Doctoral Degrees Conferred
1997–1998

ALABAMA

**Auburn University, Auburn (9)**

**DISCRETE AND STATISTICAL SCIENCES**

*Grant, Carrie*, An $n$ to $2n$ embedding of incomplete idempotent latin squares for small value of $n$.

*Parker, Carol*, Complete bipartite graph path decompositions.

*Wehrung, Lloyd B.*, Maximum packings of $K_n$ with fish.

**MATHEMATICS**

*Choi, Jongsool*, Cohomological properties of compacta.

*Clark, Alex*, Linear flows on solenoids, exponents and denjoys.

*Kornman, Paul*, AR1 and refinable maps on CANR spaces.

*Lamar, Tuwaner*, Analysis of a 2n-th order differential equations with Lidstone boundary.

*Larsen, Eric*, Large intersection of continuous nowhere monotone functions with smooth functions.

*Weathers, Tony*, Weak solutions to a system of equations arising from MHD theory.

**University of Alabama, Huntsville (2)**

**MATHEMATICAL SCIENCES**


*Youree, Roger*, Convergence of discrete-time European option problems with hereditary price structures to continuous time versions.

**University of Alabama, Tuscaloosa (6)**

**MANAGEMENT SCIENCE AND STATISTICS**

*Baaskar, Milind E.*, Special models for a multi-item, multi-location, multi-echelon, multi-period inventory system with centralized replenishments and restricted transshipment.

*Dale, Cheryl*, Sequence dependent production scheduling using the $p$-media integer linear programming model and hierarchical clustering techniques: an empirical study.


*Jones, Lady Allison (L. Allison)*, Topics on data intensive and computationally intensive control charting methods.

*Kornman, Paul*, Characteristics of non-uniformly spaced discrete-time signals from their Fourier phase.

*Yun, Lirong*, On part decompositions of graphs.

**University of Arizona (7)**

**APPLIED MATHEMATICS**

*Abby, Craig*, Assessment of reconstructed images.

*Brazier, Richard*, Seismic wave propagation stitching: matching local and global techniques.

*Ghamsareh, Rahman*, A neural network approach for the solution of traveling salesman and basic vehicle routing problems.


*Horsch, Karla*, Attractors for Lyapunov cases of the complex-Ginsburg Landau equation.

**MATHEMATICS**

*Gillis, Gregory*, Design considerations in composite conductors: an exposition of percolation theory.

*Smek, Olga*, Hear trace asymptotics for domains with singular boundaries.

**University of Arizona, Tucson (9)**

**MATHEMATICS**

*Diaz-Rivera, Ivonne*, The dynamics of queues of re-entrant manufacturing systems.

*Ding, Xiaohong*, Theoretical and numerical evaluation of convergence acceleration for the Stokes problem.

*Hong, Kang*, Robust multivariate analysis, principal components analysis and discriminant analysis.

*Le, Dung*, Nonlinear parabolic systems and attractors.

*Little, Leigh*, A finite element Navier-Stokes solver using an adaptive BICGSTAB(L) algorithm.

*Siefker, Andrew*, Characteristics of non-uniformly spaced discrete-time signals from their Fourier phase.

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 1997, to June 30, 1998) reported in the 1998 Annual Survey of the Mathematical Sciences by 227 departments in 153 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 1999 issue of the Notices.
ARKANSAS
University of Arkansas, Fayetteville (1)
MATHEMATICAL SCIENCES
Alhami, Kifah, Cyclic vectors for the shift on Bergman spaces.

CALIFORNIA
California Institute of Technology (8)
APPLIED MATHEMATICS
Hill, David J., Part I: Vortex dynamics in wake models; Part II: Wave generation.
Meloon, Mark R., Models of Richtmyer-Meshkov instability in continuously stratified fluids.
Radon, Mikhail K., Exponentially small splicing of separatrices and the Arnold’s diffusion problem.
Sjoaurev-Philippakos, Rassina, Nonlinear effects in elastic Raleigh waves.

MATHEMATICS
Ajjudani-Namini, Shahin, Large sets of tau-designs.
Blom, Anthony, The perturbation of Hamiltonian systems with a non-Abelian symmetry.
Choi, Yanglim, (3, 1)-Surfaces via branched surfaces.
Mitos, Themistokles, On a problem in geometric measure theory related to sphere and circle packing.

Claremont Graduate University (3)
MATHEMATICS
Besnard, Eric, Prediction of high lift flows with separation.
Elibahabi, Azzam, Disturbance decoupling with stability for nonlinear systems using static/output feedback: a geometric approach.
Giray, Okten, Contributions to the theory of Monte Carlo and quasi-Monte Carlo methods.

Naval Postgraduate School (1)
MATHEMATICS
Beaver, Philip F., On the quasi-monotonicity of a square linear operator with respect to a nonnegative cone.

Stanford University (8)
MATHEMATICS
Bray, Hubert Lewis, The Penrose inequality in general relativity and volume comparison theorems involving scalar curvature.
Entov, Mikhail, Surgery on Lagrangian and Legendrian singularities.
Iga, Kevin Mitsuo, Moduli spaces of Seiberg-Witten flows.
Kurberg, Par Martin, A local Riemann hypothesis.
Lien, Wen-Ching, Hyperbolic conservation laws with separation.
Pezzoli, Elena, Complexity of type-two functionals and of logical games on finite structures.
Ryzhik, Leonid V., High frequency waves and transport in a random medium.
Tsaienkos, Anna M., Stochastic stability of Bernoulli flows.

University of California, Berkeley (29)
BIOSTATISTICS
Hubbard, Alan Edward, Applications of locally efficient estimation to censored data models.
Peterson, Derick Randall, Missing data models and the selection of explanatory variables in regression.
CRIOENGINEERING AND OPERATIONS RESEARCH
Chitchachorvannich, Thaweew, Optimizing semiconductor fabrication scheduling in the face of uncertainties.
Kuo, William, Adaptive sampling strategies for semiconductor manufacturing.
Liu, Ting-Yun, Equipment acquisition planning in the semiconductor industry—considering learning effects in equipment efficiency.
Shen, Youxuan, Stochastic water fabrication scheduling.

MATHEMATICS
Alvarez, Catherine, Inverse nodal problems with mixed boundary conditions.
Badoian, Catherine, Flow equivalence of shifts with stability for nonlinear systems.
Bhat, Chandra, Krishan-Sunder subfactors and a new countable family of subfactors related to trees.
Bromberg, Kenneth, Rigidity of hyperbolic 3-manifolds with geometrically finite ends.
Burlakov, Yuri, The phase space of a focusing cubic Schroedinger equation: a numerical study.
Treier, Roland, On p-adic properties of families of curves.
Jones, David, Results on modular representations of $\text{Gal}(\overline{\mathbb{Q}}/\mathbb{Q})$ in characteristic 3.
Kathotia, Vinay, Universal formulae for deformation quantization and the Campbell-Baker-Hausdorff formula.
Kleber, Michael, Finite-dimensional representations of quantum affine algebras.
Kropp, Donald, The applicability of certain Monte Carlo methods of the analysis of interacting polymers.
Larson, Paul, Variations of $\text{P}_{\text{max}}$ forcing.
Magnin, Arturo, Dominions in varieties of groups.
Mitchell, Julie, Hodge decomposition and expanding maps on flat tori.
Shiyakhtenko, Dimitri, Free quasi-free states.
Staddon, Jessica, A combinatorial study of communication storage and traceability in broadcast encryption systems.
Steinberg, Benjamin, Decidability and hyperdecidability of joins of pseudovarieties.
Takahashi, Shuzo, Degrees of parametrizations of elliptic curves by modular curves and Shimura curves.
Terra, David, The distribution of shapes of cubic orders.
Tucker, Thomas, Some diophantine properties of points on curves.
Tvedt, Brøns, Global existence of solutions and propagation of regularity of quasi-linear viscoelastic systems of different type.
Xaba, Enoch, Robust iterative solvers for linear and nonlinear finite element equations.

University of California, Davis (6)
MATHEMATICS
Zaborszky, Oleg, Localization and supergeometry.

STATISTICS
Chiou, Jeng-Min, Nonparametric quasi-likelihood and curve data modelling.
Vestrap, Eric, A comparison of Bayesian and frequentist shrinkage.
Wood, Matthew, Analysis of the effects of missing data in the NAS data set.
Yee, Jialee, Large and small sample Bayesian inference and diagnostics for models with latent variables.

University of California, Irvine (1)
MATHEMATICS
Ni, Lei, Vanishing theorems on complete Kahler manifolds and their applications.

University of California, Los Angeles (21)
MATHEMATICS
Afsharous, David, Prediction in multi-level models.
Bloom, Peter, Total variation methods for restoration of vector valued images.
Carrero, Jesus, Lie theoretical aspects of self gravitating Riemann ellipsoids.
Cowden, Janet, Test ideals in Gorenstein isolated singularities and F-finite reduced rings.
Doctoral Degrees Conferred

Gao, Su, The isomorphism relation between countable models and definable equivalence relations.

Go, Susie, Multilevel methods on unstructured grids.

Graber, Thomas, Enumerative geometry of hyperelliptic plane curves.

Grassi, Michele, Characteristic cohomology of smooth manifolds.

Guerrini, Luca, Construction and deformation of infinite dimensional Lie algebras.

Hacon, Christopher, Divisors on principally polarized Abelian varieties.

Grassi, Michele, Topology of hyperbolic 3-manifolds.

Hui, Unkit, On approximate solutions of hyperbolic conservation laws and Hamilton-Jacobi equations.

Hui, Unkit, Cocycle conjugacy of one parameter automorphism of AFD factors of type III.

Lin, Chi-Tien, On approximate solutions for hyperbolic conservation laws and Hamilton-Jacobi equations.

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

Miller, Brian, Improvements in multiple phase flow computations.

Puha, Amber, A reversible interacting particle system on homogeneous tree.

Sharapov, Ilya, Multilevel subspace correction for large scale optimization problems.

Strong, David, Adaptive total variation minimizing image restoration.

Walda, Linda, Minimal inherently non-finitely based varieties of groupoids.

Wan, Wing-Lok, Scalable and multilevel iterative methods.

Wang, Caitlin, Calderon-Zygmund inequality for differential forms on a compact Riemannian manifold.

Yeung, Man-Chung, Probability and symmetry in computational linear algebra.

University of California, Riverside (9)

Dimitrov, Ivan, Weight modules of infinite-dimensional Lie algebras and Lie superalgebras.

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

Guo, Ching, The circular wirelength of cubes.

Hanley, William, On the Lorentz zonoid representation of distributional variability.

Mohanty, Sara, Invariants of degree 1 of almost generic plane curves.

Vasta, Joseph, Orthogonal product of simplices.

Wallace, Laura, Graded Mori rings.

Statistics

Fairchild, Lisa, Testing interactions between treatments and subgroups within groups in a two-period crossover trial.

University of Southern California (5)

Mathematics

Badner, Michael, Actions of Hopf algebras.

Bodine, Sjoukje, A dynamical systems approach to asymptotic diagonalization and integration of linear differential systems.

Hoffman, Cornelia, On some problems in representation theory of finite Chevalley groups.

Kojima, Tetsuro, Positive definite unimodular forms as trace forms.

Ouyang, Min, Actions of Hopf algebras.

