

# Doctoral Degrees Conferred

2000-2001

## ALABAMA

### Auburn University (10)

DISCRETE AND STATISTICAL SCIENCES

*Abueida, Atif Aliyan*, The full embedding problem.

*Ashe, David James*, Partial 6-cycle systems with any specified forest or 2-regular leave.

*Foster, Michelle J.*, Operations on probabilistic finite state source automata.

MATHEMATICS

*De Pasquale, Horacio*, Dual Riesz bases and the canonical operator.

*Goeden-Fick, Kathleen*, 2nth order boundary value problems with alternating order boundary.

*Metcalf, Leigh*, An extension of the Reidemeister intersection classes.

*Nwogbaga, Agashi*, New characterizations of Besov and Triebel-Lizorkin space.

*Nyuydinkong, Griffith*, On location of zeros and polar derivatives of polynomials.

*Peterson, Lisa*, Convergence of random measures on Polish spaces.

*Zhang, Chaowen*, Simple modules with character height zero and exceptional weight for the restricted special, Hamiltonian, and contact algebras.

### University of Alabama, Tuscaloosa (6)

INFORMATION SYSTEMS, STATISTICS, AND MANAGEMENT SCIENCE

*Busby, Kevin*, Interpreting out-of-control signals from Hotelling's  $T^2$  chart.

*Kaddoura, Mawla*, Density estimation through kernel estimation-based empirical characteristic function.

*Meleth, Sreelatha*, Analyzing data sets with a mixture of Mar and Ninr data: assessing the impact of sample size and proportion missing on estimates.

*Wang, Lei*, Longitudinal ecologic study with temporal-spatially correlated data: comparison of alternative models.

MATHEMATICS

*Barov, Stoyu*, On sets with convex shadows.

*Krishnan, Srilal*, Principal ideals in subalgebras of groupoid  $C^*$ -algebras.

## ARIZONA

### Arizona State University (5)

APPLIED MATHEMATICS

*Fosser, Cecilia*, Statistics in stochastic automata model for the spread of disease among mobile individuals.

*Rao, Anupama*, Titan, Triton, Pluto and Kuiper belt objects: a study of past and present atmospheres with grey and nongrey models.

MATHEMATICS

*Shetty, Sachin*, Characterization and reconstruction of finite signals using spectral information.

*Wang, Chengde*, Sequenceability,  $R$ -sequenceability, and harmoniousness of finite groups.

*Yang, Jinling*, An evolutionary epidemic model with application to type A influenza.

### University of Arizona (5)

MATHEMATICS

*Cunningham, Geoffrey*, Sums of squares in function fields of elliptic curves.

*Edmunds, Jeffrey*, A study of a stage-structured model of two competing species.

*Kim, Seog Young*, Vector bundles on an elliptic curve over a discrete valuation ring.

*Marshall, David*, Galois groups and Greenberg's conjecture.

*Marshall, Susan Hammond*, Crystalline representations and Neron models.

## ARKANSAS

### University of Arkansas (2)

MATHEMATICAL SCIENCES

*Aberra, Dawit*, The reflection principle, the Schwarz potential and quadrature.

*Mann, Casey*, On Heesch's problem and other tiling problems.

## CALIFORNIA

### California Institute of Technology (4)

APPLIED MATHEMATICS

*Hu, Gang*, Singularity formation in three-dimensional vortex sheets.

*Louie, Michael*, Numerical study of pattern forming processes in models of rotating Rayleigh-Bénard convection.

*Tokman, Mayya*, Magnetohydrodynamic modeling of solar magnetic arcades using exponential propagation methods.

MATHEMATICS

*Killip, Rowan*, Perturbations of one-dimensional Schrodinger operators preserving the absolutely continuous spectrum.

### Claremont Graduate University (2)

MATHEMATICS

*Verzi, Diana W.*, A mathematical description of diagrammatic models for structural changes in dendritic spines.

*Villasana de villegas, Minaya*, A delay differential equation model for tumor growth.

### Stanford University (10)

MATHEMATICS

*Bertelson-Volckaert, Melanie*, Foliations associated to regular Poisson structures.

