs.


Smith, Paula, Local symmetries of symmetrical Cayley maps.

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Calderhead, Kyle, Variations on the slope problem.

Chang, Won Jao, Numerical schemes for Bellman's equations with free boundary.

Chen, Kuo-Chang, Variational methods and periodic solutions of $n$-body problems.

Dobrinin, Natasha, Generalized distributive laws, games and a problem of von Neumann concerning measurable Bodean algebras.

Dong, Yun, Topological combinatorics, Alexander duality and finite free resolutions.

Kang, Kyung Kun, On boundary regularity for the Stokes and Navier-Stokes equations.

Reading, Nathan, On the structure of Bruhat order.

Rios, Cristian, Operators with VMO coefficients and nondivergence harmonic measure.

Roh, Jiaok, On the long time dynamics of an equation of Navier-Stokes class.

Ursit, Cetin, Integral representations of $L$-functions and Siegel-Weil-Kudla-Rallis formulas.

Wang, Jing, Design of progressive lenses—mathematical analysis and numerical methods.

**Statistics**

Pardoe, Iain, A Bayesian approach to regression diagnostics.

**University of Minnesota, Twin Cities** (4)

**Biostatistics**

Han, Cong, Optimal designs for nonlinear regression models with applications to HIV dynamic studies.

Liu, Jianong, Characterizing modality of the posterior for hierarchical models.

Wang, Fujun, Generalized common spatial factor model.

Wang, Zengri, Metameters in nonlinear random effects and frailty.

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Li, Xiaochun, Uniform bounds for the bilinear Hilbert transforms.

Riviera-Noriega, Jorge, Some remarks on certain parabolic differential operators over non-cylindrical domains.

Shen, Shih-Chi (Jerry), The inequalities of martingales.

Shvidkoy, Roman, Operators and integrals in Banach spaces.

Terwilleger, Erin, Multidimensional time-frequency analysis.

**Statistics**

Chiu, Jing-er, Applications of Bayesian methods to arthritis research.

Lim, Hee-Jeong, Statistical analysis of interval-censored and truncated survival data.

Ren, Cuirong, Topics in Bayesian estimation: Frequentist risks and hierarchical models for time to pregnancy.

**University of Missouri, Rolla** (2)

**Mathematics and Statistics**

Atmaca, Murat, Applications of temporal logic to assembly and disassembly sequences.

Pasali, Sibel, The geometry of map equations for trochoids.

**Washington University** (7)

**Mathematics**

Ho, Kwok-Pun, Anisotropic function spaces.

Johnson, Brody, Wavelets: Generalized quasi-affine and oversampled affine frames.

Maggioni, Mauro, On the discretization of continuous wavelets and frames.

**Systems Science and Mathematics**

Dimarogonas, James, Model of the vertical vestibular-ocular reflex of the squirrel monkey.

Genc, Veysel M. I., Hopf bifurcation related coherent oscillations in electric power systems with a clustered texture.

Kim, Sang Hyun, Adaptations of constraint programming to aircraft scheduling problems.

Nenadic, Zoran, Signal processing computation and estimation in biological neural networks.

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Montana State University (2)

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Bardsley, Johnathan, Constrained optimization techniques for image reconstruction.

Dumonceaux-Hamilton, Doreen, Rotation sets of flows on higher dimensional tori.

**University of Montana** (3)

**Mathematical Sciences**


Lertskrai, Supawan, Asymptotic analysis of a fast reaction outside a solid sphere in a creeping flow.
Mathematics

Carbery, Emma, On the existence of minimal tori in $S^3$ of arbitrary spectral genus.

Chin, Chee Whye, Independence of $l$ and monodromy groups.

Geba, Dan, A local well-posedness result for the quasilinear wave equation in $\mathbb{R}^{2+1}$.

Ho, Alan, Optimal trading strategy for European options with transaction costs.

Ion, Bogdan, MacDonald polynomials, Demazure modules and positivity.

Johnson, Carl, Eulerian digraph immersion.

Miller, Steven, 1- and 2-level density for families of elliptic curves: Evidence for the underlying group symmetries.

Nicolaou, Andreea, Global regularity of the tangential Cauchy-Riemann operator on weakly pseudo-convex CR manifolds.

Rytchkov, Viatcheslav, Estimates for oscillatory integral operators.

Schenker, Jeffrey, Asymptotic theory of symmetry: Tests for a multivariate distribution.

Volkov, Darko, Some extreme problems and output stability.

Wang, Zhifeng, Mapping tori of outer automorphisms of free groups.

New Jersey Institute of Technology (5)

Mathematics

Adabaho, Raymond, The structure and stability of expanding and converging near-stoichiometric flames.

Antoniou, Eliana, A new theory of premixed flames in near-stoichiometric mixtures.