Pappacena, Christopher, Some problems in the representation theory of associative algebras.

Colorado State University (7)

Mathematics

Adair, Ronnie Jr., Simulations of Taylor-Couette flow.

Marak, Tyrel, A filtration for K_0 of the inverse limit of a diagram of rings.

Statistics

Al-Karni, Said H. M., On the distribution of quadratic forms and of their ratios.

Chu, Jui-Yuan, Model identification in factorial experiment.

Delgado-Salvador, Jaime, Optimal design of experiments in nested variance components models.

Smith, David, Adjusting for publication bias and quality effects in Bayesian random effects meta-analysis.

Applied Mathematics

Bernard, Deconinck, The initial-value problem for multiphase solutions of the Kadomtsev-Petviashvili equation.
Doctoral Degrees Conferred

**FLORIDA**

**Florida State University** (7)

**MATHEMATICS**

- Aarajalt, Laurent, Jet mixing noise from fine scale turbulence.
- Darcy, Isabel, Biological metrics on DNA knots and catenanes.
- Dinev, Boyko, Mathematical and statistical techniques for modeling and analysis of medical data.
- Kurbanbaev, Konstantin, Solid wall boundary conditions for computational aerodynamics problems.
- Liao, Xiaozhong, Compact Riemann surfaces with symmetry using symbolic computation.
- Shen, Hao, Numerical simulation of the jet research phenomenon.

**STATISTICS**

- Stein, Jeffrey W., A class of space-time models for monitoring station data with application to El Nino events.

**University of Central Florida** (2)

**MATHEMATICS**

- Kelly, Deborah, Temporal propagation characteristics of ultrashort space-time Gaussian pulses in a laser satellite communication system.
- Minkler, Jing, On the regularity of probabilistic convergence and filter spaces.

**University of Florida** (14)

**INDUSTRIAL AND SYSTEMS ENGINEERING**

- Akansel, Mehmet, Solution techniques for single-job lot streaming problems in flow shops.

**MATHEMATICS**

- Du, Zhaowei, Schur indices of projective representations of hyperoctahedral groups.
- Finn, Robert, Homological features of rings of continuous functions.
- Krishnamurthi, Chithra, Self similar sets in complete metric spaces.
- Lane, Aminjo, Generalized Poisson distributions.
- McGovern, Warren, Algebraic and topological properties of C(X) and the F-topology.
- Mathu, Mathiak, The stochastic integral of process measures.

**STATISTICS**

- Ajmani, Vivek, Robust multivariate control charts.
- Coull, Brent, Subject-specific modelling of capture-recapture.
- Dallal, Michael, Permutation tests for randomly right censored data consisting of both paired and unpaired observations.
- Tanaka, Yoko, A proportional hazards model for informatively censored survival times.

**CONNECTICUT**

**University of Connecticut** (9)

**MATHEMATICS**

- Cogdian, Jay, Sets of interpolation for Fourier transforms of Frechet measures.
- Dai, Hong, Measuring and analyzing volatility risk in disability income.
- Hill, Sharon, Numerical and theoretical investigation of the variational formulation of a water.
- Xue, Shiqin, Fast numerical schemes for Fredholm integral equations of the second kind.

**STATISTICS**

- Chen, Jie, Approximations and inequalities for discrete scan statistics.
- Chu, Hui-May, Computation approach to Bayesian inference for risk assessment.
- Ickes, Mark, Bayesian variogram modeling.
- Iyengar, Malini K., Compositional data analysis for independent and serially correlating observations: a Bayesian approach.
- Niverthi, Murale, Bayesian methods in statistical quality control.

**Wesleyan University** (3)

**MATHEMATICS**

- Hirshberg, Alan, Vector-valued marginal problems.
- Silberger, Sylvia, Subshifts of the threedot system.
- Widman, Jack, Groups and algebras convergence and order.

**Yale University** (5)

**MATHEMATICS**

- Hui, Tai-Hong Dennis, Mixing and certain integral point problems on semi-simple Lie groups.
- Lifschitz, Lucy, Superrigidity theorems in positive characteristics.
- Styrkas, Konstantin A., Quantum groups, conformal field theories, and duality in tensor categories.
- Vu, Van Ha, Anti-Hadamard matrices, extremal set systems and nibble method.

**STATISTICS**

- Cheang, Gerald, Neural network approximation and estimation of functions.

**DELAWARE**

**University of Delaware** (4)

**MATHEMATICAL SCIENCES**

- Gorka, Sandra, Several set functions and set maps.
- Zuck, Charles, ARC-length quadrature domains.
- Zhang, Xiaoqin, Bootstrap based goodness of fit test for non-location/scale families of statistics.

**DISTRICT OF COLUMBIA**

**George Washington University** (6)

**MATHEMATICS**

- Fitzkee, Thomas, Weakly mixing tiling flows arising from interval exchange transformations.
- Kouatchou, Jules, High-order multigrid techniques for partial differential equations.
- McDaniel, Michael, Subspaces of Vassiliev invariants using cabling.

**STATISTICS**

- Anand, Ravinder, Sequential monitoring of informatively censored longitudinal data.
- Friedlin, Boris, Change point tests and other statistical problems common to legal and medical applications.
- Hu, Ming-Xiu, Robust estimating functions with nuisance parameters.

**Howard University** (2)

**MATHEMATICS**

- Nkwanta, Asamoah, Lattice, paths, generating functions and the Riordan group.
- Ombolo, Remi, Deformation of Leibnitz algebras and Lie bi-algebras.
Doctoral Degrees Conferred

Teng, Chi-Hse, Two-stage genome search design in affected-sib-pair method.
Yin, Ming, Noninformative priors with applications.
Zheng, Belyao, Summarizing the predictive power of a generalized linear model.

University of Miami (1)
MATHEMATICS AND COMPUTER SCIENCE
Fernandez, Hajimir, Span and real functional diameter of metric continua.

University of South Florida (3)
MATHEMATICS
Dragnev, Peter, Constrained energy problems for logarithmic potentials.
Simonov, Plamen, Weighted polynomial and rational approximation with varying weights.

GEORGIA
Emory University (5)
BIOSTATISTICS
Gohn, Gregory, Semiparametric methods for mismeasured exposure information in HIV vaccine trials.
Stiger, Kathleen, Small-sample performance and validation of the proportional odds model for correlated ordinal data fitted with GEE.

MATHEMATICS AND COMPUTER SCIENCE
Kraaikamp, Karel, Describing convex sets in $R^2$.
Lu, Xiaowu, Symplectic integration for Hamiltonian systems and applications.
Nardo, John, Equilateral random polygons are globally knotted.

Georgia Institute of Technology (12)
MATHEMATICS
Belogay, Eugene, Construction of smooth orthogonal wavelets with compact support.
Bin, Tan, Invariant manifolds, invariant foliations and linearization theorems in Banach spaces.
Carbinatto, Maria do Carmo, The Conley index and chaos.
Keefe, Michael, Study and implementation of Gauss Runge-Kutta schemes and application to Riccati equations.
Kuhn, Wolfgang, Rigorous and reasonable error bounds for the numerical solution of dynamical systems.
Kuhn, Zuzana, Ranges of vector measures and valuations.
Lara, Teodoro, Controllability of cellular neural networks.
Liu, Weishi, Center manifold theory for smooth invariant manifolds.
O’Connell, W. Richard Jr., Estimates for the St. Petersburg game.
Pederson, Steven, Homoclinic tangencies and families of interval maps with non-constant topological entropy.
Salazar-Gonzalez, Jose Domingo, Boundary and internal layers in a semilinear parabolic problem.
Yang, Xue-Feng, Extensions of Sturm-Liouville theory: nodal sets in both ordinary and partial differential equations.

University of Georgia (9)
MATHEMATICS
Fox, Glenn, A P-adic f-function of two variables.
James, Kevin, On congruences for the coefficients on modular forms and some applications.
Park, Myeol, Classification of stable cut loci of surfaces.
Penniston, David, The unipotent part of the generalized Jacobian of a curve.
Rashon, Joseph, On exact finite dimensional filtrers in mixed time.

STATISTICS
Allen, Michael, Bootstrap and inference for some linear time series models.
Day, Bann-Mo, Bayes and empirical Bayes estimation with application to small area estimation.
Kim, Sahnyeong, Inference for nonlinear time series models via estimating functions.
Srivastava, Anjali, Parameter estimation and saddlepoint distributions for models in plant disease epidemics.

University of Hawaii (1)
MATHEMATICS
Hanson, Jason, Algebraic realization of smooth group actions.

IDAHO
Idaho State University (2)
MATHEMATICS
Darrow, Jeffrey, Revitalizing the curriculum: using original sources, history, and writing in undergraduate mathematics.
Thornburg, Mark, Order intervals of loci of surfaces.

University of Idaho (1)
MATHEMATICS
Johnson, Kathrine, Sufficiency and maximum likelihood estimation for a class of population genetic models.

ILLINOIS
Illinois State University (2)
MATHEMATICS
Hassani, Sarah, Calculus students knowledge of the composition of functions and the chain rule.
Kersaint, Gladis, Preservice elementary teachers ability to generalize functional relationships.

Northern Illinois University (2)
MATHEMATICAL SCIENCES
Manning, Gregory, The m(4) problem of Erdos and Hajnal.
Ran, Shaohong, Choosing smoothing parameters in nonparametric curve fitting using kernel contrasts.

Northwestern University (13)
INDUSTRIAL ENGINEERING AND MANAGEMENT SCIENCE
Abeyesinghe, Rasika, External effects on firm technology strategy in Sri Lanka: an analysis of firm technology strategy in local and global context.
Berger, Rosemary, Location-routing models for distribution systems design.
Creticos, Peter, Task and skill based job matching.
Johnson, Michael, Jr., An optimization model for location of subsidized housing in metropolitan areas.
Kaminsky, Philip, Probabilistic analysis and effective algorithms for large scale machine scheduling problems.
Owen, Jonathan H., Disjunctive approaches for solving general mixed-integer linear programs.

MATHEMATICS
Choi, Youngna, One dimensional Lorenz-like attractors.
Douma, Jason, Automorphisms of products of finite p-groups with applications to algebraic topology.
Garcia-Rodriguez, Antonio, Arnold diffusion near elliptic-hyperbolic fixed points.
Richeson, David, Connection matrix pairs for the discrete Conley index.
Tran, Thy, Function-theoretic operator theory on finitely connected planar domains.

Southern Illinois University, Carbondale (2)
MATHEMATICS
Arriaga, Mercedes, A stochastic calculus for functional differential equations.
**University of Chicago** (18)

**MATHEMATICS**

Basterra, Maria, André Quillen cohomology of commutative S-algebras.

Beloulous, Pavel, Chow rings of moduli spaces of pointed elliptic curves.

Bronsan, Patrick, Topics in algebraic geometry: an algebraic Napier-Ramachandran theorem and Steenrod operations on Chow groups.

Clair, Bryan, Residual amenability and the approximation of $L^1$-invariants.

Coffman, Adam, Aspects of cortical representations of cortical information processing.

Haines, Thomas, On connected components of Shimura varieties.

Hunttinger, Reid, Some aspects of invariant harmonic analysis on the Lie algebra of a reductive $\mathbb{P}$-adic group.

Kreich, Andrew, Chow homology for Artin stacks.

