
Doctoral Degrees Conferred

2006–2007

ALABAMA

Auburn University (8)

MATHEMATICS AND STATISTICS

Castellana, Vincent, On the spectrum of minimal covers by triples.

Diawara, Norou, New classes of multivariate gamma survival and reliability models.

Nguyen, Tung, A-stability for two species competition diffusion systems.

Ozkan, Sibel, Hamilton decompositions with primitive leaves.

Pettis, Carl, The triangle intersection problem for hexagon triple systems.

Stone, Jennifer, Non-metric continua that support Whitney maps.

Trimm, Janet, On Frobenius numbers in three variables.

Tuncer, Necibe, A novel finite element discretization of domains with spheroidal geometry.

University of Alabama at Birmingham (2)

MATHEMATICS

Areeg, Abdalla, Monte-Carlo studies with random fuzzy numbers.

Childers, Douglas, Some topological results on the influence of critical points in rational dynamics.

University of Alabama-Tuscaloosa (3)

MATHEMATICS

Bulka, Yuriy, Multiple nonlinear Volterra integral equations.

Kim, Young Hee, A hysteresis model for two-dimensional input signals.

Qui, Lin, Morrey type spaces and Carleson measures.

ARIZONA

Arizona State University (9)

MATHEMATICS AND STATISTICS

Driver, Eric, A targeted Martinet search.

Imran, Mudassar, Mathematical models in biofilm and antibiotic treatment.

Infante, Nicole, Students' understanding of related rates problems in calculus.

Knapp, Jessica, Students' appropriation of proving practices in advanced calculus.

Lu, Yan, Longitudinal estimation in dual frame surveys.

Mason, Clinton, Modeling glucose dynamics leading to a diabetic state with simulations performed from data.

Shim, Eunha, Mathematical models of rotavirus transmission in the presence of maternal antibodies and vaccination.

Tridane, Abdessamad, Mathematical analysis of immunological and epidemiological models of influenza infection.

Wang, Hao, Mathematical analysis of trophic interactions: From bacteria competition of lemming cycles.

University of Arizona (9)

MATHEMATICS

Caine, John, Poisson structures on U/K and applications.

Habermas, Derek, Compact symmetric spaces, triangular factorization and Cayley coordinates.

Konstantinou, Panagiota, Homomorphisms of the fundamental group of a surface into $PSU(1, 1)$ and the action of the mapping class group.

Levitt, Benjamin, Tate-Shafarevich groups of Jacobians of Fermat curves.

Lo, Assane, Witten Laplacian methods of critical phenomena.

Punosevac, Predrag, Regularization of simultaneous binary collisions in some gravitational systems.

Spiegler, Adam, Stability of generic equilibria of the $2n$ -dimensional free rigid body using the energy-Casimir method.

PROGRAM IN APPLIED MATHEMATICS

Garcia-Naranjo, Luis, Almost Poisson brackets for nonholonomic systems on Lie groups.

McNicholas, Erin, Embedded tree structures and eigenvalue statistics of genus zero one-face maps.

ARKANSAS

University of Arkansas at Fayetteville (2)

MATHEMATICS AND SCIENCES

Kali, Zdenka, Two extremal problems in complex function theory.

Lewis, Camille, Homotopy techniques and polynomial roots.

CALIFORNIA

California Institute of Technology (5)

APPLIED AND COMPUTATIONAL MATHEMATICS

Bou-Rabee, Nawaf, Hamiltonian-Pontryagin integrators on Lie groups.

Dondl, Patrick Werner, Structure and evolution of Martensitic phase boundaries.

Latini, Marco, Simulations and analysis of two- and three-dimensional single-mode Richtmyer-Meshkov instability using weighted essentially non-oscillatory and vortex methods.

Zhang, Lei, Metric based upscaling for partial differential equations with a continuum of scales.

MATHEMATICS

Pelayo, Roberto, Diameter bounds on the complex of minimal genus Seifert surfaces for hyperbolic knots.

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 2006, to June 30, 2007) reported in the 2007 Annual Survey of the Mathematical Sciences by 197 departments in 143 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 2008 issue of the *Notices*.

Claremont Graduate University (6)

SCHOOL OF MATHEMATICAL SCIENCES

Cadwallader-Olsker, Todd, Proof schemes and proof writing.

Daneshbod, Yousef, Mathematical models in microfluidics: Capillary electrophoresis and sessile drop physics.

Gasner, Scott, Cellular pattern formation and noise in $O(2)$ symmetric systems.

Lewis, Steven, Bayesian parameter and order estimation in profile hidden Markov models.

Schmitz, Adeline, Constructive neural networks for function approximation and their application to *CFD* shape optimization.

Sunahata, Hiroki, Interaction of the quantum vacuum with an accelerated object and its contribution to inertia reaction force.

University of California, Berkeley (33)

GROUP IN BIOSTATISTICS

Bein, Edward, Topics in causal inference: Analyzing psychotherapy outcome studies, convex-combination estimators, and G -computations model selection.

Petersen, Maya, Applications of causal inference methods to improve the treatment of antiretroviral-resistant HIV infection.

MATHEMATICS

Alappatu, Jomy, An analysis of randomized algorithms on trees.

Anderson, Bernard, Relative properties of reals.

Assaf, Sami, Dual equivalence graphs, ribbon tableaux and MacDonal polynomial.

Berbec, Ioan, Group schemes over Artinian rings and applications.

Cameron, Maria, Seismic velocity estimation from time migration.

Carnahan, Scott, Monstrous Lie algebras and generalized moonshine.

Chen, Yanfeng, Categorification of representations of quantum groups and invariants of tangle cobordisms.

Chester, Elizabeth, Fast methods for computing all-to-all geodesic paths for the eikonal equation.

Christianson, Hans, Quantum monodromy and non-concentration near a closed semi-hyperbolic orbit.

Franklin, Johanna, Aspects of Schnorr randomness.

Goodrick, John, When are elementarily bi-embeddable models isomorphic?

Greicius, Aaron, Elliptic curves with surjective global Galois representation.