Kas-Danouche, Said, Nonlinear interfacial stability of core-annular film flows in the presence of surfactants.

Kunec, Stephen, Temporal synchronization of CA1 pyramidal cells by high-frequency, depressing inhibition, in the presence of intracellular noise.

Savettaseranee, Knograt, Instability of electrically driven viscous films.

Princeton University (16)

Applied and Computational Mathematics

Papavasiliou, Anastasia, Adaptive particle filters with applications.

Saleh Sabort, Manuel, Analysis of credit rating equality indexes: Volatility comparisons and option calibration.

Tehranchi, Michael, Applications of infinite dimensional stochastic analysis to problems in fixed income markets.

Yilmaz, Ozgur, Mathematical properties of coarse quantization schemes in signal analysis with new applications.

Rutgers University, Newark (1)

Mathematics and Computer Science

Wang, Zhiyong, Mapping tori of outer automorphisms of free groups.

NEW MEXICO

New Mexico State University (4)

Mathematical Sciences

Jarrah, Abdul, Generic Cohen-Macaulay monomial ideals.

Nagahashi, Hideo, A Sahlquist theorem for distributive modal logics.

Obeidat, Sofian, Wavelet techniques for the Navier-Stokes equations.

University of New Mexico (5)

Mathematics and Statistics

Panchenko, Dimity, Concentration inequalities in product spaces and applications to statistical learning theory.

Robidoux, Nicolas, Number solution of the steady diffusion equation with discontinuous coefficients.


Wolferton, Robert, Shear layer stability in a two dimensional geometry.

Yau, Canddy, Analysis of censored and incomplete data using flowgraph models.

NEW YORK

City University of New York, Graduate Center (6)

Mathematics

Apostolakis, Nikolaos, On moves between branched coverings of the three sphere.

Cebecioglu, Hulya, Homotopic residual correction algorithms for general and structured matrices.

Ianni, Jerry G., Computing normalizations using Newton polygons.

Lengyel, Florian, Recursion categories of co-algebras.

Saric, Dragomir, Complex earthquakes are holomorphic.

Zeinalian, Mahmoud, On some local combinatorial invariants of homology manifolds.

Columbia University (13)

Biostatistics

Lim, Hoi-jeong, Saddlepoint approximations to P-values for comparison of density estimates.

Ma, Guoqiang, Measuring local sensitivity to nonignorability.

Mitra, Nandita, Analyzing data from non-randomized studies using propensity score methodology.
Doctoral Degrees Conferred

Norton, Michele R., Repeated measures analysis of continuous data: An application to assess blood pressure variability buffering effects of cardiac autonomic control during psychological and orthostatic challenge.

Paykin, Andrea, Analyzing small samples of identically treated pairs of failure time observations.

Wu, Min, Adjusting for population admixture in multipoint linkage analysis with missing parental haplotypes.

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**Brendle, Tara,** The Torelli group and representations of mapping class groups.

**Clingher, Adrian,** Heterotic string data and theta functions.

**Hundley, Joseph,** Siegel zeros of Eisenstein series on $GL(N)$.

**Offen, Omer,** Relative spherical functions on $p$-adic symmetric spaces (three cases).

**Wu, Min,** Analyzing small samples of identically treated pairs of failure time observations.

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**Hundley, Joseph,** Siegel zeros of Eisenstein series on $GL(N)$.

**Offen, Omer,** Relative spherical functions on $p$-adic symmetric spaces (three cases).

**Wu, Min,** Adjusting for population admixture in multipoint linkage analysis with missing parental haplotypes.

**State University of New York, Buffalo** (3)

**Meng, Hongyan,** Stability computation for small symmetric cycles near equilibrium in reversible systems.

**Nichita, Contantin,** Numerical simulation of magneto-rheological suspensions using a continuum medium approach.

**Sirbu, Ioana,** A perturbation approach to the electron correlation cusp.

**State University of New York, Stony Brook** (19)

**Choi, Yunhee,** Extra-Poisson variation.

**Chu, King-Wai,** Optimal parallelization of simulated annealing by state mixing.

**Farías, Ricardo,** Efficient rendering of volumetric irregular grids data.

**Guo, Wei,** A parallelized point-shifted tetrahedral grid for the finite element method.

**Jin, Hyeonseong,** The incompressible limit of compressible multi-phase flow equations.

**LaForest, Marc,** A posteriori error estimate for front-tracking.

**Lee, Changkil,** In air traffic management.

**Mugno, Raymond,** Comparison of multiple objective adaptive designs.

**Otankitjaroen, Somsak,** Nonclassical shock waves in the WAG method for oil recovery.

**Plohr, JeEyon,** The linearized analysis of the Richtmyer-Meshkov instability for elastic materials.

**Xiang, Xinyu,** Sufficient strip encoding of triangle meshes.

**Zoldi, Cindy,** Shock-accelerated heavy gas cylinder.

**State University of New York, Binghamton** (7)

**Best, John David,** On 3/2-transitive groups.

**Forrester, Jeffrey,** Efficient estimation of the regression parameter in heteroscedastic regression model where heteroscedasticity is modeled as a function of the mean response.

