

# Doctoral Degrees Conferred

1998-1999

## ALABAMA

### Auburn University (10)

DISCRETE AND STATISTICAL SCIENCE

*Foust, George Michael*, Hypergraph designs.

MATHEMATICS

*Davis, John M.*, Lidstone boundary value problems for nonlinear differential equations.

*Fodor, Ferenc*, Extremal problems for convex sets and finite circle packings.

*Johnson, Alvina*, Uniqueness implies existence for discrete fourth order boundary value problems.

*Kehrein, Achim*, Mapping cone netgrids in homological algebra.

*Poor, John*, Image of dendrites under  $K$ -to-one maps.

*Rossi, Elena*, Solvability of a second order elliptic boundary value problem with jumping nonlinearities.

*Shibakov, Alexander*, Sequential convergence in topology.

*Talata, Istvan*, Kissing numbers of convex bodies.

*Tameru, Berhanu*, The Calderón reproducing formula and frames.

### University of Alabama, Birmingham (1)

MATHEMATICS

*MacDonald, Sean*, Combinatorial properties of mappings.

### University of Alabama, Huntsville (3)

MATHEMATICAL SCIENCES

*Harrison, Donald*, Finite element analysis of a coupled fluid-solid problem: mathematical and computational approach.

*Porter, Katherine*, A polynomial iterative algorithm for certain nonsymmetric systems.

*Wendt, Belinda*, Finite time horizon portfolio optimization problems with transaction costs.

### University of Alabama, Tuscaloosa (1)

MANAGEMENT SCIENCE AND STATISTICS

*Kumaralingam, Rajan*, Application of neural network based adaptive critics to periodic review lead-time lost sales inventory problems.

## ARIZONA

### Arizona State University (3)

MATHEMATICS

*Li, Bingtuan*, Analysis of chemo-stat models with distinct removal rates.

*Mead, Jodi*, Numerical methods for problems in computational aeroacoustics.

*Stemmons, Eric*, Competition in a chemo-stat with wall growth.

### University of Arizona (10)

APPLIED MATHEMATICS

*Anderson, Kevin*, Probabilistic and statistical analysis of growth and division in *Bacillus subtilis*.

*Garcia-Alvarado, Martin*, Competitive dynamics in size-structured populations with reproductive delays.

*Green, Kris*, Gravitational aspects of Tachyon domain walls.

*Haller, Karl*, Ground state properties of the neutral two-dimensional Falicov-Kimball model.

*Hyde, Craig*, The use of complex time singularity analysis in dynamical systems.

*King, Aaron*, Hamiltonian limits and subharmonic resonance in models of population fluctuations.

*Komarova, Natalia*, Essays on nonlinear waves: patterns under water; pulse propagation through random media.

*Rado, Anita*, Mathematical models of ionic diffusion in olfactory glomeruli.

MATHEMATICS

*Jackson, Jack*, Splitting in finite metacyclic groups.

*Kruse, Matthew*, Smooth, cusped, and discontinuous traveling waves in the fluid resonance equation.

## ARKANSAS

### University of Arkansas (4)

MATHEMATICAL SCIENCES

*Hemmati, Jill*, Certain problems in holomorphic pde.

*Limperis, Thomas*, Embedding theorems for Bloch space.

*Poliakova, Olga*, Free inverse semigroups.

*Saleeby, Elias*, Sampling, interpolation and a class of  $P^t(d)$  spaces whose point evaluations vary with  $t$ .

## CALIFORNIA

### California Institute of Technology (16)

APPLIED MATHEMATICS

*Aivazis, Keri Ann*, A spherical vortex model for homogeneous turbulence.

*Efendiev, Yalchin*, The multiscale finite element method (MsFEM) and its applications.

*Gallagher, Donal A.*, Saffman-Taylor fingers in deformed Hele-Shaw cells.

*Gleeson, James P.*, Random advection of a passive scalar.

*Kang, Sung Phil*, A study of viscous flow past axisymmetric and two-dimensional bodies.

*Lahey, Patrick*, A fixed-grid numerical method for dendritic solidification with Satural convection.

*Love, Phil*, Bifurcations in Kolmogorov and Taylor-vortex flows.

CONTROL AND DYNAMICAL SYSTEMS

*Bullo, Francesco*, Studies in geometric control of mechanical systems.

*Primbs, James A.*, Nonlinear optimal control: a receding horizon approach.

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 1998, to June 30, 1999) reported in the 1999 Annual Survey of the Mathematical Sciences by 224 departments in 148 universities in the United States. Each entry

contains the name of the recipient and the thesis title. The number in parentheses following the name of the university is the number of degrees listed for that university. A supplementary list, containing names received since compilation of this list, will appear in a summer 2000 issue of the *Notices*.

*Shapiro, Benjamin*, Passive control of flutter and forced response of bladed disks via mistuning.

MATHEMATICS

*Gadgil, Siddhartha*, On the geometric simple-connectivity of four-manifolds.

*Khodakovsky, Andrei*, Inverse spectral problem with partial information on the potential.

*Ku, Chao*, Dade's ordinary conjecture for the finite unitary groups in the defining characteristic.

*Sofronidis, Nikolaos*, Topics in descriptive set theory related to equivalence relations, complex Borel and analytic sets.

*Yang, Qing*, Seiberg-Witten equations on 3-manifolds with boundary.

*Zare, Douglas J.*, Geometric invariants in contact structures on 3-manifolds.

**Claremont Graduate University (3)**

MATHEMATICS

*Kong, Rong*, Transport problems and Monte Carlo methods.

*Macias, Jose Miguel*, An approximation method for solving non-homogeneous wave equations and related inverse problems.

*Olszewski, Kim*, Concatenated Reed-Solomon and Reed-Muller codex with blind adaptation for DS-CDMA antenna array systems.

**Stanford University (4)**

MATHEMATICS

*Fraser, Ailana*, On the free boundary variational problem for minimal disks.

*Irwin, Charles*, Bubbling in the harmonic map heat flow.

*Sinha, Dev*, On the structure of equivariant bordism rings for cyclic groups of prime order.

*Tupailo, Sergei*, Finitary reductions for local predicativity.

**University of California, Berkeley (36)**

BIOSTATISTICS

*Deegan, Leo*, Improper survival models.

*Mathur, Ashwini*, Partial correlation curves.

*Oman, Douglas*, Comparative evaluation of estimation method for nonlinear mixed effects models.

MATHEMATICS

*Anderson, Charles*, Projective structures on Riemann surfaces and developing maps to  $H^3$  and  $CP^n$ .

*Baker, Matthew*, Torsion points on modular curves.

*Barannikov, Sergey*, Extended moduli spaces and mirror symmetry in dimensions  $n > 3$ .

*Chartrand, Rick*, Hilbert spaces of holomorphic functions: zero sets, invariant subspaces, and Toeplitz operators.

*Chen, William*, Counterexamples to Knaster's conjecture.

*Chin, Bradford*, Convergence of Buttke's method for 2-D Euler flow.

*Csirik, Janos*, The kernel of the Eisenstein ideal.

*Gay, David*, Symplectic 4-dimensional 2-handles and contact surgery along transverse knots.

*Gottlieb, Alexander*, Markov transitions and the propagation of chaos.

*Grunschlag, Zeph*, Algorithms in geometric group theory.

*Hartshorn, Kevin*, Heegard splittings: stabilizations and the distance complex.

*Hsu, Eric*, Almost inductive limit structures of  $R$ -actions on  $AF$ -algebras and  $AF$ -embeddings of covariance algebras.

*Jalnapurkar, Sameer*, Modeling and stabilization for mechanical systems.

*Khadjari, Lily*, An effective version of Belyi's theorem.

*Kim, Jin-Hong*, Differential-geometric aspects of conjugate connections and Seiberg-Witten theory.

*Landau, Zeph*, Intermediate subfactors.

*Lee, Yuan-Pin*, Quantum  $K$ -theory.

*Leslie, Christina*, Geometric construction of intertwining maps for mixed models of compact dual pairs.

*McKinnon, David*, Counting rational points of bounded height on algebraic varieties.

*Mellor, Blake*, Finite type link homotopy invariants.

*Perlmutter, Matthew*, Symplectic reduction by stages.

*Polito, Jessica*, The  $p$ -adic image of the Galois representation at an Eisenstein prime.

*Pryor, Anna*, Analysis of a continually adapting neural network.

*Roytenberg, Dmitry*, Courant algebroids, derived brackets and even symplectic supermanifolds.

*Seo, Soogil*, Circular distributions and Euler systems.

*Vazivani, Monica*, Irreducible modules of the affine Hecke algebra of type  $A$ : a strong multiplicity one result.

*Whittlesey, Kim*, A normal all pseudo-Anosov subgroups for the genus two surface.

STATISTICS

*Dudoit, Sandrine*, Linkage analysis of complex human traits using identity by descent data.

*Ge, Zhivy*, The histogram method and the conditional maximum profile likelihood method for nonlinear mixed effects models.

*Levin, David*, Phase transitions in probability: percolation and hidden Markov models.

*Lin, Steven*, On stochastic models of interest rates with jumps.

*Nahum, Ezra*, On the pricing of lookback options.

*Zhou, Xiaowen*, Exchangeability, continuum-sites stepping-stone models, and enumeration and construction of phylogenetic invariants.

**University of California, Davis (9)**

MATHEMATICS

*Feist, Curtis*, Results of thin position.

*Korf, Lisa*, Approximation and solution schemes for stochastic dynamic optimization problems.

*Pinzon, Jorge*, Imaging spectrometry and image registration; a singular value decomposition and wavelet based learning.

*Vaughn, Richard*, Planar soap bubbles.

*Wagner, John*, A mathematical model of the fertilization of  $Ca^{2+}$  wave in *xenopus laevis* oocytes.

STATISTICS

*Chong, Yun Sam*, Dimension-reduction methods for discrete and continuous covariates.

*Johns, Craig*, Nonlinear state-space models in the presence of censored observations.

*Suess, Eric*, Bayesian deconvolution of seismic array data.

*Yan, Xin*, Nonparametric method for multivariate regression.

**University of California, Irvine (4)**

MATHEMATICS

*Cao, Chongsheng*, Global regularity for certain dissipative hydrodynamical and geophysical systems with an application in control theory.

*Koines, Andrew*, Localization of classical waves: a general framework.

*Özbağcı, Burak*, Signature of Lefschetz fibrations.

*Wynne, Shannon*, Efficient numerical algorithms for simulating evolution equations.

**University of California, Los Angeles (17)**

MATHEMATICS

*Archava, Sviatoslav*, Arithmetic Hodge structures on homotopy groups and cup-production the absolute de Rham cohomology.

*Campbell, Michael*, Continuous spin systems and graphical representations.

*Carlton, Matthew*, Applications of the two parameter Poisson-Dirichlet distribution.

*Cho, Sheena*, Deformation rings for induced Galois representation.

*Cowieson, William*, Piecewise smooth expanding maps in  $R^d$ .

*Embers, Dale*, Admissibility of finite groups over specializations of a rational function field.

*Hu, Kai*, Elasticity of isotropic intrinsically curved rods.

*Kan, David*, Methods of model reduction.

*Maderazo, Raquel*, Asymptotically flat eight manifolds.

*Matheos, Peter*, Failure of compactness for the  $d$ -bar Neumann problem for two complex dimensional Hartogs domains with no analytic disks in the boundary.

*McDonald, Elaine*, Bootstrap percolation in a polluted environment and coalescing random walks.

*Peng, Dan Ping*, Some new advances in the level set technique: methods and applications.

*Rahimizadeh, Hooman*, The dock problem.

*Sprouse, Chadwick*, Riemannian manifolds of  $L$ -positive Ricci curvature.

*Wong, Chiu-Kwong*, Total variation image deconvolution.

*Wong, Winnie*, Gas bubble dynamics.

*Yoon, Jeong-Mi*, Hierarchy of turbulent structures in nonlinear dynamical systems.

## University of California, Riverside (9)

### MATHEMATICS

*Choi, Youngook*, Enumerative geometry of plane curve.

*Fisher-Vasta, Tammy*, Presentations of  $Z$ -forms for the universal enveloping algebras of affine Lie algebras.

*Kinkade, Lillian*, Elementary divisor rings and Bezout domains.

*Londono, Jaime*, Parametric estimation of diffusion processes sampled at first exit times.

*Noga, John*, Competitive analysis of on-line algorithms.

*Ruyle, Jonathan*, Cardinal sequences of PCF structures.

### STATISTICS

*Hassan, Mohamed*, Modelling marked point processes.

*Pozharny, Jacob*, Bayesian dynamic multivariate localized analysis.

*Rowe, Daniel*, Correlated Bayesian factor analysis.

## University of California, San Diego (11)

### MATHEMATICS

*DeDeo, Michelle*, Graphs over the ring of integers modulo  $2r$ .

*Doody, Kathleen Mae*, The quasi-isometric images of the Euclidean ray.

*Gertz, Edward Michael*, Combination trust-region line-search methods for unconstrained optimization.

*Martinez, Maria Guadalupe*, Homogeneous spaces of subgroups of the finite general linear group and related hypergraphs.

*Medrano, Archie T.*, Super-Euclidean graphs and super-Heisenberg graphs: their spectral and graph-theoretic properties.

*Morse, Jennifer Leigh*, Explicit expansions for Knop-Sahi and Macdonald polynomials.

*Orellana, Rosa C.*, The Hecke algebra of type B at roots of unity, Markov traces and subfactors.

*Picciotto, Sally*, How to encode a tree.

*Putinar, Gabriela Georgeta*, Applications of rational homotopy to low dimensional manifolds and their groups.

*Richter, Olav Konrad*, Theta function of quadratic forms.

*Srimurthy, Vikram K.*, On the equivalence of measures on loop space.

## University of California, Santa Barbara (9)

### MATHEMATICS

*Fonseca, German*, Global results for the  $mKdV$  and  $Bo$  equations.

*Hauksson, Hoskaldur*, The basic attractor of the viscous Moore-Greitzer equation.

*Hoffoss, Diane*, Quasigeodesic flows on hyperbolic 3-manifolds which fiber over the circle.

*Jue, Brian*, The uniserial geometry and homology of finite dimensional algebras.