*Butscher, Adrian*, Deformation theory of minimal Lagrangian submanifolds.

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 2000, to June 30, 2001) reported in the 2001 Annual Survey of the Mathematical Sciences by 212 departments in 151 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 2002 issue of the *Notices*.

*Castelvecchi, Davide*, The foliated Morse inequalities.

*Choi, Young-tun*, Positively oriented ideal triangulations of hyperbolic three-manifolds.

*Cotton, Peter*, An analytic approach to Ornstein-Uhlenbeck processes with fluctuating parameters and applications in the modeling of fixed income securities.

*Ha, Seungyeal*, L-stability for systems of conservation laws with a non-resonant moving source.

*Lee, Roger*, Implied and local volatilities under stochastic volatility.

*Sha, Xin Wei*, Differential geometric performance and the technologies of writing.

*Wang, Xiaodong*, On the geometry of conformally compact Einstein manifolds.

SCIENTIFIC COMPUTATION & COMPUTATIONAL

*Wang, Gao Feng*, Coupled electromagnetic and device level investigations of metal-insulator-semiconductor interconnects.

**University of California, Berkeley (32)**

BIOSTATISTICS

*Bryan, Jennifer*, Methods for gene expression analysis using DNA microarrays.

*Bureau, Alexandre*, Genetic linkage analysis based on identity by descent in large pedigrees using Markov chain Monte Carlo Methods.

*Pavlic, Maja*, Estimating the number of components in a mixture and analysis of recurrent events with time dependent covariates in the presence of dependent censoring.

*Quale, Christopher*, Nonparametric and semiparametric methods for three incomplete data structures.

*Weingart, Michal*, Edge effect correction for the nearest neighbor method.

MATHEMATICS

*Abhyankar, Kashi*, Smale strategies for prisoner's dilemma type games.

*Buraztyn, Henrique*, Morita equivalence in deformation quantization.

*Clemens, John Daniel*, Description set theory, equivalence relations, and classification problems in analysis.

*Davis, Benjamin L.*, On Poisson spaces associated to finitely generated Poisson  $R$ -algebras.

*Edwards, Karen E.*, Stabilizations of Heegaard splittings with respect to connect-sums of 3-manifolds.

*Flynn, John*, Near-exceptionality over finite fields.

*Gomez, Concetta*, Definability in  $p$ -adic power series rings.

*Greene, Devin*, On certain invariants in multivariable operator theory.

*Grinshpan, Anatolii*, Electrostatics and Dirichlet spaces.

*Heitsch, Christine*, Computational complexity of generalized pattern matching.

*Huang, Hsiang-Ping*, Commutators associated to a subfactor and its relative commutants.

*King, Oliver Davis*, A mass formula for unimodular lattices with no roots.

*Li, Cheng*, Model-based analysis of oligonucleotide arrays.

*McMurdy, Kenneth*, A splitting criterion for Galonic representative associated to exceptional modular forms.

*Murray, Will*, Frobenius algebras, independence of field, and quadratic forms.

*Mustata, Mircea*, Singularities and jet schemes.

*Olsson, Martin*, Log algebraic stacks and moduli of log schemes.

*Portilheiro, Manuel*, Weak solutions for contractive nonlinear equations and parabolic relaxation limits.

*Pramanik, Malabika*, Weighted integrals in RZ and the maximal conjugated Calderon-Zygmund operator.

*Schleimer, Saul David*, Almost normal Heegaard splittings.

*Schneiderman, Robert Roland*, 4-dimensional intersection numbers of knots and links in 3-manifolds.

*Shomron, Noam*, Representations of Cartan type Lie superalgebras.

*Smith, Greg*, Computational methods for studying sheaves.

*Vladimirsky, Alexander*, Fast methods for static Hamilton-Jacobi partial differential equations.

*Wasserman, David Robert*, Epimorphisms and dominions in varieties of lattices.

*Yakimov, Milen*, Geometry of complex reductive Poisson-Lie groups.

*Zoble, Aaron*, Stationary reflection and the determinacy of inductive games.