**Mathematics**

**Paykin, Andrea,** Analyzing small samples of identically treated pairs of failure time observations.

**Wu, Min,** Adjusting for population admixture in multipoint linkage analysis with missing parental haplotypes.

**State University of New York, Albany** (5)

**Clark, Aaron,** Solvability of equations over torsion free groups.

**Kazas, Angeliki,** Generalized factorization in Hardy spaces.

**Mathematics and Statistics**

**Iasonos, Alexia,** A multivariate analysis based on frequency domain decomposition and Hilbert space projection in the presence of missing data.

**Lazaria-Bauer, Victoria,** New methods for propensity score adjustment to selection bias for WIC prenatal effects.

**Yang, Bao-Zhu,** Differentiability index and bias correction for measurement models.

**State University of New York, Stony Brook** (19)

**Best, John David,** On 3/2-transitive groups.

**Forrester, Jeffrey,** Efficient estimation of the regression parameter in heteroscedastic regression model where heteroscedasticity is modeled as a function of the mean response.

**Mathematics**

**Hang, Fengbo,** Topology of Sobolev mappings, Jacobians and Ginzburg-Landau type functions.

**Jiang, Shidong,** Fast evaluation of nonreflecting boundary conditions for the Schrodinger equation.

**Loulakis, Michail,** Einstein relation for a tagged particle in simple exclusion processes.

**Petrov, Tihomir,** Elliptic fibrations with fixed monodromy.

**Spire, Daniel,** Vortex motion laws for dynamic Ginzburg-Landau equations in two dimensions.

**State University of New York, Stony Brook** (5)

**Best, John David,** On 3/2-transitive groups.

**Forrester, Jeffrey,** Efficient estimation of the regression parameter in heteroscedastic regression model where heteroscedasticity is modeled as a function of the mean response.

**Mathematics**

**Haner, Matthew,** Random designs in factorial experiments for estimation and searching.

**Hooper, William,** Efficient estimation of transformation parameters in nonparametric regression.

**Peng, Xin Xiang,** Efficient estimation of linear functionals of a bivariate probability with equal marginals.

**Rosenthal, David,** Splitting with continuous control in algebraic K-theory.

**Teford, Steven,** A characterization of the mixed branching greedoid.

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**Choi, Yunhee,** Extra-Poisson variation.

**Chu, King-Wai,** Optimal parallelization of simulated annealing by state mixing.

**Farías, Ricardo,** Efficient rendering of volumetric irregular grids data.

**Guo, Wei,** A parallelized point-shifted tetrahedral grid for the finite element method.

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**LaForest, Marc,** A posteriori error estimate for front-tracking.

**Lee, Changkil,** In air traffic management.

**Mugno, Raymond,** Comparison of multiple objective adaptive designs.

**Otankitjaroen, Somsak,** Nonclassical shock waves in the WAG method for oil recovery.

**Plohr, JeEyon,** The linearized analysis of the Richtmyer-Meshkov instability for elastic materials.

**Xiang, Xinyu,** Sufficient strip encoding of triangle meshes.

**Zoldi, Cindy,** Shock-accelerated heavy gas cylinder.

**Mathematics**

**Gönye, Zsuzsanna,** The dimensions of escaping geodesics.

**Hennes, Peter,** Weierstrass representations of minimal real Kähler submanifolds.

**Plohr, JeEyon,** The linearized analysis of the Richtmyer-Meshkov instability for elastic materials.

**Rafii, Kasra,** Hyperbolic 3-manifolds and geodesics in Teichmüller space.
Seshadri, Harish, Einstein 4-manifolds with circle actions.
Sung, Chanyoung, On generalizations of the scalar curvature.
Teo, Lee-Peng, Kahler geometry of moduli spaces and universal Teichmüller space.

Syracuse University (2)

Mathematics
Bruce, Jennifer, Bilinski diagrams and geodesics in 1-ended planar maps.
deSilva, Rapti, Improving primary teachers’ learning and teaching of mathematics: A critical ethnography of a Sri Lankan program.

University of Rochester (3)

Biostatistics
Kost, James, Order restricted inference using dependent contrasts.
Tian, Lili, Inference procedures for the inverse Gaussian models and the Gaussian, inverse Gaussian analogies.

Mathematics
Kasikov, Alexander, Higher dagger completion of linear direct systems.