*Skidmore, Lance*, Proper representations into a unit lattice.

*Tu, Shu-Yi*, Nonresonance and global existence of small amplitude nonlinear waves in 3D.

### STATISTICS AND APPLIED PROBABILITY

*Wang, Chitsung*, Some contributions for testing multimodality.

*Wang, Jen-Ting*, A Bayesian study of some selected generalized linear models.

*Wang, Zheng*, Nonparametric analysis with saddlepoint approximation.

## University of California, Santa Cruz (6)

### MATHEMATICS

*Goff, Chris*, Isomorphic fusion algebras of twisted quantum doubles of finite groups.

*Golubev, Alex*, Engel structures.

*Hoshi, Junko*, Poisson cohomology and secondary invariants of the Poisson structure  $(x^2 + y^2)^s \partial x \wedge \partial y$ .

*Klingler, Andrew*, Stochastic calculus and eigenvalue bounds for geometric Laplacians.

*Kouranbaeva, Shinar*, Geometry and analysis of the Camassa-Holm equation. Variational approach to the second-order multisymplectic field theory.

*Ray, Dipankar*, The local geometry of the moduli space of Calabi-Yau manifolds.

## University of Southern California (5)

### MATHEMATICS

*Bao, Xiliang*, Hyperideal polyhedra in hyperbolic 3-spaces.

*Kashina, Yevgenia*, Studies of finite-dimensional semisimple Hopf algebras.

*Kilgys, Skirmantas*, Some problems in statistics of random processes with applications to nonlinear filtering and image processing.

*Rao, Chuanxia*, Nonlinear filtering and evolution equations: fast algorithms with applications to target tracking.

*Zhang, Haimeng*, Information and asymptotic efficiency for the case-cohort sampling design in Cox's regression model.

## COLORADO

### Colorado School of Mines (3)

#### MATHEMATICAL AND COMPUTER SCIENCES

*Abdulrahim, Mohammad*, Parallel algorithms for labeled graph matching.

*Elmer, Christopher*, Analysis and computation of traveling wave solutions for bistable nonlinear differential-difference equations.

*Meng, Zhaobo*, Tetrahedral based earth models, ray tracing in tetrahedral models and analytical migration velocity analysis.

### Colorado State University (11)

#### MATHEMATICS

*Hundley, Douglas*, Local modeling via neural charts.

*Morris, Jeremy*, The Hausdorff dimension of nondifferentiability sets of Cantor functions.

*Overbay, Shannon*, Generalized book embeddings.

*Shea, Peter*, Lagrangian relaxation based methods for data association problems in tracking.

*Trenary, Timothy*, A Banach-Hilbert space framework for the study of parametric problems in abstract optimization.

#### STATISTICS

*Calder, Matthew*, Noncausal heavy tailed autoregressive processes.

*Corcoran, Jem*, Perfect sampling methods is MCMC algorithms.

*Gadbury, Gary*, Causal inference in randomized experiments and observational studies.

*Naveau, Philippe*, Almost sure convergence of the maximum of a stationary sequence and asymptotic properties of probability weighted moments.

*Roback, Paul*, The pooling of prior distributions via logarithmic and supra-Bayesian methods with application of Bayesian inference in deterministic simulation models.

*Sutton, Richard*, Multivariate CDF and probability approximations using saddlepoint techniques.

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

APPLIED MATHEMATICS

*Berndt, Markus*, Adaptive refinement and the treatment of discontinuous coefficients in multilevel first-order system least squares (FOSLS).

*Heyer, Laurie*, The probabilistic behavior of sequence analysis scores with application to structural alignment of RNA.

*Staab, Peter*, Three-dimensional co-existing acoustic-rotational flows in solid fuel rocket motors.

*Sterling, David*, Anti-integrable continuation and the destruction of chaos.

MATHEMATICS

*Boyd, Diana*, A stochastic analysis of the surface structure of various cell growth models.

*Brose, Andrea*, A stochastic model describing collision and coalescence of cloud drops in a gravitational field.

*Coogen, Gwentith*, A generalization of Jacobi's derivative formula.

*Detting, Susan*, The effects of mutation on the stationary distributions of finite Markov chains absorbing states and applications to genetic algorithms.

*Lienert, Carl*, Average representation numbers of quadratic forms on lattices of even level and arbitrary rank.

*Meta, Chris*, Extensions of the secretary problem: a second interview and the team secretary problem.

*Richey, Missy*, Locally solvable operators on the discrete Heisenberg group.

*Shen, Guoxiang*, Strong moment problems and asymptotics of Stieltjes continued fractions.

*Woo, Loren*, Maximal points of convex sets in locally convex topological vector spaces.

**University of Colorado, Denver** (7)

BIOMETRICS

*Duval, Sue*, Effects of publication bias in meta analysis.

MATHEMATICS

*Holder, Allen*, Sensitivity analysis and the analytic central path.

*Jamison, Kenneth*, Modeling uncertainty using probabilistic based possibility theory with applications to optimization.

*Jimenez, Guillermo*, Domination graphs of near-regular tournaments and the domination-compliance graph.

*MacMillan, Daniel*, Relaxing convergence conditions to improve the convergence rate.

*Miller, Mark*, Generalized quadrangles of order  $(s, t)$  with  $|s - t| = 2$ .

*Spalding, Ann*, Min-plus algebra and graph domination.

**University of Northern Colorado** (4)

MATHEMATICAL SCIENCES

*Bergner Bush, Jennifer*, An exploratory study of two students understanding of group theory concepts assumed prerequisite to the concept of quotient group.

*Chilcoat, Richard*, Comparing the use of graphing calculator and writing with.

*Strickland, Jeff*, The effects of a reform calculus curriculum.

*Wisniewski, Ronald S.*, The effects of an integrated curriculum on students' attitudes and abilities regarding the application of calculus to physics problems.

**CONNECTICUT**

**University of Connecticut** (6)

MATHEMATICS

*Kang, Ensil*, Normal surfaces in knot complements.

*Kim, Eun Heui*, On the existence of positive solutions of quasilinear elliptic boundary value problems.

*Moore, Kristen*, Large amplitude torsional oscillations in a nonlinearly suspended beam.

*Samarah, Salti*, Nonlinear approximation with local Fourier bases.

*Yu, Leiping*, Alternative approach to critical point theory.

STATISTICS

*Duggan, William*, On two-stage procedures having second-order properties.

**Wesleyan University** (4)

MATHEMATICS

*DeMarco, Mary*, Intuitionistic semantics for hereditarily Harrop logic programming.

*Gutierrez, Claudio*, The arithmetic and geometry of allegories.

*McGrail, Robert*, Monads, predicates, and logic programming.

*Rackowski-Trigos, Sophia*, Totally bounded groups.

**Yale University** (6)

MATHEMATICS

*Liptak, Laszlo*, Critical facets of the stable set polytope.

*Vybornov, Maxim Yuriyevich*, Sheaves on triangulated spaces and Koszul duality.

STATISTICS

*Cross, Jason*, Universal portfolios for target classes having a continuous form of dependence on side information.

*Li, Qiang (Jonathan)*, Density estimation using mixture models.

*Liu, Xuemei*, Covariance estimation in hierarchical repeated measures, applied to evaluation of the effects of parental smoking on asthmatic children.

*Murphy, Thomas Brendon*, Risk robust priors.

**DELAWARE**

**University of Delaware** (7)

MATHEMATICAL SCIENCES

*Acosta, Andre*, Nonparametric density estimation with randomly censored data.

*Coyle, Joseph*, Direct and indirect problems in electromagnetic scattering from anisotropic objects.

*Hugari, Ibrahim*, The generalized lambda distribution and its application.

*Lin, Zhongyan*, Some direct and inverse problems for inhomogeneous media.

*Macchione, Michael*, Contributions to the study of lambda-connectedness in product spaces.

*Monyak, John*, Mean squared error properties of the ridge regression estimated linear probability model.

*Wen, Lixin*, A two dimensional electromagnetic inverse scattering problem for the irradiation.

**DISTRICT OF COLUMBIA**

**American University** (3)

MATHEMATICS AND STATISTICS

*Bell, Dan*, An investigation of the effectiveness of the use of computer animation on understanding functions of the complex plane.

*Long, Kim*, Statistics in the high school mathematics curriculum: is the curriculum preparing students to be quantitatively literate?.

*Shipley, William*, An investigation of college students' understanding of proof construction when doing mathematical analysis proofs.

**FLORIDA**

**Florida Atlantic University** (1)

MATHEMATICAL SCIENCES

*Barovich, Mark*, Long paths and cycles in graphs with large minimum degree.

**Florida Institute of Technology** (2)

MATHEMATICAL SCIENCES

*Kouhestani, Nader*, Quasilinearization applied to impulse parabolic systems.

*Rizzo, Rebecca*, Variational Lyapunov method and stability theory of hybrid systems.

**Florida State University** (4)

MATHEMATICS

*Fu, Guang*, Primary decomposition of ideals.

*Jichun, Li*, Finite element application and analysis for singular perturbed problems in shallow water.

*Poleksic, Alexandar*, Quasiconvex groups.

STATISTICS

*Tighiouart, Mourad*, Nonparametric Bayesian inference for survival data.

**University of Central Florida** (3)

MATHEMATICS

*Brown, Kevin*, Linear and nonlinear Kelvin-Helmholtz instabilities of high velocity magnetized shear layers with generalized polytrope laws.

*Minkler, Gary*, Regularity and compactness in fuzzy convergence spaces.

*Tanriver, Ugur*, One and two dimensional coherent structures of nonlinear partial differential equations via Painlevé analysis.

**University of Florida** (9)

MATHEMATICS

*Berezcky, Aron*, On the density of generating pairs in finite projective special linear groups and projective symplectic groups of odd characteristic.

*Carroll, Raymond*, An orthogonal series approach to positron emission.

*Chastain, Scott*, Geometric quantization on symplectic tori.

*Clancy, Robert*, Homological algebra of Hilbert spaces endowed with a complete Nevanlinna-Pick kernel.

*Florig, Martin*, Geometric modular action.

*Kimber, Chawne*, Prime ideals in rings of continuous functions.

STATISTICS

*Lim, Kil-Sup*, Statistical problems in using Markov chain to represent DNA sequences and their applications.

*Mukherjee, Robin*, Combinative rank-based tests for comparing response rates and response durations in randomized clinical trials.

*Shah, Neena*, Estimated generalized nonlinear least squares for latent class analysis of diagnostic tests.

**University of Miami** (1)

MATHEMATICS AND COMPUTER SCIENCE

*Kelley, Patricia*, A teaching experiment using a constructivist approach in teaching mathematics to liberal arts majors.

**GEORGIA**

**Emory University** (5)

BIostatISTICS

*Viswanathan, Bindu*, Assessing the association in correlated survival data using frailty models.

MATHEMATICS & COMPUTER SCIENCE

*Czygrinow, Andrzej*, Algorithmic version of the regularity lemma and its applications.

*Faudree, Jill*, 2-factors and  $k$ -orderability in graphs.

*Laval, Philippe*, The mean curvature flow problem: numerical solution and applications image processing.

*Wolf, Allison*, A bound of the chromatic number of graphs determined by forbidden subgraphs.

**Georgia Institute of Technology** (4)

MATHEMATICS

*Acosta, Antonio*, Existence of traveling waves and applications.

*Fowler, Tom*, Unique coloring of planar graphs.

*Szymczak, Andrzej*, Index pairs: from dynamics to combinatorics and back.

*Watson, Greg*, Computation of homology and an application to the Conley index.

**University of Georgia** (8)

MATHEMATICS

*Daugulis, Peteris*, Stable eudomorphisms rings of idempotent  $E$ -modules.

*Gnacadjia, Desire Gilles*, Phantom maps and purity over finite-dimensional self-injective-algebras.

*He, Wenjie*, Compactly supported multivariate multiwavelets: theory and construction.

*LeMasurier, Michelle*, Singularities of second order implicit differential equations.

*Li, Shuguang*, On Artin's problem for composite moduli.

*Whitt, Jason*, Computing the cohomology of groups with trivial intersection Sylow  $p$ -subgroups.

STATISTICS

*Shere, Sanjay*, Estimation problems in physical mapping of a chromosome and branching processes with immigration.

*Yu, Xin*, Performance ratio and conditional performance ratio for evaluating stock portfolios and mutual funds.

**HAWAII**

**University of Hawaii** (3)

MATHEMATICS

*Bhaduri, Ranjan*, A new result in valuation theory.

*Calcaterra, Craig*, Arc fields.

*Zhu, Yongsheng*, Composition operators and isolated points.

**IDAHO**

**Idaho State University** (3)

MATHEMATICS

*Cresswell, Donald P.*, Convergence rates of singular values associated with Fredholm operators.

*Hay-Jahans, Christopher*, Poiseuille flow: an example of classical theory in fluid dynamics.

*Yopp, David*, Cone preserving linear maps.

**University of Idaho** (1)

MATHEMATICS

*Mills, Steve*, Positive solutions to a second-order boundary value problem.

**ILLINOIS**

**Northern Illinois University** (2)

MATHEMATICAL SCIENCES

*Billings, Esther*, Qualitative-based reasoning of preservice elementary school teachers in proportion situations.

*Woods, Andrew*, Mathematical modelling and analysis of flash evaporation.

**Northwestern University** (4)

MATHEMATICS

*Asher, Sara*, The dynamics of continuous Baker maps.

*Franecki, Joseph*, The Gauss map and Euler characteristic on algebraic groups.

*Holt, Jason*, A rigidity result for surfaces with no conjugate points and an almost-periodic metric.

*Su, Bo*, Discontinuous solutions in  $L$  of Hamilton-Jacobi equations.

**Southern Illinois University, Carbondale** (2)

MATHEMATICS

*Hussein, Khaled*, Simultaneous selection and ranking for extreme populations.

*Sears, Bradley Scott*, Two-element generation of unitary groups over finite fields.

**University of Chicago** (19)

MATHEMATICS

*Ayati, Bruce*, Methods for computational population dynamics.

*Belkale, Prakash*, Local systems on  $P^1 - S$  for  $S$  a finite set.

*Chang, Stanley*, Coarse obstructions to positive scalar curvature metrics in noncompact quotients of symmetric spaces.