Hoyt, Crystal, Kac-Moody superalgebras of finite growth.

Huh, Jae-Seok, Implicit interface finite element method for elliptic interface problems.

Inoue, Taiyo, Organizing volumes of right-angled hyperbolic polyhedra.

Kelley, James, Homotopical syzygies in K -theory.

Kirkpatrick, Kay, Rigorous derivation of the Landau equation in the weak coupling limit.

Lyo, Grace, Semilinear actions of Galois groups and the algebraic K -theory of fields.

Marzuola, Jeremy, A stable class of perturbations for minimal mass solitons of saturated NLSE in 3d.

Medvedev, Alice, Group-like minimal sets in ACFA.

Miller, Carl, Cohomology of p -torsion sheaves on characteristic- p curves.

Morrison, Scott, A diagrammatic category for the representation theory of $U_q(\mathfrak{sl}_n)$.

Nieh, Ari, Decategorification of local $\mathfrak{sl}(2)$ and $\mathfrak{sl}(3)$ Khovanov homology.

Shan, Ying, Solving partial differential equations on irregular domains with moving interfaces, with applications to superconformal electrodeposition in semiconductor manufacturing.

Spivak, David, Quasi-smooth derived manifolds.

Wang, Jiajun, Cosmetic surgeries, nice Heegaard diagrams and Floer homology.

Weare, Jonathan, Smoothing and filtering of stochastic ordinary and partial differential equations by efficient path sampling.

Webster, Ben, Poisson algebraic geometry in representation theory and combinatorics.

Weinstein, Jared, Automorphic representations with local constraints.

Yazdani, Soroosh, Modular forms with odd congruence numbers.

Yu, Josephine, Combinatorial aspects of tropical geometry.

University of California, Davis (14)

MATHEMATICS

Choup, Leonard, Edgeworth expansion of the eigenvalue distribution function of GUE and LUE.

Kuang, Jessica, Models of seed predation and coexistence of desert annual plant species.

Lankham, Isaiah, Patience sorting and its generalizations.

Liao, Ben-Shan, Subspace projection methods for model order reduction and nonlinear eigenvalue problem.

Pitman, Damien, Clustering in random fitness landscapes: Conformity and incompatibility.

Sternberg, Philip, Applications of crystal bases to current problems in representation theory.

Wissman, Brian, Global solutions to the ultra-relativistic Euler equations.

STATISTICS

Ding, Jimin, Joint modelling of survival and longitudinal data.

Liao, Shanmei, Application of bootstrap confidence region for multivariate analysis.

Metoyer, Candace, Estimation methods for linear, nonlinear and multidimensional time series: Applications of state-space modeling.

Wang, Lu, Penalization and rank reduction.

Ye, Jingjing, Preprocessing and biomarker detection analysis for biological mass spectrometry data.

Zhang, Nan, Functional data analysis for non-Gaussian longitudinal data.

Zhu, Shuying, Bootstrap methods with applications in multivariate analysis.

University of California, Irvine (11)

MATHEMATICS

Bai, Li, Time reversal through rough surface.

Bargagliotti, Anna, An exploration of the effects of data based on ranks.

De Santiago, Rafael, Interest rate derivatives and value-at-risk with multiscale stochastic volatility.

Equalada, Tristan, Small-time asymptotics for multi-asset options.

Kang, Yang, The Liouville equation for general ergodic magnetic Schrödinger operations.

Kronewetter, Jason, Advances in topological social choice.

Lam, Kwan Hang, Weighted Poincaré inequality and manifolds with $\text{Spin}(9)$ holonomy.

Lin, Christopher, Curvature-induced quantization in tubular neighborhoods about complete Riemannian manifolds.

Lunasin, Evelyn, Analytical and computational study of certain sub-grid scale L -models of turbulence.

Macklin, Paul, Toward computational oncology: Nonlinear simulation of centimeter-scale tumor growth in complex, heterogeneous tissue.

Natsukawa, Eisuke, On the Weil-Petersson geometry of the moduli space of Calabi-Yau manifolds.

University of California, Los Angeles (25)

MATHEMATICS

Boisvert, Alex, A new definition of the Steenrod operations in algebraic geometry.

Chan, Stephen, Colinking properties of Euclidean neighborhood retracts in merger manifolds.

Chung, Jason, Variational image segmentation and restoration using multilayer implicit curve evolution approach.

Crawford, Nick, Mean field theories and models of statistical physics.

Dokos, Pericles, On the combinatorial and spectral properties of finite quotients of the Bruhat-Tits building of the type C2 by discrete subgroups of PGSP4 and the arithmetic of quaternionic hermitian forms.

Draganova, Anna, Asymptotic existence of decompositions of edge-colored graphs and hypergraphs.

Fernandez, Rahul, Airy functions associated to compact Lie groups and their analytic properties.

Gillette, Alan, Image inpainting using a modified Cahn-Hilliard equation.

Handy, Jon, Bounded analytic functions on the complements of square Cantor sets: The corona problem and related problems.

Ioanna, Adrian, Rigidity results in the orbit equivalence theory of non-amenable groups.

Jetter, Madeleine, Steiner equivalence of convex bodies: Analytic and algebraic perspectives.

Kittrel, John, Full groups and hyperfiniteness.

O'Dell, Steve, Inverse scattering for Schrödinger type operators in exterior domains containing surfaces with interfaces.

Ryckman, Eric, Spectral equivalences for Jacobi matrices.

Skeith, William, Homomorphic encryption and non-interactive secure computation.

Sun, Hae-Sang, Non-vanishing mod p of special L -values.

Tanushev, Nick, Gaussian beams: Theory and applications.

Upton, Margaret, Galois representations attached to Picard curves and equidistribution of traces of Hecke operators for GL_2 .

STATISTICS

Baek, Jong-Ho, Statistical methods for a sensor rich building.

Erickson, Stephen, Hierarchical empirical Bayes analysis of genomic microarrays.

Kriegler, Brian, Cost-sensitive stochastic gradient boosting within a quantitative regression framework.

Li, Jinhui, Analysis of longitudinal data with missing values.