NORTH CAROLINA

Duke University (3)

Mathematics
Ambrose, David M., Well-posedness of vortex sheets with surface tension.
Ionel, Lacramioara M., Second order families of special Lagrangian 4-folds in $C^4$.

Statistics and Decision Sciences
De Iorio, Maria, Markov random fields at multiple resolutions and an ANOVA model for dependent random measures.

North Carolina State University, Raleigh (13)

Statistics
Barber, Jarrett, Modeling and prediction of nonstationary spatial environmental processes.
Brown, George, Comparing Bayesian, maximum likelihood and classical estimates for the Jolly-Seber model.
Chen, Junliang, A Monte Carlo EM algorithm for GLMMs with flexible random effects distribution.
Chen, Pei-Yun, Estimating treatment differences in costs, effects, and cost-effectiveness ratios in observational studies with right censored data.
Chu, Tsu-Ming, Statistical nonparametric and linear mixed model analyses of oligonucleotide DNA chips data.
Dagalp, Rukkye, Estimators for generalized linear measurement error models with interaction terms.
He, Xiaofeng, Credit cycle, credit risk, and business conditions.
Huang, Shu-Pang, Robust methods for estimating allele frequencies.
Hudson-Curtis, Buffy, Generalizations of the multivariate logistic distribution with applications to Monte Carlo importance sampling.
Kalayyoglu, Zeynep, Frequentist and Bayesian unit root tests in stochastic volatility mode.
Kim, Hyun Jung, Unit root tests in panel data: Weighted symmetric estimation and maximum likelihood estimation.
Lu, Kai, Estimation of regression coefficients in the competing risks model with missing cause of failure.
Lunceford, Jared, Estimating causal treatment effects via the propensity score and estimating survival distributions in clinical trials that follow two-stage randomization designs.

University of North Carolina, Chapel Hill (16)

Biostatistics
Demissie, Seleshi, Multilevel models with binary responses: An application to group randomized intervention trials with small number of clusters.
Henriquez-Roldan, Carlos, Marginally-specified conditional models for dependent binary responses.
Taylor, Doug, Mixture models for occupational exposure data with limit of detection.
Wang, Jianmin, Using probability sampling strategies with application to adolescent health studies.

Mathematics
Bonn, James, Advection diffusion in the presence of idealized turbulence.
Duncan, David, A Wiener-Wintner double recurrence theorem.
Kneid, Kyle, Markov partitions, Hausdorff dimension, and root-finding algorithms.
Moseley, Christopher, The geometry of Engel manifolds.
Nicolaou, Katerina, Some properties of Wiener-Wintner dynamical systems.
Terry, John, Hypersurfaces and generalized deformations.
Young, Scott, Algebraic and spectral properties of generalized Cesaro operators.

Statistics
Bonnet, Guillaume, The Burgers superprocess.
Choi, Hyemi, Central limit theory and extremes of random fields.
Johnson, John, The association schemes of codes, fractional factorial designs, and block structures.
Lee, Kuan-Hui, Empirical evaluation and comparison of certain var estimation methods.
Locantore, Nick, Elliptical principal component analysis.

University of North Carolina, Charlotte (3)

Mathematics
Al-Hakim, Abbas, On a joint distribution for long runs and a limit theorem for approximate entropy with applications to the testing of random number generators.
Li, Jin-Liang, Numerical solutions for American options on assets with stochastic volatilities.
Yu, Yijun, Singularity treatment and high-order RWG basis functions for integral equations of electromagnetic scattering.

NORTH DAKOTA

North Dakota State University (3)

Statistics
Morel, Jeff, Analysis of count data in two-factor designs.
Madivarthi, Surekha, Interval-censored Type II plan.
Stockrahm, Jerome (Jerry), Discrete deconvolution.

OHIO

Bowling Green State University (2)

Mathematics and Statistics
Filippova, Daria, Long-term error estimates for nonlinear parabolic equations.
Rizzo Hong, Maria, A new rotation invariant goodness-of-fit test.

Case Western Reserve University (5)

Epidemiology and Biostatistics
Buxbaum, Sarah, Genetics of sleep apnea.
Demko, Catherine, Determinants of sun exposure and protective behaviors among US adolescents: Results from the National Longitudinal Study of Adolescent Health.
Jean-Baptiste, Rachel, Psychosocial factors affecting end stage renal disease patient compliance with hemodialysis attendance.
Li, Jingjin, Pattern-mixture models adjusting for non-ignorable dropout with administrative censoring in longitudinal studies.

Mathematics
Previts, William, Advances in topological groups.