*Chuang, Joseph*, The derived categories of some blocks of symmetric groups and a conjecture of Broué.

*Dunfield, Nathan*, Cyclic surgery, degrees of maps of character curves, and volume rigidity for hyperbolic manifolds.

*Fisher, David*, On the arithmetic structure of lattice actions on compact manifolds.

*Glasner, Karl*, Steady front propagation in phase field models.

*Kratka, Milan*, Multi-dimensional compressible Navier-Stokes equations with free boundary and symmetry.

*Mazur, Marcin*, Finite arithmetic subgroups of  $GL_N$ . The normalizer of a group in the unit group of its group ring and the isomorphism problem.

*Mouroukos, Evangelos*, Cohomological connectivity and applications to algebraic cycles.

*Rust, Colin*, Rankings of derivatives for elimination algorithms and formal solvability of analytic partial differential equations.

*Saldanha, Kenneth*, Nonlinear outcome of the elliptic instability.

*Scull, Laura*, Rational  $S^1$ -equivariant homotopy theory.

*Sharifi, Romyar*, Twisted Heisenberg representations and local conductors.

STATISTICS

*Choi, Donseok*, Modeling latitudinal correlations for satellite data.

*Fuentes, Montserrat*, Prediction of random fields and modeling spatial-temporal satellite data.

*Li, Jiayu*, 2-D hidden Markov models for speech recognition.

*Nicolae, Dan*, Allele sharing models in gene mapping: a likelihood approach.

*Wang, Steve C.*, A statistical model for computer recognition of sequences of handwritten digits, with applications to zip codes.

**University of Illinois, Chicago (12)**

MATHEMATICS, STATISTICS AND COMPUTER SCIENCE

*Burke, Brendan*, Degrees of expansion and models of arithmetic.

*Canfield, Ward*, Collage quantitative literacy approaches and a new way of analyzing functions and data.

*Gorguis, Alice*, Some parabolic partial differential equations and convergence of the successive approximations.

*Lee, Seunghun*, Pluricanonical and adjoint linear series on projective threefolds.

*Liang, Zhigang*, The numerical solution to Kolmogorov equation.

*Lin, Ke-Pao*, Counting number of integral points in tetrahedra and its applications.

*Mankus, Terrance*, New optimum algorithms for unweighted and weighted interval, circular arc and circle graphs and their models.

*Mosher, Bryan*, Displacement estimates for hyperbolic manifolds.

*Pong, Wai Yan*, Ordinal dimensions and differential completeness.

*Wang, Hao*, Conditional second order generalized estimating equations for nonlinear mixed effects model.

*Westman, John*, Computational linear and nonlinear stochastic optimal control with applications.

*Yu, Misun*, Sample size reestimation on clinical trials.

**University of Illinois, Urbana-Champaign (18)**

MATHEMATICS

*Boyd, David Andrew*, Dynamics and measures for semigroups of rational functions.

*Brueggeman, Jeffrey Alan*, On the representation of integers as sums of terms from a given sequence.

*Brueggeman, Sharon*, Number fields which are ramified only at one small prime.

*Chang, Jen-Hsu*, Whitham equations, dispersionless KP theory and Seiberg-Witten variables.

*Choi, Youn-Seo*, Tenth order mock theta functions in Ramanujan's lost notebook.

*Demir, Sakin, H<sup>p</sup>* spaces and inequalities in ergodic theory.

*Doud, Darrin Matthew*, Deformations of three-dimensional Galois representations.

*Fawaz, Amine*, Transversally holomorphic flows on 3-manifolds and geodesible vector field.

*Hoit, Abigail*, The distribution of generalized sum-of-digits functions.

*Iwashita, Yuichi*, The Lefschetz-Reidemeister trace in algebraic K-theory.

*Kang, Soon-Yi*, The Rogers-Ramanujan continued fraction and associated theta function identities found in Ramanujan's lost notebook.

*Kantorovitz, Miriam Ruth*, Adams operations and the Dennis trace map.

*Mubayi, Dhruv*, Extremal problems in graph theory: degree sequences, distance, colorings, and labelings.

*Paek, Dae-Hyun*, Chain conditions for subgroups of infinite order or index.

*Schaeffer, Benjamin*, Abstract complexity theory and the degrees of unsolvability.

*Smith, Daniel Aaron*, A variation on a theme of Vasconcelos.

*Son, Seung Hwan*, Theorems on theta functions in Ramanujan's lost notebooks.

STATISTICS

*Habing, Brian*, Some issues in weak local independence in item response theory.

INDIANA

**Indiana University, Bloomington (9)**

MATHEMATICS

*Baltag, Alexandru*, STS: a structural theory of sets.

*Basu, Devraj*, K-theory with  $R/Z$  coefficients and von Neumann algebras.

*Castaneda, Nelson*, Analysis of the Laplace operator on manifolds.

*Gao, Xiaoqiu*, Numerical schemes for some linear and nonlinear problems.

*Howard, Peter*, Pointwise estimates for the stability of a scalar conservation law.

*Johannes, Jeffrey*, The Casson-Walker-Lescop invariant for surgery on links.

*Patrangenaru, Victor*, Asymptotic statistics on manifolds and their applications.

*Pinto, Fred*, Nonlinear stability and dynamical properties for two Kuramoto-Sivashinsky equations in space dimension two.

*Stimets, Robert*, Weak-Galois cohomology.

**Indiana University-Purdue University (1)**

MATHEMATICAL SCIENCES

*Jie, Xiaojun*, The large time asymptotics of the temperature correlation functions of the XXO Heisenberg Ferromagnet. The Riemann-Hilbert approach.

**Purdue University (20)**

MATHEMATICS

*Chou, Chun-Yen*, Entropy of some homeomorphisms constructed from Brattelli diagrams.

*Danielli, Donatella*, A singular perturbation approach to a two phase parabolic free boundary problem arising in flame propagation.

*Huang, Chieh-Sen*, The modified method of characteristics with adjusted advection and an accelerated domain decomposition procedure.

*Jie, Xiaojun*, The large time asymptotics of the temperature correlation functions of the XXO Heisenberg ferromagnet, the Riemann-Hilbert approach.

*Liu, Jung-Chen*, Ratliff-Rush closures, coefficient modules, and Rees algebras of modules.

*Loomis, Paul*, Galois theory of deformations of polynomials.

*Martcheva, Maia*, An age-structured two-sex population model.

*Nayak, Suresh*, Pseudofunctorial behavior of Cousin complexes on formal schemes.

*Patton, Curtis*, Mathematical models of a host-parasite system in a marine environment.

*Rabbiolo, Guglielmo*, Definitions of the limits of predictability of the dynamics of vibro-acoustic systems.

*Spagnuolo, Anna*, Approximation of nuclear contaminant transport through porous media.

*Tchernev, Alexandre*, Generic structure of free resolutions, and homological properties of symmetric and exterior powers of modules.

*Tegtmeyer, Thomas*, The Ahlfors map and Szego kernel in multiply connected domains.

*Worner, Tamara*, Commutants of certain composition operators.

STATISTICS

*Bachmann, Markus*, Limit theorems for the minimal position in a branching random walk with independent logconcave displacements.

*Dass, Sarat C.*, Unified Bayesian and conditional frequentist testing procedures.

*Jin, Zusheng*, Subsampling methods for stochastic processes based on Poisson samples.

*Lee, Jaeyong*, Semiparametric Bayesian analysis: selection models and meteorological applications.

*Lin, Xun*, Multiple decision theory: ranking and selection problems.

*Perez, Jose M.*, Development of expected posterior prior distributions for model comparison.

**University of Notre Dame** (6)

MATHEMATICS

*Anton, Marian*, On a conjecture of Quillen.

*Dorabiala, Wojciech*, On two parabolic systems: convergence and blowup.

*Hoover, Colleen*, A transfer theorem for some superstable theories with few countable models.

*Huang, Yamin*, On two parabolic systems: convergence and blowup.

*Kodokostas, Dimitrios*, Knot exterior embeddings in  $B^4$ , and sliceness of Alexander polynomial 1 knots.

*Walk, Stephen*, Toward the definability of the array noncomputable degrees.

IOWA

**Iowa State University** (10)

MATHEMATICS

*Choi, Dug-Hwan*, Support functions of convex subsets of a finite-dimensional real space.

*Voutsadakis, George*, Categorical abstract algebraic logic.

STATISTICS

*Aldworth, (Walter) Jeremy*, Spatial prediction, spatial scattering, and measurement error.

*Chen, Cong*, Spline estimators of the distribution function of a variable measured with error.

*Christensen, William*, Analysis of multivariate spatial data using latent variables.

*Goyeneche, Juan Jose*, Estimation of the distribution function using auxiliary information.

*Jeng, Shuen-Lin*, Improved approximate confidence intervals for censored data.

*Lee, Yoon-Dong*, Spatial variogram estimation using the bootstrap method.

*Wall, Melanie*, On nonlinear structural equation analysis.

*Zheng, Zugeng*, Moment convergence for queuing system; production line analysis.

**University of Iowa** (12)

APPLIED MATHEMATICAL AND COMPUTATIONAL SCIENCES

*Benson, Steven*, Solving large scale combinatorial optimization problems.

MATHEMATICS

*Caceres-Duque, Luis*, Ultra products of sets and ideal theories of commutative rings.

*LoFaro, Walter*, A Mayer-Vietoris theorem for the Kauffman bracket skein module.

*McCabe, Cynthia*, Upper bounds on edge numbers of prime knots and links.

*Peterson, Beth*, Ruelle transfer operators and monomial representations of Cuntz algebras.

*Peterson, Lawrence J.*, Conformally covariant pseudo-differential operators.

*Stickles, Joe Alyn, Jr.*, Commutative rings with finitely generated multiplicative semigroup.

*Zhao, Xuejin (Charles)*, Existence and bifurcation of multiple positive solutions for some semilinear elliptic equations.

*Zielinski, Daylene*, Finding formulas for Ohtsuki's finite type invariants of integral homology 3-spheres.

STATISTICS AND ACTUARIAL SCIENCE

*Castelloe, John*, Issues in reversible jump Markov chain Monte Carlo and composite EM analysis, applied to spatial Poisson cluster processes.

*Isaacson, Jeffrey*, Statistical methods for combining temporally and spatially correlated data from multiple measurement systems.

*Tsai, Henghsiu*, Tests for nonlinearity in partially observed time series.

KANSAS

**Kansas State University** (8)

MATHEMATICS

*Cook, Sarah*, Good-lambda inequalities for wavelets.

*Legan, Bruce*, On a structure theory for commutator-finite orthomodular lattices.

STATISTICS

*Al-Hadeed, Abdulla*, Models for step-stress accelerated life testing.

*Ballou, Lynda*, Prediction intervals and lack-of-fit tests for neural networks.

*Moore, Terri*, Lack-of-fit tests and goodness-of-measures for mixed models.

*Strand, Matt*, Extensions in inference for lattice-ordered means: isotonic regression and hypothesis tests.

*Wang, Yuhua*, The analysis of count data in a one-way layout and a new multivariate negative binomial distribution.

*Yu, Qifeng*, Fitting linear mixed effects model with heterogeneous correlated data via ECM algorithm.

**University of Kansas** (1)

MATHEMATICS

*Matache, Valentin*, Composition operators on spaces of holomorphic functions.

KENTUCKY

**University of Kentucky** (10)

MATHEMATICS

*Fahey, Mark*, Numerical computation of quadratic forms involving large scale matrix functions.

*Kuchenbrod, John*, Extremal problems on weighted graphs.

*Muir, Jerry, Jr.*, Linear and holomorphic idempotents and retracts in the open unit ball of a commutative  $C^*$ -algebra with identity.

*Simmons, Scott*, Homogeneous Dirac operators and representation theory.

*Starr, Collin*, Sums of squares of polynomials in  $R[x_1, \dots, x_n]$ .

*Weber, Wendy*, Recovering regular triangulations of complex polytopes.

STATISTICS

*Grambow, Steven*, Deterministic methods in robust estimation and influence diagnostics.

*Pittard, Melissa*, An alternative definition of the breakdown point for principal components analysis.

*Tong, Yansheng*, Bayesian analysis of mixtures of normal linear models.

*Xia, Chenghua*, Maximum likelihood estimation for nonstandard mixture models.

LOUISIANA

**Louisiana State University, Baton Rouge** (6)

BIOMETRY AND GENETICS

*Diaz, Carroll, Jr.*, The statistical analysis of multivariate repeated measurements with patterned covariance matrices.

MATHEMATICS

- Hawkins, Sidney*, Inequalities between pythagoras numbers and algebraic ranks in Witt rings of fields.
- Matthews, Gretchen*, Weierstrass pairs and minimum distance of Groppa codes.
- Pascal, Jesus*, On the value function of some singular optimal control problems.
- Wu, Pou-Lin*, Maximal circuits in matroids.
- Wu, Zhaoyang*, Spikes in matroid theory.

**Tulane University (5)**

MATHEMATICS

- Meng Xianfeng*, A computational model of flow through porous media at the microscale.
- Packard, Earl*, Finite difference approximations for parabolic systems on grids with irregular nodes.
- Rothe, Magnus*, Continuous coboundaries for dynamical systems on Polish spaces.
- Skoubine, Kirill*, Mathematical modeling of spiral wave reentry and defibrillation shocks in ventricular myocardium.
- Solanilla, Leonardo*, Conformal deformation to positive curvature on noncompact surfaces.

**University of Southwestern Louisiana (7)**

MATHEMATICS AND STATISTICS

- Chan, Wai Yuen*, Global existence and complete blow-up of solutions for degenerate nonlinear parabolic problems.
- Edler, Laurie*, Path connected groups.
- Ferdinand, Robert*, Approximation and parameter identification problems for models in applied sciences.
- Hao, Jian*, Inferences on normal covariance matrix with incomplete data.
- Huffman, Jason*, Convolution algebras and noncommutative operational calculus.
- Marshall, David*, Asymptotic behavior of generalized logistic and Lotka-Volterra population models.
- Shan, Yujiang*, Jacobson radical rings and their adjoint groups.