Rohng, Christian, Nonisotropic Schrödinger equations.

Schrödinger, Farid, Approximation of linear flows with elliptic streamlines.

Shirokova, Nadya K., A splitting formula for spectral flow.

Smith, Lawrence, Computing resolutions over associative algebras with ordered basis.

Stankewitz, Rich Lawrence, Completely invariant Julia sets of rational semi-invariant Julia sets.

Stankewitz, Rich Lawrence, On the equivalence of rational semi-invariant Julia sets.

**University of Illinois, Urbana-Champaign** (17)

**MATHEMATICS**

Amini, Massoud, Local structure of operator algebras.

Collander, James Ellis, The initial value problem for the Zakharov equations.

Hariman, Christopher M., Extremal problems in graph theory.

Ibañez, Bert, Families of rank zero twists of elliptic curves.

Kim, Dong-Hyun, Topics in the theory of $q$-additive and $q$-multiplicative functions.

Lin, Yi-Shuang, The local-global structure of the Galois deformation space.

Mason, Alan Gregory, An application of stochastic flows to Riemannian foliations.

McCreary, Paul Robert, Visualizing Riemann surfaces, Teichmuller spaces, and transformation groups on hyperbolic manifolds using free time interactive animator (RTICA) graphic.

Meyer, Jeffrey Lyle, Analogues of Dedekind sums.

Miller, Claudia Marie, Hypersurface sections: a study of divisor class groups and of the complexity of tensor products.

Murray, John Cyril, Dade’s conjecture for the McLaughlin’s simple group.

Rouda, Gareth Scott, Alternating automata and the temporal logic of ordinals.

Shim, Jae-Wan, The Baum-Connes map for a smooth groupoid.

Stankewitz, Rich Lawrence, Completely invariant $\mathcal{L}$-sets of rational semigroups.

Wu, Yu-Fen, Groups in which commutativity is a transitive relation.

Wu, Yue, Higher order fractional differentiation in infinite dimensional spaces and related partial differential equations.

**PHYSICS**

Sun, Chengyu, Modeling of fatigue crack propagation process: generalized linear mixed model approach.

**University of Notre Dame** (4)

**MATHEMATICS**

Fehér, Laszlo, eta invariant and concordance classes of positive scalar curvature metrics.

**INTEGRAL TRANSFORMS, OPTICS, AND SEQUENCES**

Cai, Huaiyu, On edgepath expansions for sums of weakly dependent random vectors.

Gai, Raymond, On the relativistic Vlasov-Maxwell-Fokker-Planck system.

Pranata, Bebe, Some applications of the Navier-Stokes equations. Applications to climatology.


Doctonal Degrees Conferred

Joachim, Michael, The twisted Atiyah orientation and manifolds whose universal cover is spin.

Stroumin, Alexei, Homology decompositions for classifying spaces of compact Lie groups.

Weiner, Paul, Multidimensional convolution codes.

IOWA

Iowa State University (14)

MATHEMATICS

Buske, Dale, Hilbert modules over semi-crossed products of the disk algebras.


Wang, Huadong, Feedback stabilization of bilinear control systems.

Wojdylo, Jerzy, Relation algebras and vertex conditions in graph theory.

STATISTICS

Benner, Rebecca Jean, Contributions to survival analysis.

Brabek, Marek, Consistent estimation using approximation likelihoods.

Chitou, Bassirou, Inversion of sparse matrices using Monte Carlo methods.

Hsu, Nan-Jung, Hierarchical long-memory time series models.

Chen, Dongjian, Some geometrical properties of Banach space and their applications.

Mora, Peter Neville, A study of harmonic forms of central simple algebras.

Paslaski, George, Weak convergence of probability measures when measurements are subject to error.

KANSAS

Kansas State University (6)

STATISTICS

Butine, Michael, A comparison of methods for analyzing binomial data in a mixed model setting.

Chartier, Kevin, Robust analysis of scale.

Gibson, Eric, Goodness of fit tests for composite hypotheses with right or left censored data.


Shaoxian, Chen, Adaptive local smoothing methods for turbulent reactive flow models.

Sheng, Rongqin, Interior-point methods for semidefinite programming.

STRICT AND POLITICAL SCIENCE

Paslaski, George, Weak convergence of probability measures when measurements are subject to error.

Thompson, John, A study of harmonic mappings on punctured domains: an argument principle and some coefficient results.

LOUISIANA

Louisiana State University, Baton Rouge (5)

MATHEMATICS

Acosta, Daniel, Spin orbifolds and the Stiefel-Whitney class of scaled trace forms of central simple algebras.

Baeumer, Boris, Vector-valued operational calculus and abstract Cauchy problems.

Brusamarelli, Rosali, On the second Steifel-Whitney class of scaled trace forms of central simple algebras.

Dittmann, John, Unavoidable minors of graphs of large type.


Nguyen, Thanh Tran, Trace-class estimates for survival analysis.

Wichita State University (5)

MATHEMATICS AND STATISTICS

Bouchouer, Ilya, Inverse parabolic problems with applications to option price.

Eller, Matthias, Uniqueness of continuation theorems.

Horn, Mark, Iterative methods applied to some problems in conformal mapping and potential theory.

Pomaranyi, Igor, Numerical analysis of problems of tomography, radiotherapy and photonic crystal theory.

Qiu, Feng, Inverse problems for linear and semilinear elliptic equations of the Schrodinger type.

Pustilnik, George, Weak convergence of interacting stochastic systems.

Tulane University (8)

MATHEMATICS

Acosta, Daniel, Spin orbifolds and the minimal genus problem.
Boras, George, Some definite integrals and related results.
East, Gerard, Finite group actions and the topology of nonnegatively curved four-manifolds.
Estrella, Angel, Traveling wave solutions to McKean’s caricature of the nerve equation in two dimensions.
Hopkins, Matthew, Computational modeling of the fluid dynamics of motile microorganisms.
Nischal, Atul, Stable classification of homotopy equivalences of fake lens spaces.
Ponder, Nathan, Asymptotics of eigenvalues of an operator associated with a pure jump Markov process.
Yu, Hongyi, Domain in decomposition multiplicative Schwarz method and adaptive mesh refinement strategy for solving a class of nonlinear parabolic equations.

University of Southwestern Louisiana (4)

Mathematics
Ledet, Robert, Convergent nets in Abelian topological groups.
Xu, Mingqi, Behavior of solutions of some nonlinear diffusion equations with Neumann boundary conditions.
Zhao, Xiaoxian, Stability results, convex dependence and fixed point theorems for nonlinear problems.
Zhu, Jianmin, Quenching and blow-up of solutions for semilinear hyperbolic problems.

MARYLAND

Johns Hopkins University (9)

Biostatistics
Chen, Min-Chi, On modeling and inference for multivariate failure time data.
Rathouz, Paul, Nuisance parameters, measurement error and the efficient use of auxiliary data for estimating unobserved occupational exposures.

Mathematical Sciences
Chiang, Chin-Tsang, Linear smoothing methods with longitudinal dependent variable.
Dong, Quanming, Multiple comparisons via improved inclusion-exclusion.
Fishkind, Donniell, Posets, graphs, and topological spaces.
Schoolfield, Clyde, Random walks on wreath products of groups and Markov chains on related homogeneous spaces.

Mathematics
Ayoub, Nehme, Extended hedging in incomplete markets.
Ghomi, Mohammad, Strictly convex submanifolds and hypersurfaces of positive curvature.
Zeng, Sixin, Blended complexes.

University of Maryland, Baltimore (4)

Mathematics and Statistics
Chilton, Lawrence, Locking-free hp elements for elasticity problems.
Ivanova, Anastasia, A birth and death urn for randomized clinical trials.
Luria, Anna, Chandrasekhar point problems in auto-correlated data.
Mats, Vladimir, Design and likelihood-based estimation for binary response experiments under ethical constraints with application to Phase I clinical trials.

University of Maryland, College Park (27)

Mathematics
Arteaga, Santiago, Nonlinear abd parallel algorithms for finite element method discretizations of the incompressible Navier-Stokes equations.
Belegradek, Igor, Counting negatively curved manifolds.
Cavehorne, Stephanie, Forcing with directed families of finite structures.
Chang, Yu-Fen, A central limit theorem for spatial regression based on generalized estimating equations.
DeOliveira, Victor, Prediction in some classes of non-gaussian random fields.
Denny, Diane Lynn, A well-posed system of equations modelling near-critical fluid flow.
Gallnari, Alessandra, The orbit method for the unipotent group over finite fields.
Girard, Andrew, Semi-reformable bodies in an ideal fluid.
Gonzalez, Jose, On a category of “Uniform” spaces.
Harrison, Melissa, Frames and irregular sampling from a computational perspective.
Hecklen, Deborah, Decreasing sequences of sigma-algebras as in ergodic theory.
Hirsa, Ali, Numerical algorithms for the convection-diffusion equations and variance gamma model.
Hoffman, Robert L., Optimization in air traffic control: ground delay programs.
Horn, Karen M., Classification of term orders on a module.
Jeffries, Neal, Logistic mixtures of generalized linear model time series.
Kehrbbaum, Stefan, Hamiltonian formulations of the equilibrium conditions governing elastic rods.
Keswani, Navin, Relative ETA-invariants and C*-algebra K-theory.
Kilmer, Mishu Elena, Regularization of ill-posed problems.
King, Kimberly, Minimal models of genus 1 curves.
Kopyli, Leonid, On estimation of the marginal survival function.

Lightwood, Samuel, An embedding theorem for a class of Z^2 shifts of finite type.
Lubell, Amanda, Global interactions with regular types.
Rogers, Kathleen, Stability exchange in parameter-dependent constrained variational principles with applications to elastic rod models of DNA minicircles.
Rosenschon, Andreas, On the K-cohomology of algebraic varieties.
Turnquist, Brian, Near model completeness and generic structures.
Wu, Hui-Chuan, Multidimensional irregular sampling in terms of Frames.
Yip, Shui-Cheng, Asymptotic analysis of quasilinear parabolic-hyperbolic equations describing the large longitudinal motion of a light viscoelastic bar with heavy attachment.

MASSACHUSETTS

Boston University (2)

Mathematics
Lee, Eileen, The structure and geometry of the Bruhat orders.
Soto-Treviño, Cristina, Geometric methods for periodic orbits in singularly perturbed systems.

Brandeis University (5)

Mathematics
Gerard, Benoit, Singular connections on 3-manifolds and manifolds with cylindrical ends.
Gonzales, Griselda, Weyl modules.
Lawler, Michael, Infinite dimensional solutions and symmetries of the self-dual Yang-Mills hierarchy.
Liberzon, Daniel, Asymptotic properties of nonlinear feedback control systems.
Pires de Campos, Jose Edwardo, Boundary string links.

Harvard University (32)

Biostatistics
Bellocco, Rino, Modification of HIV back-calculation models.
Botta, Matteo, Asymptotic inference in one-dimensional identifiable parametric models when the Fisher information is zero.
Li, Qian, Marginal methods for analyzing multi-variate survival data.
Patt, Mary, Aspects of the analysis of crossover trials.
Wang, Xiaochen, Contributions to statistical genetics and survival analysis.
Zhang, Shu, Statistical models for informative dropout and feedback between outcomes and covariates.
Zhao, Hongwei, Survival analysis of quality adjusted lifetime.

