

# Doctoral Degrees Conferred

1995-1996

## ALABAMA

### Auburn University (4)

#### MATHEMATICS

Casukhela, Kameswarraro Suryanarayana, *Exchangeability and spreadability of random measures in higher dimensions.*

Elalaoui-Talibi, Hussain, *Palm measure quality for exchangeable and regenerative random sets.*

Griffus, Lloyd, *Exactly K-to-1 maps between metric continua.*

Seaquist, Carl, *Monotone open maps on the Sierpinski curve.*

### University of Alabama at Birmingham (3)

#### BIostatISTICS

Alghamdi, Abdullah, *Quantitative theories of carcinogenesis with applications.*

#### MATHEMATICS

Al-Sheikh, Sarah Abdulrahman, *A study of bifurcation for non-autonomous ordinary differential equations.*

Underwood, Steven D., *The Agmon spectral function for magnetic potentials.*

### University of Alabama-Huntsville (3)

#### MATHEMATICAL SCIENCES

Lunsford, Myrtis Lunsford, *Existence results for generalized variational inequalities.*

Rowell, Ginger Holmes, *Probability distributions on temporal semigroups.*

Smart, Christian Boyd, *Studies in graph based LP/IP parameters.*

### University of Alabama, Tuscaloosa (5)

#### APPLIED STATISTICS

Mayo, Matthew Stuart, *Elemental subsets: The building blocks of regression.*

Tucker, Gary R., *A quality control chart based on ordinal categorical data.*

#### MATHEMATICS

Daundasekera, Wasantha Bandara, *Optimization theory for  $n$ -set functions.*

Park, Dongwan, *Limit algebras of stationary systems.*

Zhang, Xiaojing, *On linear and nonlinear stability theory of periodic flows of incompressible fluid.*

## ALASKA

### University of Alaska Fairbanks (1)

#### MATHEMATICAL SCIENCES

Humphrey, Patricia B., *Martingales in capture-recapture experiments with constant survival and recruitment.*

## ARIZONA

### Arizona State University (8)

#### MATHEMATICS

Gobbert, Matthias, *Homogenization technique for the development of mesoscopic scale models for chemical vapor deposition.*

Pyung, In Soo, *Determinant inequalities for orthogonal polynomials.*

Quintana, Juan Alberto, *Powers of Hamiltonian cycles.*

Wu, He-Yi, *Analysis of excitable dendritic spine with activity-dependent stem conductance.*

Yest, Robert Lawrence, *Norm exponents of quadratic imaginary number fields.*

Zhao, Tao, *The analysis of delay chemostate model.*

Zhu, Anmin, *Computing capillary and minimal surfaces.*

Zhu, Yingxian, *On  $x$ -bounded and vertex Ramsey classes of graphs.*

### University of Arizona (10)

#### APPLIED MATHEMATICS

Blayneh, Kbenesh W., *A hierarchical-sized structured population model.*

Cruz-Pacheco, Gustavo, *The nonlinear Schroedinger limit of the complex Ginzburg-Landau equation.*

Fennemore, George C., *Wetting fronts in one-dimensional periodically layered soils.*

Gartside, James, *Nonlinear interaction of two oblique modes in a supersonic mixing layer.*

Oliver, Marcel, *A mathematical investigation of models of shallow water with a varying bottom.*

Stark, Donald R., *Structure and turbulence in the complex Ginzburg-Landau equation with a nonlinearity of arbitrary order.*

#### MATHEMATICS

Dunn, Will-Matthis, III, *Algorithms and applications of comprehensive Groebner bases.*

Holmberg, Gregory, *A lower bound for the Laplacian.*

Inprasit, Utith, *Equilibria in size-structure populated models.*

Shipman, Barbara, *Convex polytopes and duality in the geometry of the full Kostant-Toda lattice.*

## ARKANSAS

### University of Arkansas at Fayetteville (4)

#### MATHEMATICAL SCIENCES

Bowling, Stephen Jonathan, *Cohomology of Banach semigroup algebras.*

Chen, Dong, *Optimal error bound estimation of quasi-Newton methods.*

Meigooni, Abbas Shamseddin, *An algorithm in four-coloring.*

Teclezghi, Beimet, *Endomorphisms of symmetric semigroups on a finite set.*

## CALIFORNIA

### California Institute of Technology (6)

#### APPLIED MATHEMATICS

Ardalan, Kayvan, *Complex vortex arrays.*

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 1995, to June 30, 1996) reported in the 1996 Annual AMS-IMS-MAA Survey by 221 departments in 150 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 spring 1997 issue of the *Notices*.

## MATHEMATICS

- Norwood, Thomas, *Codes and polynomials in the study of cyclic difference sets.*
- Schlag, Wilhelm,  $L^p \rightarrow L^q$  estimates for the circular maximal function.
- Smirnov, Stanislav, *Spectral analysis of Julia sets.*
- Ure, Patricia K., *A study of  $(0, n, n+1)$ -sets and other solutions of the isoperimetric problem in finite projective planes.*
- Zhu, Yunfeng, *the Lyapunov exponents for Schrödinger operators and Jacobi matrices with slowly oscillating potentials.*

### Claremont Graduate School (2)

## MATHEMATICS

- Graham, Christopher Giles, *Cooperative solution concepts for multi-sides assignment games.*
- Tran, Phuong Yen Thi, *Asymptotic reliability of the hypercube and the D-octahedral networks.*

### Stanford University (9)

## MATHEMATICS

- Betz, Martin Scott, *Operad representations in Morse theory and Floer homology.*
- Cardon, David Alan, *Zeros of Fourier coefficients of metaplectic Eisenstein series.*
- Harris, Joe Thomas, *Some properties of a Sessile drop in a potential field of Newtonian form.*
- Hurtubise, David Edward, *The Floer homotopy type of Grassmann manifolds.*
- Klute, Annette, *Icosahedral Galois representations and elliptic curves.*
- Overton, Christopher Wall, *The 2-local stable splitting for the Mathieu group M12.*
- Paraschivescu, Andrei Remus, *Infinite transfers for the special linear group with integer entries.*
- Yamada, Sumio, *Some convexity and unique continuation property of harmonic mappings.*
- Zhou, Lianmin, *The stability of liquid bridges.*

### University of California, Berkeley (38)

## INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH

- Ahn, Suneung, *Bayesian probability modeling for engineering applications.*
- Chen, Man-Wai Anna, *Efficient algorithms for the ultimate pit limit problem.*
- Kamoun, Mahdi, *Model and algorithms for the facility layout problem with emphasis on supporting just-in-time.*
- Landy, Dan Edward, *Batch scheduling for manufacturing.*
- Lin, Chun-yi, *Shop floor scheduling of semiconductor wafer fabrication using real-time feedback control and predictions.*

- Russo, Giuseppe, *Continuous time models of the reporting and cost process of insurance claims.*
- Ugarte, Armando, *Coordination mechanisms for high-tech manufacturing organizations (HTMOs).*

## MATHEMATICS

- Agnarsson, Geir, *On monomial ideals and co-relations for algebras over fields.*
- Allcock, Daniel Jonathan, *The Leech lattice and hyperbolic geometry.*
- Aotani, Masayasu, *Problems in the classification of  $E_0$ -semigroups.*
- Brerik, John Olaf, *Families of curves on families of surfaces degenerating to normal rational cubic surfaces in  $\mathbb{P}^3$ .*
- Cook, David, *Minimal coding of a subset of  $\mathbb{N}_2$  into a real.*
- Cotner, Carl Frank, *The nesting depth of radical expressions.*
- Covert, Paul Michael, *Hydrodynamic limit for two particle systems with non-constant speed parameter.*
- Drorsky, Alexander, *Generic representations of parabolic subgroups of the classical group.*
- Ensor, Andrew James, *Templates and worlds for interpretations.*
- Hillion, Steven J. P., *The dimensions of spaces of modular forms.*
- Kaskel, Bruce Ephraim, *The image of the adelic Galois representation of  $J_0(37)$ .*
- Kim, In-Kang, *Geometric structures on manifolds and the marked length spectrum.*
- Li, Ren-Cang, *Raising the orders of unconventional schemes for ordinary differential equations.*
- Liebling, Richard Lyle, *Classification of space curves using initial ideals.*
- Milne, Roger Brent, *An adaptive level set method.*
- Nguyen, Hieu, *Weakly symmetric spaces and bounded symmetric domains.*
- O'Sullivan, Michael Edward, *Classification and divisor class groups of normal cubic surfaces in  $\mathbb{P}^3$ .*
- Robertson, Leanne Davina, *Power bases in cyclotomic integer rings.*
- Schlatter, Mark Douglas, *Extensions of results of Morley and Shelah to permutation groups.*
- Schlesinger, Enrico Ettore, *The spectrum of projective curves.*
- Seabold, Daniel Evan, *Chang's conjecture and the nonstationary ideal.*
- Stern, Eugene, *Quantum affine Weyl duality for an infinite tensor product.*
- Tarver, James Elmo, *Boltzmann-Grad limit for a particle system in continuum.*
- Valdez-Sanchez, Luis Gerardo, *On manifolds obtained from generalized Scharlemann cycles.*
- Wattenberg, Martin, *Generic families of dynamical systems on the circle.*
- Wolff, Mayhew, *Fundamental groups of immersed spheres.*
- Wu, Yuhua, *Absolute minimizers in Finsler metrics.*

- Wu, Zhuang, *The triple dqds algorithm for complex eigenvalues.*
- Xu, Feng, *A new series of subfactors.*
- Zhou, Hong, *Numerical analysis of slender vortex motion.*
- Zieve, Michael Ernest, *Cycles of polynomial mappings.*

### University of California, Davis (14)

## MATHEMATICS

- Aleinov, Igor, *Matrix models with non-holomorphic potentials.*
- Alexandrov, Mikhail Dmitrievich, *On some problems of quantum field theory and theory of integrable systems.*
- Coleman, Jerome, *Gaussian spacetime models: Markov field properties.*
- Dong, Xiaopeng, *Estimating density functions: A constrained maximum likelihood approach.*
- Kavinoky, Richard, *The non-applicability of the Hawking singularity theorem to the Smoller-Temple cosmological model.*
- Lang, Lynelle Melisa, *A generalization of Massey products with applications to deformation theory.*
- Shi, Kejian, *Effect of spatial heterogeneity on the probability of failure of the sterile insect technique.*
- Simcik, Luke J., *Resolving non-smooth solutions to discretized ill-posed problems.*
- Vedantham, Ram, *Wave propagation in random media.*
- Wang, Xiaojun, *Global and local optimization using linear bounding functions.*

## STATISTICS

- Braun, Jerome, *Multiple change-point methods for DNA sequence segmentation.*
- Cai, Zongwu, *Statistical inferences under dependence.*
- Capra, William B., *Nonparametric estimation of mortality from cohorts of lifetables.*
- Exuzides, Kyriakos, *Predictive influence in survival models.*

### University of California, Irvine (4)

## MATHEMATICS

- Sorouri, Mohammad Javad, *A numerical conformal mapping.*
- Van Ly, Hung, *Finite dimensional aspects of nonlinear dissipative systems and their applications.*
- Viens, Frederi G., *Almost-sure exponential behavior of scalar- and vector-valued stochastic parabolic equations.*
- Wu, Chia-Lin, *Reflecting diffusion processes and its application to ATM network with feedback control.*

### University of California, Los Angeles (29)

## MATHEMATICS

- Biesterfeld, Amy, *The epsilon look-ahead rule and its application to foraging theory.*

Chacon Vera, Eliseo, *A cubic spline approximation and analyticity for the vortex patch problem.*

Chen, Li-Sue, *Sliced inverse regression for time series analysis.*

Chen, Susan, *A simple level set method for solving Stefan problems.*

Cooper, Randolph, *Variational inequality approach to dynamic contact problems.*

Falcone, Anthony, *Operator.*

Fedkiw, Ronald, *A survey of chemically reacting, compressible flows.*

Ghate, Eknath, *Critical values of the Asai L-function in the imaginary quadratic case.*