Presson, Angela, Statistical methods for complex disease analysis.

Sun, Wei, Statistical strategies in eQTL studies.

Wang, Hui, Extended homozygosity in high density genotyping.

University of California, Riverside (7)

MATHEMATICS

Crockett, Catherine, On the topology, combinatorics and geometry of circle and spherical orders.

Daudert, Britta, Epidemic modeling on complex networks, localization on snowflake domains.

Lu, Hung, p -adic fractal strings and their complex dimensions.

Morton, Jeffrey, Extended TQFT's and quantum gravity.

Rock, John, Zeta functions, complex dimensions of fractal strings and multifractal analysis of mass distributions.

Senesi, Jagannatha Prasad, Finite dimensional representation of the twisted loop algebras.

Wise, Derek, Topological gauge theory, Cartan geometry and gravity.

University of California, San Diego (14)

MATHEMATICS

Anderson, Reid, Local algorithms for graph partitioning and finding dense subgraphs.

Bandlow, Jason, Combinatorics of Macdonald polynomials and extensions.

Berg, Arthur, Nonparametric function estimation with infinite-order kernels and applications.

Colarusso, Mark, The Gelfand-Zeitlin algebra and polarizations of regular adjoint orbits for classical groups.

Erway, Jennifer, Iterative methods for large-scale unconstrained optimization.

Farina, John, Stability properties in ring theory.

Kotschwar, Brett, Some results on the qualitative behavior of solutions to the Ricci flow and other geometric evolution equations.

Lebl, Jiri, Singularities and complexity in CR geometry.

Musiker, Gregg, A combinatorial comparison of elliptic curves and critical groups of graphs.

Smith, Barry, On the values of equivariant and Artin L -functions of cyclic extensions of number fields.

Voden, Thomas, Subalgebras of Golod-Shafarevich algebras.

Wildstrom, David, Dynamic resource location on generalized distance metrics.

Wong, Aaron, The Brauer-Siegel theorem for fields of bounded relative degree.

Wroblewski, David, Non-smooth Brownian martingales and stochastic integral representations.

University of California, Santa Barbara (5)

MATHEMATICS

Dawson, Liana, Unique continuation for higher order dispersive equations.

Gunnarsson, Gunnar, Stochastic partial differential equation models for highway traffic.

STATISTICS AND APPLIED PROBABILITY

Paradkar, Deepali, Some contributions to inferential tests in mixture models and model-based clustering.

Siddiqi, Muhammad Aleemuddin, Statistical image and functional data analysis.

Villacorta, Alexander, Information diffusion in multimedia environments.

University of California, Santa Cruz (4)

MATHEMATICS

Agapito, Ruben, Study of energy decay of magnetohydrodynamics equations.

Berman, Abraham, On centers of blocks of finite groups.

McCain, William, Properties of the linearized Kepler operator.

Niche, Cesar, On the topological entropy and periodic orbits of optical and magnetic flows.

COLORADO

Colorado School of Mines (5)

MATHEMATICS AND COMPUTER SCIENCE

Crabtree, John, Design and implementation of computational automation tools for the evaluation of detailed chemical kinetic mechanisms.

Hyatt, John, Domain decomposition orthogonal spline collocation with non-matching grids.

Kurkowski, Stuart, Credible mobile ad hoc network simulation-based studies.

McMullin, Dale, A graphical data structure for complicated vector field properties and behavior.

Wang, Zhongben, Modified nodal cubic spline collocation methods for elliptic and parabolic problems.

Colorado State University (8)

MATHEMATICS

Cruceanu, Stefan, Numerical solutions of nonlinear systems derived from semilinear elliptical equations.

Devanath, Sripriya, Modular decomposition of K -hypergraphs.

Kull, Trent, Coefficient recovery in parabolic initial boundary value problems.

Sandelin, Jeff, Global estimate and control of model, numerical, and parameter error.

STATISTICS

Coar, William, State-space models for stream networks.

Merton, Andrew, Geostatistical models: Model selection and parameter estimation under infill and expanding domain asymptotics.

Ozaksoy, Isin, Modeling genetic correlation in microsatellite frequencies associated with covariates and population substructure.

Patterson, Paul, Generalized inference for mixed linear models problems.

University of Colorado, Boulder (9)

APPLIED MATHEMATICS

Ahrens, Cory, The asymptotic analysis of communications and wave collapse problems in nonlinear optics.

Jin, Chao, Parallel domain decomposition methods for stochastic partial differential equations and analysis of nonlinear integral equations.

Liu, Hong, Rare events, heavy tails, and simulation.

Sheehan, Brendan, Multigrid methods for isotropic neutron transport.

MATHEMATICS

Catone, Christopher, Projective equivalence of Finsler and Riemannian surfaces.

Deajim, Abdul, On non-associative division algebras arising from elliptic curves.

Furst, Veronika, A characterization of semiorthogonal Parseval wavelets in abstract Hilbert spaces.

Miller, Sheila, Free left-distributive algebras.

Sagullo, Noel, A Drinfeld analogue of the Brownawell-Waldschmidt theorem.

University of Northern Colorado (3)

SCHOOL OF MATHEMATICAL SCIENCES

Cribari, RaKissa, Socio-cultural factors and seventh grade students' attitudes and beliefs about mathematics.

Dollard, Clark, Preservice elementary teachers' thinking about situations involving probability.

Huang, Chein Chung, The understanding of multiplication of preservice elementary school teachers in Taiwan.

CONNECTICUT

University of Connecticut, Storrs (14)

MATHEMATICS

Foondun, Mohammad, Harnack inequalities for integro-differential operators.

Mullen, Ryan, Examples of Banach spaces that are not branch algebras.

Rogalski, Alexander, Reverse mathematics on lattice ordered groups.

Schwell, Rachel, Operads, polytopes and the A_∞ -Deligne conjecture.

Shlapaik, Yuriy, Numerical methods for finding certain solutions to Gross-Pitaevskii type equations with general potentials.

Tang, Huili, Uniqueness for the Martin-gale associated with pure jump processes.