Doctoral Degrees Conferred
### Doctoral Degrees Conferred

#### Engineering and Applied Sciences

- **Bender, Michael A.**, New algorithms and metrics for scheduling.
- **Blackwell, Trevor L.**, Applications of randomness in systems performance measurement.
- **Chang, Kehing**, IP-layer per-flow queuing and credit flow control.
- **Horowitz, Larry W.**, The influence of boundary layer chemistry on global tropospheric ozone and nitrogen oxides.
- **Lin, Dong**, Internet congestion control: cooperative end systems and gateway algorithms.
- **Ryll, Kathleen**, Human-computer collaboration in the design of graphics.
- **Squires, Stephen L.**, Extensible sealing.
- **Wang, Yi**, Implementing reusable solvers: an object oriented framework for operation research algorithms.

#### Mathematics

- **Brennan, Thomas J.**, Variation of capacity for convex domains in Euclidean space.
- **Ellenberg, Jordan**, Hilbert modular forms and the Galois representations associated to Hilbert-Blumenthal abelian varieties.
- **Emerton, Matthew J.**, Exceptional theta correspondences.
- **Hutchings, Michael**, Generalized harmonic maps and gas dynamics in open tubes.
- **Pellicer, Manuel**, Stability of algebraic manifolds with corners.
- **Wang, Yi**, Stability of algebraic manifolds.
- **Wang, Yi**, Support theorems and inversion for Radon transforms.

#### Statistics

- **Scott, Steven**, Bayesian methods and extensions for the two state Markov modulated Poisson process.
- **Zanatto, Elaine**, Imputation for unit nonresponse; modeling sampled nonresponse follow-up, administrative records, and matched substitutes.

### Massachusetts Institute of Technology (34)

#### Mathematics

- **Beke, Tibor**, Homotopy theory and topology.
- **Bender, Michael A.**, New algorithms and metrics for scheduling.
- **Blackwell, Trevor L.**, Applications of randomness in systems performance measurement.
- **Chang, Kehing**, IP-layer per-flow queuing and credit flow control.
- **Horowitz, Larry W.**, The influence of boundary layer chemistry on global tropospheric ozone and nitrogen oxides.
- **Lin, Dong**, Internet congestion control: cooperative end systems and gateway algorithms.
- **Ryll, Kathleen**, Human-computer collaboration in the design of graphics.
- **Squires, Stephen L.**, Extensible sealing.
- **Wang, Yi**, Implementing reusable solvers: an object oriented framework for operation research algorithms.
- **Gaio, John**, Implementing reusable solvers: an object oriented framework for operation research algorithms.
- **Kniker, Timothy**, The commercialization of university research discoveries: are university technology transfer offices stimulating the process.
- **Kraft, Kenneth**, Decision tree algorithms for handwritten digit recognition.
- **Michaels, Steven**, The commercialization of university research discoveries: are university technology transfer offices stimulating the process.
- **Paulson, John**, The commercialization of university research discoveries: are university technology transfer offices stimulating the process.
- **Turock, Latife Beril**, Analysis of a production inventory system under a stationary demand process and forecast updates.

### Northeastern University (2)

#### Mathematics

- **González, Nicolás**, Schubert varieties, ladder determinantal varieties and toric varieties.
- **Oleinik, Igor**, On the essential self adjointness of Schrödinger type operators.

### Tufts University (1)

#### Mathematics

- **Zhao, Yiyong**, Support theorems and injectivity for Radon transforms.

### University of Massachusetts, Amherst (8)

#### Mathematics and Statistics

- **Boucher, Christopher**, Large deviations for doubly indexed stochastic processes with applications to statistical mechanics.
- **Dornback Boucher, Catherine**, Characterizations of pyramids and their generalizations.
- **Heisker, Joseph**, Computations of statistical equilibrium states for two dimensional turbulence with conserved vorticity moments.
- **Luo, Haiping**, Desingularizing the intersection between a catenoid and a plane.
- **Petersen Black, Christine**, The mathematics of superfluid films in porous media.
- **Schwarz, Christine**, Nilpotent orbits of mixed Hodge structure.
- **Wilder, Kenneth**, Decision tree algorithms for handwritten digit recognition.

### Michigan State University (14)

#### Mathematics

- **England, Timothy**, Quadratic representations for groups of Lie type over fields of characteristic two.
- **Higdon, William**, Composition operators on the Dirichlet space.
Ko, Youngsang, $C^{1,\alpha}$ regularity of interfaces for solutions of the degenerate parabolic $p$-Laplacian equation.

Liu, Li, A Gauss-Galerkin finite element method for a class of singular diffusion equations in two space variables.

Matveев, Rostislav, A decomposition of smooth simply-connected $k$-cobordant four manifolds.

Nixon, Michael, The discretized Korteweg-de Vries equation.

Radford, Affaf, Residual properties of finitary linear groups.

Remski, Joan, Models of superconductivity: a Josephson junction with thin normal layer.

Satit, Naim, Boundedness of integral operators in the upper half space with Carleson measures.

Wang, Wei, Entropy zero systems and Morse-Smale systems.

Yang, Je, Elliptic functions, theta function, and submanifolds in space forms.

Yu, Zhihui, Applications of play against past strategies in repetitions of a game.

Zhang, Daowen, Methods for linkage analysis of complex genetic disease.

Zhang, Xudong, Efficient random algorithms for constrained global and nonlinear optimization.

Biostatistics

Morse, Christopher, The development of inferences for infinite horizon dynamic games.

Hauser, Elizabeth, Control of a batch process for nonlinear Schrödinger equations.

Neale, John J., Static spherically symmetric perturbed Hamiltonian systems with two parameters.

Reaume, Daniel J., Efficient random algorithms for constrained global and nonlinear optimization.

Zhang, Kaixia, Minimax control of dynamic systems with state constraints.

Western Michigan University (6)

Biostatistics

Crawford, Pamela, Fostering reflective thinking in first-semester calculus students.

Biostatistics and Statistics

Figueras-Centeno, Ramon Manuel, Surface models of finite geometries.

Low, Richard, Units in integral group rings for direct products.

Biostatistics

Myeong, Anne, Perturbed Hamiltonian systems of two parameters with several turning points.

Wayne State University (2)

Biostatistics

Hasen, William, Maximal embeddings of alternating groups in the classical groups.

Mathematics

Zhang, Kaisa, Minimax control of dynamical systems with state constraints.

Mathematics

Huisken, William, Maximal embeddings of alternating groups in the classical groups.

Statistics

Zhang, Kaixia, Minimax control of dynamical systems with state constraints.

Western Michigan University (6)

Statistics

Kosinski, James, Inference for linear and nonlinear calibration problems.

Mathematics

Gao, Fan, Criticality of interlacements for three-ranks of quadratic number fields.

Wayne State University (2)

Mathematics

Huisken, William, Maximal embeddings of alternating groups in the classical groups.

Statistics

Zhang, Kaixia, Minimax control of dynamical systems with state constraints.

Mathematics

Huisken, William, Maximal embeddings of alternating groups in the classical groups.

Statistics

Zhang, Kaixia, Minimax control of dynamical systems with state constraints.
### Doctoral Degrees Conferred

**Valero-Elizondo, Luis**

- On some invariants associated to simple group representations.

**Yi, Sangkug**

- Analytic torsions on quaternionic manifolds.

**Yuan, Yu**

- Some qualitative properties of solutions to second order elliptic and parabolic equations.

**Statistics**

**Agin, Marilyn**

- Optimal Bayesian design for nonlinear models.

**Chou, Connie**

- Multivariate longitudinal data analysis, using generalized estimating equations.

**Lee, Hakbae**

- Dimension reduction in binary response regression.

**Nelson, David**

- Stepwise Bayes methods for incorporating prior information in finite population sampling.

**MISSISSIPPI**

**University of Mississippi**

**Adams, Katherine**

- Mathematics and Statistics

**Lang, Andrew**

- The Casimir effect.

**Cazacu, Constantin**

- Genus L systems: normal forms, L systems: normal forms,

**Holland, Jason**

- The orthocompletion and the Dedekind completion of certain lattice-ordered groups.

**MISSOURI**

**University of Missouri, Columbia**

**Avery, Richard**

- Multiple positive solutions to boundary value problems.

**Batar-Batar, Ferry**

- Empirical Bayes methods in survey sampling.

**Dawkins, Paul**

- Spurious eigenvalues in the spectral tau method.

**Holley, Darren**

- Quotients of the multiplicative group of a field.

**Homp, Michelle**

- A transport equation in porous media with an oblique, evolutionary boundary condition.

**Jajcayova, Tatiana**

- HNN extensions of inverse semigroups.

**Mueller, Jennifer**

- Inverse problems for singular differential equations.

**Sapir, Olga**

- Identities of finite semigroups and related questions.

**Van Peursem, Dan**

- Analytical modeling of groundwater flow.

**WEI, Ruizhong**

- A transport equation in porous media with an oblique, evolutionary boundary condition.

**NEW JERSEY**

**New Jersey Institute of Technology**

**Portnoy, Neil**

- Composition and differentiation on the Hardy and Bergman spaces.

**NEW HAMPSHIRE**

**University of New Hampshire**

**Al-Hawary, Talal Ali**

- Toward an elementary axiomatic theory of the category of loopless pointed matroids and strong maps.

**Montana State University**

**Al-Hawary, Talal Ali**

- Toward an elementary axiomatic theory of the category of loopless pointed matroids and strong maps.

**University of Nebraska, Lincoln**

**Anderson, Douglas**

- Discrete Hamiltonian systems.

**Avery, Richard**

- Multiple positive solutions to boundary value problems.

**Batar-Batar, Ferry**

- Empirical Bayes methods in survey sampling.

**Dawkins, Paul**

- Spurious eigenvalues in the spectral tau method.

**Holley, Darren**

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**Homp, Michelle**

- A transport equation in porous media with an oblique, evolutionary boundary condition.

**Jajcayova, Tatiana**

- HNN extensions of inverse semigroups.

**Mueller, Jennifer**

- Inverse problems for singular differential equations.

**Sapir, Olga**

- Identities of finite semigroups and related questions.

**Van Peursem, Dan**

- Analytical modeling of groundwater flow.

**WEI, Ruizhong**

- A transport equation in porous media with an oblique, evolutionary boundary condition.

**NEW JERSEY**

**New Jersey Institute of Technology**

**Portnoy, Neil**

- Composition and differentiation on the Hardy and Bergman spaces.
Princeton University (13)

APPLIED AND COMPUTATIONAL MATHEMATICS

Balan, Rada, A study of Weyl-Heisenberg and wavelet frames.
Callet, Jonathan, Long time asymptotics for fast wave averaging of the rotating shallow water equations.
Chen, Yuchi, Diffraction effects on diffusive optical bistability and optic memory.
Ganguly, Kisnor, Efficient numerical solvers for linear standing-wave problems.
Johnson, Mark, Computer-assisted studies and visualization of nonlinear phenomena: two-dimensional invariant manifolds, global bifurcations, and robustness of global attractors.
Kramer, Peter, Passive scalar scaling regimes in rapidly decorrelating flow.
Smith, Stephen A., Dissipative closures for statistical moments, fluid moments, and subgrid scales in plasma turbulence.