MARYLAND

**Johns Hopkins University (13)**

BIostatistics

- Chen, Yingqing*, Accelerated hazards model and its extensions.
- Das, Abhik*, Topics in spatial statistics.
- Gray, Sarah*, Analysis of multidimensional longitudinal data.
- Guo, Chuanfa*, Combining information: likelihood approach.
- Huang, Wenzheng*, Unbiased generic likelihood.

- Wang, Nae-Yuh*, On the use of extended generalized estimating equations for regression analysis under non-standard situations.

MATHEMATICAL SCIENCES

- Machida, Motoya*, Stochastic monotonicity and realizable monotonicity.
- Mazur, David*, Integer programming approaches to a multi-facility location problem.
- Xie, Jingdong*, Generalizing the Mann-Whitney-Wilcoxon statistic.

MATHEMATICS

- Ambro, Florin*, The adjunction conjecture and its applications.
- Devadoss, Satyan*, Tessellations of moduli spaces and the mosaic operad.
- Ryu, Heuisu*, Algorithm for non-triviality of Shafarevich-Tate group using Heegner points for certain elliptic curves.
- Tong, Guoling*, The Shirmura integral and the standard  $L$ -function of  $U(3)$ .

**University of Maryland, Baltimore County (4)**

MATHEMATICS AND STATISTICS

- Bokossa, Maxime*, Estimation of parameters of an overdispersion model.
- Imhoff, Scott*, Framework for image segmentation, compression and hybrid algorithms via wavelet-estimation of local smoothness.
- Liang, Zhiyuan*, Optimal stopping regions for a two component change-point problem in continuous time.
- Seshaiyer, Padmanabhan*, Non-conforming hp finite element methods.

**University of Maryland, College Park (31)**

MATHEMATICS

- Belegradec, Igor*, Counting negatively curved manifolds.
- Carney, Debra*, Linear structures with few substructures.
- Close, Peter*, Postprocessing and superconvergence for boundary element methods on polygons with nonuniform meshes.
- Funke, Jens Patrick*, Rational quadratic divisors and automorphic forms.
- Hwang, Yi-Ting*, Some finite sample results in the left-truncation and right-censored model.
- Kim, Hong Chan*, The symplectic structure on the moduli space of real projective structures.
- Lee, Chung Yeung*, Queries in computational learning theory and combinatorial problems.
- Leon, Manuel Torres*, Minimally supported frequency wavelets.
- Lillywhite, Steven*, Cohomology of a symplectic quotient of a loop space.
- Lindsay, David*, Computational methods applied to wind tunnel optimization.

- Morgan, Mark D.*, The degree of modular parametrization of  $Q$ -curves.

- Newberger, Florence*, The ergodic theory of Bowen-Margulis measure.
- Paffenroth, Randy Clinton*, Mathematical visualization, parameter continuation, and steered computations.
- Pfeiffer, Ruth*, Statistical problems for stochastic processes with hysteresis.
- Planchak, J. Gregory*, Bounded spectral synthesis.
- Quintero, Jose R.*, Three-dimensional long water waves with small amplitude.
- Schultz, Jason*, Lifting of characters of  $SL_2(F)$  and  $SO_{1,2}(F)$  for  $F$  nonarchimedean.
- Shankar, Krishnan*, Isometry groups of homogeneous positively curved manifolds.
- Shih, Yin-Tzer*, Upwind finite element solutions for convection-diffusion problems.
- Swartz, Edward B.*, Matroids and quotients of spheres.
- Torcaso, Federico*, Reaction-diffusion equations in random media.
- Vanderschoot, Mary Helen*, Limit sets for continuous flows on surfaces.
- Wang, Bei*, High order Godunos schemes for hyperbolic systems of conservation laws.
- Yuan, Guochenz*, Properties of numerical experiments in chaotic dynamical systems.
- Zhong, Zhenshao*, Goodness-of-fit tests with application to lifetime data.

MEASUREMENT, STATISTICS AND EVALUATION

- Bolesta, Monica*, Comparison of standard errors within a latent.
- Herrick, Mary Lee*, State level performance assessments and consequential evidence of validity.
- Li, Yuan*, Multidimensional IRT equating.
- Powell, Douglas*, The robustness of the chi-square goodness of fit test for structural equations models: a meta-analysis.
- Von Secker, Claire*, Using hierarchical linear gross models to examine factors related to science achievement.
- Yen, Shu Jing*, Psychometric properties of IEA reading comprehension test using latent class analysis.

MASSACHUSETTS

**Boston University (8)**

MATHEMATICS

- Chen, Chieh-Yu (Joyce)*, Robustness and power of two sample tests applied to data substantially distorted from normality.
- Karu, Kalle*, Semistable reduction in characteristic zero.
- Liao, Szu-I (Aurora)*, Robustness of two sample tests of means under non-normality and heterogeneity of variances.

*Medvedev, Georgiy*, Problems on oscillations and pattern formation in mathematical biology.

*Morimoto, Mayumi*, On pricing barrier options related to Brownian motion with the class of square root curved boundaries.

*Roberts, Gareth Owen Massacio Eaton*, Existence and stability of relative equilibria in the  $N$ -body problem.

*Vajiac, Adrian Ionut*, Localization techniques in topological quantum field theories.

*Wang, Wan-Jung (Stephanie)*, Binary sequence with underlying nonstationary time series.

## Brandeis University (7)

### MATHEMATICS

*Bruno, Andrea*, Degenerations of linear series and binary curves.

*Chen, Chungheng*, On symplectic random matrices.

*Garber, Manuel*, On quadratic vector fields preserving a family of 4 quadrics.

*Kalikow, Louis*, Enumeration of parking functions, allowable permutation pairs, and labeled trees.

*Kulkarni, Upendra*, Characteristic-free representation theory of  $GL_n(\mathbb{Z})$ : some homological aspects.

*Pawale, Vivek*, Invariants of semi-direct product of cyclic groups.

*Travis, Leopold*, Graphical enumeration: a species-theoretic approach.

## Harvard University (31)

### BIostatistics

*Bebchuk, Judith*, Analysis of survival data accompanied by intermediate events that may be right of interval censored.

*Bernardo, M. Patricia*, Designs for studies with failure time random variables.

*Blackwell, Elizabeth*, Random effects latent variable models for multivariate ordinal bioassays.

*Fine, Jason*, Analysis of competing risks data with non-proportional hazards models.

*Horton, Nicholas*, Use of multiple informant data as a predictor psychiatric epidemiology.

*Jones, Cheryl*, Model checking and analysis strategies for correlated survival data.

*Morrissey, Mary*, Misclassification, nonignorable nonresponse, and mismeasurement.

*Parise, Helen*, Semiparametric smoothing methods for the analysis of animal carcinogenicity experiments.

*Regan, Meredith*, Models for clustered and discrete outcomes in developmental toxicology.

*Wang, Zhenyu*, Nonparametric estimating equations for longitudinal data.

*Weinberg, Janice*, Two sample linear rank and permutation tests under general alternatives, with application to summary measures.

*Yeap, Beow*, Robust inference in hierarchical non-linear models.

### ENGINEERING AND APPLIED SCIENCES

*Baker, Ellen*, The mug-shot search problem: a study of the eigenface metric, search strategies, and searching facial image data.

*Gloy, Nikolas*, Code placement using temporal profile information.

*Morris, Robert*, Scalable TCP congestion control.

*Small, Christopher*, Building an extensible operating system.

### MATHEMATICS

*Ben-Zui, David*, Spectral curves, opers and integrable systems.

*Bernstein, Mira*, Moduli spaces of curves with level structure.

*Doran, Charles*, Picard-Fuchs uniformization and geometric isomonodromic deformations: modularity and variation of the mirror map.

*Engelward, Andrew*, Models over 2 for locally quasi-split algebraic groups.

*Goldstine, Susan*, Spin representations and lattices.

*Landweber, Gregory*, Dirac operators on loop spaces.

*Loftin, John*, Applications of affine differential geometry to  $RP(2)$  surfaces.

*Logan, Adam*, Moduli spaces of curves with Markel points.

*O'Neal, Catherine*, Jacobians of curves of genus one.

*Positselski, Leonid F.*, Kostel property and Bogomolov's conjecture.

*Russell, Heather*, Punctual Hilbert schemes of smooth surfaces.

*Szyold, Michael*, Flat models of elliptic schemes.

*Wang, Jian-Mei*, Seiberg-Witten invariant on non-compact three and four-manifolds.

*Wieand, Kelly*, Eigenvalue distributions of random matrices in the permutation group and compact Lie groups.

*Wilmer, Elizabeth*, Exact rates of convergence for some simple non-reversible Markov chains.

## Massachusetts Institute of Technology (15)

### MATHEMATICS

*Amundsen, David*, Resonances in dispersive wave systems.

*Chan, Daniel*, Noncommutative rational double points.

*Dugger, Daniel*, A Postnikov tower for algebraic  $K$ -theory.

*Goldin, Rebecca*, Cohomology of weight varieties.

*Granja, Gustavo*, On quaternionic line bundles.

*Hersh, Patricia*, Decomposition and enumeration in partially ordered sets.

*Kassaei, Payman*,  $p$ -adic modular forms over Shimura curves over  $\mathbb{Q}$ .

*Lucas, Adam*, Small unitary representations of the double cover of  $SL(m)$ .

*Ma, Yanyan*, Studies in matrix perturbation and robust statistics.

*Moroianu, Sergiu*, Residue functionals on the algebra of adiabatic pseudo-differential operators.

*Nigam, Mats*, Numerical modeling of suspension flows.

*Pachter, Lior*, Domino tiling, gene recognition, and mice.

*Popescu, Ioana*, Applications of optimization in probability, finance and revenue management.

*Radulescubanu, Andrei*, Cofibrance and completion.

*Rosu, Ioanid*, Equivariant elliptic cohomology and rigidity.

## University of Massachusetts, Amherst (10)

### BIostatistics and Epidemiology

*Matthews, Charles*, The measurement of physical activity in free-living humans and the effect of seasonal and short-term changes in physical activity on cardiovascular disease risk.

*Silverman, Bonnie*, Exposure to chloroform in swimming pools during pregnancy and risk for intrauterine growth retardation.

### MATHEMATICS AND STATISTICS

*Blessinger, Todd*, Stochastic orders and dependence properties of concomitants of order statistics.

*Cramer-Benjamin, Richard*, Independence in the ordinal model and on closed set systems.

*Ferland, Alane*, Isoperimetric inequalities and concave functions.

*Galotta, Rosanna*, Classification of stable minimal surfaces bounded by Jordan curves in close planes of Euclidean three-space.

*Li, Chunming*, Classification by active testing with applications to imaging and change detection.

*McCune, Catherine*, Rational minimal surfaces.

*Pearlstein, Gregory*, The geometry of the Deligne-Hodge decomposition.

*Rumynin, Dmitry*, Modular Lie algebras and their representations.

## MICHIGAN

### Michigan State University (14)

#### MATHEMATICS

*Chen, Weimin*, The Seiberg-Witten theory of homology 3-spheres.

*Chung, Hwee Hoon*, Polyhedral homotopy and its applications to polynomial system solving.

*Cinzori, Aaron*, Future polynomial regularization of ill-posed Volterra problems.

- Clifford, John*, The product of a composition operator with the adjoint of a composition operator.
- Gebhard, David*, Deletion-contraction techniques for the chromatic symmetric function of a graph.
- Kepka, Mariusz*, Global existence of solutions to nonlinear wave equations.
- Liu, Larry Shu-Chung*, Left-modular elements and edge labelings.
- Miao, Jie*, Toeplitz operators on harmonic Bergman spaces.
- Popovici, Irina*, Rigidity and dimension of the harmonic measure on Julia sets.
- Rassy, Matthias*, On certain pushing-up problems related to vertex transitive graphs.
- Scofield, Thomas*, Sequential predictor-corrector methods for variable regularization of ill-posed Volterra problems.
- Yao, Qingchuan*, Convergence of several iterative methods and solving symmetric tridiagonal eigenvalue problems.

STATISTICS AND PROBABILITY

- Blazek, Rudolf*, Conditional inference for incomplete permutation bootstraps in multiple linear regression with potential application to wavelet shrinkage.
- Choudhuri, Nidhan*, Bayesian bootstrap credible sets for multidimensional mean functional.

**University of Michigan,  
Ann Arbor** (27)

BIostatistics

- Bandekar, Rajesh*, A sum of profiles model and its application in experimental design.
- Chen, Hua Yun*, Statistical methods for handling missing data in longitudinal data analysis and in survival analysis.
- Chen, Yin-Miao*, Analysis of right censored cost data.
- Fan, Ruzong*, Mathematical and statistical models for mutant genes in nonstationary populations.
- Guo, Wensheng*, A new class of structural time series models.

Mathematics

- Alterman, Deborah*, Diffractive nonlinear geometric optics for short pulses.
- Connell, Christopher*, Rigidity and dynamics of negatively curved homogeneous spaces.
- Denham, Graham*, Local systems on the complexification of an oriented matroid.
- Freeman, Eric*, Quadratic and cubic Diophantine inequalities.
- Hanes, Douglas*, Special conditions of maximal Cohen-Macaulay modules, and applications to the theory of multiplicities.
- Kim, Jahwan*, Gamma factors of certain supercuspidal representations.
- Korpas, Levente*, Quantization of symplectic cobordisms.

- Mihailescu, Eugen*, Periodic points and hyperbolicity in higher dimensional dynamics.
- Molinary, Rory*, Properties of relative recursive enumerability.
- Parsell, Scott*, Exponential sums and Diophantine problems.
- Rosenberg, Joel*, Geometry of moduli of cubic surfaces.
- Scharaschkin, Victor*, Local global problems and the Brauer-Manin condition.
- Shanmugalingam, Nageswari*, An extension of Sobolev spaces to metric spaces.
- Singh, Srilatha*, Uniqueness of the JSJ decomposition for negatively curved groups.
- Sink, Jeffrey*, Asymptotic expansions of quantum invariants and a zeta-function of a knot.
- Swanson, Christopher*, Planar cyclic difference packings.
- Tyson, Jeremy*, Geometric and analytic applications of a generalized definition of the conformal modulus.