Kent State University (7)

Mathematical Sciences
Brunkalla, Kai, Perturbation of hypercyclic and supercyclic operators.
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Downey, Lawrence M., Jr., Some problems in linear and multi-linear operator theory.
Feng, Bao Q., Matrix inequalities.
Kover, Janice S., Perturbation of norm attaining operators.
McVey, John Kenneth, Bounding the number of character degrees using generalized relative primeness conditions.
Ohio State University (7)
Mathematics
Aydin, Nuh, New quasi-cyclic and quasi-twisted codes and an optimal family of polynomial codes.
Barbacioru, Catalin, Generalization of the Volkenborn integral.
Beli, Constantin, Integral spinor norm groups over dyadic local fields and representations of quadratic forms.
Breitenbucher, John, Third order mock theta functions for multivariable symmetric hypergeometric series.
Fiala, Nick, Some topics in combinatorial design theory and algebraic graph theory.
Jalics, Jozsi, Existence of slow waves in mutually inhibitory thalamic neuronal networks.
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Ohio University (1)
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Liu, Chuan, K-networks and mappings.
University of Cincinnati (5)
Epidemiology and Biostatistics
Deng, Chunglin, Statistical tests for hormesis in aquatic toxicology experiments.
Huang, Bin, Statistical assessment of the contribution of a mediator to an exposure outcome association.
Leonard, Anthony C., Hypothesis testing with the similarity index.
Pei, Huihui, Exploring bootstrap applications to linear structured equations.
Mathematical Sciences
Stancescu, Daniel, Bootstrap methods for the estimation of the variance of partial sums.
University of Toledo (4)
Mathematics
Cao, Rongmei, Lagrangian submanifolds of 8-dimensional almost symplectic manifolds.
Ling, Yi, Theory and applications of 2-D non-separable wavelet interpolation and approximation.
Shi, Hengbo, Finite dimensional of monomial algebra.
Zhong, Guan, Some results about empirical likelihood methods.
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Mathematics
Tong, Simei, Complemented subspaces of $L_p$ determined by partitions and weights.
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Woods, Tadg, Lorentz wave maps.
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Burdon, Marcia, Exploring bootstrap applications to linear structured equations.
Mathematical Sciences
Shimkus, Thomas, Immersions of 2-torsion lens spaces.
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Mathematics
Dumitrascu, Constantin Dorin, A new approach to bivariant K-theory.
Emerson, Heath, An example of non-commutative Poincare duality arising from hyperbolic dynamics.
Kim, Hee Jung, Almost complex structures arising in contact geometry.
Lemin, Vladimir, On some properties of ultrametric spaces and their applications to category theory and computer science.
Zhang, Bin, Equivariant theories and algebraic varieties.
Zhang, Sheng, A linear shell theory based on variational principles.
Statistics
Li, Haihong, Improving point estimation for models with many nuisance parameters.
Mao, Changxuan, Mixture models for species and population size estimation.
Mosquin, Paul, The analysis of Bayesian finite mixtures and discrete choice models.
Temple University (6)
Mathematics
Al-Rasasi, Ibrahim, A mean value theorem for class numbers of quadratic extensions of function fields.
Hartenstein, David, Regularity of a class of weak solutions to the Monge-Ampere equation.
Loveridge, Clark, Measure of planes separating convex bodies in three dimensions.
Carnegie Mellon University (3)
Mathematical Sciences
Bunimovich, Danil, Modelling and pricing of collateralized debt obligations.
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Brym Mawr College (2)
Mathematics
Salzman, Amber, The arithmetic genus of threefolds defined by extended Hilbert modular groups.
Ludwick, Kurt, Survival of modularity under congruence restrictions.
Lyansky, Yan, Phase transition for the hard-core stochastic Ising model.
Xu, Jianjun, Studies of some high order finite/spectral element methods for viscous incompressible flow.

University of Pennsylvania (10)

MATHEMATICS
Atria, Matias, Two new algorithms for computational number theory.
Frye, Stephen, On the topological classification of toric varieties.
Glass, Darren, Orthogonal epsilon constants for tame actions of finite groups on surfaces.
Rojkovskaia, Natasha, Quantum family algebras.

STATISTICS
Diaz-Tena, Nurra, Multiple imputation for estimation of AR(1) process parameters.
Gong, Hanfeng, Density estimation by free-knot spline functions.

University of Pittsburgh (13)

BIOSTATISTICS
Gause, Christine, Methods for combining covariate data obtained by multiple sampling schemes in occupational cohort studies.
Li, Wei, Resampling approach for estimating prediction error and for adjusting logistic regression coefficients for covariate measurement error.
Valenta, Zdenek, Estimation of the survival function for Gray’s piecewise constant time-varying coefficients model.

MATHEMATICS
Buliga, Marius G., On the enumeration of colored spanning trees in a graph.
Burch, Kimberly, Matching equivalences and chemical graph theory.
Kapadia, Devendra, A class of conformally Einstein spacetimes.

University of Rhode Island (2)

MATHEMATICS
McGrath, Lynn, Investigation of some difference equations.