STATISTICS

Das, Sonali, A new development of Bayesian structural equations model with application to the VHA survey data.

Diva, Ulysses, Novel approaches in modeling spatially correlated multivariate data.

Ghosh, Samiran, Clustering classification and function for high dimensional data arising from bioinformatics and related domains.

Liu, Zhaohui, Bayesian inference for non-homogeneous Poisson process models for software reliability.

Oemcke, Zoe, The estimation and forecasting of volatility: The use of stock, option and high-frequency data to assist in the valuation of options.

Pepe, William, On some bounded risk sequential procedures for exponential mean and normal density estimation.

Song, Changhong, Analyzing longitudinal data using random effects models.

Xu, Hai, Statistical inference and computing for diffusion models in finance.

Yale University (6)

MATHEMATICS

Bremer, James C., Adaptive multiscale analysis of graphs and manifolds.

Kim, Sang-hyun, Hyperbolic surfaces subgroups of right-angled Artin graph products of groups.

Licata, Anthony Michael, Moduli spaces of sheaves on surfaces in geometric representation theory.

Licata, Joan, Heegaard Floer link homology, the Thurston norm, and minimal-complexity surfaces.

Sussan, Joshua, Category 0 and $sl(k)$ link invariants.

Wong, Helen, $SO(3)$ quantum invariants: Density and applications.

DELAWARE

University of Delaware (2)

MATHEMATICAL SCIENCE

Capursi, Maria, On some projective planes of order 16 arising by Bose-Barlotti derivation.

Zhou, Junjie, Option pricing under the generalized tempered stable process.

DISTRICT OF COLUMBIA

George Washington University (4)

MATHEMATICS

Dabkowska, Malgorzata, Turing degree spectra of groups and their spaces of orders.

Ufferman, Eric, Structures and partial computable automorphisms.

Veve, Michael, Skein modules, orderable magmas, and billiards.

STATISTICS

Chen, Xiao Wu, Inference of haplotype effects in case-control studies using unphased genotype and environment data.

FLORIDA

Florida Institute of Technology (1)

MATHEMATICAL SCIENCES

Allen, Josef, Multiplicative noise ratio and speckle reduction for synthetic aperture radar imagery via nonlinear partial differential equation methods.

Florida State University (16)

MATHEMATICS

Achuthan, Srisairam, Analysis of orientational restraints in solid-state nuclear magnetic resonance with applications to protein structure determination.

Asbury, Thomas, From data to structure: Using orientational information with PISEMA spectra to build atomic models.

Galloway, Mack, Option pricing with selfsimilar, additive processes.

Laing, Christian, Biomedical applications of shape descriptors.

Mann, Jennifer, DNA knotting: Occurrences, consequences, and resolution.

Toporikova, Natalia, Regulation of rhythmic prolactin secretion: Combined mathematical and experimental study.

Tzigantchev, Dimitre, Predegree polynomials of plane configurations in projective space.

Webster, Clayton, Reduction techniques for the numerical solution to stochastic partial differential equations.

Wood, William, Combinatorial type problems for triangulation graphs.

Zhang, Jianke, Numerical methods for portfolio risk estimation.

STATISTICS

Auguste, Anna, Estimation from data representing a sample of curves.

Delpish, Ayesha, Comparison of estimators in hierarchical linear modeling.

Herbei, Radu, Quasi-3D statistical inversion of oceanographic tracer data.

Rubinshtein, Eugenia, Optimal linear representations of images under diverse criteria.

Sharma, Dinesh, Logistic regression, measures of explained variation, and the base rate problem.

Yu, Han, Nonparametric minimax testing on high frequency data.

University of Central Florida (4)

MATHEMATICS

Cowan, Doris C., Effects of atmospheric turbulence on the propagation of flattened Gaussian optical beams.

Jing, Wu, Frames in Hilbert C -modules.

Mancas, Stefan C., Dissipative solitons in the cubic-quintic complex Ginzburg-Landau equation: Bifurcations and spatiotemporal structure.

Vetelino, Frida, Fade statistics for a lasercom system and the joint PDF of a gamma-gamma distributed irradiance and its time derivative.

University of Miami (2)

MATHEMATICS

Clarke, Patrick, Duality for formal toric Landau-Ginzburg models.

Dominguez, Alvio, Non-existence of product-form solutions for some closed discrete-time queueing networks.

University of South Florida (10)

MATHEMATICS

Ameur, Kheira, Polynomial quandle cocycles, their knot invariants and applications.

Aryal, Gokarna R., Study of Laplace and related probability distributions and their applications.

Camara, Louis R., Statistical modeling and assessment of software reliability.

Cureg, Edgardo S., Some problems in products of random matrices.

Gishe, Jemal E., Finite family of orthogonal polynomials and resultants of Chebyshev polynomials.

Mostafa, Abdelelah M., Regression approach to software reliability models.

Pirnot, Joni B., Recognizable languages defined by two-dimensional shift spaces.

Quarcoo, Joseph O., Contributions to the degree theory for perturbations of maximal monotone operators.

Shibata, Michiru, Pricing models and analysis of corporate coupon-bonds and credit default swaptions.

Wooten, Rebecca Dyanne, Statistical environmental models: Hurricane, lightning, rainfall, flooding, red tide and volcanoes.

GEORGIA

Emory University (9)

BIOSTATISTICS

Moore, Renee, Prediction of random effects when data are subject to a detection limit.

Wu, Haiyan, Hierarchical analysis of microarray experiments with applications to the study of CD8 T cell immune responses.

MATHEMATICS AND COMPUTER SCIENCE

Berger, André, Faster minimum weight subgraph algorithms.

Kurzyniec, Dawid, Towards lightweight and reconfigurable resources sharing frameworks.

Liu, Jia, Pre-conditioned Kyrlov subspace methods for incompressible flow problems.

Powell, Jeffrey, Two questions about connectivity in graphs.

Tengan, Eduardo, Graphs and surfaces.

Wagner, Brian, Subgraph sequences in graphs and diagraphs.

Zich, Jan, The Hajós conjecture and triangulations.