Goldstein, David, *The near optimality of Stormer methods for long time integration of  $y'' = g(y)$ .*

Haas, Eric, *Implicit-explicit splitting methods for stiff ordinary differential equations.*

Jiang, An, *Fast wavelet based methods for certain time dependent problems.*

Kang, Myungjoo, *A level set approach for the motion of soap bubbles with curvature dependent velocity or acceleration.*

Kao, Shin-Shin, *Vortex sheets, singular integrals, and steady flows.*

Lan, Sikun, *Instabilities in rapidly rotating MHD systems.*

Lee, Hian-Kit, *Relative u-invariants of algebraic quadratic forms.*

Lessnick, Michelle, *Stability analysis of symplectic integration schemes.*

Martin, Reiner, *Non-uniquely ergodic foliations of thin type, measured currents and automorphisms of free groups.*

Neeman, Itay, *Determinacy and iteration trees being an account of the author's journey upward and inward.*

Oliveira, Oswaldo, *Energy decay for solutions of the wave equation in domains with unbounded boundary.*

Rudominer, Mitchell, *Mouse sets definable in  $L$  ( $\mathbb{R}$ ).*

Scannell, Kevin, *Flat conformal structures and causality in deSitter manifolds.*

Shakarji, Craig, *Object oriented, numerical methods for two dimensional, incompressible flows, using overlapping grids.*

Shearer, Michael, *Penetrative convection with and without barodiffusion.*

Shteingold, Semion, *Metric invariants of Alexandrov spaces.*

Steele, Gregory, *Results concerning singularity formation in incompressible flows.*

Tan, Filippo, *A regularized Siegel-Weil formula on unitary groups.*

Winfield, Christopher, *The local solvability of partial differential operators on  $\mathbb{R}^3$  involving Weisenberg group operators.*

Winkler, Soren, *Matrix convexity.*

Zhao, HongKai, *Generalized Schwarz alternating procedure for domain decomposition.*

## University of California, Riverside (6)

### MATHEMATICS

Griffith, Cheryl, *Numerical computation and computer visualization of the eigenfunctions for the Koch snowflake drum.*

He, Qi Christina, *Generalized Minkowski content, vibrations of fractal drums, fractal strings and the Riemann zeta-function.*

Soedjak, Heroe, *Asymptotic properties of bispectral density estimators of harmonizable processes.*

### STATISTICS

Dagne, Getachew A., *Robustness of directional neighborhood approach (DNA) in image classification and its application to small area estimation.*

Kim, Yong-Hee, *Estimation of a distribution function under generalized ranked set sampling.*

Mezbahur, Rahman, *Two stage estimation of density functions and regression functions.*

## University of California, San Diego (8)

### MATHEMATICS

Crass, Scott Warren, *Solving the sextic by iteration: A complex dynamical approach.*

Eggers, John Dietrich, *Holomorphic extension of CR functions on smooth submanifolds of  $\mathbb{C}^N$ .*

Keeton, Allan Gerald, *Commuting varieties associated with symmetric pairs.*

Krushkal, Vjacheslav, *On the relative slice problem and 4-dimensional topological surgery.*

Leonard, Michael Wallace, *Reduced Hessian quasi-Newton methods for optimization.*

Shinnerl, Joseph R., *KKT-based interior-point methods for numerical optimization.*

Vityaev, Andrei E., *Complex analysis and its applications to control theory.*

Yan, Shu, *Link homotopy and unlinking numbers.*

## University of California, Santa Barbara (5)

### MATHEMATICS

Bekiranov, Daniella, *Well-posedness of nonlinear evolution equations.*

Boldt, Axel, *Two aspects of finite-dimensional algebras: Uniserial modules and Coxeter polynomials.*

Carmack, Lori Ann, *A boundary free numerical study of the axisymmetric incompressible Euler equations.*

Mangum, Brian Scott, *Topological and geometric properties of surfaces transverse to pseudo-Anosov flows.*

Shanahan, Patrick Daniel, *Cyclic Dehn surgery and the A-polynomial of a knot.*

## University of California, Santa Cruz (4)

### MATHEMATICS

Allen, Nancy, *On the spectra of certain graphs arising from finite fields.*

Ehlers, Kurt, *The geometry of swimming and pumping at low Reynolds number.*

Goetze, Thomas, *On a cubic Shimura integral for a rank two symplectic group.*

Haverl, Carl, *A metric on moduli spaces of projective hypersurfaces.*

## University of Southern California (5)

### MATHEMATICS

Boca, Ioana, *Filtrations and projective representations of Hopf algebras to quantum groups.*

Fung, Chin-Pang Alex, *New numerical algorithms for nonlinear filtering.*

Glezen, Paul, *Compact Poincaré duals of Chern classes over moduli space-induced by canonical line bundles of the universal curve.*

Li, Qingnan, *Mathematical and numerical analysis of biological neutral networks.*

Pop, Horia, *Quantum group constructions in a symmetric monoidal category.*

## COLORADO

### Colorado School of Mines (2)

#### MATHEMATICAL AND COMPUTER SCIENCES

Hoscheit, Gregory Charles, *A tabu search genetic algorithm hybrid heuristic for solving a master production schedule with sequence dependent changeover times.*

Jin, Hong-Sung, *Uniformly superconvergent interpolation schemes for solutions of first order systems for two point boundary value problems.*

### Colorado State University (4)

#### MATHEMATICS

Robertson III, Alexander, *A class of Lagrangian relaxation algorithm for the multidimensional assignment problem.*

Symms, John, *Deformations of configurations of planes.*

#### STATISTICS

Fayyad, Rana, *Confidence intervals for variance components in unbalanced models.*

Hartel, Gunter F., *Distribution free tests of the sub-model hypothesis in multiple regression and a Monte Carlo comparison with robust alternatives.*

### University of Colorado, Boulder (4)

#### APPLIED MATHEMATICS

Sholl, David, *Lattice gas models of surface chemistry.*

## MATHEMATICS

- Ahlgren, Scott, *Equations of polynomial-exponential type.*
- Bonan-Hamada, Edward, *A bounded compactness theorem for  $L^1$  embedding in  $R^2$ .*
- Moretti, Christopher Paul, *Degrees of abelian subvarieties of powers of elliptic curves over  $C$ .*

### University of Colorado at Denver (6)

## MATHEMATICS

- Jones, Jim E., *A mixed finite volume element method for accurate computation of fluid velocities in porous media.*
- Merz, Sarah, *The competition graphs of hamiltonian, interval, strongly connected and symmetric digraphs and tournaments: Elimination orderings, competition inverses, chromatic number and domination.*
- Parker, Mark, *A set covering approach to infeasibility analysis of linear programming problems and related issues.*
- Phelps, Eric, *Factor rank of Boolean matrices.*
- Van Iwaarden, Ronald, *An improved unconstrained global optimization algorithm.*
- Zullo, Holly, *Feasibility flows in multicommodity graphs.*

### University of Northern Colorado (4)

## MATHEMATICAL SCIENCES

- Hsieh, Dannie, *A comparison of the thinking processes of mathematically advanced and average students, age 10 and 11, engaged in mathematics problem solving.*
- Phonvichal, Thanavath, *A comparison of inconsistent and consistent least squares estimation methods for a simultaneous econometric model of the Colorado economy.*
- Soto-Johnson, Hortensia, *Technological vs. traditional approach in conceptual understanding of series.*
- Van Dressar, Vickie, *Relationships of a mathematics content course for elementary/middle school teachers with pre-service teachers' attitudes/beliefs about mathematics and the teaching of mathematics.*

## CONNECTICUT

### University of Connecticut (7)

## MATHEMATICS

- Chen, Yue, *Numerical variational methods for approximating traveling waves in a nonlinearly suspended beam.*
- Cui, Xiang Hao, *A study of the relative critical point theory and the critical groups in locally convex closed subsets of Banach manifolds.*

Razafinjatovo, Haja-Nirina, *Irregular sampling with derivatives.*

## STATISTICS

- Bonetti, Marco, *Geometric methods in data analysis.*
- Chang, Hong, *Model determination using predictive distributions.*
- Datta, Sujay, *Multistage parametric inference-procedures: The 'fine-tuning' aspect and the distribution free scenario.*
- Sison, Maria Cristina Irene Pena, *Simultaneous confidence intervals, sample size determination and testing procedures for multinomial proportions.*

### Wesleyan University (3)

## MATHEMATICS

- Erdélyi-Szabó, Miklós, *Decidability in the constructive theory of reals as an ordered  $Q$ -vectorspace.*
- Liu, Guoyang, *Free groups and free products in  $SL_2(\mathbb{Z})$  and  $SO_3(\mathbb{Q})$ .*
- Olberding, Bruce Michael, *Torsion-free modules over Prüfer domains.*

### Yale University (10)

## MATHEMATICS

- Chen, Jiang-Ping, *Local factors, central characters, and the representations of the general linear group over non-Archimedean local fields.*
- Fastenberg, Lisa Alexandra, *Mordell-Weil groups in pro-cyclic extensions of a functional field.*
- Hrycak, Tomasz Wieslaw, *An improved fast multiple algorithm for potential fields.*
- Kleinbock, Dmitry Yanovich, *Nondense orbits of nonquasiunipotent flows and applications to diophantine approximation.*
- Kotlov, Andrew Valeri, *Rank and combinatorial structure of graphs.*
- Papageorgiou, Yannis Yorgos,  *$SL_2(\mathbb{C})$ , the cubic and quartic.*
- Raghunathan, Ravi, *Converse theorems for Dirichlet series with poles.*
- Voss, Karl Alvin, *Self-similar solutions of the Navier-Stokes equations.*

## STATISTICS

- Iversen, Edwin, *A spatial and temporal Markov random field model with application to real estate price indices.*
- Yang, Yuhong, *Minimax optimal density estimation.*

## DELAWARE

### University of Delaware (5)

## MATHEMATICAL SCIENCES

- Byer, Owen, *Some results on extremal  $(\nu, e)$ -graphs.*
- Dover, Jeremy, *Theory and applications of spreads of geometric spaces.*
- Kaup, Peter, *An inverse problem arising in corrosion detection.*

Macansantos, Priscilla, *The Kurzweil-Henstock integral: Applications to ordinary differential equations, differential inclusions, and Banach space-valued functions.*

Wantz, Kenneth, *Unital embedded in finite projective planes.*

## DISTRICT OF COLUMBIA

### George Washington University (2)

## MATHEMATICS

Ramamurthi, Sita, *Dynamics near the essential singularity for zero-free entire vector fields of finite order.*

## STATISTICS

Lent, Janice, *Probabilistic analysis of some searching and sorting algorithms.*

## FLORIDA

### Florida Atlantic University (2)

## MATHEMATICS

- Fischer, Bernd, *On the geometric quantization of symplectic Lie group actions.*
- Winkowska-Nowak, Katarzyna, *Topologizing Boolean algebra.*

### Florida Institute of Technology (2)

## MATHEMATICS

- Kovach, Todd, *Quasilinearization and interval analysis.*
- Yin, Yunfeng, *A unified study of differential equations with antiperiodic boundary conditions.*

### Florida State University (8)

## MATHEMATICS

- Ruane, Kim E., *Boundaries of groups.*
- Wen, Fengping (John), *Topics in quantum groups.*
- Young-Kyun, Yang, *An analysis of Mushroom Chimney structures.*
- Zhang, Liang (Peter), *On analytic and algebraic properties of Jacobian varieties of Riemann surfaces.*

## STATISTICS

- Amirsehi, Kourosh, *Testing for a time-dependent covariate effect in the linear risk model.*
- Dorado, Crisanto, *Estimation of the survival function from data on units which are repaired upon failure.*
- Subramanian, Sundarraman, *Estimation of survival functions when failure indicators are missing completely at random.*
- Yang, Jie, *Likelihood ratio based confidence bands in survival analysis.*

**University of Florida (8)**

## INDUSTRIAL AND SYSTEM ENGINEERING

Altibi, Naser A., *A non-linear programming application for optimization of electricity capacity expansion and emission planning problems.*