MATHEMATICS

Cordoba Gazolaz, Diego, Absence of simple hyperbolic blow-up for the quasigeostrophic and Euler equations.
Kisnor, Mark, Local constancy in p-adic families of Galois representations.
Rajaei, Ali, On lowering the levels in modular mod ℓ Galois representations of totally real fields.
Rastegar, Arash, On congruences between Drinfeld modular forms.
Rubinstein, Michael, Evidence for a spectral interpretation of the zeros of L-functions.
Vanderkam, Jeffrey, Non-vanishing of L-functions at the center of the critical strip.

Rutgers University, New Brunswick (17)

MATHEMATICS

Asselah, Amine M., Phase stability: stochastic particle system and P.D.E.
Cadin, Radica, Applications of the Poly-Painlevé test.
Csakany, Rita, On three combinatorial problems.
Hamer, Carol L., Congruences among the traces of the Hecke operators.
Hajjaji, Luke, Characterizing causality conditions using the conformal boundary of a simply connected Lorentz surface.
Kling, Daniel Harold, Doubly-periodic flat surfaces in three-space.
Kowalski, Emmanuel, The rank of the Jacobian of modular curves: analytic methods.
Li, Wangyi, Representations of vertex operator superalgebras and abelian intertwining algebras.
Mauri, Luca, Two-descent, two-torsors and cohomology.
Ng, Sin-Huang, The Lie bialgebra structures on the Witt and Virasoro algebras.
Radulescu, Dan Constantin, A computer-assisted proof of uniqueness of phase for the hard-square lattice gas model in two dimensions.

STATISTICS

Buyske, Steve G., Optimal design for item calibration in computerized adaptive testing.
Choi, Suktae, A nonparametric empirical Bayes approach to checking frailty models with recurrent event-time data.
Hoh, Joe-Lian, Some statistical models and methods for analysis of screening data.

Vanderkam, Jeffrey, Non-vanishing of L-functions at the center of the critical strip.

New Mexico State University (5)

MATHEMATICAL SCIENCES

Emery, David, Continuity properties of pseudo-differential operators defined by nonisotrop symbols.
Nimah, Benedict, Optimizing system reliability with integer programming.
Quineiro-Rico, Eduardo, Quaternionic holomorphy of the tensor algebra of an algebra with an involution.
Schlach, Karen, An algorithm for the Quillen-Suslin theorem for discrete Hodge algebras.

University of New Mexico (3)

MATHEMATICS AND STATISTICS

Biswas, Anjan, Perturbation of optical solitons.
Gore, Rebecca, Quality assurance measures for continuous manufacturing sampling plans with supplemental rules.
Hardy, Michael E., Apportionment of availability in a manufacturing process where effort functions are unknown.

NEW YORK

City University of New York, Graduate Center (9)

MATHEMATICS

Arroyo, Edward, Davson’s chess, short on graphs and graph involutions.
Castro, Francis, Exponential sums and L-functions over finite fields.
Gendron, Timothy, Fuchsian germs.
Gladkov, Irena, The Zak transform and a new approach to waveform design.
Huang, Huaile, On the structure of the space of lattices in a class of simply connected, 2-step solvable real Lie groups and genus sets of certain spaces.
Huang, Xiaohan, Algorithms for fast rectangular matrix multiplications and their applications.
Peng, Guiai, On the dynamics of nondegenerate polynomial endomorphisms in two dimensions.
Saadia-Otera, Marina, The composition of the finite Hilbert transform and the differentiation operator.
Zheng, Ai-Ling, Studies in algorithms for fast structured matrices computations and their applications.

Clarkson University (1)

MATHEMATICS AND COMPUTER SCIENCE

Al-Jarrah, Ali, Bessel integrals and sums: old and new.

Columbia University (8)

MATHEMATICS

Deloup, Florian, Explicit formulas for abelian quantum invariants of links in 3-manifolds.
Liu, Yang, Cartan geometry, CR and complex geometry.
Mukhtar-Sharigi, Sabir, On spectral decomposition of tree lattices.
O’Sullivan, Cormac, Properties of Eisenstein series formed with modular symbols.
Ok, Younghin, Gamma factors at 1/2 and distortion.

STATISTICS

Jin, Zhezhen, Some statistical methods for analysis of non-linear mixed effects models.
Srivastav, Gennady, Maximizing the probability of perfect hedge under partial information and non-linear dynamics.

Cornell University (26)

APPLIED MATHEMATICS

Allers, Donald, Patch survival in a mosaic hybrid zone.
Herzel, Stefano, Two problems on option pricing.
Rubio, Iselisse, Groebner base for 0-dimensional ideals and applications to decoding.
Doctoral Degrees Conferred

Subramanian, Ajay, Applications of stochastic control to mathematical finance.
Willsn, Allan, Hodgkin-Huxley models: parameter estimation issues, an application to spike frequency adaptation, and analysis of a subcritical Hopf-homoclinic bifurcation.

MATHEMATICS
Aguiar, Marcelo, Internal categories and quantum groups.
Baz libert, Harel, Finiteness properties for handlebody mapping class groups.
Battig, Robert, Completeness of securities market models—an operator point of view.
Bellhouse, Eknath, Coexistence in a two species reaction diffusion process using a hydrodynamic limit.
Davoren, Jennifer Mary, Modal logics for continuous dynamics.
Oliva, Ricardo Antonio, On the combinatorics of external rays in the dynamics of the complex Henon map.
Shah, Nikhil, Predator mediated coexistence.
Teplyaev, Alexander Vyacheslav, Convergence of interval parameter estimation issues, an application to Cox's model, and an application to quadratic forms.
Xiang, Yongjian, Computing Thom classes of handlebody mapping class groups.

Rensselaer Polytechnic Institute (10)

MATHEMATICAL SCIENCES
Aff, Tom, Iterative substructuring algorithms for the $p$-version of finite element method.
Chen, Connie Kangyan, Applications of the method of complex characteristics.
Givelberg, Edward, Modeling elastic shells immersed in fluid.
Huang, Jingfang, Direct adaptive methods for linear differential equations.
Jin, Weimin, Singular perturbation and the energy of folds.
Kim, Matthew, A diffuse interface approach to the development of microstructure in martensite.
Kim, Soemyong, Excitable systems in motion: interactions between electrical and mechanical activities of the heart.
Lee, Kim-ho, Obstacle problems for the fully nonlinear elliptic operators.
Lu, Zhijin, On the geometry of the moduli space of Calabi-Yau manifolds.
Nanda, Seema, Spatial random graphs and dynamics of disordered systems.
Rankar-Motlagh, Alireza, Analysis of metric-measure spaces.
Sampieri, Dominick, Inverse problems, model selection and entropy in derivative security pricing.
Serafini, Hester, First-passage percolation on the Dalaunay graph of a d-dimensional Poisson process.

New York University, Courant Institute (13)

MATHEMATICAL SCIENCES
Bica, Ion, Iterative substructuring algorithms for the $p$-version of finite element method.
Chen, Connie Kangyan, Applications of the method of complex characteristics.
Givelberg, Edward, Modeling elastic shells immersed in fluid.
Huang, Jingfang, Direct adaptive methods for linear differential equations.
Jin, Weimin, Singular perturbation and the energy of folds.
Kim, Matthew, A diffuse interface approach to the development of microstructure in martensite.
Kim, Soemyong, Excitable systems in motion: interactions between electrical and mechanical activities of the heart.
Lee, Kim-ho, Obstacle problems for the fully nonlinear elliptic operators.
Lu, Zhijin, On the geometry of the moduli space of Calabi-Yau manifolds.
Nanda, Seema, Spatial random graphs and dynamics of disordered systems.
Rankar-Motlagh, Alireza, Analysis of metric-measure spaces.
Sampieri, Dominick, Inverse problems, model selection and entropy in derivative security pricing.
Serafini, Hester, First-passage percolation on the Dalaunay graph of a d-dimensional Poisson process.

State University of New York, Binghamton (8)

MATHEMATICAL SCIENCES
Cardenas, Manuel, Localization for exact categories.
Pagano, Steve, Separability and representability of bias matroids of signed graphs.
Plavchak, Tom, A polyhedral transversality theorem for one-parameter fixed point theory.
Rebeli, Denise, On generalized Hamiltonian groups.
Roy, Ranja, Integrity questions for virtual signature.
Sarmin, Norhaniza, On two-generator groups of nilpotent class two and their nonabelian tensor squares.
Weinberger, Arthur, Reducing fuzzy algebra to classical algebra.
Zhang, Qinhai, On abnormal subgroups of finite groups.

State University of New York, Buffalo (5)

Mathematics
Chen, Dechang, Applications of stochastic control to mathematical finance.

Statistics
Eberly, Lynn, Convergence of interval estimates from the Gibbs sampler.
Gulyas, Stephen, Latent disease change-point models for longitudinal biomarkers.
Ohman, Pamela, Approximated and estimated saddlepoint approximations.
Schulman, Andrew, A comparison of local bandwidth selectors for local polynomial regression.

State University of New York, Albany (10)

Mathematics and Statistics
Jaffrey, Marc, Beurling type theorems for submodules of the Hardy space $H^2$.
Lambert, Peter, Extreme points and support points in Bloch type spaces.
O'Neil, John, Test elements in finitely generated groups.
Repligen, Daniel, Swan classes and realizable classes for integral group rings over groups of prime order.
Salpukas, Michael, Spherical diagrams and the solutions of equations over groups.
Smith, Harold III, Constructing Hopf orders in elementary abelian group rings.
Sowizral, Mycroft, Growth functions of discrete non-cocompact groups of isometries of the hyperbolic plane.
Sterner, Michael, Fractional derivatives and convolutions of univalent functions.
Tse, Manyiu, Hopf algebra actions on elementary abelian extensions of degree $p^n$.

Statistics and Biometry
Chen, Jiannin, Adaptive smoothing and its applications in change-point and image analysis.

State University of New York, New York, Albany

Mathematics and Statistics
Jaffrey, Marc, Beurling type theorems for submodules of the Hardy space $H^2$.
Lambert, Peter, Extreme points and support points in Bloch type spaces.
O'Neil, John, Test elements in finitely generated groups.
Repligen, Daniel, Swan classes and realizable classes for integral group rings over groups of prime order.
Salpukas, Michael, Spherical diagrams and the solutions of equations over groups.
Smith, Harold III, Constructing Hopf orders in elementary abelian group rings.
Sowizral, Mycroft, Growth functions of discrete non-cocompact groups of isometries of the hyperbolic plane.
Sterner, Michael, Fractional derivatives and convolutions of univalent functions.
Tse, Manyiu, Hopf algebra actions on elementary abelian extensions of degree $p^n$.

Statistics and Biometry
Chen, Jiannin, Adaptive smoothing and its applications in change-point and image analysis.
Liu, Xia, Parametrices for hypoelliptic operators in spaces of distribution with restricted growth.

Slavik, Petr, Approximation algorithms for set cover and related problems.

**STATISTICS**

Shen, Han, Bayes sequential experimental design for multiparameter nonlinear models.

**State University of New York, Stony Brook** (23)

**APPLIED MATHEMATICS AND STATISTICS**

Arenz-Mireles, Orlando, A comparative study of tests for homogeneity of variances under order.

Galambos, Nora, Numerical solution of operators in spaces of distribution with spherical and geometrical properties.