Georgia Institute of Technology (2)

SCHOOL OF MATHEMATICS

Jiang, Wen, Maximum codes with the identifiable parent property.

Komendarczyk, Rafal, Nodal sets and contact structures.

University of Georgia (9)

MATHEMATICS

Ashton, Edward, Exploring continuous tensegrities.

Cho, Okkyung, Construction of compactly supported multiwavelets.

Guy, Michael, Moduli of weighted stable maps and their gravitational descendants.

Hower, Valerie, Hodge spaces of real toric varieties.

Mullikin, Chad, On length minimizing curves with distortion thickness bounded below and distortion bounded above.

Park, Daeshik, The Fekete-Szegő theorem with splitting conditions on the projective line of positive characteristics.

Zhou, Jie, Construction of orthonormal wavelets of dilation factor 3 with application in image compression and a new construction of multivariate compactly supported tight frame.

STATISTICS

Bhattacharya, Archan, Inference for controlled branching processes, Bayesian inference for zero-inflated count data, and Bayesian techniques for hairline fracture detection and reconstruction.

Han, LingLing, Models with subject by treatment and subject by carryover interactions and use of baseline measurements in crossover trials.

HAWAII

University of Hawaii at Manoa (3)

MATHEMATICS

Chrisman, Micah, The number theory of finite cyclic actions on surfaces.

Kaneshige, Bryon, On semifree symplectic circle actions.

Piotrowski, Andrzej, Linear operators and the distribution of zeros of entire functions.

ILLINOIS

Illinois Institute of Technology (1)

APPLIED MATHEMATICS

Zhang, Guo Quan, Iterated approximate moving least-squares: Theory and applications.

Northern Illinois University (4)

MATHEMATICAL SCIENCES

Brahma, Sanjoy, Robust and minimum norm partial quadratic eigenvalue assignment problems: Theory and computations.

Frobish, Daniel, Estimation of change points in recurrent events models.

Hein, Robert, P -polynomial table algebras and distance regular graphs.

Kallenbach, Jeffrey, Spectral concentration in the Sturm-Liouville differential equation.

Northwestern University (10)

ENGINEERING SCIENCE AND APPLIED MATHEMATICS

Clay, Matthew, Motion of thin droplets due to surfactants and gravity.

Fisher, Lael, Mathematical modeling of interfacial hydrodynamic phenomena in some liquid-fluid systems.

Norris, Scott, Evolving faceted surfaces: From continuum modeling, to geometric simulation, to mean-field theory.

Park, Jang, Numerical studies of integral equation and rod models of solid fuel combustion.

Rempe, Michael, Efficient computational strategies for simulating neural activity on branched structures.

Retford, Christopher, Multi-scale modeling of surfaces and edges of nanoscale materials.

MATHEMATICS

- Aldi, Marco*, A-branes and mirror symmetry.
- Borisov, Dennis*, Homotopy Gerstenhaber structure on deformation complex of a morphism.
- Johnson, Michael*, Results on polynomial ergodic averages.
- Voineagu, Mircea*, Semi-topological K -theory of certain projective varieties.

Southern Illinois University, Carbondale (3)

MATHEMATICS

- Chang, Jing*, Resistant dimension reduction.
- Kazi, Haseeb*, Inequalities and bounds for elliptic integrals.
- Marr, Alison*, Labelings of directed graphs.

University of Chicago (22)

MATHEMATICS

- Abouzaid, Mohammed*, On homological mirror symmetry for toric varieties.
- Balduzzi, David*, Hamiltonian geometry of moduli space of bundles on curves.
- Boyarchenko, Dmitriy*, Characters of unipotent groups over finite fields.
- Dymarz, Tullia*, Large scale geometry of certain solvable groups.
- Jackson, Craig*, Nilpotent slices and Hilbert schemes.
- Kerr, Gabriel*, Weighted blow-ups and mirror symmetry for toric surfaces.
- McCathern, Sharon*, A replacement theorem for modules with a unipotent automorphism.
- Morris, Courtney*, On free $\mathbb{Z}/p\mathbb{Z}$ actions on products of spheres.
- Ponto, Kathleen*, Fixed point theory and trace for bicategories.
- Putman, Thomas*, An infinite presentation of the Torelli group.
- Rule, David*, The regularity and Neumann problem for non-symmetric elliptic operators.
- Scheels, Ann*, The fortification illusion of migraine.
- Smithling, Brian D.*, On the moduli stack of commutative, 1-parameter formal Lie groups.
- Thomas, Anne*, Lattices in automorphism groups of polyhedral complexes.
- Walker, Katharine*, Fundamental groups of moduli spaces of quadratic differentials.
- Yanagisawa, Masuo*, Floer homology for elliptic $K3$ surface.
- Young, Robert*, Filling inequalities and the geometry of nilpotent groups.
- Zarnescu, Arghir*, Analytic study of models of complex non-Newtonian fluids.

STATISTICS

- Jager, Abigail*, Likelihood methods for potential outcomes.
- Ostrovnaya, Irina*, Estimating error rates for independent and dependent test statistics.
- Shao, Xiaofeng*, Statistical evaluation of multiresolution model output and spectral analysis for nonlinear time series.
- Yang, Jie*, Infinite exchangeability and partitions and permanent process and classification model.