El Hafsi, Mohsen, *Real-time production and setup scheduling of deterministic and stochastic manufacturing systems.*

Rayco, Maria Brenda R., *Algorithmic approaches to demand point aggregation for location models.*

## MATHEMATICS

Moser, William R. II, *Approximation methods in inductive inference.*

Pulapaka, Hari, *Non-revisiting paths and cycles in polyhedral maps.*

## STATISTICS

Kang, Taewoon, *A modified method for bootstrap confidence intervals.*

Morrison, Scott, *A multiple regression model for angular responses.*

Um, Yonghwan, *Multivariate nonparametric tests for independence and for multi-sample location problem.*

**University of Miami (1)**

## MATHEMATICS AND COMPUTER SCIENCE

Avila, Eric, *Permanence in seasonal ecological models with spacial heterogeneity.*

**University of South Florida (4)**

## MATHEMATICS

Lu, Guoqi, *Markov processes with random transition probabilities.*

Pritsker, Igor, *Convergence and zero distribution of Laurent-type rational functions.*

Yoder, Margaret, *String rewriting applied to problems in the braid groups.*

Zhou, Yanmu, *Arrangements of points on the sphere.*

**GEORGIA****Emory University (5)**

## BIostatistics

Kolczak, Margarette Smith, *Assumptions and variance estimates in evaluating vaccine efficacy using the household secondary attack rate.*

## MATHEMATICS AND COMPUTER SCIENCE

Carroll, Blayne, *Subgraph transformations: A generalization of line graphs.*

De Maio, Joseph, *The embedding of a  $2 - \binom{n}{2}, \frac{n}{2}, 1$  design in a projective plane of even order  $n$ .*

Harris, John, *Forbidden triples of subgraphs and traceability.*

Wysocka, Beata, *Some results in anti-Ramsey theory.*

**Georgia Institute of Technology (8)**

## MATHEMATICS

Bussian, Eric Richard, *Bounding the edge cover time of random walks on simple graphs.*

Eidenschink, Michael, *Exploring global dynamics: A numerical algorithm based on the Conley index theory.*

Leiva, Hugo, *Skew-product semiflows and time-dependent dynamical systems.*

Meddin, Mona, *Genetic algorithms: A Markov chain and detail balance approach.*

Mendivil, Franklin, *Compactifications and function spaces.*

Rehacek, Jan, *Ergodic billiards and mechanism of defocusing in  $n$  dimensions.*

Rufeger, Waltraud, *An analysis of the oregonator.*

Thomas, Diana Maria, *Dynamics of lattice systems.*

**University of Georgia (5)**

## MATHEMATICS

Cheng, Fred Yuanyou, *An explicit upper bound of the Riemann zeta function in the critical strip and a conjecture of Graham.*

Kresic-Juric, Sasa, *Loop groups, integrable systems of classical mechanics and discretizations.*

Peng, Chuang, *Relative projectivity, relative cohomology and the ideals in cohomology rings.*

Srinivasan, Anitha, *Computations of class numbers of quadratic fields.*

## STATISTICS

Datta, Susmita, *Dynamics of cytonuclear disequilibria and related statistical tests for the neutrality of mitochondrial DNA makers for hybrid zone data.*

**HAWAII****University of Hawaii at Manoa (1)**

## MATHEMATICS

Huang, Guoxiang, *Automated reasoning and machine learning.*

**IDAHO****Idaho State University (3)**

## MATHEMATICS

Brunette, John J., *The Clairaut equation: A study in the geometry of partial differential equations.*

Simon, Rick, *Reconstructing multivariable isotonic functions in  $L_1$  via discrete approximation.*

Tiffin, Timothy L., *Enumeration of Hamiltonian cycles and paths in  $m \times n$  grid graphs.*

**University of Idaho (1)**

## MATHEMATICS

Meerdink, Kenneth, *An unavoidable tangle approach to the Kawach-Nakanishi conjecture.*

**ILLINOIS****Illinois State University (2)**

## MATHEMATICS

Lewis, Raynold, *The knowledge of equivalent fractions that children in grades 1, 2 and 3 bring to formal instruction.*

Stump, Sheryl, *Secondary mathematics teachers: Knowledge of the concept of slope.*

**Northern Illinois University (4)**

## MATHEMATICAL SCIENCES

Huang, Guoqiang, *Problems in the theory of block induction.*

Lee, Ran, *Homotopy method for solving eigen-problems of Hermitian matrices.*

Marzano, Frank, *Periodic differential equations with singularity.*

Talarico, Susan, *Non-definite eigenvalue problems.*

**Northwestern University (12)**

## INDUSTRIAL ENGINEERING AND MANAGEMENT SCIENCE

Barnes-Schuster, Dawn, *Supply chain management and the use of long term supply contracts.*

Choudhury-Irwin, Sania, *A packet switched data concept for mixed traffic CDMA cellular system.*

Felli, James C., *The expected value of perfect information as an alternative to sensitivity analysis in multiparametric decision problems.*

Kuo, Yar-Lin, *Scheduling aircraft engine maintenance: Modeling and optimization.*

Monteiro, Brian L., *Airline yield management origin-destination seat inventory control.*

Tibben-Lembke, Ronald S., *Essays in logistics.*

Watson, Michael S., *A standardization analysis process applied to steel coils in the automotive industry.*

## MATHEMATICS

Bendel, Christopher P., *Support varieties for infinitesimal algebraic groups.*

Cogswell, Kurt, *Volume growth in unstable submanifolds.*

Diller, David, *Some nonlinear partial differential equations arising in thin film dynamics and the Ricci flow.*

McDonald, John, *Fractional power series and resultants.*

McDougall, Jane, *A study of a family of non-linear functionals.*

## Southern Illinois University, Carbondale (5)

### MATHEMATICS

- Bonn, Jeffrey T., *Combinatorial objects from ordering the elements of a finite field.*
- Brown, Robert Alan, *Decomposition of dual-extending modules.*
- Haile, Dawit, *Extremal results on critical edge-chromatic graphs.*
- Li, XinMin, *Sampling expansions and uniform bounds for the corresponding truncation errors.*
- Raffoul, Youssef N., *Stability, boundedness, and periodic solutions of Volterra type difference equations.*

## University of Chicago (20)

### MATHEMATICS

- Adler, Jeffrey Daniel, *Refined anisotropic  $K$ -types and supercuspidal representations.*
- Anspach, Peter H., *The unramified discrete spectrum of  $P\text{Sp}(4)$  over a rational function field.*
- Benveniste, Elie Jerome, *Rigidity and deformations of lattice actions preserving geometric structures.*
- Cole, Michael, *Complex oriented  $\text{RO}(G)$ -graded equivariant cohomology theories and their formal group laws.*
- Consani, Caterina, *Double complexes and Euler  $L$ -factors on degenerations of algebraic varieties.*
- Johnston, Heather Marie, *Transversality for non-manifolds.*
- Kley, Holger Philipp, *Rigid curves in quintic threefolds.*
- Korey, Michael B., *Ideal weights: Doubling and absolute continuity with asymptotically optimal bonds.*
- Lauter, Kristin Estella, *Ray class field construction of curves over finite fields with many rational points.*
- Mundel, Trevor, *A model of edge detection in the primary visual cortex.*
- Resnick, Serge, *Dynamical problems in non-linear advective partial differential equations.*
- Wolbert, Jerome Joseph, *Classifying modules over  $K$ -theory spectra.*

### STATISTICS

- Ambrosius, Walter Thomas, *Deformable templates and image compression.*
- Barnard, John, *Cross-match procedures for multiple-imputation inference: Bayesian theory and frequentist evaluation.*
- Collins, Linda, *Inter-event distance methods for the statistical analysis of spatial point processes.*
- Dong, LiMing, *Adjustment for covariates in the analysis of clinical trials.*
- Frigge, Michael, *Some Monte Carlo methods in linkage analysis.*
- Hung, Hui-Nien, *Average likelihood.*
- van Dyk, David A., *Construction, implementation and theory of algorithms based on data-augmentation and model reduction.*

Zhang, Qi Yu, *Statistical inference and nuisance parameters.*

## University of Illinois at Chicago (12)

### MATHEMATICS, STATISTICS, AND COMPUTER SCIENCES

- Bardoe, Matthew, *Universal embedding for the involution geometries of  $U(3)$ ,  $SU(3)$  on  $CO_1$ .*
- Cheng, Hon-Wing, *On-line computations of the Yau filtering system.*
- Ganesan, Venketraman, *On the characters of and parabolic unipotent subgroups of finite general linear groups.*
- Goetz, Arkadiusz, *Dynamics of piecewise isometries.*
- Kim, Mijung, *Multivariate survival analyses with general extreme value model.*
- Mathias, John Franklin, *A diagrammatic approach to calculating knot invariants of finite type.*
- Monroe, Laura, *Greedy codes over binary and non-binary fields.*
- Rainbolt, Julianne, *On the Gelfand-Graev and generalized Gelfand-Graev representations of  $U(3, q)$ .*
- Rasoulian, Amid, *Some theorems on the structure of finite dimensional estimation algebras.*
- Tang, Chungyu, *Nonparametric regression analysis for repeated measured data using wavelets.*
- Umland, Kristin, *The Mod-2 cohomology of the Lyons group.*
- Vatan, Farrokh, *On the analog computation of Boolean functions.*

## University of Illinois, Urbana-Champaign (25)

### MATHEMATICS

- Axel, Ralph, *The interaction of shock waves and dispersive waves.*
- Bae, Jaegug, *On subset-sum-distinct sequence of positive integers.*
- Boeckle, Gebhard, *Universal deformations of even Galois representations and relations to mass wave forms.*
- Cavagnaro, Catherine Elizabeth, *A homotopy reciprocity law for ribbon disc complements.*
- Choi, Changsun, *Inequalities for the differential subordinates of martingales, harmonic functions, and Ito processes.*
- Gies, Paul, *Efficient algorithms in Coxeter groups of large type.*
- Harnish, Stephen, *A non-well-founded set theory (GST).*
- Kerofsky, Louis, *Harmonic forms under metric and topological perturbations.*
- Kim, Eunsang, *Foliations and exotic index theory.*
- Knox, Steven, *The number of facets of a projection of a convex polytope.*
- LaFramboise, Thomas, *The Grothendieck-Cousin complex on  $G/B \times G/B$ .*
- Lee, Si-Chang, *Some special cases of Chow groups of complete ramified regular local rings.*

Movshovich, Yevgenya E., *Integrals of harmonic functions over curves and surfaces.*

- Ose, David Thomas, *Toward a deformation theory for Galois representations of function fields.*
- Qian, Xiaoling, *Zeros of partial sums of power series.*
- Schreiner, Walter, *Matrix regular orders on operator spaces.*
- Walker, Judith L., *Algebraic geometric codes over rings.*
- Walker, Mark, *Motivic complexes and the  $K$ -theory of automorphisms.*
- Yao, Leummin, *On the maximum number of limit cycles of certain polynomial Lienard equations.*

### STATISTICS

- Chen, Huann-Sheng, *Estimation in random field models for noisy spatial data.*
- Choi, Kyungmee, *Nonparametric multivariate multisample tests of the location problem and multivariate regression based on directions of data.*
- Douglas, Jeffrey Alan, *Theory and applications of nonparametric regression in item response theory.*
- Ge, Nanxiang, *Contributions to classification and calibration with high-dimensional data.*
- Xie, Minge, *Regression modeling: Latent structure, theories and algorithms.*
- Zhao, Quanshui, *Estimation and inference for conditionally heteroscedastic models.*

## INDIANA

### Indiana University (4)

#### MATHEMATICS

- Ding, Hongyu, *Group actions on noncompact surfaces.*
- Letsche, Carl, *Eta invariants and the knot-slice problem.*
- Pearson, Kimberly, *Algebraic  $K$ -theory of two-dimensional crystallographic groups.*
- Zhan, Mei-Qin, *Existence theory for the Landau system from plasma physics.*