Kim, Ju-Hong, Efficient collision detection for interacting 3D graphics and virtual environments.

Mancuso, James, Exact null distributions of runs statistics in occupancy arrangements with applications to disease clustering.

Marcano, Mariano, Inverse problem algorithms and applications in renal concentrating mechanism models.

Neus, Jordan, EDF-based GOF tests for the homosedastic two-component normal mixture.

Taksar, Tatiana, Approximate solutions for the pricing of American options.


Whitledge, Vicki, Effect of unstirred layers on the renal concentrating mechanism.

**MATHEMATICS**

Florentino, Carlos, On Schottky vector bundles over Riemann surfaces.

Friedman, Paul, Langlands parameters of subquotients of derived functor modules.


Kim, Jan, Rational rays and critical portraits of complex polynomials.

Latschev, Janko, A generalization of Morse complex.

Maschler, Gideon, Distinguished Kähler metrics and equivariant cohomological invariants.

Petean, Jimmy, Indefinite Kähler-Einstein metrics on compact complex surfaces.

Rothman, Regina, Upper bounds of the length of the shortest closed geodesic on simply connected manifolds.

Schafer, Joseph, Stochastic analog of the Selberg trace formula.

Sebbar, Abdellah, Quantum groups, screening operators and universal q-de Rham cycles.

Sliwinski, Jennifer, Positive paths and length minimizing geodesics in Kofler’s geometry.

Yampolsky, Mikhail, Complex bounds for renormalization of one-dimensional dynamical systems.

Yang, Rongwei, Hardy modules.

**Syracuse University** (3)

**MATHEMATICS**

Boeklns, Matthew, On the spectral radius of positive operators.

Harin, William, Comparing four approaches to teaching limits.

Niğam, Preeti, The role of visualization in teaching undergraduate mathematics: a multiple study of teachers’ perceptions and practices.

**University of Rochester** (7)

**BIOSTATISTICS**

Liu, Aiyi, Estimation following sequential tests.

Marchetti, Carol, Robust analysis of variance.

Zou, Hong, Analysis of some transformation models for the two-sample problem with special reference to ROC curves.

**MATHEMATICS**

Cobell, Cristian, Topics on the distribution of inverses mod q.

Fu, Shieh-Shun, Oscillatory integral operators and the restricted two-plane transform.

Liu, Tianfang, Stability estimates for the two-dimensional inverse conductivity problem.

Lossa, Celine, Singular homology of strong bouquets of Moore spaces.

**NORTH CAROLINA**

**Duke University** (7)

**MATHEMATICS**

Farjason, Charles, Percolation dimension of Brownian motion in three dimensions.

Georgieva, Anna, One dimensional diatomic particle chains.

Odden, Christopher, The virtual automorphism group of the fundamental group of a closed surface.

Rolf, James, A mathematical reconstruction of the corneal surface.

Travers, Kirsten, Ultra-singularity of semi-linear hyperbolic partial differential equations.

**STATISTICS AND DECISION SCIENCES**

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

Petrus, Giovanni, Bayesian analysis of long memory time series.

**North Carolina State University, Raleigh** (34)

**MATHEMATICS**

Banoczi, James Michael, Multilevel methods for conductive-radiative heat transfer.

Batera, Jeffrey Victor, A random process model for dispersion in containment transport through porous media analysis and computation.

Hardy, Peter Garth, On characterizing nilpotent Lie algebras by their multipliers, t(1) – 8.

Hessinger, Sabrina Anne, Computing Galois groups of linear differential equations of order four.

Hu, Xueqing, Derivation on prime gamma rings.

Jaffris, Michael Allen, Analysis and simulations of unsaturated groundwater flow in heterogeneous media.

Klima, Richard Ervin, Involutorial commutants of the seventh order with applications to algebraic cryptography.

Lyerly, Christopher Mark, Explicit construction of a level-two representation of $G_2^{(1)}$.

Schmidt, Michael Andreas, Quotient rings of $T$-rings.

Tocci, Michael David, Numerical methods for variably saturated flow and transport models.

Velmansumudam, Somasundaram, Internal transition layers in singularly perturbed boundary value problems.

Yang, Zhiping, Monotone methods for analytic and numerical solutions of reaction diffusion systems.

Yeomans, Kevin Dean, Initialization issues in general differential algebraic equation integrators.

Zhong, Yangchun, Efficient numerical solution of general nonlinear higher index differential algebraic equations.

**STATISTICS**

Apetizar-Jara, Russell, Assessing assumption violations in line transect sampling.

Bay, Jeffrey, Adjusting data for measurement error.

Coffman, Cynthia, The effects of corridor-linked patches on metapopulation dynamics: A field experiment with microtus pennsylvanicus.

Deal, Parthosh, Quality of service modeling for wide area network based systems.

Easterling, Michael, The integral projection model: theory, analysis and application.

Evans, Barry, Estimation and hypothesis testing in nonstationary time series using frequency domain methods.

Gardner, Martha, Equipment fault detection using spatial signatures.

Hahn, William, Estimating the prevalence of a spatially dependent characteristic.

Haines, Dawn, Estimating population parameters using multiple frame and capture-recapture methodology.
Doctoral Degrees Conferred

Jonkman, Jeffrey, Estimation of percentiles using group testing when the underlying response variable is continuous.
Kim, Dongwoo, 4th fractional factorial designs by pseudo-factors.
Kim, Seongyoon, Extended least squares estimator using Monte Carlo method in nonlinear random coefficient models.
Lee, Taeyoung, Unit root tests in nonstationary time series.
Lovern, Mark, Determination and modeling of benzene metabolism by mouse, rat and human microsomes.
Luong, Te-Hsin, Approximations for skewed probability densities based on Laguerre series and biological applications.
Martin, Eden, Extensions of the transmission/disequilibrium test for identifying human genes.
Peck, Steven, Spatial aspects of the evolution of pesticide resistance: models and recommendations.
Sen, Amit, New tests of structural stability and applications to consumption based asset pricing models.
Sidik, Kurex, Exact unconditional tests for discrete data.
Zhai, Jun, Multiresolution analysis of random processes and application.

University of North Carolina, Chapel Hill (14)

Mathematics
Donnelly, Robert, Explicit constructions of semisimple Lie algebras.
Kart, Michael, Combinatorial models for families of characters of Lie groups.
Koss, Lorelle, Ergodic and Bernoulli properties of analytic maps of complex projective space.
Leukert, Sven, Representations and nonpositively curved solvmanifolds.
Priebe, Natalie, Detecting hierarchy in tiling dynamical systems via derived Voronoi tessellations.
Schaubroeck, Lisbeth, Analytic and geometric properties of plane harmonic functions.

Operations Research
Arquelles, Cristina, Exploiting special structure to enhance efficiency of manufacturing simulation.
Gautam, Narasajan, Quality of service for multi-class traffic in high-speed networks.
Marasigan, Farah, Computing performance measures on planar graphs.
Reid, Marcia, k-net channel routing for VLSI design.
Reid, Thomas, Admission control for transient source systems.

Statistics
Duckworth, William, Minimax and minimax distance designs.
Mandal, Pranab, Topics in stochastic nonlinear filtering.
Marion, Michael, Asymptotics for conditional U-statistics with applications.

University of North Carolina, Charlotte (1)

Mathematics
Kao, Kuo-Yuan, Hot and tepid combinatorial games.

North Dakota State University, Fargo (3)

Mathematics
Cai, Xiaotao, (SMO)Cycles in graphs.
Sherman, Margaret, The identification of non-adjacent vertices in n-critical graphs.
Zhao, Yunhe, Numerical solutions for boundary integral equations.

Ohio Air Force Institute of Technology (3)

Mathematics and Statistics
Anderson, Bruce, The rational resolution analysis: a generalization of multiresolution analyses with application to the specific emitter problem.
Schmitt, Lawrence (Larry), Optimal pulsed pumping for remediation of aquifers when sorption is rate-limited.
Suzuki, Laura, Representations, approximations, and algorithms for mathematical speech processing.

Bowling Green State University (8)

Mathematics and Statistics
Agustin, Ma, Zenia, Smooth goodness-of-fit tests for imperfect repair models.
Agustin, Marcus, Dynamic competing risks models: inference and applications.
Chowdhury, Javed, Preliminary test approach to shrinkage estimation of parameters in a variety of statistical models.
Green, Daniel, Normal-type structure, ultrapowers, and convexity conditions in Banach spaces.
Menad, Nacer, Covolume methodology for partial differential equations.
Raminayake, Kaledi P. Asoka, Epidemic change point and trend analyses for certain statistical models.
Senior, Kenneth, Differentiability of solution maps in abstract parabolic PDE.
Wartow, Pamela, Lexicographic powers of the real line.

Case Western Reserve University (4)

Mathematics
Biggins, John, On infinite groups and unitary duality.

Operations Research and Management
Liu, Gia-Shie, Group maintenance policies for queueing systems with unreliable servers.
Sha, Jung-Huei, Using a maximum matching to find a minimum vertex cover in a graph.
Zhong, Jianmin, A principle pivoting algorithm for solving the piecewise linear complementarity problem.

Kent State University (9)

Mathematics and Computer Science
Baglama, James, Krylov subspace methods with applications in liquid crystal modeling.
Bernardes, Nilson Da Costa Jr., Some problems on iteration theory and on polynomials.
Bos, Jorn, Three problems on hypercyclic operators.
Choi, Hong-In, Fault tolerance in bitonic sorting networks and static shuffle-exchange networks.
Fernandez, Cecilia, Some problems concerning multilinear and holomorphic maps on Banach spaces.
Goonatilake, Rohitha, On probabilistic aspects of summability theory.
Osiakwewu, Jeffrey, Summability of matrix submethods and spliced sequences.
Patterson, Richard, Some theorems in the theory of divergent double sequences.
Pawlowski, Piotr, The location of the zeros of a polynomial and a generalized Jensen’s inequality.

Ohio State University (13)

Mathematics
Balteanu, Corneli, Coherence for iterated monoidal categories and homological obstructions to delooping.
Chen, Yuqiang, Farrell cohomology of automorphism groups of free groups of finite rank.
Gold, Jeffrey, Estimation of the fractal dimensions of selected classes of Julia sets using spectral radius calculations.
Hravec, Jan, Norms of powers of absolutely convergent Fourier series of modulus 1.
Larih, Paul, Results in polynomial recurrence.
Makarov, Mihail, On the second Poisson structure for the Korteweg-DeVries equation.
Stadler, Jonathan, Schur functions, juggling and statistics on shuffled permutations.
Vompe, Dmitry, Numerical modeling of crystal growth in Bridgman device.
Wayand, Lee, Identifying communication obstacles that arise when translating the modern mathematics classroom to distance.
Weishaar, Robert, An asymptotic study of several models of sparse graphs.
**Portand State University** (2)  
**Mathematical Sciences**  
**Cresap, David**, Contributions in survival analysis: estimation of location and scale using Cramer-von Mises methods on randomly censored data.  
**Rowan, Costin**, On the transversal geometry of Poisson manifolds.

**University of Oregon** (3)  
**Mathematics**  
**Barthwal, Savi**, Semiperfect CS-rings.  
**Schaller, Elena**, Admissibility and asymptotic behavior of first and second order differential equations in Banach spaces.  
**Tannan, Sujal Jhingan**, On the transversal geometry of Poisson manifolds.