University of Illinois at Chicago (21)

MATHEMATICS, STATISTICS AND COMPUTER SCIENCE

- Akbas, Erol*, A presentation for the automorphisms of the 3-sphere that preserve a genus two Heegaard splitting.
- Andikfar, Hossein*, Decomposition numbers and Cartan invariants of finite groups of Lie type in the defining characteristic.
- Beyarslan, Ozlem*, Random structures over pseudofinite fields.
- Brugueras, Jaime*, On payoff allocations for assignment games and on algorithms for stochastic games.
- Cai, Dongmin*, Information-based projection method for categorical clustering and outlier detection.
- Chakrabarty, Siddhartha*, Optimal control of drug delivery to brain tumors using a distributed parameters deterministic model.
- Coppola, Andrew*, The theory of Q -abstract elementary classes.
- Dong, Yuping*, Surveillance studies on change point in incidence rate.
- Fernos, Talia*, Relative property (T) , linear groups, and applications.
- Grizzard, Phil*, On Lefschetz characters of 2-local geometries for some sporadic groups.
- Gupta, Chetan*, Algorithms to identify clusters and outliers based on dyadic decomposition with applications to streams.
- Lenzhen, Anna*, Teichmüller geodesics that do not have a limit in PMF.
- Lou, Congrong*, Assessment of agreement.
- Olson, Jeffrey*, Finiteness conditions on varieties of residuated structures.
- Savic, Predrag*, Counting closed orbits in rectangles with slits.
- Taber, Mark*, Analyticity of the Dirichlet-Neumann operator and its application to detecting ocean bathymetry.
- Tancredi, Daniel*, Design insights for epidemiological studies of prevalent and incident dementia.
- Wei, Li*, Stochastic curtailment method under linear models.
- Yan, Guoqing*, Option pricing for a stochastic-volatility jump-diffusion model.

Yan, Zhiwu, Crossover designs for a self and simple mixed carryover effects model with correlated errors.

Ye, Jinchun, Optimal life insurance purchase, consumption and portfolio under an uncertain life.

University of Illinois, Urbana-Champaign (23)

MATHEMATICS

- Anguelova, Jana*, Quantum vertex algebras and symmetric polynomials.
- Cao, Weiting*, Some problems in structural graph theory.
- Cho, Jae-Seong*, An algebraic generalization of subelliptic multipliers.
- Gambill, Thomas*, L^2 bounds of the attractor for the KS equation.
- Gibson, Donald*, Covering systems.
- Jossey, John*, Galois 2-groups unramified outside 2.
- Kaul, Hemanshu*, Topics in stochastic combinatorial optimization and extremal graph theory.
- Ledoan, Andrew*, Distribution of Farey series and free path lengths for a certain billiard in the unit square.
- Lee, Jae-ug*, Particles' spreading in a simple Majda model and eigenvalue estimation through Cayley transform.
- Markin, Nadya*, Realization of Galois groups with restricted ramification.
- Paulhus, Jennifer*, Elliptic factors in the Jacobians of low genus curves.
- Poitevin, Luis*, Model theory of Nakano spaces.
- Snapp, Bart*, Generalized local cohomology and the canonical element conjecture.
- Tao, Hua*, Potential theory for subordinate Brownian motion by tempered stable subordinator.
- Treeneer, Stephanie*, Congruences for the coefficients of weakly holomorphic modular forms.
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Ma, Haijun, Bayesian hierarchical boundary analysis for areal public health data.

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Wu, Xiaoqin, Temperature effects in semiconductor equations.

MISSOURI

St. Louis University (1)

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Granda, Larry, Dehn surgery on singular knots.

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Szomolay, Barbara, Analysis and control of a biofilm disinfection model.

Welder, Rachael, Preservice elementary teachers' mathematical content knowledge of prerequisite algebra concepts.

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Gray, Katharine, Comparison of trend detection methods.

NEBRASKA

University of Nebraska-Lincoln (6)

MATHEMATICS

Brown Kramer, Joshua, Two problems in extremal set theory.

Buchholz, Bobbi, Self-adjoint matrix equations on time scales.

Cokeley, Paul, Boundary and localized null controllability and corresponding blow up rates of thermoelastic and structurally damped systems.

Haataja, Steve, Amalgamation of inverse semigroups and operator algebras.

Loeb, Edward, Quantum error-correcting codes: From stabilizer codes to induced codes.

White, Diana, Proper resolutions and their applications.

NEW HAMPSHIRE

University of New Hampshire (6)

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Mitcheltree, Melissa, Exploring lesson study as a form of professional development for enriching teacher knowledge and classroom practices.

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New Jersey Institute of Technology (4)

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Cheng, Yiming, Prediction of mRNA polyadenylation sites in the human genome and mathematical modeling of alternative polyadenylation.

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Columbia University (17)

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Caputo, Maria, Highly degenerate harmonic mean curvature flow.

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Casey, Fergal, Prediction and optimal experimental design in systems biology models.

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Interian-Fernandez, Yannet, Models and algorithms: Applications to satisfiability and genome rearrangement problems.

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Maxim, Andrei, Aspects of the finite element method for elliptic partial differential equations.

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Graduate Center, City University of New York (10)

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Bonanome, Marianna, Quantum algorithms in combinatorial group theory.

Clement, Anthony, On the Baumslag-Solitar groups and certain generalized free products.

Gitman, Victoria, Applications of the proper forcing axiom to models of Peano arithmetic.

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Landesman, Peter, Generalized differential Galois theory.

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Wladis, Claire, Metric properties of Thompson's groups $F(n)$ and $F(n, m)$.

Zahariev, Svetoslav, Approximation of spectra results for twisted Laplace operators.

Rensselaer Polytechnic Institute (7)

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Collis, Jon, New capabilities for parabolic equations in elastic media.

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Eladdadi, Amina, Mathematical modeling of the effects of Hera overexpression on cell proliferation and cell cycle in breast cancer.

Ferrara, Matthew, Radar signal processing.

Khan, Adnan, Parametrization for some multiscale problems in biology and turbulence.

Reilly-Raska, Laurel, Deterministic and stochastic interval wave effects on shallow water acoustic propagation.

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State University of New York at Albany (2)

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Beecher, Amanda, Combinatorial description of a free resolution of a multi-graded module.

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Mendoza, Gabriela, On some minimality conditions involving elements of prime order in a group G .

Smith, Joseph, Groups whose normalizers form a chain.

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Tashman, Adam, Modeling risk in arbitrage strategies using finite mixtures.

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Gogus, Nihat, Continuity of plurisubharmonic and Perron-Bremermann envelopes.

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Hu, Rui, L^p norm estimates of eigenfunctions restricted to submanifolds.

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Duke University (9)

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House, Leanna, Nonparametric Bayesian models in expression proteomic applications.

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Lucas, Joseph, Sparsity modeling for high dimensional systems: Applications in genomics and structural biology.