### Indiana University-Purdue University, Indianapolis (2)

#### MATHEMATICAL SCIENCES

- Alwis, Pradeep, *Asymptotic morphisms on contact manifolds.*
- Wang, Yinping, *Unified frequentist and Bayesian testing of precise hypothesis; in fixed samples and sequential settings.*

### Purdue University (31)

#### INDUSTRIAL ENGINEERING

- Lee, Julien, *Integration of the steel and electricity industries using price and load information exchange.*
- Mehta, Sanjay V., *Predictable shop scheduling in the presence of machine breakdowns.*
- Morris, Sarah E., *Simultaneous wide-area and local-access network design.*

Venkatadri, Uday, *Fractal layout for job shops.*

Wood, Demet, *Variances and quantiles in dynamic-system performance: Point estimation and standard errors.*

Zhang, Zaili, *Topics in linear, dynamic and multi-objective optimization.*

#### MATHEMATICS

Capogna, Luca, *Optimal regularity for quasilinear equations in nilpotent stratified Lie groups of step two.*

Dougherty, Michael Matthias, *Higher gradient integrability of minimizers for functionals with polyconvex local energies.*

Elek, Gabor, *Combinatorial heat kernels and  $L^2$ -topological invariants.*

Fu, David Edward, *Valuations of maximal rational rank and local weak simultaneous resolution.*

Hummelsheim, Klaus Willi, *Universal classes and the Lefschetz formula for holomorphic differential operators.*

Hurst, Paul Rollins, *Linear fractional composition operators on weighted Hardy spaces.*

Kim, Seongjai, *Domain decomposition methods for contaminant transport in fractured porous media.*

Lai, Yung-Hui, *On the relation type of systems of parameters and on the Poincaré series of systems of parameters.*

Lee, Miyoung, *Mixed finite element method for strongly nonlinear elliptic problems: the  $h$ - $p$ -version.*

Li, Hua-Lun, *The stability of embeddings of Cauchy-Riemann manifolds.*

Mohan, Radha, *Cores, Rees valuations and indecomposable modules over a two-dimensional regular local ring.*

Ren, Hongliang, *Numerical solution of the continuation problem for the hyperbolic differential equations.*

Rhoads, Gregory, *Applications of complex function theory to minimal surfaces.*

Smits, Robert George, *Conditioned Brownian motion, spectral gaps and rates to equilibrium for diffusions.*

Sun, Li-Chuan, *Growth of Betti numbers, and cohomology operators defined by a deformation.*

Tang, Jing, *Probabilistic analysis of digital search trees.*

Waldyaratne, Ajith, *Extensions of almost CR vector bundles.*

Yang, Daoqi, *Parallel non-overlapping domain decomposition algorithms for elliptic partial differential equations.*

Yie, Seongan Lim, *Solutions of Cauchy Riemann equations on a pseudoconvex domain with nonsmooth boundary.*

Yue, Rong, *Optimal feedback control and value functions.*

Zhang, Zhuoyuan, I. *Differential games with maximum cost; II. The decomposition of initial space of RFDE.*

#### STATISTICS

Abate, Marcey L., *The use of historical data in statistical selection and robust product design.*

Dmochowski, Jacek, *Properties of intrinsic Bayes factors.*

Ruff, Dustin Dean, *Minimum Cramer-von Mises estimation of a distribution.*

Varshavsky, Julia A., *On the development of intrinsic Bayes factors.*

### University of Notre Dame (10)

#### MATHEMATICS

Byun, Yanghyun, *The unstable tangent fibration of Poincaré complex.*

Chacholski, Wojciech, *Functors  $C^{w_a}$  &  $P_a$ .*

DeCataldo, Mark, *Codimension of two subvarieties of quadrics.*

DiRocco, Sandra, *A higher order embedding of surfaces.*

Michalski, Grzegorz, *On foundations of recursion theory.*

Nakamura, Shu, *The classification of the third reduction with a spectral value condition.*

Sanderson, John, *Intrinsic pseudodistances.*

Wang, Tzu-Yueh (Julie), *The truncated second main theorem and diophantine problems of function fields.*

Wraith, David, *Exotic spheres with positive Ricci curvature.*

Yu, Chern-Yih, *The conjecture real K-theory of elementary Abelian R-groups.*

### IOWA

#### Iowa State University (10)

#### MATHEMATICS

Hsu, Feng-Luan, *Coding theory and discrete transforms.*

Lai, Ruey-Gang, *Practical feedback stabilization of nonlinear control systems and applications.*

Lin, Shan, *Analysis and synthesis of nonlinear systems.*

Ou, Chung-Ming, *Global aspects of control systems: Perspectives from control Lyapunov functions.*

Wang, Rong, *Modulation of  $\gamma$ -aminobutyric acid (GABA) type A receptor-mediated responses in spinal dorsal horn neurons by  $\mu$ -opioid receptor agonists and  $Ca^{2+}$  calmodulin-protein kinase and Monte Carlo simulation of the GABAergic synaptic transmission.*

#### STATISTICS

Emir, Birol, *Nonparametric procedures for comparing the performance of repeated markers used to predict a survival endpoint.*

Lei, Dean Ding-Hwa, *The LRT method of constructing a two-sided "variables" acceptance region and its comparison with other methods.*

Liu, Chih-Yao, *Variants of asymptotic extremes.*

Reyes, Melissa Lucia Lopez, *Automatization and transfer of alphabet arithmetic, number comparison, and object comparison among intellectually gifted youth, average-ability youth, and college students.*

Rohit, Siddheshwar DEO, *Tests for unit roots in multivariate autoregressive processes.*

### University of Iowa (13)

#### APPLIED MATHEMATICS AND COMPUTATIONAL SCIENCE

Luh, Chi-Mei, *Numerical methods for workspace analysis of mechanisms and manipulators.*

#### MATHEMATICS

Bai, Rekha, *Semigroups for which every right congruence is essential.*

Bean, Stephen, *Riemannian manifolds satisfying  $[Ric^g, w] = 0$ , and their isotropic curvatures.*

Chen, Jie, *Numerical analysis of a family of parabolic variational inequalities.*

Deaconu, Valentin, *Groupoid constructions and  $C^*$ -algebras.*

Howe, Michael, *Representations of  $GL(\infty)$  and decomposition of Fock spaces.*

Kim, Seki, *Numerical solutions in singular integral equations.*

Na, Qiyuan, *Some contributions to the theory of operator modules.*

Wu, Chong-Yih, *Right congruences on semigroups.*

Yu, Hua-Ping, *On rings and modules with the exchange property.*

Zhou, Jinshi, *Disease transmission models with varying population sizes.*

#### STATISTICS AND ACTUARIAL SCIENCES

Cross, Gavin Morrison, *Nonparametric cumulative charts based on linear placement statistics.*

Yang, King Jang, *On the number of subgraphs of a random graph in  $(0, 1)$   $D$ .*

### KANSAS

#### Kansas State University (9)

#### MATHEMATICS

Al-Agha, Khaled, *On the involutory dimension of involution posets.*

Goeckel, Gregory, *On nonaxisymmetric entry flow in a semi-infinite circular tube at very low Reynolds numbers.*

Mitchell, Patrick, *Algorithms for finding small solutions.*

Ravindran, Kuppasami, *On a structure theory of effect algebras.*

Yan, Chuntao, *Nonlinear wave equations and solitary waves.*

## STATISTICS

- Curriero, Frank Charles, *The use of non-euclidean distances in geostatistics.*
- Khamis, Imad H., *Multiple step-stress accelerated life testing.*
- Njuho, Peter M., *Using mixed models to analyze data from on-farm trials.*
- Wickremasinghe, Nimal, *Testing subhypotheses in the nonreplicated three-way multiplicative interaction model.*

## University of Kansas (2)

## MATHEMATICS

- Chen, Zhisheng, *Some applications of adaptive control: Diffusion approximation and heirarchical approximation schemes.*
- Chu, Yi, *An equivariant Toeplitz  $C^*$ -algebra over  $SL(2, \mathbb{R})$ .*

## Wichita State University (3)

## MATHEMATICS

- Aguilar, Valentina, *The range of the exponential Radon transform.*
- Hu, Chenglie, *Application of computational complex analysis.*
- Sever, Ali, *On the inverse conductivity problem.*

## KENTUCKY

## University of Kentucky (7)

## MATHEMATICS

- Bronstein, Albert, *On representations of quivers.*
- Lou, Zhouming, *Orthogonal spline collocation for biharmonic problems.*
- Roper, Kevin, *Convexity properties of holomorphic mappings of the unit ball in  $C^n$ .*
- Wells, Clark, *An improved method for sampling of molecular conformation space.*

## STATISTICS

- Hinkle, John, *Reciprocal components, reciprocal curves and partial least squares.*
- Peterson, Patrick, *A family of quadratic forms indexing spatial or temporal clustering of epidemiological count data.*
- Zhang, Yuan, *Regression in selection biased sampling model.*

## LOUISIANA

## Louisiana State University (9)

## MATHEMATICS

- Ahmad, Hamza, *Function fields of Pfister neighbors.*
- Chimitza, Basinyi, *Modules associated to disconnected surfaces by quantization functors.*
- Gonzalez, Genaro, *Locally generated semigroups.*

Mills, Allan Donald, *The determination of a matroid's structure from properties of certain large minors.*

Nido, Juan Antonio, *Multiplicities and transforms of ideals.*

Shi, Genbao, *Mathematical contributions to elasticity and quantum theory.*

Vijayan, Colathur, *On the relationship between representation equivalence and isomorphism of fundamental groups of three-step nilmanifolds.*

Wang, Kunyang, *The generalized Kompaneets equation.*

Zou, Dongya, *Existence and uniqueness theorems for some white noise integral equations.*

## Tulane University (4)

## MATHEMATICS

- Fink, Thorsten, *Cartesian powers of the group of integers.*
- Liu, Wenhong, *On complete conformal deformations of noncompact Riemannian manifolds.*
- Wu, Sanxing, *On the semilinear equation  $\Delta u + k(x)u - f(x, u) = 0$  on a complete manifold.*
- Yuan, Zhongmin, *Identifying 4-manifolds up to diffeomorphism.*

## University of Southwestern Louisiana (7)

## MATHEMATICS

- Johnson, Darren John, *Combining independent studies in a calibration problem.*
- Lin, Mingchun, *Some results on loss estimation for the normal model with unknown variance.*
- Liu, Hon-hung Terence, *Parabolic quenching and blow-up.*
- Ning, Shiyang, *Quenching problems of parabolic differential equations.*
- Reeves, Melissa Johnston, *Expanding connected topologies on groups.*
- Shi, Xiaofa, *Intermediate expression preconditioning and verification for rigorous solution of nonlinear systems.*
- Xiao, Sihai, *Loops, group codes, and applications.*

## MARYLAND

## Johns Hopkins University (9)

## BIostatistics

- Hall, Charles B., *Diagnostics for dependent data regression models.*
- Heagerty, Patrick J., *Multivariate multinomial marginal models.*
- Melton, Beth A., *An estimating equations approach for latent variable models with applications to psychosocial data.*
- Xue, Xiaonan, *Analysis of survival data under heterogeneity: Univariate and bivariate frailty models.*

## MATHEMATICAL SCIENCES

Singer, Karen, *Random intersection graphs.*

## MATHEMATICS

- Kovacs, Julio, *Local and global characterizations of Schwarzschild solution in classical relativity.*
- Li, Yanfei, *On the Hopf ring of the sphere.*
- Petrovic, Zoran, *On spaces of matrices satisfying some rank conditions.*
- Rajan, Ashvin, *The topology of economic equilibria.*

## University of Maryland, Baltimore County (6)

## MATHEMATICS AND STATISTICS

- Barash, Steven Craig, *Detection and estimation of conserved signals in multiple DNA sequences.*
- Baron, Michael I., *Confidence estimation in the change-point problem.*
- Dondoshansky, Ilya V., *On factorization of entire functions with respect to composition and value distribution.*
- Wu, Zhong, *Some contributions to parametric estimation using a ranked set sample.*
- Xenophontos, Christos, *The hp version of the finite element method for singularly perturbed problems in unsmooth domains.*
- Zha, Wenxing, *Confidence regions in multivariate calibration.*