SOUTH CAROLINA

Medical University of South Carolina (3)

BIOMETRY AND EPIDEMIOLOGY
Carter, Rickey, Relative risk models for data in which the success probabilities approach one.

Durkalski, Valerie, The analysis of clustered matched-pair data under an equivalence design.
White, Nicole, DIVERgent Alignments (DIVA): Multiple alignment techniques for proteins with less than 20% identity.

University of South Carolina, Columbia (13)

EPIDEMIOLOGY AND BIOSTATISTICS
Gray, Brian R., Modeling nonstationary and spatially-correlated oyster infection prevalence data.
Harshaw, Charles Clinton, The tetrahedron volume scan: A tool for the detection of spatial-temporal disease clusters.
Pierce, Kristen J., Semi-parametric multiple imputation applied to stratified survival data.
Swann, R. Suzanne, Analyses of stratified longitudinal studies using generalized estimating equations with data missing at random.
Uddin, Molla A., Attributable fraction, its properties and applications.

MATHEMATICS
Allen, Martha, Generalization of the irreducibility of I. Schur.
Burton, Tamara, Domination of DOT-critical graphs.
Iwasa, Akira, Metrizability of trees.

University of Tennessee (4)

MATHEMATICAL SCIENCES
Gao, Yuan, Mot. f-based protein structure and function prediction.
McCaulley, Thomas Lee, Neutral schemata: Toward a comprehensive mechanism of mind.
Yang, Congjun, Indexes for nearest neighbor queries and related problems.
University of Tennessee (3)

Mathematics
Challos, George, On reproducing kernels and invariant subspaces of the Bergman shift.
Joshi, Hem Raj, Optimal control problems in PDE and ODE systems.
Krohn, Cynthia, An individual-based approach to population dynamics with applications to sockeye salmon and iteroparous organisms.

Vanderbilt University (5)

Mathematics
Bahls, Charles Patrick, Even rigidity in Coxeter groups.
Greer, Meredith, A population model of Prion dynamics.
Lin, Amy Haio-Chun, The dynamics of the interactions between solid tumors and the immune system: A deterministic model.
Marotti, Miklos, The variety generated by tournaments.
Stewart, Sarah Ann, Some families of subnormal operators with finite rank self-commutators.

Southern Methodist University (1)

Statistical Science
Lee, Eui Kyoo, Bayesian hierarchical spatiotemporal models with application to the modeling of Hanford Site tritium concentrations.

Texas A & M University (17)

Mathematics
Bacuta, Cristina, A geometry intervention in engineering and science calculus II: Supporting the calculus reform.
Bilgin, Gulendam, Near-rings of functions.
Diao, Zijian, Quantum computing and quantum search algorithms.
Garcia, Cesar, Renormings via asymptotic uniform convexity and the approximation property on near Hilbertian spaces.
Holcomb, Trae, Contributions to a general theory of codes.
Kim, Chisup, On iteration and approximation methods or anisotropic problems.
Ladipo, Kehinde, A wave equation approach to numerical simulation of natural convection in rectangular enclosures.
Lipnikov, Konstantin, Numerical methods for the Biot model in poroelasticity.

University of North Texas (4)

Mathematics
Berlinkov, Artemi, Dimensions in random constructions.
Huettenmueller, Rhonda, The Pettis integral and operator theory.
Lindsay, Larry, Quantization dimension for probability distributions.
Rees, Michael, Topological uniqueness results for the special linear and other classical Lie algebras.

University of Texas, Arlington (1)

Mathematics
Griffin, Byron, A study of stochastic iterative processes under random structural perturbations.

University of Texas, Austin (14)

Mathematics
Bowen, Lewis, Density in hyperbolic space.
Finotti, Luis, Canonical and minimal degree liftings of curves.
Hayes, Leslie, The plus closure of an ideal.
Jiang, Jiaosheng, Bounded operators without invariant subspaces on certain Banach spaces.

Sha, Naijun, Bolstering cart and Bayesian variable selection methods for classification.
Sukasih, Amang, Goodness-of-fit tests and related diagnostics for response probability models in the analysis of complex survey data.
Krashen, Daniel, Birational isomorphisms between Severi-Brauer varieties.
Leasure, Jason, Geodesics in the complex of curves of a surface.
Leininger, Christopher, Essential surfaces in hyperbolic three-manifolds.
Monica Torres, Razo, Plane-like minimal surfaces in periodic media with inclusions.
Socha, Katherine, Modal expansions of surface wave model equations.
Visarraga, Darrin, Heat transport models with distributed microstructure.
Yuan, Juan-Ming, Studies in recurrence and singularity formation in nonlinear dispersive wave equations.