STATISTICS

- Cheng, Shao-Wei*, Optimal blocking schemes and projection properties for fractional factorial designs.
- Shen, Qing*, Linear models for a functional response.
- Wang, Chuanguo*, Modeling temporally dependent ordinal processes.
- Weng, Chiu-Hsing*, Very weak expansions for sequentially designed experiments.
- Ye, Qian*, Latin hypercube designs for computer experiments.

MINNESOTA

**University of Minnesota,  
Minneapolis** (18)

BIostatistics

- Mugglin, Andrew*, Fully model-based approaches for spatially misaligned data.

Mathematics

- Chiang, Doris*, Andrianov's integral for unitary groups.
- Killpatrick, Kendra*, Recursions for the  $q$ -Kostka polynomials.
- Koo, Yonghoi*, Parabolic partial differential equations and systems arising in differential geometry and applications.
- Lee, Chengwei*, Some central limit theorem and large deviation results for a continuous time Markov process.
- Lee, Namyong*, On the PSD involution model.
- Liu, Bo*, The regularity, exact boundary controllability and stabilization of a membrane with strings on general polygonal domains.
- Naughton, Gerard Peter*, Symmetric orthogonal wavelets.
- Richter, David*, Semi-simple Lie algebras of differential operators.

- Shald, Scott*, Problems in estimation: target tracking in missile defense and the limiting case of the discrete time Kalman filter.

- Tsai, Tai-Peng*, On problems arising in the regularity theory for the Navier-Stokes equations.

- Yoo, Hyeok*, An analytic approach to stochastic partial differential equations and its applications.

STATISTICS

- Mira, Antonietta*, Ordering slicing and splitting Monte Carlo Markov chains.
- Olive, David*, Applied robust statistics.
- Runyan, Grant*, Superfair red-and-black.
- Tiso, Maurizio*, Nonparametric model selection: an approach based on density estimation.
- Varbanov, Alexandre*, Bayesian image analysis of fMRI brain data sets.
- Wang, Ming-Dauh*, On the optimal administration of screening tests.

MISSISSIPPI

**Mississippi State  
University** (2)

Mathematics and Statistics

- Jang, Mi-Young K.*, Bootstrap and kernel smoothing on some robust estimation.
- Tiwari, Tapan K.*, The effect of integrating a computer algebra system in an introductory differential calculus course.

MISSOURI

**University of Missouri,  
Columbia** (11)

Mathematics

- Avila, Andres*, Stability results for the first eigenvalue of the Laplacian on spaces forms.
- Ben-Hadj-Rhouma, Mohamed*, On the continuation of periodic orbits.
- Dickson, Ronald*, Algebro-geometric solutions of the Boussinesq hierarchy.
- Hermi, Lotfi*, On the spectrum of the Dirichlet Laplacian and other elliptic operators.
- Lang, Andrew*, The Casimir effect.
- Stefanov, Atanas*, On homogeneous Calderon-Zygmund operators with rough kernels.
- Steiger, Don*, Numerical  $N$ -body methods in computational chemistry.

STATISTICS

- Changyong, Song*, One-sided multivariate test.
- Chongcharoen, Samruam*, One-sided multivariate test.
- Hoshaw-Woodard, Stacy*, Methods of analyzing longitudinal data.

*McIntosh, Matthew*, Sample sizes for comparing means of two multivariate normal populations when the alternative is ordered.

## University of Missouri, Rolla (2)

MATHEMATICS AND STATISTICS

*Canak, Ibrahim*, Tauberian theorems for generalized Abelian summability methods.

*Jayawardhana, Ananda*, Predictive density estimation in life testing.

## Washington University (11)

MATHEMATICS

*Bernstein, Holly*, Isothermic tori with spherical lines of curvature.

*Corbett, Jonathan*, Coherent states on kinematic groups: the study of spatiotemporal wavelets.

*Gigante, Giacomo*, A general method for transferring one dimensional results in harmonic analysis to different settings associated with groups and hypergroups.

*Lampe, Kristen*, A counting formula for colored rooted forests and its relation to the Jacobian conjecture.

*Nicholson, Benjamin*,  $K$ -theory, projective modules, and complete intersections.

*Nielsen, Morten*, Size properties of wavelet packets.

*Penner, Michelle*, Foliations with Kazhdan's property T.

SYSTEMS SCIENCE AND MATHEMATICS

*Chen, Y. M.*, Compiler for resource scheduling program.

*Noble, John F.*, Parametrized families of broken extremals and sufficient conditions for relative minima.

*Rink, Katherine*, Adaptation of shortest path algorithms to mobility problems.

*Wang, Haiyan*, Deformable models for image processing.

## MONTANA

### Montana State University (5)

MATHEMATICAL SCIENCES

*Brown, Sharon*, A reaction diffusion model for competing pioneer and climax species.

*Goudelock, Cliff*, Effect of the use of an Internet-based 'problem of the week' on high school geometry student problem-solving achievement and attitudes toward mathematics.

*Harpster, Dave*, A study of possible factors that influence the construction of teacher-made problems that assess higher-order thinking skills.

*Luebeck, Jennie*, Distance mediated mentoring: a telecommunication-supported model for novice rural mathematics and science teachers.

*Miller, Kirk*, The relationship between a school district's perceived progress in implementing a school technology plan which uses Internet-access and on-line educational resources and a set of school district characteristics.

## University of Montana (1)

MATHEMATICAL SCIENCES

*Anderson, Ronald*, Spatial discriminant analysis for linear relationships.

## NEBRASKA

### University of Nebraska, Lincoln (5)

MATHEMATICS AND STATISTICS

*Deis, Timothy*, Equations in free inverse monoids.

*Krueger, Robert*, Disconjugacy of  $n$ th order linear difference equations.

*Nielsen, Lance*, Stability properties for Feynman's operational calculus.

*Saydam, Azime Serpil*, Prime ideals in birational extensions.

*Wu, Chien-Hua*, On a test for multivariate normality and on certain statistical procedures valid for complex surveys.

## NEW HAMPSHIRE

### Dartmouth College (4)

MATHEMATICS

*Jones, Albin*, Some results in the partition calculus.

*Myers, Amy*, Results in enumeration and topology of interval orders.

*Ryan, Stephen*, Trapezoid orders geometric classification and dimension.

*an Huef, Astrid*, Transformation-group  $C^*$ -algebras with bounded trace.

### University of New Hampshire (1)

MATHEMATICS

*McSweeney, Laura*, Dynamic analysis of unevenly sampled data with applications to statistical process control.

## NEW JERSEY

### New Jersey Institute of Technology (3)

MATHEMATICAL SCIENCES

*Huang, Zili*, Flame dynamics in unsteady strained flows.

*Samulyak, Roman*, Dynamical systems associated with particle flow models: theory and numerical methods.

*Wang, Yanping*, Theoretical study of bubble motion and remobilization in surfactant solutions.

## Princeton University (3)

APPLIED AND COMPUTATIONAL MATHEMATICS

*Mattingly, Jonathan*, The stochastic Navier-Stokes equation: energy estimates and phase space contraction.

*Mucha, Peter*, On zero Reynolds number microhydrodynamics of particulate suspensions.

*Wittenberg, Ralf*, Local dynamics and spatiotemporal chaos. The Kuramoto-Sivashinsky equation: a case study.

## Rutgers University, New Brunswick (11)

MATHEMATICS

*Campbell, Garikai*, Finding elliptic curves and infinite families of elliptic curves defined over  $Q$  of large rank.

*Chelst, Dov*, Modified two component plasmas and generalizations of Schwarz's lemma.

*Desper, Richard*, Evolutionary trees in two settings: progression of neoplasms and differentiation of species.

*Gunston, Tor*, Cohomological degrees, Dilworth numbers and linear resolution.

*Kazarnovski-Krol, Aleksei*, Integral representations and Harish-Chandra expansion for zonal spherical functions of type  $A_n$  and conformal blocks of the  $WA_n$ -algebra.

*Lin, Senchun*, Some theorems on surfaces in Euclidean and Minkowski 3-space.

*Ojanen, Harri*, Weighted norm inequalities for rough singular integrals.

*Tu, Tong*, Performance of Reissner-Mindlin elements.

*Yunger, Jason*, Facet stepping and motion by crystalline curvature.

STATISTICS

*Keiji, Nagai*, Nonparametric sequential tests and change-point detection problems.

*Yung-Seop, Lee*, Data mining criteria for tree-based regression and classification.

## Stevens Institute of Technology (2)

MATHEMATICAL SCIENCES

*Al-Hihi, Joni*, Testing for a moving average unit root in the presence of fractionally integrated processes.

*Lenzing, Erik*, A hybrid Green's function approach to computational electromagnetics.

## NEW MEXICO

### New Mexico State University (4)

MATHEMATICAL SCIENCES

*Jorgenson, Kristofer*, On classes of examples of additive  $G_a$ -actions on  $C^4$ .

*Pogel, Alex*, Stone triples and self-duality.

*Waterman, Gregg*, The area integral and the exponential square class for parabolic functions.

*Wei, Guo*, Contributions to distributions of random sets on Polish spaces.

## University of New Mexico (12)

### MATHEMATICS AND STATISTICS

*Abanades, Miguel A.*, Homology and cohomology classes represented by real algebraic sets.

*Brown, Thomas R.*, Multiple time scale solutions for Navier-Stokes equations for small Mach numbers.

*Douthett, Elwood (Jack) M., Jr.*, The theory of maximally and minimally even sets, the one-dimensional antiferro-magnetic Ising model, and the continued fraction compromise of musical scales.

*Fugate, Michael L.*, Adjusted means plots for detecting lack of fit and lack of independence in linear models.

*Hurlburt, Christine M.*, Isogeny covariant differential modular forms.

*Joglar-Prieto, Nuria*, Regular mappings into the 2-dimensional sphere.

*Joubert, Shirley Bleasdale*, Gradient methods for Kalman filter disaggregation of times series.

*Kvernadze, George*, Locating discontinuities of a bounded function by spectral method.

*Lapidus, Jodi Ann*, Multivariate statistical methods using continuous and discrete data.

*Mason, Tamra*, Analysis of diffusion and surface reaction problems in biological systems.

*Myder, John E.*, A mathematical analysis of induced systems in a plant-herbivore system.

*Parker, Robert Lewis*, Small-sample and computational improvements for paired comparisons.

## NEW YORK

### Adelphi University (3)

#### MATHEMATICS AND COMPUTER SCIENCE

*Masilamani, Purushochaman*, Complex fluid flow based on lattice Boltzman equation.

*Petrakos, Kostas*, Time-dependent control strategies for two-person games.

*Wallach, Patrick*, The modified batch algorithm for loop-erased self-avoiding walks.

### City University of New York, Graduate Center (5)

#### MATHEMATICS

*Belianina, Maria*, Studies in algorithmic graph theory.

*Kargl, Roland*, An unstable Adams spectral sequence based on a generalized homology theory.

*Petrovic, Ivan B.*, A Teichmüller model for periodic doubling.

*Weiss, Maria A.*, Completeness of certain bimodal logics for subset spaces.

*Zhao, Kaiyan*, The combinatorics of chessboards.

### Columbia University (7)

#### BIOSTATISTICS

*Abreu, Paula*, Investigation of statistical methodology used in linkage analysis of complex genetic disorders.

#### MATHEMATICS

*Budhram, Arjune*, Trace of Hecke operators of the Petersson norm of weight  $(2, 2)$  Hilbert modular forms.

*Joe, Dosang*, Symplectic structures on connected sums with a ruled surface and product formulas for Seiberg-Witten invariants along a nilmanifold.

*Shor, Jeremy*, Using the JSJ decomposition to study fixed subgroups.

#### STATISTICS

*Putnam, Lise-Anne K.*, Limit theorems for estimators based on convex functions of spacings.

*Yang, Yanmei*, Long range dependence in the study of time series with finite or infinite variances.

*Zhao, Xiaoliang*, Bayesian adaptive portfolio optimization.

### Cornell University (18)

#### APPLIED MATHEMATICS

*Hastings, Rachel*, Triangulations of point configurations and point configurations and polytopes.

*Mariano, Adrian*, Image processing with total variation minimization.

*Montes-Pizarro, Errol*, Bifurcating periodic solutions for a family of semilinear wave equations.

*Pena, Javier*, Condition numbers for linear programming.

*Szanto, Agnes*, Computation with polynomial systems.

#### MATHEMATICS

*Boutin, Debra L.*, Centralizers of finite subgroups of automorphisms and outer automorphisms of free groups.

*Garcia, Gonzolo*, On conformal metrics on the Euclidean ball.

*German, Ilya*, Hedging options with small transaction casts.

*Gordina, Maria*, Holomorphic functions and the heat kernel measure on an infinite dimensional complex orthogonal group.

*Jensen, Craig*, Cohomology of  $\text{Aut}(F_n)$ .

*Kang, Min Jeong*, Asymptotic behavior of solutions of one dimensional parabolic SPDE.

*Lewkeeratiyutkul, Wicharn*, Perturbation theorems for supercontractive semigroups.

*Milnikel, Robert*, Nonmonotonic logic: a monotonic approach.

*Mitchell, Jeffrey*, Short time behavior of hermite functions on compact Lie groups.

*Orlandi, Lisa*, Actions of Artin groups and automorphism groups on  $R$ -trees.

*Pan, Shu-Yen*, Local Theta correspondence and unrefined minimal  $K$ -types.

*Sen, Shayan*, Representations and characters of an extension of  $\text{SL}(3, R)$  by an outer automorphism.

#### STATISTICAL SCIENCES

*Wu, Samuel Shangwa*, Nonparametric estimation of hazard functions.

### New York University, Courant Institute (12)

#### MATHEMATICAL SCIENCES

*Andenmatten, Michel*, The Weinstein conjecture and holomorphic curves in higher dimensions.

*Banagl, Markus*, Extending intersection homology type invariants to non-Witt spaces.

*Bonorino, Leonardo*, Regularity of the free boundary for some elliptic and parabolic problems.

*Dienstfrey, Andrew*, Hilbert analysis of a Riemann Hilbert problem arising in inverse scattering theory.

*Goldak, M. Shawn*, Form drag in wind driven ocean flows: a dissipative mechanism for the antarctic circumpolar current.

*Kosygina, Elena*, Behavior of relative entropy in the hydrodynamic scaling limit.