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Haskett, Ryan, Long-time asymptotic solutions in driven microfluidic processes.

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Dann, Rebekkah, Methods for strengthening the design and analysis of clinical trials to show non-inferiority of a new treatment to a reference treatment for a binary response variable.

Gear, James, A test for detecting space-time clustering and a comparison with some existing methods.

Gelfond, Jonathan, Bayesian model-based methods for the analysis of DNA microarrays with survival, genetic and sequence data.

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Choate, Eric P., Small amplitude oscillatory flows of nematic liquid crystal polymers.

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Guo, Nailong, Numerical study on the optimal coupling by evanescent whispering gallery modes between two micro-spheres by using a discontinuous spectral element method.

Holt, Jason, Spectral analysis of the one-dimensional Schrödinger operator with unbounded potentials.

Islami-Arshagi, Hussein, The long-time behavior of solutions of difference wave equations.

Li, Henong, Semiparametric weak instrumental variables model for panel and cross-sectional data.

NORTH DAKOTA

North Dakota State University, Fargo (2)

MATHEMATICS

Dutta, Tridib, On a generalized notion of integrality and VSFT domains.

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OHIO

Bowling Green State University (10)

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Case Western Reserve University (1)

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Hageman, Rachael, Bayesian methods for large-scale parameter and sensitivity analyses for myocardio metabolism.

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Dimitrov, Youri, Polynomially divided solutions of bipartite self-differential functional equations.

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Ohio University, Athens (1)

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Al-Ahmadi, Adel, Injectivity conditions on group rings.

University of Cincinnati (3)

MATHEMATICAL SCIENCES

Badamdorj, Dorjsuren, Modeling and computation of signal transduction of olfactory cilia with non-uniform CNG and CI (Ca) channels distributions.

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University of Cincinnati, Medical College (1)

EPIDEMIOLOGY AND BIOSTATISTICS DIVISION

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University of Toledo (2)

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Deng, Xin, Goodness-of-fit tests of the density ration models.

Hindeleh, Firas, Application of differential geometry to metric separability problems in Lie groups.

OKLAHOMA

Oklahoma State University, Stillwater (3)

MATHEMATICS

Miller, David, Evaluating the effectiveness of a learning system for technical calculus.

STATISTICS

Maharry, Timothy, Proportion differences using the beta-binomial distribution.

Morris, Tracy, A permutation test for the structure of a covariance matrix.

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Hamidi Alaoui, Abdelhamid, Vorticity-based estimation of vertical velocities from radar data: Accuracy and sensitivity.

Hands, Krista, The business calculus GMTA: An exploration of how to teach a course one has never taught.

Lancaster, Stephen, Pre-service teachers and statistics: Interrelationships between content confidence, knowledge, and attitudes; pedagogical content knowledge; and teacher interest in professional development in statistics.

Li, Junfang, Geometric evolution equations and p -harmonic theory with applications in differential geometry.

Wu, Lina, P -harmonic theory on ellipsoids with applications in geometry.

OREGON

Oregon State University (2)

STATISTICS

Alnosaier, Waseem, Kenward-Roger approximate F test for fixed effects in mixed linear models.

Li, Yonghai, Likelihood analysis of the multivariate ordinal probit model for repeated and spatial ordered categorical responses.

Portland State University (2)

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Anderson, Rick, Mathematics meaning and identity: A study of the practice of mathematics education in a rural high school.

Williams, Anca, A qualitative analysis of hybrid control systems.

University of Oregon (7)

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Allen, Paul, Timelike minimal submanifolds in Robertson-Walker spacetimes.

Carter, John, Convergence of the Eilenberg-Moore spectral sequence for Morava K -theory.

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PENNSYLVANIA

Carnegie Mellon University (2)

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Cudina, Milica, Asymptotic control for some time-varying stochastic networks.

Natarajan, Venkatesh, Independent sets in powers of odd cycles and the global min-cut problem.

Lehigh University (2)

MATHEMATICS

Bendjilali, Nasrine, New approaches to multiple comparisons.

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Pennsylvania State University, University Park (13)

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Gorb, Yuliya, Asymptotic analysis of effective properties of highly concentrated composites.

Meemark, Yotsanan, Operators based on double cosets of GL_2 .

Mummert, Anna, Thermodynamic formalism for nonuniformly hyperbolic dynamical systems.

Ryham, Rolf, An energetic variational approach to mathematical modeling of charged fluids: Charge phases, simulation and well posedness.

Tsao, Shih-Chang, On explicit constructions and improved bounds of algebraic geometry codes.

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Dziak, John, Penalized quadratic inference functions for variable selection in longitudinal research.

Kang, Doh Yung, Casual inference by semiparametric imputation.

Lee, Hyun-Sook, Two topics: A jackknife maximum likelihood approach to statistical model selection and a convex hull peeling depth approach to nonparametric massive multivariate data analysis with applications.

Sarr, Makhtar, Robust nonparametric inference based on the multivariate trimmed mean.

Xu, Hong, Contributions to adaptive web sampling designs.

Zhang, Zhe, New modeling procedures for functional data in computer experiments.

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Corry, Scott, Arithmetic and geometry of the open p -adic disc.

Daenzer, Calder, A groupoid approach to noncommutative T -duality.

Guerra, Stefano, Spectral cover construction for associated bundles.

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STATISTICS

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MATHEMATICS

Diwadkar, Jyotsna, Nilpotent conjugacy classes of reductive p -adic Lie algebras and definability in Pas's language.

Duran, Ahmet, Overreaction behavior and optimization techniques in mathematical finance.

Gurel Kazanci, Fatma, Pattern formation in coupled networks with inhibition and gap junctions.

Hart, Gary D., A constraint-stabilized time-stepping approach for piecewise smooth multi-body dynamics.

Manica, Carolina, Numerical methods in turbulence.

Mihai, Daniela, Mathematical aspects of twistor theory.

Pencheva, Gergina, Multiblock modeling of flow in porous media and applications.

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Tadesse, Arebaw, Compact composition operators on the Hardy and Bergman spaces.