## University of Maryland, College Park (19)

## MATHEMATICS

- Brown, Richard, *Mapping class actions on the  $SV(2)$ -representation varieties of compact surfaces.*
- Chin, Wai, *Chaotic dynamics in piecewise smooth systems.*
- Fang, Yung-Fu, *Local existence for semilinear wave equations and applications to Yang-Mills equations.*
- Grant, Gregory, *Galois  $PSL(2, F)$  extensions and root numbers.*
- Hermiz, Keith, *Rayleigh-Benard convection driven shear: Models, stability, dynamics and transport.*
- Huang, Sheng-Fei, *Doubling land epsilon factors of representations of  $SL(2)$ .*
- James, Scott, *Multiparticle systems.*
- Kwon, Jae Ryong, *Compressible Navier-Stokes.*
- Laing, Alan, *On higher level singular moduli.*
- Park, Chun-gil, *The bundle structure of non-commutative tori.*
- Paul, Annegret, *Howe correspondence for real unitary groups.*
- Roberts, Boyd, *Q-curves over quadratic fields.*
- Sargent, Michael, *Diffeomorphic equivalence of configuration spaces of polygons in constant curvative spaces.*
- Shirron, Joseph, *Solution of exterior Helmholtz problems using finite and infinite elements.*



Stone, Thomas, *The mathematical problem of crack propagation and its numerical treatment.*

Takamura, Shigeru, *Deformation of complex surfaces with boundary.*

Wu, Yuan-Jye, *Matrix decompositions in signal processing and Markov chains.*

Yang, Tonghai, *Theta liftings and L-functions of elliptic curves.*

Zocca, Valentino, *Integration of the symplectic form on the space of convex real projective structures on a Riemann surface.*

## MASSACHUSETTS

### Boston University (10)

#### MATHEMATICS

Di Sario, Robert Michael, *A non-parametric approach to analysis for dependent and independent data.*

Galia, Joseph H., Jr., *Robustness and power of likelihood ratio tests applied to data distorted by floor effects.*

Georges, James E., II, *Bayesian tolerance regions and model diagnostics for mixed regression models.*

Hendrix, Suzanne Brown, *Comparing intent-to-intent and protocol compliant analyses to exposure analysis in the presence of various dropout mechanisms.*

Kaplan, Samuel Ross, *The collinear one-bumper two-body problem.*

Lovita, Adrian, *p-adic cohomology of semistable Abelian varieties.*

Pacelli, Patricia Lynn, *Uniform boundedness for rational points.*

Robatino, Andre, *Computation of mock Heeger points on modular elliptic curves.*

Silbershatz, Halit, *Estimation of a pooled relative risk and adjustments for small samples for performing a meta-analysis.*

Suzuki, Jeff Akinori, *The history of the stability problem in celestial mechanics, from Newton to LaPlace (1642-1787).*

### Brandeis University (9)

#### MATHEMATICS

Bode, Martina, *Homogeneous vector bundles on symplectic Grassmannians.*

Gallego, Francisco, *Szygies of ruled surfaces.*

Li, Tian-Jun, *Seiberg-Witten invariants and topology of symplectic 4-manifolds.*

Moisescu, Marius, *Isotopy invariants for knotted  $\theta$ -curves.*

Patry, Luc, *Points of structural transitions of Dirichlet and applications to flat 3-manifold and lens spaces.*

Peeva, Irena, *Free resolutions.*

Purnaprajna, Bangere, *Vanishing theorems and syzygies for surfaces.*

Sun, En-Hung, *On the skein-type relations for the Kontsevich integral.*

Xu, Bing, *Geometry of the K P hierarchy and string equations.*

### Harvard University (31)

#### BIostatISTICS

Cheng, Su-Chun, *Analysis of failure time data with linear transformation models.*

Daniels, Michael Joseph, *Hierarchical regression models with applications.*

Davidov, Ori, *Contributions to statistical methodology in cancer research.*

Elashoff, Michael Reid, *Individualized treatment for HIV/AIDS.*

Hogan, Joseph William, *Mixture models for incomplete longitudinal and event time data.*

Holcroft, Christina Ann, *Design and analysis of multistage studies with missing data.*

Hu, Ping, *Measurement errors, reporting delay and early detection trials.*

Rogus, John Joseph, *An extension of WPC to test for linkage in the presence of gene-environment interaction and applications to N/DDM and Alzheimer's disease.*

Scharfstein, Daniel Oscar, *Semi-parametric efficiency: Implications for the design and analysis of group sequential studies.*

Troxel, Andrea Beth, *Methods for the analysis of longitudinal measurements subject to nonignorable non-monotone missing data.*

#### ENGINEERING AND APPLIED SCIENCES

Chen, Stanley F., *Building probabilistic models for natural language.*

DeCatur, Scott E., *Efficient learning from faculty data.*

Hallinan, Peter W., *A deformable model for the recognition of human faces under arbitrary illumination.*

Khardon, Roni, *Learning to be competent.*

Larson, Michael E., *Stochastic optimization of rare event probability problems.*

Nesson, Edward, *Randomized, oblivious, minimal routing algorithms for multi-computers.*

Sloan, Norton Q. III, *Dynamics of a shelf-slope front: Process studies and data-driven simulations in the Middle Atlantic Bight.*

Walton, Robert L., *R-CODE: A very capable virtual computer.*

Weisman, Michael J., *Parameterized surface models for binocular stereo vision.*

Zao, John Kar-Kin, *Finite-precision representation and data abstraction of three-dimensional Euclidean transformations.*

Zhu, Song Chun, *Statistical and computational theories for image segmentation, texture modeling and object recognition.*

#### MATHEMATICS

Hassett, Brendan Edward, *Special cubic hypersurfaces of dimension four.*

Liu, Ai-Ko, *Wall crossing formula of Seiberg-Witten invariants and symplectic four-manifolds with  $b_2^+ = 1$ .*

Mann, Brad, *A Berry-Esseen central limit theorem for discrete Markov chains.*

Polishchuk, Alexander, *Biextensions, Weil representations on derived categories, and theta-functions.*

Rumelhart, Karl, *Minimal representations of exceptional p-adic groups.*

Silver, Jeff, *Weighted Poincaré and exhaustive approximation techniques for scaled Metropolis-Hastings algorithms and spectral total variation convergence bounds in infinite commutable Markov chain theory.*

Steinsaltz, David, *Socks and boxes: Variations on Daniel Bernoulli's marriage problem.*

#### STATISTICS

Larsen, Michael D., *Bayesian approaches to finite mixture models.*

Li, Heng, *A vector space approach to linear models and its application in dyadic designs.*

McIntosh, Martin W., *Controlling for an ecological parameter in meta-analysis and hierarchical models.*

### Massachusetts Institute of Technology (23)

#### MATHEMATICS

Astashkevich, Alexander, *Fedosov's Quantization of semisimple coadjoint orbits.*

Athanasiadis, Christos, *Algebraic combinatorics of graph spectra, subspace arrangements and Tutte polynomials.*

Bremke, Kirsten-Anne, *Kazhdan-Lusztig polynomials and cells for affine Qeyl groups and unequal parameters.*

Canas da Silva, Ana M., *Multiplicity formulas for orbifolds.*

Castellacci, Giuseppe, *Invertible sheaves on generic rational surfaces and a conjecture of Hirschowitz's.*

He, Siqian, *Statistics and dynamics of stiff chains.*

Kiwi, Marcos A., *Probabilistically checkable proofs and the testing of Hadamard like codes.*

Knutson, Allen, *Weight varieties.*

Korogodsky, Leonid I., *Representations of non-compact quantum groups: Quantum orbit method and super-tensor products.*

Kravchenko, Olga, *Deformation quantization of symplectic fibrations.*

Losonczy, Jozsef, Jr., *Combinatorial aspects of the theory of canonical forms.*

Mihov, Diko, *Quantization of nilpotent coadjoint orbits.*

Mooers, Edith, *The heat kernel for manifolds with conic singularities.*

Okazaki, Satomi, *Cycle types of permutations with restricted positions and a characterization of a new class of interval orders.*

Piunikhin, Serguei, *Quantum and Floer cohomology have the same ring structure.*

Rezk, Charles, *Spaces of algebra structures and cohomology of operads.*

Rovinsky, Marat, *Multiple Gamma functions and derivatives of L-functions at non-positive integers.*

Russell, Alexander, *Efficient holographic proofs.*

Stone, Richard, *2-loop perturbative invariants of lens spaces and a test of Chern-Simons quantum field theory.*

Strela, Vasily, *Multiwavelets: Theory and applications.*

Wilson, David, *Exact sampling with Markov chains.*

Woodward, Christopher, *Multiplicity-free Hamiltonian actions and existence of invariant Kähler structure.*

Worthing, Rodney A., *Contributions to the variational theory of convection.*

## Northeastern University (5)

### MATHEMATICS

Berenshtein, Arkady, *Algebraic and combinatorial structure of quantum groups and their canonical bases.*

Bishop, James, *Bounds on p-values for classes of stopping rules.*

Finn, David, *Positive solutions of nonlinear elliptic equations with prescribed singularities.*

Navarro, Jorge, *Special one-dependent processes.*

Song, Mingjie, *Schubert varieties in  $Sp(2n)/\beta$ .*

## Tufts University (3)

### MATHEMATICS

Hou, Qiang, *On Markov properties of solutions to wave equations driven by Levy noise.*

Miao, Weiwen, *Maximum likelihood estimation for exponential families.*

Zhang, Gang, *Regular and empirical central limit theory for exchangeable random variables.*

## University of Massachusetts, Amherst (9)

### MATHEMATICS AND STATISTICS

Chen, Hsing-Me, *Estimating distributions in the presence of measurement error with replicate values.*

Chen, Zesen, *Degrees of the norm and trace of the J-invariant of Drinfeld modules associated to hyperelliptic curves.*

Gaze, Eric, *Degenerating variations of mixed Hodge structures.*

Huerfano, Ruth Stella, *Unitary representations of gauge groups.*

Kieffer, Gordon, *The large deviation principle for two-dimensional stable queueing systems.*

Sykes, Scott, *Modern applications of lattice theory.*

Vassileva, Irina, *Dedekind eta function, Kronecker limit formula and Dedekind sum for the Hecke group.*

Wang, Decheng, *Stochastic modelling of magnetic resonance images with applications to tissue classification.*

Wang, Li, *Radiation condition development for a marching algorithm.*

## MICHIGAN

### Michigan State University (18)

#### MATHEMATICS

Balogh, Zoltan, *Metric properties of semi-hyperbolic dynamics with applications to harmonic measure.*

Gray, Paul, *Superconductivity models and their numerical implementation.*

Huang, Liying, *Stochastic differential equations and their numerical approximations.*

Izhikevich, Eugene, *Bifurcations in brain dynamics.*

Jin, Ming, *Quasi-Laguerre iteration and its application in solving symmetric tridiagonal eigenvalue problems.*

Johnson, Mark Ray, *Cohen-Macaulay blowing-up algebras and construction in linkage.*

Korkmaz, Mustafa, *Complexes of curves on orientable surfaces and mapping class groups of nonorientable surfaces.*

Lech, Jaroslaw, *Essentially normal multiplication operators on the Dirichlet space.*

Papadopoulos, Panagiotis, *Some amalgams in characteristic 3 related to  $Co_1$ .*

Song, Young-Kwon, *Maximal commutative subalgebras of  $n$  by  $n$  matrices over a field.*

Wang, Kunchuan, *The generalization of paraproducts and the full T1 theorem for Sobolev and Triebel-Lizorkin spaces.*