*Lai, Ming-Chih*, Simulations of the flow past an array of circular cylinders as a test of the immersed boundary method.

*Lu, Chern*, Asymptotic periodic solution to the branched Toda lattice.

*Newman, Joshua*, Model calibration in mathematical finance.

*Slifstein, Mark*, An examination of the advantage of frequency decomposition in the cochlea.

*Toselli, Andrea*, Domain decomposition methods for vector fields problems.

*Wang, Peiyong*, Regularity of the free boundaries of two-phase problems for fully nonlinear elliptic equations.

### New York University (1)

#### STATISTICS AND OPERATIONS RESEARCH

*Shane, Karen*, A robust approach to categorical data analysis.

### Rensselaer Polytechnic Institute (5)

#### MATHEMATICAL SCIENCES

*Blue, Jennifer*, A hybrid of tabu search and local descent algorithms with applications in artificial intelligence.

*Jaye, Michael*, Geoacoustic profile estimation and stochastic propagation modeling.

*Krembs, Mary*, Classification and approximation of Voronoi nets.

*Shah, Sharmila*, An ellipsoid algorithm for equality-constrained nonlinear programs.

*Timofeyev, Ilya*, Finite dimensional dynamics of the Laser equations.

### State University of New York, Albany (9)

MATHEMATICS AND STATISTICS

*Beneteau, Catherine*, Radial null sets of analytic functions with growth restrictions.

*Carswell, Brent*, Wandering property for Bergman submodules over singly generated algebras.

*Deno, Christa*, Resolving multigraded modules over polynomial rings.

*Jewett, Rumara*, The almost convexity of a certain nilpotent group.

*Johnson, Laurie*, Hyperbolicity of one relator groups.

*Racquet, John*, On the coincidence of uniqueness and boundedness conditions for classes of analytic functions.

*Soliwiej, Jaroslaw*, Holder estimates for the solutions of the Cauchy-Riemann equations on convex domains of the finite type.

*Sutherland, Melissa*, Hypersurfaces and almost complete intersections: resolutions and Poincare series of cyclic modules.

STATISTICS AND BIOMETRY

*Hamdan, Abdel K.*, Measuring the effect of interventions on multiple nonstationary time series with applications to public health programs.

### State University of New York, Binghamton (3)

MATHEMATICAL SCIENCES

*Beuerle, James*, Metacyclic groups and their nonabelian tensor squares.

*Visscher, Matthew*, On the nonabelian tensor product of groups.

*Zhang, Qin Hai*, On abnormal subgroups of finite groups.

### State University of New York, Buffalo (6)

MATHEMATICS

*Ianakiev, Krassimir*, Existence of global solution and scattering operator for nonlinear hyperbolic equations.

*Ling, Jun*, A bound for the first fundamental gap.

*Pinciu, Valeriu*, Positionings of essential surfaces in link compliments.

*Raimondo, Roberto*, Compact toeplitz-type operators and the berezin transform on the Bergman spaces of the complex balls and multiply-connected domains.

*Stanica, Pantelimon*, Chromos, boolean functions and avalanche characteristics.

*Xu, Hongliang*, Precise solution of the wave equation.

### State University of New York, Stony Brook (15)

APPLIED MATHEMATICS AND STATISTICS

*Chang, Hung-Chyuan*, Teletraffic analysis in ATM environment.

*Chen, Chien-Hsiun*, Comparison of empirical strategies to minimize functions on linkage data.

*Lee, Won Suck*, A theoretical study of trace flow through heterogeneous porous media in curved geometry.

*Lo, Yungtai*, Test for the number of components in a normal mixture.

*Moon, In Hak*, Numerical solution of differential equations for renal concentrating mechanism.

*Oh, Wonho*, Random field simulation and an application of Kriging to image processing.

*Pinezich, John*, Periodic structure in two-dimensional Riemann problems for Hamilton-Jacobi equations.

MATHEMATICS

*Batra, Punita*, Invariants of real forms of affine Kac-Moody Lie algebras.

*Dey, Rukmini*, A dimensional reduction of the Seiberg-Witten equations and geometric quantization.

*Godinho, Leonor*, Circle actions on symplectic manifolds.

*Hinkle, Benjamin*, Parabolic limits of renormalization.

*Kim, Jaeman*, Einstein-Thorpe manifolds.

*Koralov, Leonid*, Transport by random stationary flows.

*Ordower, Marc*, Hyperinvariant subspaces and structure theory for  $k$ -tuples of commuting operators on finite dimensional spaces.

*Zakeri, Saeed*, Dynamics of cubic Siegel polynomials.

### Syracuse University (4)

MATHEMATICS

*Almannaei, Abdulsalam*, A study of degenerate elliptic partial differential equations.

*DeCampo, Raymond*, Extending the Beltrami equation into higher dimensions.

*Pfaff, Thomas*, A mean field model for species abundance.

*Tran, Max*, Finite element spectral approximation.

### University of Rochester (7)

BIostatistics

*Ritz, John*, Combining within-pair and between-pair information for a Cox frailty model.

MATHEMATICS

*Huang, Tianpei (Peter)*, Evolutionary and asymptotic properties under stochastic flows.

*Liu, Nga Wai*, Presymplectic geometry of the loop group.

*Liu, Yi*, Monotonicity and stability of semilinear equations.

*Ong, Boon Wee*, The Abel-Jacobi map of a Riemann surface and quasifibrations.

*Tse, Kung-Kuen*, Rational homotopy of function spaces.

*Yang, Qingji*, Large deviation principles for fast switching Markov processes.

## NORTH CAROLINA

### Duke University (9)

MATHEMATICS

*Fisher, Mary Elizabeth*, Numerical solution of statistic differential equations applied to problems in mathematical finance.

*McKay, Benjamin*, Duality and integrable systems of pseudoholomorphic curves.

*Vlassopoulos, Ioannis*, Quantum cohomology and the loop space.

*Zhornitskaya, Liya*, Positivity preserving numerical schemes for lubrication type equations.

STATISTICS AND DECISION SCIENCES

*Aguilar, Omar*, Latent structure in bayesian multivariate time series models.

*Huerta, Gabriel*, Bayesian analysis of latent structure in time series models.

*Laading, Jacob*, Practical methodology for inclusion of modality-specific modifications in a hierarchical Bayesian deformation model.

*McCulloch, Colin*, High-level image understanding through Bayesian hierarchical models.

*Prado, Raquel*, Latent structure in non-stationary time series.

### North Carolina State University, Raleigh (22)

MATHEMATICS

*Batzel, Jerry J.*, Modeling and stability analysis of the human respiratory control system.

*Bauer, Craig P.*, Triangular monoids.

*Buksas, Michael W.*, Modeling, analysis, and implementation of forward and inverse problems in one-dimensional electromagnetic scattering with differential and hysteretic polarization models.

*Chan, David M.*, Asymptotic dynamics in multispecies, discrete competitive systems.

*Del Rosario, Ricardo C.*, Computational methods for feedback control in structural systems.

*Holmes, Karen B.*, Finite dimensional nilpotent Lie algebras with isomorphic maximal subalgebras.

*Hontz, Jennifer M.*, Root multiplicities of some Kac-Moody Lie algebras of indefinite type.

*Musante, Cynthia*, A distributed parameter model for spatially dependent hepatic processing of 2,3,7,8-tetrachlorodibenzo- $p$ -dioxin.

*Obersnel, Franco*, On compactifications of the set of natural numbers and the half line.

*Schroeter, Jeffrey D.*, Simulation and control of the Navier-Stokes equations using the reduced basis methods.

*Simon, Tammy M.*, Modeling and computation of the effective magnetic properties of magnetoheological fluids.

*Sprague, John*, Analytic functions of a generalized complex.

STATISTICS

*Chun, Heuiju*, Probabilistic and statistical modeling for geometric structure of nonwoven fabrics.

*Gheyas, Ferdous*, Multicollinearity in mixture experiments.

*Green, Cynthia Lea*, Information lost or gained: a new parametric estimation method for failure time data.

*Hardy, Sarah Wilson*, Smoothing spline methods for response surfaces: smoothing test and selection.

*Jeon, Geongbae*, Latent variable fit to interlaboratory studies.

*Keys, Deborah*, A biology based model of phthalate ester tissue disposition in rats: development and application to risk assessment for human male reproductive toxicity.

*Radmacher, Michael David*, Mutation and selection in the germinal center reaction: mathematical and statistical analyses.

*Tourkodimitris, Stavros*, Asymptotics of estimators from estimating equations for non-standard bivariate normal censored data.

*Wu, Chi-Tsung*, Generalized estimating equations for spatially correlated data.

*Zhou, Weixin*, Structured wavelet antenna signal modeling and random scale general model.

**University of North Carolina, Chapel Hill (13)**

BIOSTATISTICS

*Catellier, Diane*, Likelihood-based inference for incomplete repeated measures data.

*King, Tonya Sharp*, Developing robust estimators of the concordance correlation coefficient.

*Schreinemackers, Dina*, Multistate survival analysis.

*Tien, Hsiao-Chuan*, Association patterns in bivariate survival models with internal censoring.

MATHEMATICS

*Freeze, Michael*, Lengths of factorizations in Dedekind domains.

*Hamilton, Tracy*, Height-unmized ideals in a non-Noetherian ring: a step towards non-Noetherian Cohen-Macaulayness.

*Johnson, Kimberly*, Beta-shift dynamical systems and their associated languages.

*Miller, Jason*, Relative critical sets in  $\mathbf{R}$  and applications to image analysis.

*Mukhin, Evgeny*, On quantized Knizhnik-Zamolodchikov equation.

*Shelton, Kennan*, Ergodic properties of a class of Erdos measures.

*Shin, Sujin*, Measures that maximize weighted entropy for factor maps between subshifts of finite type.

*Strack, Paul*, Multitail Cantor bouquets.

*Vermeire, Peter*, Some results on secant varieties leading to a geometric flip construction.

**University of North Carolina, Charlotte (3)**

MATHEMATICS

*Liang, Rufeng*, Some properties of wavelets.

*Malakhov, Alexey*, Homogenization of properties and random Gaussian flows in 1D.

*Shaban, Wafaa*, The direct and inverse scattering problems for the Schrödinger difference operator.

OHIO

**Air Force Institute of Technology (1)**

MATHEMATICS AND STATISTICS

*Reineke, David*, Estimation and goodness-of-fit in the case of randomly censored lifetime data.

**Case Western Reserve University (8)**

EPIDEMIOLOGY AND BIostatISTICS

*Irfan, Uma*, Familial patterns of microbial infection in periodontitis.

*Jaffe, Dena*, Effects of air pollution on a medicaid asthmatic population: emergency department claims and reimbursement.

*Jia, Haomio*, Small area estimates of county-level severe work disability prevalence based on the behavioral risk factor surveillance system.

*Korourkian-Hajinazari, Siran*, Cesarean sections in Ohio: trends by indications, outcomes, and payment source.

*Yuan, Zhong*, The association between mortality and types of hospitals: results of a study using medicare beneficiaries.

*Yun, Hyun*, Parametric and non-parametric models for the optimal HIV treatment strategies.

*Zheng, Cixuang*, Admixture mapping: an alternative genome scanning approach.

*Zhu, Xiaofeng*, Associations between traits and genetic markers.

**Kent State University (6)**

MATHEMATICS AND COMPUTER SCIENCE

*Ajwa, Iyad*, Parallel algorithms and implementations for the Grobner bases algorithms and the characteristic sets method.

*Gray, Simon*, A protocol for the efficient exchange of mathematical data.

*Mkaddem, Sami*, Numerical modeling of confined liquid crystal systems.

*Ulm, Darrell*, Establishing the power of associative computing (ASC) using simulations and virtual parallelism.

*Zeager, Jeffrey*, Statistical convergence analogues of some matrix summability theorems.

*Zhang, Qin (Gene)*, Iterative methods for linear ill-posed problems.

**Ohio State University (22)**

MATHEMATICS

*Blackford, Tom*, Permutation groups of extended cyclic codes over Galois rings.

*Bucicovschi, Bogdan*, Contributions to the complex powers and zeta function of elliptic pseudodifferential operators.

*Genyuk, Julia*, Topics in multifractal formalism.

*Gorokhovskiy, Alexander*, Explicit formulae for characteristic classes in noncommutative geometry.

*Hartenstein, Margaret*, Finite groups of chain difference one.

*Humphreys, Natalia*, A central limit theorem for complex-valued probabilities.

*Jalics, Miklos*, A numerical study of steady crystal growth in a vertical Bridgman device.

*Liu, Kan*, Divisible difference sets and difference sets from cyclotomy.

*Lu, Qin*, Cohomological properties of the punctured mapping class groups.

*Mihalas, Stelian*, Graph dimensions and related colorings.

*Mohacsy, Hedvig*, Candelabra systems and designs.

*Nigussie, Yared*, Tree ideals and algorithms.

*Renado, Marco*, Mixing properties of actions by commuting epimorphisms of compact Abelian groups.

*Szilard, Agnes*, Resolution graphs of normal surface singularities.

*Yu, Hoseog*, Idempotent relations and the conjecture of Birch and Swinnerton-Dyer.

*Zhang, Linghai*, Existence and stability of traveling wave solutions of neuronal network equations.

STATISTICS

*Linder, Richard Scott*, Impact of censoring on sample variances and regression coefficient in a bivariate normal model.

*Nahas, Ramzi*, Comparison of concomitant and visual ranking in ranked set sampling.

*Qin, Ling*, Nonparametric Bayesian models for item response data.

*Salter, Laura A.*, Simulation-based estimation of phylogenetic trees.

*Wang, Min-Hui*, Classification using phylogenetic trees.

*Zhou, Shangqiang*, Regression splines: some theories and algorithms.

## Ohio University (7)

### MATHEMATICS

*An, Gang*, Periodic solutions to nonlinear wave equations.

*Gao, Shu Chun*, Optimal control of partial differential equations with closed range operators.

*Gao, Yun*, Initial and boundary value problems for classes of functional differential equations.

*Kanwar, Pramod*, On the structure of nonsingular quasi-continuous and CS-rings.

*McKibben, Mark*, Existence theorems for nonlinear functional differential equations.

*Tartir, Jamal*, Relative separation properties and relative covering properties in topology.