TEXAS INSTITUTE OF COMPUTATIONAL AND APPLIED MATHEMATICS
Eaton, Frank Joseph, A multigrid preconditioner for two phase flow in porous media.
Overfelt, James, Numerical modeling of Stokesian emulsions.

University of Texas, Dallas (3)
MATHEMATICAL SCIENCES
Gill, Ryan Scott, Introduction to generalized broken-line regression.
Johnson, Joel, Tensor algebras, displacement structure, and some classes of stochastic processes.
Nita, Boydan, Pure gravitational radiation with twisting rays.

UTAH
University of Utah (5)
MATHEMATICS
Cytrynbaum, Eric, Using low dimensional models to understand cardiac arrhythmias.
Dereaux, Martin, Complex surfaces of negative curvature.
Dumett, Miguel, A numerical method for solving anisotropic elliptic boundary value problems on irregular domains in two and three dimensions.
Hohn, Michael, On the solution of mixed boundary value problems in elasticity.
Kucuk, Ismail, Variational approach to optimization of elastic structures.

VERMONT
University of Vermont (2)
MATHEMATICS AND STATISTICS
Ricciardi, Karen L., Optimal groundwater remediation design subject to uncertainty.
Yaw Aidoo, Anthony, Studies on a prototype channel geometry for acetylcholine receptor channel.

VIRGINIA
College of William and Mary (1)
MATHEMATICS
Evans, Diane, Algorithms for operations on probability distributions in a computer algebra system.

Old Dominion University (1)
MATHEMATICS AND STATISTICS
McKaig, Iain, Mathematical models of quiescent solar prominences.

University of Virginia (4)
MATHEMATICS
Fulgham, Bernard, The scalar center for quadratic Jordan algebras.
Hoack, Aaron, Free closures of projective remoteness configurations.
Li, Weiping, Algebraic groups and support varieties.

Virginia Commonwealth University (3)
BIOSTATISTICS
Massie, Tammy, Testing genetic hypothesis on bivariate dose using repeated measures logistic regression.
Massie, Tristan, Variance estimation and influence functions for threshold models.
Shih, Margaret, Titrating and evaluating multiple drug regimens with subjects.

Virginia Polytechnic Institute and State University (9)
MATHEMATICS
Drumright-Clarke, Mary Ann, Numerical simulations that characterize the effects of surfactant on droplets in shear flow.
Hartman, Gregory, Graphs and noncommutative Koszul algebras.
Massey, Thomas Christopher, Development of a flexible Galerkin finite element method for hyperbolic PDE’s and a posteriori discontinuous finite element error estimation for two-dimensional hyperbolic problems.

WISCONSIN
University of Wisconsin-Madison (13)
APPLIED MATHEMATICS
Mihalisin, James, Polytopal graphs and digraphs.

WASHINGTON
University of Washington (20)
APPLIED MATHEMATICS
Bale, Derek, Wave propagation algorithms on curved manifolds with applications to relativistic hydrodynamics.
Dolven, Eric, Sequake waves-standing wave dynamics with Faraday excitation and radiative loss.
Fogarty, Tiernan, Finite volume methods for acoustics and elastoplasticity with damage in a heterogeneous media.
Lee, Long, Immersed interface methods for incompressible flow with moving interfaces.
Mudavanhu, Blessing, Renormalization approach for solving weakly nonlinear differential equations.
Rossmanith, James, A wave propagation method with constrained transport for ideal and shallow water magnetohydrodynamics.

BIOSTATISTICS
Dodd, Amalia, Discrete proportional hazards models for uncertain outcomes.
Nan, Bin, Information bounds and efficient estimates for two-phase designs with lifetime data.

MATHEMATICS
Cokus, Shawn, Qualitative linear algebra and computational complexity.
Garfield, Peter, The bigraded Rumin complex.
Hampton, Marshall, Concave central configurations of the four body problem.

STATISTICS
Clark, Seth, Model robust regression based on generalized estimating equations.
Dorai-Raj, Sundaradas, First- and second-order properties of spatiotemporal point processes in the space-time and frequency domains.
Liang, Hong, Adaptive Fourier analysis for unequally-spaced time series data.
Lipkovich, Ilya, Bayesian model averaging and variable selection in multivariate ecological models.
Waterman, Megan, Linear mixed model robust regression.
Wilcock, Samuel, A new nonparametric procedure for the k-sample problem.
Packer, Asa, On certain optimal containment problems involving convex sets.
Tamasan, Alexandru, A two dimensional inverse boundary value problem in radiation transport.
Williams, Gordon, Petrie schemes.

Statistics
Bates, Samantha C., Bayesian inference for deterministic simulation models for environmental assessment.
Song, Shuguang, Estimation with bivariate interval-censored data.

Washington State University (2)
Mathematics
Hagerty, Gary, Finding a few eigenvalues of large sparse non-symmetric matrices.
Tian, Mei “Emily”, Pattern formation analyses of thin liquid films.