Wang, Xiaodi, *Wavelet-based methods for some boundary value problems.*

Wieczorek, Wojciech, *The Donaldson invariant and embedded 2-spheres.*

Zhang, Ping, *Subposets of Boolean algebras.*

Zhang, Shangqian, *Studies on Sturm-Liouville wavelets and fast algorithms.*

Zou, Xiulin, *Quasi-Laguerre's method and its parallel implementation on solving symmetric tridiagonal eigenvalue problems.*

#### STATISTICS

Katsikiotis, Vasilis, *Regression models with (Case 2) interval censoring.*

Zhang, Hao, *On periodic autoregression: Maximum entropy modeling and parameter estimation.*

## University of Michigan, Ann Arbor (27)

#### INDUSTRIAL AND OPERATIONS ENGRG.

Alfakih, Abdo Youssef, *Facets of an assignment problem with a 0-1 side constraint.*

Chou, Yu-Li, *Accelerating the solution of dynamic programs through state aggregation.*

Cross, William Paul, *Approximating solutions in infinite horizon optimization.*

Hammett, Patrick C., *Validating, stamping and metal assembly processes during automotive body development.*

Isken, Mark Wayne, *Personnel scheduling models for hospital ancillary units.*

Kebblis, Matthew Frank, *Control of assembly systems.*

Kim, Samuel Uk, *Framework for development of maintenance policies and setup switchovers for CNC machines.*

Norman, Bryan Allan, *The random keys genetic algorithm for complex scheduling programs.*

Park, Jung Hwan, *A cost-driven partitioning algorithm for tandem trip-based material handling systems.*

Sang, Shih-Ching Albert, *Statistical modeling of circular features and measurements obtained using coordinate measuring machines.*

#### MATHEMATICS

Boonstra, Brian K., *Lower-dimensional manifolds in several complex variables.*

Borisov, Lev A., *A finiteness theorem for subgroups of  $Sp(4, \mathbb{Z})$ .*

Cao, Chun, *The geometry of discrete groups.*

Coyle, Lester N., *Diffusion of random walk in a random environment.*

Davidson, Morley A., *Waring's problem in number fields.*

Greiner, Paul S., *Boundary properties of planar harmonic mappings.*

Kane, Derek G., *Topological central extensions of parahoric subgroups of  $SL(n, D)$ .*

Kriloff, Catherine E., *Representations of graded Hecke algebras associated to noncrystallographic root systems.*

LaForte, Geoffrey L., *Phenomena in the  $n$ -R.E. and  $r$ -REA degrees.*

Langmeyer, Navah, *The quasihyperbolic metric, growth, and John domains.*

Matsumoto, Saburo, *Subgroup-separability of 3-manifold groups.*

McKerihan, Mark D., *Matrices connected with Brauer's centralizer algebras.*

Payne, Tracy L., *Invariant submanifolds for homogeneous flows on quotients of semisimple Lie groups of noncompact type.*

#### STATISTICS

Lo, Chi, *Bayesian estimation of a bounded normal mean.*

Park, Dongryeon, *Sequential design for nonparametric regression with binary data.*

Soon, Guoxing, *Large sample theory of empirical distributions in a window censoring model for renewal processes.*

Tse, Sze Man, *Gaussian approximations in the random truncation model.*

**Wayne State University (4)**

## MATHEMATICS

Gupta, Ishita, *On continuous-time and passive stochastic approximation problem.*

Hu, Yuan-Ping, *Surface matching.*

Miao, Song, *Numerical methods for stochastic optimization.*

Shao, Yongheng, *Nonsmooth sequential analysis in infinite dimensions: Theory and applications.*

**Western Michigan University (2)**

## MATHEMATICS AND STATISTICS

Gavlas, Heather, *A graph theoretic study of the similarity of discrete structures.*

Schultz, Michelle, *Random Cayley maps.*

**MINNESOTA****University of Minnesota, Minneapolis (23)**

## BIOSTATISTICS

Li, Xiaoli, *A mixed effects, cure model analysis of censored longitudinal data.*

Sargent, Daniel Jay, *A general framework for hierarchical survival models in the Cox proportional hazards regression setting.*

## MATHEMATICS

Bastos, Waldemar Donizete, *Exact boundary control for hyperbolic equations in polyhedral domains.*

Bondarevsky, Vadim, *On the global regularity problem for the 3-dimensional Navier-Stokes equations on thin domains.*

Case, Jeremy, *Analytic continuation and rationality of Euler products in integral representations of L-functions for classical groups.*

Cho, Soojin, *Null designs of posets.*

Jones, Phillip, *Asymptotic potential for simulated annealing.*

Kwean, Hyukjin, *Inertial manifolds for reaction diffusion equations: An extension of the principle of spatial averaging.*

Li, Bo, *Analysis and computation of martensitic microstructure.*

Liu, Yong, *Free boundary problems of variational type.*

Lomeli, Hector E., *Exact symplectic twist maps in higher dimensions.*

Lou, Yuan, *Diffusion, self-diffusion and cross-diffusion.*

Merkel, John, *Morse theory and the N-body problem.*

Moreles-Vazques, Miguel, *Perturbation analysis and controllability of elastic beams.*

Sander, Evelyn, *Hyperbolic sets for noninvertible maps and relations.*

Sinha, Samarendra, *Periods of t-motives and special functions in characteristic p.*

Tsai, Dong-Ho, *Geometric expansion of plane curves.*

Zhang, Jianhua, *Nonlinear problems in partial differential equations.*

## STATISTICS

Bura, Efstathia, *Dimension reduction via inverse regression.*

Chiaromonte, Francesca, *A reduction paradigm for multivariate laws.*

Olwell, David, *Topics in statistical process control.*

Shi, Ping, *Bayesian approach to optimal sequential design for destructive life testing.*

Stryszak, Pawel, *Dimension reduction through inverse regression.*

**MISSISSIPPI****Mississippi State University (2)**

## MATHEMATICS AND STATISTICS

Miciano-Carino, Agnes, *Oscillation and asymptotic properties of solutions of higher order delay difference equations.*

Yang, Jin-San, *Least weighted methods in linear models.*

**University of Mississippi (1)**

## MATHEMATICS

Viriden, Lee Inmon, *Rounded lines in matroids.*

**MISSOURI****St. Louis University (1)**

## MATHEMATICS

Landvov, Ryan Alan, *The Jones polynomial of pretzel knots and links.*

**University of Missouri, Columbia (10)**

## MATHEMATICS

Nowell, James Ray, *Periodic finite-gap solutions of the Korteweg-de Vries equation in terms of Dirichlet and Neumann data.*

Panman-Watson, Phyllis Gayle, *Weighted norm inequalities for the ergodic Hilbert transform on locally compact Abelian groups.*

Ratnaseelan, Ratnam, *Trace relations for KdV solutions in connection with general boundary conditions.*

Sticka, Wilhelm Michael, *Elliptic finite-gap solutions for completely integrable systems.*

Teschl, Gerald, *Spectral theory for Jacobi operators.*

Unal, Mehmet, *Perturbative oscillation theorems.*

## STATISTICS

Abeyratne, Anura, *Comparison of K Weibull distributions under random censoring.*

Lee, Giunhee, *Noninformative priors for some models useful in reliability and survival analysis.*

Lin, Kuo-Chin, *Some topics in wavelet statistics.*

Ries, Lawrence D., *Software reliability: Statistical modeling, estimation and inference.*

**Washington University (19)**

## MATHEMATICS

Arcozzi, Nicola, *Riesz transforms on spheres and compact Lie groups.*

Battle, Gregory, *Characterizations of commutative and noncommutative Moore-Penrose rings.*

Betsakos, Dimitrios, *Harmonic measure, domains with fixed inradius, and polarization.*

Di Biase, Fausto, *Approach regions and maximal functions in theorems of Fatou type.*

Jiang, Xinli, *Strongly symmetric smooth molecules and strongly symmetric operators.*

Podleski, Ann Baker, *A statistical test for correlated error in binned data with applications to DNA fingerprinting data.*

Shepherd, Mary Day, *Line congruences as surfaces in the space of lines.*

Wang, Jianwen, *Multipliers and interpolating sequences in analytic Besov spaces.*

## SYSTEMS SCIENCE AND MATHEMATICS

Chuang, Luhan, *Clustersolutions and numerical methods for nonlinear optimal control problems.*

Eberhardt, Rowena, *Characterizations of optimal trajectories for infinite horizon problems.*

Jiang, Xin, *Stability analysis of large power systems with hard limits on dynamic states.*

Kim, Kiyong, *Computational methods for the Hopf bifurcation related segment of the feasibility boundary for large power systems.*

Meusey, Michael, *A semantic control approach to evasive maneuver selection.*

Pandian, Sundara, *Observers for nonlinear systems.*

Roltgen, John, *A new framework for supervisory control of discrete event systems.*

Ruland, Kevin, *Polyhedral solution to the pickup and delivery problem.*

Wu, YunYing, *On robust impact control via positive acceleration feedback for robot manipulators.*

Yang, Fan, *Network optimization with time window constrained routing and scheduling.*

Yu, Zhenyu, *Vision guided robot motion planning control.*

## MONTANA

## Montana State University (4)

## MATHEMATICAL SCIENCES

Kassebaum, James, *Embeddings of inverse limit spaces.*

Matson, Thor, *A rational interval of rotation numbers of periodic points for certain non-separating plane continua.*

Paz-Cuentas, Miguel, *Analysis of a mixture of fixed and random effects in a mixed model.*

Todd, Charles, *Analyzing repeated measures by employing mixed model factor analytic hybrid estimators of the covariance matrix.*

## University of Montana (2)

## MATHEMATICAL SCIENCES

Chen, Shaohua, *Positive and oscillatory radial solutions of semilinear elliptic and parabolic equations.*

Keck, Heidi, *The development of an analytic scoring scale to assess mathematical modeling projects.*

## NEBRASKA

## University of Nebraska-Lincoln (7)

## MATHEMATICS AND STATISTICS

Atici, Ferhan, *Fixed point techniques in cone theory with applications to difference equations.*

Campbell, Nancy L., *Bayesian models for a change-point in failure rate.*

Harmsen, Betty Jean, *The discrete calculus of variations.*

Herzinger, Kurt David, *Minimal generating sets of ideals and torsion in  $I \otimes_R I^{-1}$ .*

Jorgensen, David, *Vanishing of Tor on a complete intersection.*

Nam, Kyung H., *Trend changes in failure rate and mean residual life: Its relations and applications.*

Reyes, Jose Tristan Fua, *An application of Feynman's operational calculus to exponentials of noncommuting operators.*

## NEW HAMPSHIRE

## University of New Hampshire (1)

## MATHEMATICS

Buck, Judith Curran, *An investigation into student's conceptual understandings of the graphical representation of polynomial functions.*

## NEW JERSEY

## Princeton University (3)

## APPLIED AND COMPUTATIONAL MATHEMATICS

Finger, Christopher C., *Branching particle systems on a flow.*

Hornthrop, David J., *Monte Carlo simulation of turbulent transport.*

Tan, Meng Lee, *Microstructures and macrostructures in rapid granular flows.*

## Rutgers University (22)

## MATHEMATICS

Bowman, Tom A., *On two combinatorial problems: The Conway-Guy sequence and discrete threshold growth.*

Chen, Yansong, *Some variational problems with lack of compactness.*

Costin, Ovidiu, *Generalized asymptotic expansions for ODE's and applications.*

Jones, Jason Andrew, *Reconstruction of quantum coordinate algebras.*

Kelley, Mary Jeannette, *Edge- and surface-energy-minimizing crystalline structures.*

Klarreich, Naomi, *Simply connected Lorentz surfaces that have conformally diffeomorphic realizations in the Minkowski plane.*

Leahy, Andrew S., *Multiplicity free representations.*

Lo, Hor-Kuen (Eddie), *A polycyclic quotient algorithm.*

Moskow, Shari, *An analysis of eigenvalue problems for periodic composites.*

Shareshian, John, *Combinatorial properties of subgroup lattices of finite groups.*