*Valuyeva, Julia*, On tightness-type properties and on relative dimension concepts.

## University of Cincinnati (1)

### MATHEMATICAL SCIENCES

*Nica, Daniel*, Consistency of kernel estimators under pairwise dependence assumptions.

## University of Toledo (1)

### MATHEMATICS

*Wang, Bowen*, The geometric structure of the differential equation.

## OKLAHOMA

### Oklahoma State University (6)

#### MATHEMATICS

*Beal, Jon*, Trajectories of the continuous Newton method applied to the primal-dual barrier equations of linear programming.

*Coventry, Debra*, Enumeration of rational curves on minimal rational surfaces.

*Elezi, Artur*, Extending Givental's results for concavex vector bundles on projective spaces.

#### STATISTICS

*Coombs, Laura*, Sequential root estimation for the beta-binomial distribution.

*Kegler, Scott*, First-order dynamics of the logit-MLE procedure.

*Sweeney, Diane*, Ranking small progressively censored samples to estimate time and test to goodness-of-fit.

## University of Oklahoma (4)

#### BIostatistics and EPIDEMIOLOGY

*Hacimahmutoglu, Serap*, Examining the behavior of parameter estimates in generalized estimation equations for small and moderate sample sizes with binary outcomes.

#### MATHEMATICS

*Bergthold, Trisha*, Patterns of analytical thinking and knowledge use in students' early understanding of the limit concept.

*Ivansic, Dubravko*, Volumes and topology of hyperbolic 4-manifolds.

*Simmons, Charlotte*, Euclidean, conformal, and hyperbolic geometry over classical, finite, and other fields.

## OREGON

### Oregon State University (6)

#### MATHEMATICS

*Fischer, James*, A new look at the Ashtekar-Magnon energy condition.

*Krouss, Paul*, Dependent site percolation models.

*Limmer, Douglas*, Measure-equivalence of quadratic forms.

#### STATISTICS

*Derryberry, DeWayne*, Extensions of the proportional hazards loglikelihood for censored survival data.

*Higdon, Roger*, Maximum likelihood analysis for regression with measurement error.

*Utlaut, Theresa*,  $F$ -tests in partially balanced and unbalanced mixed linear models.

## University of Oregon (5)

#### MATHEMATICS

*Boersema, Jeffrey*, Real  $C^*$ -algebras, united  $K$ -theory, and the Kunneth formula.

*Cassidy, Thomas*, Global dimension four extensions of Artin-Schelter regular algebras.

*Guenther, Christine*, The fundamental solution on manifolds with time-dependent curvatures and the well problem.

*Kim, Joongwhae*, Spectrum of operators in interpolation spaces.

*Sheth, Jagat*, Cohomology and restrictions of some irreducible representations of the symmetric group.

## PENNSYLVANIA

### Carnegie Mellon University (5)

#### MATHEMATICAL SCIENCES

*Bishop, Matthew*, Mating search without path enumeration.

*Lessmann, Olivier*, Dependence relations in nonelementary classes.

*Wong, Dennis P.*, A unifying credit model.

*Xi, Hongwei*, Dependent types in practical programming.

*Yershov, Andrew*, Numerical methods for the shallow water equations.

## Lehigh University (2)

### MATHEMATICS

*Mauch, Elizabeth*, Representations of Schmudgen type for semidefinite functions.

*Tessaro, George*, Some conditions in which a sequence space fails to have the Wilansky property.

## Pennsylvania State University (11)

### MATHEMATICS

*Ferleger, Sergey*, Alexandrov geometry and dynamics of semi-dispersing billiards on Riemannian manifolds.

*Foth, Philip*, Representations of fundamental groups of open Kaehler manifolds.

*Foth, Tatyana*, Automorphic forms on complex hyperbolic spaces.

*Mata, Mauricio*, Homotopically associative structures on Hochschild and cyclic complexes.

*Shen, Quan*, Mathematical analysis of compositive system of liquid crystal and polymer.

*Sze, Lawrence*, On the combinatorial and number theoretic properties of  $(r, e)$ -core.

#### STATISTICS

*Beattie, Scott*, Contributions to the design and analysis of experiments: computer experiments and supersaturated designs.

*Dubnicka, Suzanne*, Rank-based procedures for combined paired and unpaired data.

*Ghosh-Dastidar, Madhumita*, Multiple edit/multiple imputation for multivariate continuous data.

*O'Gorman, John*, General mixed models with censored data.

*Qu, Peiyong*, Adaptive generalized estimating equations.

## Temple University (14)

### MATHEMATICS

*Huang, Qingbo*, Harnack inequality for the linearized parabolic Monge-Ampere equation.

*Robertson, Aaron*, Some results in Ramsey theory.

*Tokoly, Loretta*, Frobenius reciprocity and Grothendieck groups of Hopf Galois extensions.

*Zelege, Melkamu*, Discrete radon transform, covering, congruences and Boolean functions.

#### STATISTICS

*Bhatt, Nivedetta*, Parameter estimation of the doubly stochastic models.

*Ceesay, Paulette*, Inferential procedures for the minimum of normal means and variances from a Bayesian perspective.

*Chu, Clara*, Statistical models for species area relationships.

*DeWoody, Kimberly*, Some optimal matrix designs in stability studies.

*Gruhen, David*, Analysis of correlated data with constant coefficient of variation.

*Hanlon, Alexandra*, Hierarchical mixed effects modeling: inference and classification using a fully parametric model.

*Huang, Eunhee*, Analysis of correlated ordinal data with missing values.

*Liu, Sherry*, Informative drop-out in longitudinal data.

*Teles, Paulo*, The effects of temporal aggregation on time series tests.

*Wiens, Brian*, Similarity of three treatment groups.

## University of Pennsylvania (8)

### MATHEMATICS

*Cantarella, Jason*, Topological structure of stable plasma flows.

*Ksir, Amy*, Prym varieties and integrable systems.

*Ouyang, Yong*, Abstract deformation of Stein manifolds.

*Tapp, Kristopher*, The geometry of open manifolds of nonnegative curvature.

*Yang, Chao*, The probabilistic Kirchhoff polynomials over finite fields.

*Yu, Chia-Fu*, On the supersingular locus of Hilbert-Blumenthal four-folds.

### STATISTICS

*Crunk, Steven*, On tapering to improve Yule-Walker estimation in autoregressive processes.

*Remeza, Helen Zhou*, Hierarchical Bayes methodology for improving estimation: applications to demand forecasting and portfolio analysis.

## University of Pittsburgh (9)

### MATHEMATICS

*Al-Gassem, Hussain*,  $L^p$  estimates for singular integrals with kernels belonging to certain Block spaces.

*Al-Salman, Ahmad*,  $L^p$  estimates of singular integral operators of convolution type with rough kernels.

*Bieske, Thomas*, Lipschitz extensions in the Heisenberg group.

*Cheng, Leslie*,  $L^p$  estimates for oscillatory integral operators.

*Flaherty, Timothy J.*, Wavelet theory, constructions, and applications in  $R^n$ .

*Guo, Bin*, The distance chromatic numbers and the chromatic uniqueness of graphs.

### STATISTICS

*Bacanu, Silviu*, Combination of classifiers.

*Gao, Haitao*, Linear latent covariate models with applications to longitudinal analysis.

*Kowalski, Jeanne*, Generalized linear mixed effects models for longitudinal data with replicates and measurement error.

## RHODE ISLAND

### Brown University (16)

#### APPLIED MATHEMATICS

*Chen, You-Ning*, Optimal control of assignment to processors under heavy traffic.

*Dent, Gelonia*, Aspects of particle sedimentation in dilute flows at finite Reynolds numbers.

*Evangelinos, Constantinos*, Parallel simulations of vortex-induced vibrations: linear and non-linear models.

*Greene, Walter*, The local trigonometric transforms and their use in solving partial differential equations.

*Hu, Changqing*, Numerical methods for hyperbolic equations on unstructured meshes.

*Jones, Andrew*, Analysis of the chemical vapor infiltration process.

*Lomtev, Igor*, A discontinuous Galerkin method for compressible Navier-Stokes equations in stationary and moving 3D domains.

*Potter, Daniel*, Compositional pattern recognition.

*Szpiro, Adam*, Asymptotic analysis and high order Markov chain based numerical methods for optimal control problems and related Hamilton-Jacobi partial differential equations.

*Warburton, Timothy*, Spectral/hp methods on polymorphic multi-domains: algorithms and applications.

*Yew, Alice*, An analytical study of solitary-waves in quadratic media.

#### MATHEMATICS

*Benson, Julie Lynn*, Gain of regularity for nonlinear dispersive equations in two spatial dimensions.

*Diaconu, Calin Adrian*, Applications of the double Dirichlet series to quartic twists.

*Jamison Benedetto, Danielle Lynn*, Local Hardy spaces and nonlinear quantities arising in the theory of compensated compactness.

*Lee, Yoon Jin*, Cohen-Lenstra heuristics and the Spiegelungssatz.

*Zhao, Jianqiang*, Hopf algebra structure of generalized scissors congruence groups.

## University of Rhode Island (4)

#### MATHEMATICS

*Iakoubovski, Mikhail*, Constrained  $H^\infty$  optimization and analytic spectral factorization.

*Lewis, Scott*, Pitch tournaments—a new class of combinatorial designs.

*Merritt, Adele*, Advances in  $Z$ -cyclic whist and triplewhist tournaments.

*Valicenti, Soudabeh*, Periodicity and global attractivity of some difference equations.

## SOUTH CAROLINA

### Clemson University (5)

#### MATHEMATICAL SCIENCES

*Locke, Ann-Janette*, Prior imprecision in Bayesian hierarchical modeling.

*Payne, Tamra*, Quantifying error in the analysis of partitioning interval tracer tests.

*Rose, Dawn*, Solution approaches for a multi-dimensional scheduling problem in the apparel industry.

*Ward, Amy*, Minimax optimal control of steady state systems.

*Wassermann, Ruth*, Full-load truck routing with time windows.

## University of South Carolina, Columbia (8)

#### EPIDEMIOLOGY AND BIostatISTICS

*Wright-Bush, Tamara*, Two-stage principal component analysis for the purpose of combining ordinal data.

#### MATHEMATICS

*Chen, Yu*, Global differential geometry of 1-resolvable  $C^\infty$  infinity curves in the plane.

*Czabarka, Eva*, Shifting in finite vector spaces.

*Gao, Zhenguang*, Wavelet transform and data compression.

*Man, Shushang*, A family of Eulerian-Lagrangian localized adjoint methods for two-dimensional transport equations and the error analyses.

*Szekely, Zoltan*, Complexity of the finite algebra membership problem for varieties.

*Zsilinszky, Laszlo*, Topological games and hyperspace topologies.

#### STATISTICS

*Onar, Arzu*, Accelerated test models using the inverse Gaussian distribution.

## TENNESSEE

### University of Memphis (5)

#### MATHEMATICAL SCIENCES

*Brezna, Andrei*, Parameter dependence in Thomas-Fermi theory.

*Brezna, Aurora*, Approximation of generalized wave equations by two-point boundary value problems.

*Jayawardene, Chula*, Ramsey numbers related to small cycles.

*Kaznachev, Dmitri*, Neural network algorithms for hypergraph optimization problems.

*Li, Rao*, A polynomial-time algorithm for finding the independence number of a special class of graphs.

## University of Tennessee (4)

### MATHEMATICS

*Bullington, Grady*, On the expected number of generators of a submodule of a free module over a finite principal ideal ring.

*Kolodziejczyk, Janusz*, Numerical simulation of singular solutions of the generalized Korteweg-de Vries equation.

*Sanders, Manuel*, Existence of certain compact contractible manifolds containing disjoint spines.

*Williams, George B., Jr.*, Discrete conformal welding.

## TEXAS

### Rice University (8)

#### COMPUTATIONAL AND APPLIED

#### MATHEMATICS

*McZeal, Cassandra*, Reoptimization in interior point methods with applications to integer programming.

*Rich, Jennifer*, A computational study of vehicle routing applications.

*Rojas, Marielba*, A large-scale trust-region approach to the regularization of discrete ill-posed problems.

#### MATHEMATICS

*Handron, David*, Generalized billiard paths and Morse theory for manifolds with corners.

*Phillips, David*, Inverse spectral problems with incomplete knowledge of the spectrum.

*Stone, Lorette*, Costa cousins.

#### STATISTICS

*Pankratz, Vernon Shane*, Stochastic models and linkage disequilibrium estimating the recombination coefficient.

*Schwalb, Otto*, Practical and effective methods of simulation based parameter estimation for multidimensional data.

### Southern Methodist University (4)

#### MATHEMATICS

*Fortenberry, Todd*, Investigations of interfacial instabilities in a coating flow problem.

*Khlopina, Natalia*, Finite element methods for degenerate two-phase incompressible flow problems.

*Kierzenka, Jacek*, Studies in the numerical solution of ordinary differential equations.

#### STATISTICAL SCIENCE

*Adams, Bryan*, Scatterplot smoothing with partially variable bandwidths.

### Texas A&M University (13)

#### MATHEMATICS

*Horton, Peter*, Global existence of solutions to reaction-diffusion systems on heterogeneous domains.

*Leise, Tanya*, An analog to the Dirichlet-to-Neumann map and its application to dynamic elastic fracture.

*Li, Yongxin*, On theory and numerical methods for finding multiple critical points with applications to semilinear PDE.

*Oikhberg, Timur*, Geometry of operator spaces and products of orthogonal projections.

*Zheng, Hao*, Linear threshold schemes, visual cryptography, and parasite-host cryptosystems.

#### STATISTICS

*Chen, Chien-Feng*, Bootstrapping the order selection test.

*Heo, Sunyeong*, Diagnostics for survey inference accounting for incomplete data and measurement error.

*Kambour, Edward Lane*, Bayesian methods in statistical process control.

*Kim, Sung-Jae*, Generating geographic time series and a combined rainfall-soil moisture model and its statistics.

*Lee, Sangrae*, Inference for distribution functions and quantiles, based on limited complex survey.

*Lei, Shu-Yi*, Testing biasedness of estimating equations in weighted regression with missing covariate data.