**University of Cincinnati** (1)  
**Mathematics**  
**Kangro, Urve**, Unique global solvability for initial-boundary value problems for Black-Scholes equations.

**University of Oregon** (3)  
**Mathematics**  
**Breuer, Joseph (Patrick)**, Complex subgroups of real reflection groups.  
**Heo, Sangwoon**, Constructing cubature formulae on the disk, the triangle, and the sphere.  
**Herman, Edwin (Ed)**, Totally disconnected topological groups.

**University of Oklahoma** (4)  
**Statistics**  
**Kim, Chansoo**, Robust tests using weighted likelihood estimation.  
**Masters, Brenda**, Grade density estimation.  
**Richter, Scott**, Exact and estimated exact tests for designs involving interactions using the rank transform.  
**Wilson, Craig**, An approach to modelling the coefficient of variation in factorial experiments.

**University of Oklahoma** (1)  
**Mathematics**  
**Bhatia, Kavita**, Pleating coordinates for a slice of the deformation space of a hyperbolic 3-manifold with cusps.

**Oregon State University** (4)  
**Mathematics**  
**Fischer, James**, A new look at the Ashtekar-Magnon energy condition.

**Pennsylvania State University** (3)  
**Mathematics**  
**Chen, Jinghong**, Hydrodynamic coupling between a viscoelastic gas/liquid interface and a swirling vortex flow.

**University of Pittsburgh** (8)  
**Mathematics**  
**Chen, Zhixiong**, Wave propagation in neuronal models.  
**Fairag, Faisal**, A two-level discretization method for the streamfunction form of the Navier-Stokes equations.
Doctoral Degrees Conferred

Pinto, David, Computational, experimental, and analytic explorations of neuronal circuits in the cerebral cortex.
Wang, Chie Bing, Asymptotics for Painlevé III by isomonodromic deformation method.
Wang, Xiyou, On positive definiteness reproducing spaces.

STATISTICS
Jong, Yi-Kuan (Joei), Burn-in and bathtub distributions.
Shen, Sa, A bootstrap confidence procedure for a pulse detection model for hormone secretion data.

RHODE ISLAND

Brown University (18)
APPLIED MATHEMATICS
Boae, Michelle, Representations, asymptotics and approximations for large deviations and risk-sensitive problems.
Chi, Zhiyi, Probability models for complex systems.
Ferry, James, Thermal convection: a numerical simulation and modal analysis.
Gottlieb, Sigal, Convergence to steady state of weighted ENO schemes, norm preserving Runge-Kutta methods and a modified conjugate gradient method.
Kochanek, Kevin, Dynamic programming algorithms for maximum likelihood decoding.
Nicholls, David, Traveling gravity water waves in two and three dimensions.
Ramanan, Kavita, Construction and large deviations analysis of constrained processes with applications to communication networks.
Robertson, Christopher, Tracking of objects from image sequences using Lagrangian dynamics and nonlinear filtering.
Stephens, Monica, A one-dimensional mixed-layer ocean model for use in 3-D climate simulations.
Su, Hsuan-Wen, Periodic solution of finite regularity for the nonlinear Klein-Gordon equation.
Tufio III, Henry Michael, Algorithms for large scale parallel simulation of unsteady incompressible flows with three-dimensional complex geometrics.
Yang, Baolin, Spectral methods and absorbing boundary conditions.

MATHEMATICS
Al-Lawatia, Mohammed, Algorithm development and numerical analysis of transport equations.
Cormea, Emil, Multiresolution analysis of nonlinear phenomenon arising in surface modeling.
Ho, Chih-Chang, The cycling of partitions and compositions under repeated shifts.
Nagy, Marton, Expandably finitely based algorithms.
Pan, Chunliang, Insertion properties of monotonically defined spaces.
Szarvas, Tibor, Uniform Lp(w) spaces.

STATISTICS
Merchant, Aparna, Improved multiple comparisons in response surface methodology.
Owen, William Jason, Accelerated test models using the Birnbaum-Saunders distribution.
Street, Walter Scott, IV, B-splines and nonlinear mixed models for environmental time series.
Tu, Wenchu, Empirical Bayes analysis of count data.

University of Rhode Island (3)

University of South Carolina (10)

University of Tennessee (4)
MANAGEMENT SCIENCE
Flanagan, Debra, Optimal monitoring systems using statistical experimental design.

MATHEMATICS
Collier Melescue, Suzanne, A theory on perturbations of the Dirac operator.
Kim, Hwankoo, Factorization in monoid domains.
Kim, Yongkuk, Codimension two submanifold decompositions that induce approximate fibrations.

Vanderbilt University (10)

MATHEMATICS
Assaf, IV, David, Sensitivity of spline functions on triangulation to vertex perturbation.
Barton, David, On hyponormal tuples of commuting operators with finite rank self-commutators.
Dishman, Laurie Gail Plunk, Intersassociativity and strong intersassociativity.
Hota, Sanjukta, Mathematical models of respiratory function.
Johnson, Michael Eugene, Resonances in periodic chemotherapy scheduling; age structured models.
Kessler, Walter Bruce, Construction of orthogonal compactly-supported scaling functions and multiwavelets on arbitrary meshes.
Lee, Hoonyoung, Recognizable elements of quantales: a result of Myhill revisited.
Menser, David, Lower bounds on the circumference of graphs in terms of girth and degree conditions.
Talbert, Robert, Stratified and equivariant homology via homotopy colimits.

Texas (7)

Rice University (7)
COMPUTATIONAL AND APPLIED MATHEMATICS
Martinez, Monica, A priori error estimates of finite element models of systems of shallow water equations.
Williams, Pamela, Effective finite termination procedures in interior point methods for linear programming.
Yang, Chao, Accelerating the Arnoldi iteration-theory and practice.

Tennessee (3)

University of Memphis (3)
MATHEMATICAL SCIENCES
Lindeman, William, Edge extremal graphs with Hamiltonian properties.
Song, Hongjun, Control structures for software agents.

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Kim, Yongkuk, Codimension two submanifold decompositions that induce approximate fibrations.

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Kim, Yongkuk, Codimension two submanifold decompositions that induce approximate fibrations.

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Hota, Sanjukta, Mathematical models of respiratory function.
Johnson, Michael Eugene, Resonances in periodic chemotherapy scheduling; age structured models.
Kessler, Walter Bruce, Construction of orthogonal compactly-supported scaling functions and multiwavelets on arbitrary meshes.
Lee, Hoonyoung, Recognizable elements of quantales: a result of Myhill revisited.
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Talbert, Robert, Stratified and equivariant homology via homotopy colimits.

Texas (7)

Rice University (7)
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Williams, Pamela, Effective finite termination procedures in interior point methods for linear programming.
Yang, Chao, Accelerating the Arnoldi iteration-theory and practice.

Tennessee (3)

University of Memphis (3)
MATHEMATICAL SCIENCES
Lindeman, William, Edge extremal graphs with Hamiltonian properties.
Song, Hongjun, Control structures for software agents.
Cunningham, Nancy, A variational approach to local uniqueness of immersed minimal surfaces in $\mathbb{R}^3$.

Hawking, Christopher, A minimization of a curvature functional on fiber bundles.

Ledbetter, Ashley, Energy minimizers, gradient flow solutions, and computational investigation in the theory of biharmonic maps.

McBain, Mary, Can you hear the size of vertices? An inverse spectral problem of Laplacians on weighted graphs.

Southern Methodist University (4)

Mathematics

Gonzalez Santos, J. German, A numerical study of simple shearing flow of foams.

Kamm, Julie, Singular value decomposition-based methods for signal and image processing.

Statistics and Probability

Hartfield, Molly Isbell, Characterizing stability in time across geographical regions.

Vergara, Stephen Wiechecki, Computational aspects of multi-resolution analysis (MRA) and wavelets.

Texas A&M University (21)

Mathematics

Bobby, Daniel, Concerning the Halmos-Mazurkiewicz theorem in monotonically normal spaces.

Chiu, Wan-Yi, Optimal fractional factorial designs.

Gu, Qing, The wavelets and wavelet sets.

Han, Dequan, Irrotational retraction unitary systems and extensions of triangular operators.

Hanisch, Jorg, Computational aspects of spline-wavelets.

Jonas, Eljegov, On the structure of operators and wavelets.

Kamat, Vishnu, Operator algebras, wandering subspaces and wavelet theory.

Lau, Wai Wah, Reflexive sheaves on $\text{PC}$ and the dimension of spaces of multivariate splines.

Lauri, Vasilie, Some results on invariant subspaces.

Lu, Shijin, Wavelets associated with a multi-resolution analysis (MRA) and infinite matricially normed spaces.

Mashat, Daoud, Fast algorithms and their application to numerical quaiconformal mappings of doubly connected domains onto annuli.

Sun, Tong, Locking-free finite element methods for thin plates and shells.

Zeng, Chongchun, On the theory and practice of fitting distributions to data.

Statistics and Probability

Chandra, Prakash, Topics in nonparametric regression: mean functional estimation and bootstrap confidence intervals for local estimating equations.

Liang, Xiao-Dong, A diagnostic test of heteroscedasticity based on nonparametric smoothing.

Macrì, Jeffrey Dean, Nonparametric regression and measurement error.

Newman, Richard, Testing parallelism among the profiles after a certain time period.

Park, Eun Sug, Multivariate receiver modeling from a statistical science viewpoint.

Texas Tech University (6)

Mathematics and Statistics

Chandrawansa, Kumari, Statistical inverse estimation of irregular input signals.

Chiu, Wan-Yi, Optimal fractional factorial designs.

Deo, Roy, Sasa, The role of musculoskeletal dynamics and neuromuscular control in stress development in bone.

Gu, Qing, Wavelet detection of coherent structures in wind fields.

Hodges, Lucille, Quadrature, interpolation and observability.

Tomlinson, John, Functional techniques for data analysis.

Wheeler, William, On properties of the zeros of the Cesaro approximants to outer functions.

University of Houston (3)

Mathematics

Khoury, Raja, Closest points to the space of stochastic matrices.

Reff, Andrea, Existence of weak solutions for a class of conservation laws with multiple characteristics.

Zhang, Zhanqian, The existence and decay of solution of a class of non-strictly hyperbolic systems of conservation laws.

University of North Texas (3)

Mathematics

Bacchus, Dragos, Spaces of measures and an introduction to functional analysis.

Bhat, Diana, Minimality of the special linear groups.

Opalecky, Robert, A topological uniqueness result for special linear groups.

University of Texas, Arlington (3)

Mathematics

Abraham, Mahmoud, A study of stochastic partial differential equations.

Corley, Herbert W., Jr., Maximization with respect to cones.

Peters, Andrew, A generalization of the Shapley value for games in partition function form: axioms, formula and potential.

University of Texas, Austin (13)

Mathematics

Abramson, Daniel, On an integral related to Vinogradov’s integral.

Chiu, Wan-Yi, Optimal fractional factorial designs.

Dresden, Gregory, Spectra of heights over certain finite groups.

Fogel, Karrolyne, Stark’s conjecture for octahedral extensions.

Handfield, Francis, Adiabatic limits of the anti-self-dual equation.

Harper, Shinko, Segre class of almost complete intersections.

Judd, Robert, On Bourgain’s index and Schreier sets.