Strauss, Martin Joel, *Measure in feasible complexity classes.*

Tai, Jin-Yen, *f-localization and connectivity.*

## OPERATIONS RESEARCH

Badics, Tamas, *Approximation of some nonlinear binary optimization problems.*

Balakrishnan, Arun, *Hardware/software techniques for sequential logic testing.*

Cepek, Ondrej, *Structural properties and minimization of Horn Boolean functions.*

Narasimhan, Partha, *QoS based bandwidth allocations in wireless networks.*

Peterson, Dale, *Gridline graphs and the choice number of perfect line graphs.*

Phillips, Jonathon, *Problems in biometrics and biomedical imaging.*

Zang, Wenan, *Three topics in graph theory.*

## STATISTICS

Korn, Leo, *Robust estimation for left censored data with applications to chemical concentrations.*

Zhang, Donghui, *The E-LS method for nonlinear mixed effects models.*

Zhou, Ling-Zhi, *Statistical inference for lifetime models under random selection.*

## Stevens Institute of Technology (1)

## MATHEMATICAL SCIENCES

Iglehart, Patricia Ann, *A multivariable asymptotic expansion of the general second order linear differential equation.*

## NEW MEXICO

## New Mexico State University (1)

## MATHEMATICAL SCIENCES

Kramer, Xenia Hart, *The Noetherian property in some quadratic algebras.*

## University of New Mexico (2)

## MATHEMATICS AND STATISTICS

Gasparim, Elizabeth Terezinha, *Holomorphic vector bundles on blow-ups.*

Torres, David J., *Integration operators in the spectral-method with Navier-Stokes applications.*

## NEW YORK

## City University of New York, Graduate Center (7)

## MATHEMATICS

Blackburn, Robert, *Large deviations of local times of Levy processes.*

Gilde, Ernest, *On some problems concerning anti-Wick operators.*

Kapovitch, Iliia, *Quasiconvex subgroup of one-relator groups with torsion.*

Kennedy, Juliette Cara, *On embedding models of arithmetic into reduced powers.*

Weiss, Malia Angela, *Bisimilarity relations between directed and intersection frames.*

Yang, Lei, *Multiplicities of Galois representations in higher weight sheaf cohomology associated to Shimura curves.*

Yanofsky, Noson, *Obstructions to coherence: Natural noncoherent associativity and tensor functors.*

## Clarkson University (1)

## MATHEMATICS AND COMPUTER SCIENCE

Liu, Qiming, *Generalized conditional symmetries, asymptotic integrability and integrable surfaces.*

## Columbia University (7)

## MATHEMATICS

Dobler, Thomas, *Trisecants to projective surfaces.*

Fung, Tat Sang, *Immersion in knot theory.*

Graham, Thomas, *On the variational formulae for Arakelov metrics under quasiconformal deformation.*

Greenwood, Matthew, *Finite type invariants of knots and 3-manifolds.*

Kwak, Sijong, *The Castelnuovo-Mumford regularity of smooth subvarieties of codimension two in  $P^4$  and  $P^5$ .*

Li, Wei, *Rotation structure on 4-manifolds.*

Ng, Ka-Yi, *Groups of ribbon knots.*

**Cornell University** (14)

## APPLIED MATHEMATICS

Bond, David, *Fast wavelet transforms of boundary element matrices.*

Campbell, William, *Optimal design of multirate systems.*

Driscoll, Toby Allen, *Domain decomposition methods for conformal mapping and eigenvalue problems.*

Ghrist, Robert Wayne, *The link of periodic orbits of a flow.*

Sarangarajan, Aravamuthan, *A study of permutation polytopes arising in combinatorics and optimization.*

Simonsen, Katy L., *Models of DNA sequence evolution and applications to hypothesis testing.*

Wei, Yuan, *Nonlinear equality constrained minimization via the quadratic loss penalty function.*

## MATHEMATICS

Farzaneh, Ramin, *A computer generated proof for the existence of periodic orbits for three-dimensional vector fields.*

Goldfarb, Boris, *Splitting assembly maps for arithmetic groups with large actions of infinity.*

Huber, Birkett, *Solving sparse polynomial systems.*

Ma, Gang, *Brownian motion and admissible limits.*

Stiadle, Thomas Albert, *Algebraic K-theory and assembly for complexes of groups.*

Wang, Weizhen, *On assessment of bioequivalence.*

## STATISTICS

Tatsuoka, Curtis, *Sequential classification on partially ordered sets.*

**New York University, Courant Institute** (14)

## MATHEMATICS

Cambronero, Santiago, *The distribution of the ground state of Hill's equation with random potential.*

Casarin, Mario, *Schwarz preconditioners for spectral and mortar finite element methods with applications to incompressible fluids.*

Chen, Min, *The velocity formulation of the Euler equation and the symplectic integration.*

Cheng, Honjwei, *Fast, accurate methods for the evaluation of harmonic fields in composite materials.*

Kim, Sunchul, *On Prandtl-Batchelor theory of steady flow at large Reynolds number.*

Kuhl, Nelson, *A test practice for Monte Carlo simulation of plasma transport driven by quasineutrality.*

Licea, Cristina, *Topics in first passage percolation.*

Liu, Chun, *Flow of liquid crystals.*

Naddof, Aliniza, *On homogenization and scaling limit of some gradient perturbation of a massless free field.*

Ossowski, Jacek, *Linear discrepancy, packings and Ramsey numbers.*

Paras, Antonio, *Non-linear diffusion equations in mathematical finance: A study of transaction costs and uncertain volatility.*

Roma, Alexandre, *A multilevel self-adopted version of the immersed boundary method.*

Sormani, Christina, *Noncompact manifolds with lower Ricci curvature bounds and minimal volume growth.*

Venkatsubramani, Ramesh, *Hydrodynamic limit for the asymmetric exclusion process with deterministic initial data and the Hammersley process on  $S(1)$ .*

**Polytechnic University** (1)

## MATHEMATICS

Arouzi, Ali, *Existence of a subsonic compressible flow past an obstacle in the hyperbolic plane.*

**Rensselaer Polytechnic Institute** (10)

## DECISION SCIENCES AND ENGINEERING SYSTEMS

Rose, David, *Designing incentives under conditions of bounded rationality.*

Srinivasan, Aparna, *A systematic approach to modeling yield for integrated circuits.*

## MATHEMATICAL SCIENCES

Caldwell, Cathy, *A reconstruction algorithm for electrical impedance tomography in an annulus.*

Caprioli, Paul, *A parallel computing paradigm for nonlinear optimization with applications in the numerical solution of differential equations and parameter determination.*

Haider, Mansoor, *Analytic approximations for the indentation of a thin linear elastic layer and a viscoelastic formulation in finite strain with applications to the mechanics of biological soft tissues.*

Howell, Keith, *Analysis of motion and bottom scattering effects on underwater acoustic propagation.*

Kelly, Terrence, *An exterior point method for linear programming.*

Lee-Ashraf, Ching-ju, *An inverse nodal problem for a membrane.*

Somasundaram, Manjula, *Uniqueness and recovery of the refractive index from transmission eigenvalues.*

Zharnitsky, Vadim, *Breakdown of stability of motion in superquadratic potential.*

**SUNY at Albany** (7)

## BIOMETRY AND STATISTICS

DiRenzo, A. Gregory, *Nonparametric adaptive spectral estimation: With application to analysis of aplysia total motion activity.*

## MATHEMATICS AND STATISTICS

Holcomb, John P. Jr., *Estimation and characterization for linear regression analysis in the presence of measurement error.*

Kohl, Timothy, *Classification of Abelian Hopf algebra forms acting on radical extensions.*

Luo, Donghan, *Multipliers of fractional Cauchy transforms.*

McNally, Patrick S., *Special theta relations.*

Panariello, James, *Growth and boundedness conditions for the Stieltjes moment problem.*

Voce, Daniel A., *Test words and the stable image of an endomorphism.*

**SUNY at Binghamton** (2)

## MATHEMATICAL SCIENCES

Babb, James, *Estimating change points in linear and non-linear time series.*

Brunsdon, Victor, *Cohomology, local rigidity and fixed points.*

**SUNY at Buffalo** (5)

## MATHEMATICS

Huang, Haihua, *On the dynamical power of the center of braids.*

Jin, Qiu, *Uniqueness of the Cauchy problem in the spaces of distributions and generalized distributions with restricted growth.*

Szkibieli, Grzegorz Mirosław, *Transcendental numbers with explicit  $g$ -ary expansion and Jacobi-Perron algorithm.*

Zhou, Borong, *Doi-Hopf data, smash data, Frobenius-types and functors.*

## STATISTICS

Shah, Deven, *On boundary deviation problems and ballot problem distributions.*

**SUNY at Stony Brook** (25)

## APPLIED MATHEMATICS AND STATISTICS

Boston, Brian Keith, *Front tracking of complex wave interactions.*

Fonseca, Leonardo, *Numerical simulation of single-electron devices.*

Grossi, Ana Cristina, *Dispersion of tracer slugs for flow in porous media.*

Hurley, Jane Marie, *The effects of viscous terms on Riemann problem solutions.*

Kim, Dong-Jin, *Bicriterion optimization of produce-to-order manufacturing systems: A queueing approach.*

Lee, Sang-Moon, *Geometric and stochastic analysis of porous media structure.*

Lee, Seungwoo, *Application of bivariate normal mixture to twin data.*

Lo, Gen-Ching, *Projective block Lanczos algorithm and its parallelization on distributed-memory parallel processors.*

McCoy, Roger Alan, *Parallel algorithms for molecular dynamics with applications to Thiu-film sputter deposition.*

Ning, Yu-Ming, *Simulation study of Skumix algorithm: A research on skewness-mixture problem.*

Saltz, David, *Formation of a partial liquefaction shock wave in a retrograde vapor.*

Single, Richard, *An application of robust estimation to linkage analysis.*

Tael, Steven Arno, *Numerical solution of the Riemann problem for the equation of conservative elastoplasticity.*

Thistleton, William Joseph, *Contaminant transport and in-situ bioremediation in porous media.*

Wang, Qiuzhen, *Properties of the likelihood ratio test for a three component normal mixture.*

#### MATHEMATICS

Gordon, Derek, *Quaternionic discrete series of semisimple Lie groups.*

Kwapisz, Jaroslaw, *Rotation sets and entropy.*

Liu, Gang, *Associativity of quantum multiplication.*

Nair, Sunil, *Singularities of bundle maps and geometric residue theorems.*

Prado, Eduardo Almeida, *Conformal measures in polynomial dynamics.*

Richard, Simon, *Hofer's geometry on compact surfaces.*

Yarrington, Brian, *Local connectivity and Lebesgue measure of polynomial Julia sets.*

Yun, Gabjin, *Fundamental groups of Riemannian manifolds, sigma constant and scalar curvature.*

Zhang, Chaohui, *On Teichmüller and Bers fiber spaces.*

Zhou, Jian, *Connected sums of self-dual orbifolds.*

### Syracuse University (6)

#### MATHEMATICS

Agu, Nkechi Madonna Adelene, *A computer laboratory setting to teach college calculus.*

Budney, Leonard R., *Regularity of A-harmonic forms.*

Celik, Halil Ibrahim, *Pointwise singularities of plurisubharmonic functions.*

Khoury, Hani Q., *Exploring perspectives about mathematics within the cultural context of a college algebra class at a community college: A case study.*

McGraw, Colleen K., *Exploring the mathematical paths students follow in high school and college.*

Zhang, Jun-Lue, *An integrated approach to some ranking and selection problems.*

### University of Rochester (6)

#### MATHEMATICS

Franzova, Nora, *Long time existence for the heat equation with a spatially correlated noise term.*

Stancu, Alina, *Uniqueness of self-similar solutions for a crystalline flow.*

Tu, Hezhou, *Reconstruction of an obstacle inside a planar domain from boundary measurements.*

Wu, Jie, *On combinatorial descriptions of homotopy groups and the homotopy theory of mod 2 Moore spaces.*

Xie, Qun, *Differential geometry of tangent bundles, with applications to harmonic maps.*