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Gamalo, Mark, Bounded influence approaches to constrained mixed vector autoregressive models.

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Soulakova, Julia, Dose finding strategies for single drug and combination drug trials.

Ziegler, Melissa, Variable selection when confronted with missing data.

RHODE ISLAND

Brown University (11)

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Cheng, Yingda, Discontinuous Galerkin methods for Hamiltonian-Jacobi equations and equations with higher order derivative.

Lian, Heng, Some topics on statistical theory and applications.

Lin, Guang, Parallel high-order methods for deterministic and stochastic CFD and MHD problems.

Oman, Peter, Enriched homotopy and calculus.

Qiu, Jingmei, High order schemes: Convergence for hyperbolic conservation laws and applications in computational cosmology.

Wan, Xiaoliang, Adaptive multi-element generalized polynomial chaos: Algorithms and applications.

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Chen, Ming, Analysis of some nonlinear dispersive waves in a compressible hyperelastic plate.

Hutz, Benjamin, Arithmetic dynamics on varieties of dimension greater than 1.

Jang, Juhi, Diffusive expansion in kinetic theory and dynamics of gaseous stars.

King, Michael, Cluster ensembles of type A_n and the canonical map for configuration spaces.

Manes, Michelle, Arithmetic dynamics of rational maps.

University of Rhode Island (3)

MATHEMATICS

McGurer, Melinda, Optimizing waiting measures in flow-shops.

McPhillips, Kenneth, Far field shallow water wave number estimates given a linear towed array using fast maximum likelihood, matrix pencil and subspace fitting techniques.

Tiner, Gary, On the Erdős-Sós Conjecture.

SOUTH CAROLINA

Medical University of South Carolina (4)

BIOSTATISTICS, BIOINFORMATICS, AND EPIDEMIOLOGY

Abell, Jill, Racial disparities in cardiovascular mortality risk associated with body mass index in men and women: A subject level meta analysis.

Adelman, Aaron S., Population mixing and risk of childhood acute lymphoblastic leukemia.

Lin, Yan, Analyzing 2×2 tables with small sample sizes and possibly missing data.

McNeil, Rebecca, Development and application of the multivariate Mantel-Haenszel mean scores test.

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Beanland, Kevin, A hereditarily indecomposable Banach space and embedding of l -infinity into the space of operators.

Finch, Carrie, Topics from the irreducibility of polynomials and coverings of the integers.

Li, Shuang, Numerical methods and analyses for the fluid flow in the fractured porous media.

Liu, Xiteng, Space signal representation in redundant systems.

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Buckley, Brooke, Benchmark analysis under Abbott-adjusted quantal response models.

Jaki, Thomas, Maximum kernel likelihood estimation.

Wu, Yuping, Statistical methods for the analysis of mass spectrometry data.

Yates, Philip, Methods for the analysis of flood frequency data.

TENNESSEE

University of Memphis (3)

MATHEMATICAL SCIENCES

Gal, Ciprian, Wentzell boundary conditions in the context of wave equations, Sturm-Liouville operators and Cahn-Hilliard models.

Fu, Dongyue, A comparative study of general linear mixed model and permutation tests in group-randomized trials under non-normal error distributions.

Zhou, Hong, Optimal fold-over plans for three level fractional factorial designs.

University of Tennessee, Knoxville (4)

MATHEMATICS

Asano, Erika, Three population models applied to competition, disease and invasion.

Ding, Wandi, Two biological applications of optimal control to hybrid differential equations and elliptic PDEs.

Mitra, Atish, Cohomological dimension with respect to nonabelian groups.

Saum, Michael, Adaptive discontinuous Galerkin finite element methods for second and fourth order elliptic partial differential equations.

Vanderbilt University (3)

MATHEMATICS

Futamura, Fumiko, Symmetrical localized frames, localized operators and their application to the construction of localized Hilbert and Banach frames.

Leonetti, Casey, Reconstruction from error-affected data in shift-invariant spaces.

Shan, Lin, Equivariant index theory and non-positively curved manifolds.

TEXAS

Baylor University (6)

STATISTICAL SCIENCES

Carlin, Patricia, Bayesian inference for correlated binary data with an application to diabetes complication progression.

Cheng, Dunlei, Topics in Bayesian sample size determination and Bayesian model selection.

McGlothlin, Anna, Logistic regression with misclassified response and covariate measurement error: A Bayesian approach.

Moore, Page, A restriction method for the analysis of discrete longitudinal missing data.

Ounpraseuth, Songthip, Selected topics in statistical discriminant analysis.

Riggs, Kent, Maximum-likelihood-based confidence regions and hypothesis tests for selected statistical models.

Rice University (12)

COMPUTATIONAL AND APPLIED

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Sabino, John, Solution of large-scale Lyapunov equations via the block modified Smith method.

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Chuang, Jer-Chin, Transgressive chains, harmonic cycles, and subdivisions.

Kim, Soomin, Limits of minimal surfaces with increasing genus.

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Samansky, Eric, Convergence of Gibbs measure and the behavior of shrinking tubular neighborhoods of fractals and algebraic sets.

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Paszek, Pawel, Modeling stochasticity in gene regulation.

Rossell, David, Some approaches to Bayesian design of experiments and microarray data analysis.

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Southern Methodist University (3)

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Markos, Mulugeta, Steady liquid flow and liquid-vapor interface shapes in different groove structures in micro heat pipes.

Rangelova, Marina, Error estimation for fourth order partial differential equations.

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Texas A&M University (16)

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Ambartsoumian, Gaik, Spherical radon transform and mathematical problems of thermoacoustic tomography.

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- Cheon, Sooyoung*, Protein folding and phylogenetic tree reconstruction using stochastic approximation Monte Carlo.
- Li, Bo*, An analysis of Texas rainfall data and asymptotic properties of space-time covariance estimators.
- Li, Yehua*, Topics in functional data analysis with biological applications.
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- Abdulbala, Soha*, Generalized sigma-delta quantization.
- Flagg, Mary*, The role of the Jacobson radical of the endomorphism ring in the Baer-Kaplansky theorem.
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