WEST VIRGINIA
West Virginia University (6)
Mathematics
Espinoza, Benjamin, Whitney preserving maps.
Li, Xiangwen, Cycle cover, group coloring with related problems.
Li, Xuechao, Chords of longest circuits of graphs.
Luo, Rong, Edge coloring of simple graphs and edge-face coloring of simple plane graphs.
Montgomery, Bruce, Dynamic coloring of graphs.
Plotka, Krzysztof, Set-theoretic and algebraic properties of certain families of real functions.

WISCONSIN
Medical College of Wisconsin (1)
Biostatistics
Shu, Youyi, Multistate survival models: Theory and applications.

University of Wisconsin, Madison (24)
Mathematics
Baker, Joni, Some topological results on ultrafilters.
Bloss, Matthew, Partition algebras and permutation representations of wreath products.
Christlieb, Andrew, Computational methods for long mean free path environments.
Hamblin, James, On solvable groups satisfying the two-prime hypothesis.

Hsieh, Liang-Yu, On minimum rank matrices having prescribed graph.
Li, Xiantao, Computation of the semiclassical limits of the Schrödinger equation and related problems.
Mazaheri, Mohsen, Valuation and robustness in stochastic volatility environments.

WISCONSIN
University of Wisconsin, Milwaukee (3)
Mathematical Sciences
Ilicasu, Fatma Olcay, High order methods for singular perturbation problems.
Radcliffe, David, Unique presentation of Coxeter groups and related groups.
Soleski, Tatiana, Wavelet based computerized tomography.

Statistics
Brumback, Lyndia, Flexible random time transformations for functional data.
Buhr, Kevin, A Brownian particle system with local time interaction.
Cho, Hyungjun, Tree-structured regression modeling for censored data.
Huang, Li-Fei, Confidence regions for the ratio of percentiles.
Huang, Yufen, Transformations, regression geometry and \( R^2 \).
Lin, Pei Sheng, Analysis of cross-classified spatial data with autocorrelation.
Park, Soomin, Analysis of longitudinal data with informative missingness.
Shen, Lei, Analysis of longitudinal data: Measurement error, confounding and model misspecification.
Shi, Yuanjun, Monte Carlo techniques for design and analysis of group sequential clinical trials with multiple primary endpoints.
Wang, Chen, Joint analysis of quality of life and survival.
Wang, Hansheng, Two-way contingency table with marginally and conditionally imputed non-respondents.
Wang, Jin, Testing hypothesis and estimation in the presence of omitted confounders.
Yang, Yuyan Jessie, Two-level factorial and fractional factorial designs in blocks of size two.

University of Wisconsin, Milwaukee (3)
Mathematical Sciences
Ilicasu, Fatma Olcay, High order methods for singular perturbation problems.
Radcliffe, David, Unique presentation of Coxeter groups and related groups.
Soleski, Tatiana, Wavelet based computerized tomography.
Doctoral Degrees
Conferred 2001–2002

Supplementary List
The following list supplements the list of thesis titles published in the February 2003 Notices, pages 264–80.

ARIZONA
Arizona State University (6)

MATHEMATICS

Archibald, Richard, Boundary detection and reconstruction in magnetic resonance imaging.

Dunn, Charles, Extensions of a simple competitive graph coloring algorithm.

Kuo, Yu-Ju, Interior point algorithms for second order cone problems with applications.

Loladze, Irakli, The importance of being stoichiometric: Population dynamics from the perspective of chemical elements.

Marthaler, Daniel, Two problems from nonlinear dynamical systems.

Zela, Dritan, A continuum spine model for the horizontal cell-to-cone feedback in cat outer retina.

COLORADO
University of Colorado (3)

MATHEMATICS

Caravone, Curtis, On the convergence of model-free policy iteration algorithms for reinforcement learning: Stochastic approximation under discontinuous mean dynamics.

Caulk, Suzanne, Explicit action of Hecke operators on Hilbert-Siegel modular forms.

Kornelson, Keri, Local solvability of Laplacian difference operators arising from the discrete Heisenberg group.

GEORGIA
University of Georgia (2)

MATHEMATICS

Bindner, Donald, On the space spanned by the powers of an operator and its adjoint.

Liu, Ruihua, Hierarchical control and filtering of stochastic markovian system.

NORTH CAROLINA
Duke University (1)

MATHEMATICS

Collins, Anne D., Configuration spaces in robotic manipulation and motion planning.

 PENNSYLVANIA
Carnegie Mellon University (2)

STATISTICS

Ghiuvea, Cristian, Pricing of generalized American options with applications to energy derivatives.

Ianus, Iuliana, Approximate robust Bayesian inference with applications to sample size calculation.