#### STATISTICS

Heo, Moonseong, *On the fit of sample graphical displays to patterns in populations.*

## NORTH CAROLINA

### Duke University (10)

#### MATHEMATICS

Brooks, Elizabeth Annette, *Probabilistic methods for hyperbolic partial differential equations.*

Chaudhary, Sharad, *The Brill-Noether theorem for real algebraic curves.*

Clelland, Jeanne Nielsen, *Geometry of conservation laws for a class of parabolic partial differential equations.*

Clelland, Richard B., *Simulation of granular and fluid systems using combined continuous and discrete methods.*

Foisy, Joel S., *The second homology group of the level 2 mapping class group of an orientable surface.*

Foltinek, Kevin Bruce, *Quasilinear third-order scalar evolution equations and their conservation laws.*

Furati, Khaled, *A hysteretic polymer flooding model.*

Kabanov, Alexandre I., *The second cohomology of the moduli space of Riemann surfaces with twisted coefficients.*

Knudson, Kevin Patrick, *The homology of special linear groups over Laurent polynomial rings.*

Michael, Christopher Thomas, *Uniqueness of calibrated cycles using exterior differential systems.*

### North Carolina State University, Raleigh (17)

#### MATHEMATICS

Chen, Xuzhou, *The matrix iterative analysis.*

Harger, Robert Jr., *Realization of level two integrable highest weight representations of the affine Lie algebra  $A_7^{(2)}$ .*

Mani, Vaidyanath, *On black box interpolation over arbitrary fields.*

Sigmon, Neil, *Involutive commutants of the sixth order with applications to algebraic cryptography.*

Xue, Zhaoqing, *Mesh-independence of GMRES for integral equations.*

#### STATISTICS

Bailey, Barbara Ann, *Asymptotics and applications of local Lyapunov exponents.*

Barrows, Cathleen Flake, *The effect of measurement error on two-sample tests.*

Chen, Chiu-Lan, *New developments in change-in-ratio estimation of population size.*

Cohn, Richard Daniel, *Between-group comparisons of real and complex principal components for serially correlated observations, with environmental applications.*

Graham, Jonathan Miles, *Markov chain Monte Carlo inference procedures for discrete spatial lattice models.*

Kao, Chen-Hung Kao, *Statistical methods for locating positions and analyzing epistasis of multiple quantitative trait genes using molecular marker information.*

Lau, Lap-Cheung, *Generalized score tests in linear models.*

Lee, Jae-Yeong, *Faster simulated annealing techniques for stochastic optimization problems, with applications to queueing network simulation.*

Royle, Jeffrey Andrew, *Statistical inference for heterogeneous random fields.*

Tsai, Kuenhi, *Survival analysis for telemetry data in animal studies.*

Weiss, Jack Martin, *The cubic ternary complex model: A heuristic for classifying equilibrium pharmacological models and for understanding efficacy and apparent affinity in these models.*

Zhang, Xiaolong, *Integrating resource types, access conditions and preference differences into models for use and nonuse values: The case of marine debris control.*

### University of North Carolina, Chapel Hill (15)

#### BIOSTATISTICS

Chaudhary, Asraf Mohammad, *Asymptotic inference from unequal probability multi-stage samples.*

El-Moalem, Habib, *Nonparametric methodology for incorporation of surrogates in clinical trials.*

Glueck, Deborah H., *Power for a generalization of the GLMM with fixed and random predictors.*

Lyles, Robert H., *Contributions to the modeling and assessment of occupational exposures and their health-related effects.*

Smith, Melissa, *Robust hierarchical Bayes methodology for clinical studies.*

Wang, Chin-Hua, *Random effect models for improving covariates estimation in time-dependent proportional hazards model.*

Yang, Yi-Hsin, *Interim analysis for continuous repeated measurements.*

#### MATHEMATICS

Barnes, Julia, *Applications of noninvertible ergodic theory to rational maps of the sphere.*

Bridgman, Bruce, *Transmission of multidimensional semilinear oscillations across an interface.*

Ellis-Monaghan, Joanna, *A unique universal graph polynomial with applications to the Martin polynomial.*

Kwon, Sung-Sik, *Parameter estimation in an abstract parabolic equation and its application to the Stefan problem: An augmented Lagrangian approach.*

Ma, Haijing, *Growth rates of digits and denominators for a class of  $f$ -expansions.*

Yang, Zhongguo, *Henon-like maps before or at the first tangency.*

#### OPERATIONS RESEARCH

Puryear, Lindsey C., *Stability and queuing time analysis of reader-writer queues.*

Rump, Christopher Michael, *Equilibrium stability in a service facility with adaptive customer response to congestion.*

Subramanian, Janakiram, *Dynamic resource management for a network under stochastic demand.*

## OHIO

### Bowling Green State University (6)

#### MATHEMATICS AND STATISTICS

Baltazar-Aban, Inmaculada, *Properties of residuals in failure-time models with applications in model diagnostics.*

Chen, Jie, *Inference about the change points in a sequence of Gaussian random vectors using information criterion.*

Kouider, Elies, *Concavity of transformed log-likelihood functions on a lack-of-fit tests.*

Liu, Yue, *Characterizations of some multivariate populations and a new solution to the Behrens-Fisher problem.*

Sobecki, David, *Splittings of sequence spaces and interpolation of WCG and SWCG Banach spaces.*

Wang, Yining, *Characterizations based on conditional structure and their statistical application.*

### Case Western Reserve University (5)

#### MATHEMATICS

Daras, Tryfon, *Some large and moderate deviations results for exchangeable sequences.*

Steinberg, Daniel Howard, *Elastic curves in hyperbolic space.*

#### OPERATIONS RESEARCH

Popova, Elmira, *New approaches to determining group maintenance policies.*

Popova, Ivilina, *Three essays in derivatives.*

Yang, Wen-Huei, *Stochastic vehicle routing with optimal restocking.*

### Kent State University (2)

#### MATHEMATICS AND COMPUTER SCIENCE

Lee, Jae-Dong, *Minimizing communication in the bitonic sort.*

Lee, Koung Goo, *Routing algorithms on shuffle exchange networks.*

### Ohio State University (25)

#### MATHEMATICS

Babikov, Mark Michael, *Alternative algebras and their isotopes.*

Bhatnagar, Gaurav, *Inverse relations, generalized bibasic series, and their  $u(n)$  extension.*

Carlson, Charles David, Jr., *Part I: Asymptotic analysis of capillary instability of free jets; Part II: The behavior of flexible belts under tension.*

Chern, Shikai, *Dirac induction for unimodular Lie groups.*

Hunt, Donald August, *Annular and annular-like products.*

Jeon, Intae, *Gelation phenomena.*

Joung, Haewon, *Generalized-polynomial inequalities.*

Kessar, Radha, *Blocks and source algebras for the double covers of the symmetric groups.*

Lam, Ching Hung, *On the structure of vertex operator algebras and their weight two subspaces.*

Maharry, John Andrew, *A characterization of graphs with no cube minor.*

Marcsik, John David, *Analytic torsion and closed one-forms.*

McCutcheon, Randall Glenn, *IP-sets, polynomials and multiple recurrence.*

Morje, Prabhav Gangadhar, *A nearly linear algorithm for Sylow subgroups of permutation groups.*

Nie, Qing, *Topics in the motion of bubbles in incompressible liquids.*

Oh, Jangheon, *On zeta-functions and Iwasawa modules.*

Poufinas, Thomas, *Discrete-time and continuous-time option pricing with fees.*

Szabo, Tibor, *External problems for graphs and hypergraphs.*

Tsolomitis, Antonis P., *Symmetrizations and convolutions of complex bodies.*

Varga, Jozsef, *Traces and commutators of compact operators.*

Wai, Hong Kit, *Two generalizations of Witten-Helffer-Sgostrand theory.*

Weisz, Ivan, *Lambda-designs with small lambda are type 1.*

Wu, Kuo-Chi, *The normal form theory.*

Xiang, Qing, *Difference sets: Their multipliers and existence.*

Xiao, Yimin, *Fractal measures and related properties of Gaussian random fields.*

Zhou, Jian-Ping, *On multinomial models of some financial instruments.*

### Ohio University (4)

#### MATHEMATICS

Ding, Yimin, *Volterra integral equations in Banach spaces.*

Hrinca, Ioan, *Optimal control problems for the Lotka-Volterra systems with distributed state.*

Syed, Safdar Raza, *Rings with quasi-continuous right ideals and mutually injective hulls.*

Xie, Nandie, *Derived length of solvable permutation groups.*

### University of Cincinnati (1)

#### QUANTITATIVE ANALYSIS AND INFORMATION SYSTEMS

Noble, Christine, *The impact of SOS identification on integer program solution efficiency.*

## OKLAHOMA

### Oklahoma State University (7)

#### MATHEMATICS

Belhachemi, Rachid, *Peak sets in convex domains with real-analytic boundaries.*

Force, Gregory Michael, *Construction of  $L_p$  spaces for  $p \in (1, \infty) \setminus \{2\}$ .*

Johnson, Kerry, *A system for mathematical student placement in college algebra.*

Lorch, John Day, *Unitary structure for ladder representations of  $U(p, q)$ .*

Novak, Jodie D., *Explicit realizations of certain representations of  $Sp(n, \mathbb{R})$  via the Penrose transform.*

Zerger, Thomas, *Contracting rational curves on smooth complex threefolds.*

#### STATISTICS

Sawyer, Julia Kay, *The effect of bias on least squares estimators of the slope parameter.*

### University of Oklahoma (4)

#### MATHEMATICS

Ahmadi, Dora Cardenas, *A comparison study between a traditional and reform Calculus II program.*

Jin, Ying-jun, *Resolution of output least squares estimators for parabolic equations.*

Saveliev, Nikolai Nikolaevich, *Floer homology and 3-manifold invariants.*

Zhou, Bingjun, *Inverse scattering problems with non-reflecting boundary conditions.*

## OREGON

### Oregon State University (3)

#### STATISTICS

Kolsky, James, *Extensions for paired comparisons models.*

McDonald, Trent, *Analysis of finite population surveys: Sample size and testing consideration.*

Thompson, Caryn, *Diagnostics for the evaluation of spatial linear models.*

### University of Oregon (5)

#### MATHEMATICS

Burton, Laurie, *V-monoids and V-valuations.*

Fisher, Bryan, *On automorphisms of quantized enveloping algebras.*

Hudson, M. Suzanne, *Marginal information for expectation parameters in the presence of nuisance parameters.*

Park, Jiseong, *Non-constant mean curvature of solutions of the Einstein constraint equations for hyperboloidal surfaces.*

Wiens, Jonathan, *Cohomology of differential forms on arrangements of hyperplanes.*

## PENNSYLVANIA

### Carnegie Mellon University (9)

#### MATHEMATICS

Carr, Robert David, *Polynomial separation procedures and facet determination for inequalities of the traveling salesman polytope.*

Larsen, Christopher Jason, *Variational and measure theoretic techniques for material equilibria.*

Schellekens, Michel Pierre Clara, *The Smyth completion: A common topological foundation for denotational semantics and complexity analysis.*

#### STATISTICS

Black, Paul, *An examination of belief functions and other monotone capacities.*

Fitzgerald, Mark, *Registration and estimation of functional magnetic resonance images.*

Hadjicostas, Petros I., *Probabilistic analysis of association reversal phenomena.*

Jiang, Tao, *On order selections of continuous autoregressive processes.*

Palma, Wilfredo, *State space modeling of long-memory processes.*

Wolfson, Lara J., *Elicitation of priors and utilities for Bayesian analysis.*

### Drexel University (1)

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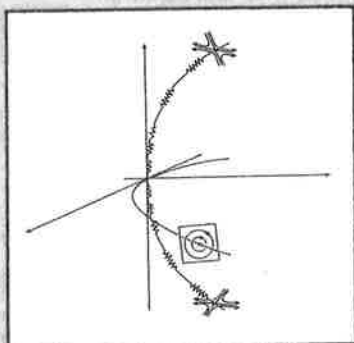
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