*Oh, Hee-Seok*, Spherical wavelets and their statistical analysis with applications to meteorological data.

*White, Edward Dalton III*, A PC program for the parameter estimation of nonlinear growth models with unequally spaced correlated observations.

### Texas Tech University (4)

#### MATHEMATICS

*Lockwood-Cooke, Pamela Renee*, A three dimensional dynamic model of human eye movement.

*Mouron, Christopher*, Expansive homeomorphisms and indecomposable subcontinua.

*Sharp, Wyatt Duncan*, Development of stochastic neutron transport equations and development and analysis of Galerkin and difference methods for approximation of stochastic Volterra population equations.

*Weerasinghe, Dharshana*, Optimal control laws for aircraft tracking.

### University of Houston (3)

#### MATHEMATICS

*Buono, Pietro-Luciano*, A model of central pattern generators for quadruped locomotion.

*Walker, Julie*, Thread generated idempotent topological semigroups on  $n$ -cells.

*Wu, Suming*, Steady-state simulation and fuel cost minimization of gas pipeline networks.

## University of North Texas (4)

### MATHEMATICS

*Byrne, Jesse*, Multifractal analysis of a parabolic rational map.

*Finan, Marcel*, On the existence of many sign-changing non-radial solutions to semilinear elliptic problems on annular domains.

*Richardson, Peter*, Natural smooth measures on leaves of the unstable manifold of open billiard dynamical systems.

*Slavens, Dawn*, Operators on the injective tensor product of Banach spaces.

## University of Texas, Arlington (2)

### MATHEMATICS

*Anderson, Patrica*, Qualitative features of solutions of perturbed differential equations.

*De La Pena, Gary*, Adaptive grid generation.

## University of Texas, Austin (9)

### MATHEMATICS

*Bachman, David*, A piecewise-linear theory of minimal surfaces of non-zero index.

*Barton, Jeffrey*, Analogs of the Beurling-Selberg functions in  $N$ -dimensions and their applications.

*Bergbauer, Chinyoung*, The stretching factors and the degeneracy slopes of fibered alternating knots.

*Cadavid, Carlos*, A remarkable set of words in the mapping class group.

*Chen, Hongqui*, Solitary waves and other long-wave phenomena.

*Jeong, Sang Tae*, Diophantine problems in function fields of positive characteristic.

*Lerma, Miguel*, Some applications of extremal functions in Fourier analysis.

*Linhart, Jean Marie*, Numerical investigations of singularity formation in nonlinear wave equations in the adiabatic limit.

*Masters, Joseph*, Lengths and homology of hyperbolic 3-manifolds.

## University of Texas, Dallas (1)

### MATHEMATICAL SCIENCES

*Brazauskas, Vytautas*, Robust and non-parametric statistical methods for Pareto distribution tail index estimation, with actuarial science applications.

## University of Texas, Houston (5)

### BIOMETRY

*Chang, Chung-Chi*, Analysis of recurrent failure times: a time-dependent yule process approach.

*Hebert, David A.*, Effect of non-normal random components on level and power in group-randomized trials.

*Rochester, Carol*, Sequential updating via dynamic hierarchical models: a Bayesian approach to longitudinal analysis.

*Stowers, Dorothy Lee*, Design and implementation of a multicriteria medical decision support system for diagnosis and treatment.

*Tarwater, Patrick M.*, The effects of population density on the spread of disease in a local population.

## UTAH

### Brigham Young University (3)

#### MATHEMATICS

*Kuksov, Dmitri*, Cogrowth of groups.

*Shi, Junping*, Topics in nonlinear elliptic equations; 1. bifurcation theory on nonlinear elliptic equations; 2. spike layer solutions of Cahn-Hilliard equations.

*Weingartner, Andreas*, Integers free of prime divisors from an interval.

### University of Utah (3)

#### MATHEMATICS

*Jacobsen, Jon*, Bifurcation problems associated with Mange-Ampere operators.

*Jones, Elizabeth*, Computations of Buchsbaum-Rim multiplicities.

*Yoshikawa, Toshio*, A variational approach to the strongly nonlinear regime of the Rayleigh-Taylor instability.

## VERMONT

### University of Vermont (1)

#### MATHEMATICS AND STATISTICS

*Poodiack, Robert*, Littlewood-Paley theory in two parameters.

## VIRGINIA

### College of William and Mary (1)

#### MATHEMATICS

*Fallat, Shaun*, Totally nonnegative matrices.

### George Mason University (3)

#### APPLIED AND ENGINEERING STATISTICS

*Yang, Kwang-Su*, Toward refinements of spatial smoothers: attending to details in computationally intensive settings.

#### CSI/INSTITUTE FOR COMPUTATIONAL SCIENCES AND INFORMATICS

*Fauntleroy, Julia Corbin*, The effect of alternative measures of distance on distance-weighted smoothing for spatial data.

*Vandersluis, J. Patrick*, Detecting silent ischemia: enhanced visualization of cardiac electrophysiology using virtual leads.

### University of Virginia (11)

#### APPLIED MATHEMATICS AND MECHANICS

*Ji, Guangcao*, Boundary stabilization of partial differential equations: theory, algorithms, and applications.

*Wibberly, Leonard*, Modeling fiber dynamics and transport in the carding process.

#### MATHEMATICS

*Chouinard, Kevin*, Weight distributions of codes from finite planes.

*Donaway, Robert*, Norm and essential norm estimates of composition operators on Besov-type spaces.

*Goebeler, Thomas*, Topological structure and Banach ideals of composition operators.

*Neal, Matthew*, Facial structure in JB-algebras.

*Polhill, John*, Constructions of partial difference sets using Galois rings.

*Roach, Jeffrey*, An explicit deformation category construction.

*Terry, Christopher*, Norm subgroups of  $GL(2, A)$ .

*Thacher, Stephanie*, Octonion planes defined by Lie algebras.

#### STATISTICS

*Hoferkamp, Carol Lynne*, Analysis of fixed and mixed effects linear models under heteroscedasticity.

### Virginia Commonwealth University (3)

#### BIOSTATISTICS

*Gibb, Roger*, Optimal treatment combination estimation for univariate and multivariate response surface applications.

*McCann, Tifani*, Determining estimable functions in the general model.

*Summitt, Carol*, Threshold models for time-to-response endpoints.

### Virginia Polytechnic Institute and State University (8)

#### MATHEMATICS

*Hagen, Thomas*, Elongational flows in polymer processing.

*McGilvray, Heather*, A classification of some quadratic algebras.

*Smith, Nathan*, Syzygy decompositions and projective resolutions.

*Stewart, Dawn*, Numerical methods for accurate computation of design sensitivities.

#### STATISTICS

*Eno, Daniel*, Noninformative prior Bayesian analysis for statistical calibration problems.

*Huffman, Jennifer*, Optimal experimental design for Poisson impaired reproduction studies.

*Hughes, Christopher*, Variable sampling rate control charts for monitoring process variance.

*Lee, Yew-Haur*, Fisher information test of normality.

## WASHINGTON

### University of Washington (25)

#### APPLIED MATHEMATICS

*Calhoun, Donna*, A Cartesian grid method for solving the streamfunction-vorticity equations in irregular geometries.

*Swanson, Kristin*, Mathematical modeling of the growth and control of tumors.

#### BIOSTATISTICS

*Goddard, Katrina*, Study design issues in the analysis of complex genetic traits.

*Graham, Jinko*, Disequilibrium fine-mapping of a rare allele via coalescent models of gene ancestry.

*Hamblett, Nicole*, A regression modeling approach for describing patterns of HIV genetic variation.

*McNeney, Brad*, Asymptotic efficiency in semiparametric models with non-i.i.d. data.

#### MATHEMATICS

*Athreya, Siva R.*, Probability and semilinear partial differential equations.

*Browning, Brian*, Time and frequency domain scattering for the one-dimensional wave equation.

*Drinen, Michael*, Iwasawa mu-invariants of Selmer groups.

*Eberz-Wagner, Dorothea*, Discrete growth models.

*Galbraith, Grant*, Applications of variational analysis to optimal trajectories and nonsmooth Hamilton-Jacobi theory.

*Hillman, Christopher*, Sturmian dynamical systems.

*McDowall, Stephen Ronald*, An electromagnetic inverse problem in chiral media.

*Mori, Izuru*, Some results on quantum projective planes.

*Nave, Lee*, The cohomology of finite subgroups of Morava stabilizer groups and Smith-Toda complexes.

*Roth, John*, Perturbations of Kaehler-Einstein metrics.

*Xu, Song*, Non-interior path-following methods for complementarity problems.

STATISTICS

- Byers, Simon D.*, Bayesian modeling of highly structured systems using Markov chain Monte Carlo.
- Chatterjee, Nilanjan*, Semiparametric inference based on estimating equations in regression models for two phase outcome dependent sampling.
- da Silva, Cibele Queiroz*, Capture-recapture estimation of bowhead whale population size using photo-identification data.
- Gomes, Antonio Eduardo*, Lifetime and disease onset distributions from incomplete observations.
- Roy Choudhury, Kingshuk*, Additive mixture models for multichannel image data.
- Saha, Angshuman*, Application of ridge regression for improved estimation of parameters in compartmental models.
- Whitcher, Brandon J.*, Assessing nonstationary time series using wavelets.
- Wu, Lang*, Lattice conditional independence models for incomplete multivariate data and for seemingly unrelated regressions.

**Washington State University** (1)

PURE AND APPLIED MATHEMATICS

- Song, Yafang*, Incomplete  $LU$  factorization, fuzzy cell mapping and a lake model.

**WEST VIRGINIA**

**West Virginia University** (4)

MATHEMATICS

- Ferencak, Michael*, Outline and nearly outline triple systems of even index.
- Guenther, Chris*, Pseudospectral methods for non-smooth evolutionary problems.
- Hennayake, Kamal*, Generalized edge connectivity in graphs.
- Zhang, Xiakun*, Generalizations of colorability and connectivity.

**WISCONSIN**

**University of Wisconsin, Madison** (27)

MATHEMATICS

- Apps, Philip David*, Nonstandard stochastic matching processes and stochastic canards.
- Chang, Chia-Chin*, Nonlinear theories of forced surface waves in a circular basin.
- Edwards, Stephanie P.*, On the non-real zeros of derivatives of real entire functions and the Polya-Wiman conjectures.
- Good, Cheryl P.*, Brauer algebras and centralizer algebras of type D.
- Hong, Sunggeum*, Weak type estimates for some multipliers of Bochner-Riesz type.

*Huang, Daode*, Biclique partitions and generalized tournament matrices.

*Kang, Youngok*, Gravity-capillary waves in the presence of constant vorticity.

*Kasturirangan, Rajesh*, The Floer homology of standard pairs.

*Kersey, Scott N.*, A minimizing spline curve under near-interpolatory constraints.

*Kim, Yong Jung*, Scaling invariance and hyperbolic conservation laws.

*Lee, Young S.*, The analysis of finite difference schemes for the Stokes equations.

*Liu, Chia-Hsin*, Group identities, polynomial identities and generalized polynomial identities.

*Lotfallah, Wafik Boulos*, Strong laws in finite model theory.

*Meda-Guardiola, Ana*, Conditional laws and dominating points.

*Neudauer, Nancy Ann*, The transversal presentations and graphs of bicircular matroids.

*Ozugurlu, Ersin*, The effect of surface tension on capillary gravity waves.

*Rho, Yoomi*, Progress on three problems in graph theory.

*Riedl, Jeffrey M.*, Fitting heights of solvable groups with few irreducible character degrees.

*Tsai, Chung-Hsien*, Contributions to a fifth order model equation for steady capillary-gravity waves over a bump.

*Yalcin, Ergun*, Group actions and group extensions.

*Yoon, Jungho*, Approximation to scattered data by radial basis function.

STATISTICS

*Cho, Kwanho*, The effect of transformation on prediction interval estimation in regression.

*Gangnon, Ronald*, Disease rate mapping via cluster models.

*Kim, Hyunjoong*, Multiway split classification trees.

*Lin, Chin-Yu*, A general class of function-indexed nonparametric test for survival analysis.

*Lin, Xiwu*, Smoothing spline ANOVA for polychotomous response data.

*Potter, David*, Logistic regression trees.

**University of Wisconsin, Milwaukee** (6)

MATHEMATICAL SCIENCES

*Al-Hasan, Abdelnasser*,  $L^p$ -boundedness of a singular integral operator.

*Bhattacharyya, Mouchumi*, A random effects model for multistate survival analysis with applications to bone marrow transplants.

*Gopalakrishnan, Hema*, On the  $\pi$ -regularity of semigroup graded rings.

*Knopf, Dan*, Quasi-convergence of the Ricci flow.

*Svetic, Ralph*, On the ultimate Peano derivative and Denjoy index.

*Warnapala-Yehiya, Yajni*, The numerical solutions of the exterior boundary value problems for Helmholtz equations via an integral equations approach.

**WYOMING**

**University of Wyoming** (8)

MATHEMATICS

*Kojouharov, Hristo*, Mathematical modeling on fluid flow, contaminant transport and biofilm growth in porous media.

*Li, Yaqing*, Finite element simulation of thick biofilms at the microscale.

*Oleary, Patrick*, Mathematical modeling of variably adsorbing contaminants in porous media.

*Poet, Jeff*, Score certificates for upset tournaments.

*Wu, Li*, Two-grid algorithms for solving reaction diffusion equations using mixed finite elements.

STATISTICS

*Bilen, Canan*, Wavelet-based detection of outliers.

*Ford, Nancy*, Consumer's usage goals and perception of quality.

*Lokupitiya, Ravindra*, Improvements and enhancements for empirical simulation for the risk analysis of hurricanes.

# Doctoral Degrees Conferred 1998–1999

## *Supplementary List*

The following list supplements the list of thesis titles published in the February 2000 *Notices*, pages 253–71.

### ALABAMA

#### **University of Alabama, Tuscaloosa (1)**

MATHEMATICS

*Libis, Carl*, Sums of powers and generalizations of Bernoulli and related polynomials.

### ILLINOIS

#### **Illinois State University (2)**

MATHEMATICS

*Miller, Daniel*, Exploring the integration of technology in collegiate mathematics.

*Mooney, Edward S.*, Development of a middle school statistical thinking framework.