Lane, David, Exceptional surfaces for resolution of isolated threefold singularities.

Osiris, John, Manifolds obtained by Dehn surgery on infinitely many distinct knots in $S^3$.

Paul, Randall, Normal form techniques in degenerate Hamiltonian systems.

Sedgwick, Eric, On the classification and stabilization problems for Heegaard splittings of three-manifolds.

Shults, Benjamin, Discoveries and experiments in the automation of mathematics.

Yao, Rieck, Heegaard surfaces and Dehn fillings: $G(0, 1, 1) \leq G(M)$.

University of Texas, Dallas (1)

Mathematical Sciences

Zuo, Yijun, Contributions to the theory and applications of statistical depth functions.

UTAH

Brigham Young University (3)

Mathematics

Goodwell, Troy, Projections of compacta in $\mathbb{R}^n$.

Omran, Mohammad, The real positive semi-definite completion problem for two unspecified entries.

Zeng, Chongchun, Normally hyperbolic invariant manifolds and invariant foliations for semiflow in Banach spaces.

University of Utah (6)

Mathematics

Chen, Huayong, Nonexistence of isometric immersions of noncompact surfaces with nonpositive curvature.
Doctoral Degrees Conferred

**Chen, Chi-kan**
Non-local thermo elastic phase field models.

**Fletcher, Jeffrey**
Homological group invariants.

**Macura, Natasa**
Quasi-isometries and mapping Tori.

**Mineyev, Igor**
Exotic homology theories and negative curvature in groups.

**Xie, Min**
Theoretical studies of forced excitable systems.

**University of Virginia**

**VERMONT**

**University of Vermont**

**Utah State University**

**Fletcher, Jeffrey**
Chen, Chi-kan
Doctoral Degrees Conferred

**Macura, Natasa**
Quasi-isometries and mapping Tori.

**Mineyev, Igor**
Exotic homology theories and negative curvature in groups.

**Xie, Min**
Theoretical studies of forced excitable systems.

**Virginia Commonwealth University**

**Biostatistics**

Farina, Dianne
The development of D-optimal designs for exponential survival models.

Kuhn, Andrew
Incorporating noise and dispersion effects into medical experiments involving failure time data.

London, Wendy
Application of within-cluster correlations in a generalized estimating equations approach (GEE); implications for inference in survival analysis.

Tefaye, Fisseha
Modeling onset times in twins based on multivariate frailty model.

**Virginia Polytechnic Institute and State University**

**Industrial and Systems Engineering**

Al-Loughani, Intesar
Algorithmic approaches for solving Euclidean distance location and location-allocation problems.

Saharko, Arief
Tactical network flow and discrete optimization models and algorithms for the empty railcar transportation problem.

**Mathematics**

Kang, Jinghong
The computational Kleinman-Newton method in solving nonlinear nonquadratic control problems.

Mackin, Gail
On an order-parameter model of solid-solid phase transitions.

Ramirez-Gomez, Edgaurdo
Finite element methods for parameter estimation in steady-state diffusion equation.

Ranalli, Ramona
The structure of the 2-Sylow subgroups of the ideal class groups of imaginary bicyclic biquadratic fields.

Repp, Andrew
Discrete Riemann maps and the parabolicity of tilings.

Taylor, Frank
Abelian quintic fields.

Yu, Tom
On-line traffic signalization using robust feedback control.

**Statistics**

Beaghen, Michael
Canonical variate analysis and related methods with longitudinal data.

Kim, Ki-Ho
Construction and analysis of linear trend-free factorial designs under a general cost structure.

Kitchin, Patty
A new method for comparing experiments and measuring information.

Wang, Shuh-Cheng (David)
Analysis of zero heavy data using a mixture model approach.

**Washington**

**University of Washington**

**Applied Mathematics**

Jackson, Trachette
Mathematical models in two-step chemotherapy.

Nelson, Patrick
Mathematical models of HIV pathogenesis and immunology.

Stollnitz, Eric
Reproducing color images with custom inks.

Thompson, Christopher
A stochastic, linear, dynamic model El Nino/southern oscillation.

**Biostatistics**

Kulich, Michal
Additive hazards model with incomplete covariate data.

Lamiey, Thomas
Marginal regression modelling of weakly dependent data.

Nunn, Martha
Influence diagnostics for correlated data.

Peckova, Monika
Adaptive testing for difference in survival distributions.

Xie, Sharon
Covariate measurement error methods in failure time regression.

**Mathematics**

Burton, Cynthâa
Hopf algebras and Dieudonnâe modules.

Jay, Jon
Recovering a layered viscoacoustic medium from its response to a point source.

Martinez-Morales, Josâe Luis
Geometric data fitting.

Wang, Jenn-Nan
Inverse backscattering for acoustic and Maxwell’s equations.

Wiegmann, Andreas
The explicit jump immersed interface method and interface problems for differential equations.

**Statistics**

Carlin, Sandra
Statistical inference for partially observed Markov population processes.

Hu, Hui-Lin
Large sample theory for pseudo maximum likelihood estimates in semiparametric models.

Keim, Michelle
Bayesian information retrieval.

Sardy, Sylvain
Regularization techniques for linear regression with a large set of carriers.

Schaffner, Andrew
Tools for the advancement of undergraduate statistics education.

Zhang, Ying
Estimation for counting processes with incomplete data.

**Washington State University**

**Mathematics**

Roycroft, Denise
A quantum mechanical manifold and its integral geometric transfer to classical phase space.

Saier, Nelson
Involution fixations of projective spaces.

Terry, Christopher
Normal subgroups of GL(2, A).

**Statistics**

McFarland, Harry
The exact distributions of "Plug-in" discriminant functions in multivariate analysis.

**VIRGINIA**

**College of William and Mary**

**Mathematics**

Glen, Andrew
A probability programming language: development and applications.

**George Mason University**

**Applied and Engineering Statistics**

Ahn, Sung
A maximum likelihood method for density estimation.

Levine, Jonathan
Choosing strata weights in two group fixed effect analysis of variance with multiple strata when interaction may be present: a problem in analyzing multicenter clinical trials.

**University of Virginia**

**Mathematics**

Roycroft, Denise
A quantum mechanical manifold and its integral geometric transfer to classical phase space.

Saier, Nelson
Involution fixations of projective spaces.

Terry, Christopher
Normal subgroups of GL(2, A).

**Statistics**

McFarland, Harry
The exact distributions of "Plug-in" discriminant functions in multivariate analysis.
Jiang, Pelei, Interior point methods for stochastic programming and related problems.
Zhu, Min, Techniques for large-scale nonlinear optimization—principals and practice.

WEST VIRGINIA

West Virginia University, Morgantown (4)

Mathematics

Buchanan, Il, Hollie, Graph factors and Hamiltonian decompositions.
Crupper, Matthew, Hall’s condition and list coloring.
Jordan, Francis, Cardinal numbers connected with adding Darboux-like functions.
Zhu, Chen, Asymptotic behaviors of solutions to some hydrodynamics models of semiconductors.

WISCONSIN

University of Wisconsin, Madison (35)

Mathematics

Abreu, L., Mahmood, H., Discrete stochastic optimization using random search.
Annesson, Carl D., Bow and stern flows with gravity and surface tension.
Clotou, Stefan, Ideals of enveloping algebras.
Coughman, John S., Bipartite P- and Q-polynomial association schemes.
Eisen, Nicholas L., Holomorphic sections of an orientable vector bundle.
Fokh-Gabayet, Magali L., Bounderness of certain convolution operators.
Griffiths, Evan J., Completely mitotic Turing degrees, jump classes, and enumeration degrees.
Herrmann, Paul D., Symmetric and asymmetric buckling of circular arches.
Kim, Joonil, Hilbert transform and maximal function along curves in the Heisenberg group.
Lindhurst, Scott C., Homology and invariants of reflection groups and Lie algebras.
Montgomery, Aaron G., Lusternik-Schnirelmann category and simplicial sets.
Moon, Dongho, Schur-Weyl duality for Lie super algebra and Lie color algebras.
Nam, Ki-Bong, Generalized Witt algebras over a field of characteristic zero.
Parker, Darren B., Hopf Galois extensions and forms of coalgebras and Hopf algebras.
Shaw, May Shu-Mei, Solution to the coagulation and fragmentation and partial differential equation.
Sned, Elizabeth S., Tolerance graphs and pseudo-interval graphs.
Strom, Jeffrey A., Category weight and essential category weight.
Torres-Gallardo, Evelyn, A FOSLS method for the overlapping grid problem.
Tsai, Tsang-Hsi, The uniform CLT and LL for Markov chains.
Uen, Wuu-Nan, A descriptive study of mathematical teaching styles of junior high mathematics teachers in Taiwan.
Westlund, Eric R., The boundary manifold of an arrangement.
Yeh, Chien-ning, o-minimal expansions of ordered sets with unary functions.
Yeh, Nai-Sher, Contributions to forced capillary-gravity waves under Hocking’s edge condition.

Statistics

Borghi, Elaine, Methods of inference in Strauss disc processes.
Chen, Yinzhong, Inference with complex survey data under random hot deck imputation.
Hsiao, Chin-Fu, Are sequential trial designs bayes?.
Ladd, William, Two-dimensional self-modeling.
Martin, Sandra, Profiling methods in nonlinear models inverse prediction, and calibration.
Pan, Wei, Nonparametric and semiparametric survival analysis with left truncated and internal censored data.
Tao, Xiaoying, Estimation methods of statistical models for longitudinal data.
Yeo, In-Kwon, On alternative power transformation to handle skewness.
Zhang, Yurui, Two new algorithms for nonparametric analysis given incomplete data.

University of Wisconsin, Milwaukee (6)

Mathematical Sciences

Abreu, Sigrid, Asymptotic behavior and design of a sieve estimator for a Gaussian mean function.
Balser, Tobias, New approximations for avoiding Gibbs phenomenon in wavelet subspaces.
Chen, Daining, Multipliers on certain function spaces.
Diestelkamp, Wiebke, Projections, decompositions and parameter inequalities for orthogonal arrays.
Fischer, Hans-Juergen, Visual boundaries of right angled Coxeter groups and reflection manifolds.
Inform, Maha, The weighted continuous Galerkin method for initial value problems.
Petersen, Hans-Juergen, A spline estimate of the score function in Adaptive L1-estimation for linear regression.

Price, Kenneth, Enveloping algebras of Lie color algebras.
Shen, Xiaoping, Wavelet based numerical methods.

WYOMING

University of Wyoming (6)

Mathematics

Borghi, Elaine, Methods of inference in Strauss disc processes.
Chen, Yinzhong, Inference with complex survey data under random hot deck imputation.
Hsiao, Chin-Fu, Are sequential trial designs bayes?.
Ladd, William, Two-dimensional self-modeling.
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Tao, Xiaoying, Estimation methods of statistical models for longitudinal data.
Yeo, In-Kwon, On alternative power transformation to handle skewness.
Zhang, Yurui, Two new algorithms for nonparametric analysis given incomplete data.

Statistics

Seier, Edith, A family of skewness and kurtosis measures.


Supplementary List

The following list supplements the list of titles published in the January 1998 Notices, pages 45–63.

COLORADO

University of Colorado, Boulder (1)

Mathematics

Azmi, Fatima Mohammad, Computation of the equivariant cocycle of the Dirac operator.