**University of California, Davis (11)**

MATHEMATICS

*Casey, Michael*, Stochastic limit laws for stochastic programming.

*Henry, Jennifer*, On generating a minimal set of polyhedral maps on the torus.

*Parsons, Regina*, The effects of increased attention to the calculus foundations when teaching definite integrals.

*Starr, Shannon*, Some properties for the low-lying spectrum of the ferromagnetic, quantum XXZ spin system.

*Thoo, John*, Nonlinear waves in random media.

*Tyler, Eiko*, Manifolds on which analysis meets topology—a historical approach.

*Williams, Matthew*, Numerical methods for tracking interfaces with surface tension in 3-D mold-filling processes.

STATISTICS

*Chang, Lin Jen-Jen*, Simulation and synthesis of high-dimensional data and related issues.

*Dubin, Joel*, Nonparametric methods for multivariate longitudinal data.

*Hanson, Timothy*, Applied Bayesian semiparametric methods with special application to the A.F.T. model and to hierarchical models for screening.

*Nguyen, Danh*, Statistical analysis of gene expression data from DNA microarrays based on partial least squares and related dimension reduction.

**University of California, Irvine (2)**

MATHEMATICS

*Landrigan, Michael*, Log-dimensional properties of spectral measures.

*Yang, Roger*, Newton polygons of  $L$ -functions of polynomials of the form  $X^d + \lambda X$ .

**University of California, Los Angeles (14)**

MATHEMATICS

*Barakat, Wissam*, Levy random fields on symmetric Riemannian spaces of noncompact type.

*Barquero, Pedro*, Norm principle for algebraic group.

*Caibou, Frederic*, Rate equations in materials sciences and simulation of multiphase flows.

*Carter, Janylle*, Dual method for total variation-based image restoration.

*Emerson, Nathaniel*, The combinatorics of polynomials with disconnected Julia sets.

*Fischman, Ami*, On the image of lambda-adic Galois representations.

*Gray, Maolison*, Remote sensing of atmospheric parameters using forward scattering.

*Kisiel, Ali*, The hamiltonian structure of discrete KP equations.

*Li, Chun Che*, Kuznetsov trace formula and asymptotic behaviour of Hecke eigenvalues.

*Nguyen, Duc*, A boundary condition capturing method for incompressible flame discontinuities.

*Nikshych, Deritri*, Quantum groupoids, their representation categories, symmetries of von Neumann factors, and dynamical quantum groups.

*Sherman, David*, The application of modular algebras to relative tensor products and noncommutative  $L^p$  modules.

*Wu, Hsin Tai*, On  $p$ -adic Hilbert modular adjoint  $L$ -functions.

*Zarikian, Vrej*, Complete one-sided  $M$ -ideals in operator spaces.

**University of California,  
San Diego** (11)

MATHEMATICS

- Aksoylu, Burak*, Adaptive multilevel numerical methods with applications in diffusive bimolecular reactions.
- Gallo, Teresa*, Combinatorial bases for modules of coinvariants.
- Halleck, Ezra*, Magic square subclasses as linear diophantine equations.
- Langley, Thomas*, The plethysm of two Schur functions at hook, near-hook, and two-row shapes and a class of  $(q, t)$ -symmetric functions arising from plethysm.
- Little, David*,  $q$ -enumeration of classical combinatorial structures.
- Marquez, Francisco*, On Cayley graphs for subgroups of  $GL(3, p)$ .
- McElroy, Tucker*, Statistical inference for model parameters of time series exhibiting the Noah and Joseph effects.
- Minei, Marvin*, Three block diagonalization methods for the finite graph.
- Ribando, Jason*, Probabilistic methods for efficient triangulations of the  $n$ -cube.
- Szczepanski, Amy*, From Jacobson rings to the Jacobson conjecture.
- Tuba, Imre*, Braid representations and tensor categories.

**University of California,  
Santa Barbara** (5)

STATISTICS & APPLIED PROBABILITY

- Acharyya, Suddhasatta*, Some problems in nonparametric resampling inference.
- Hau, Seonkoo*, Portfolio management with stable distributions.
- Karcher, Peter*, Markov chain Monte Carlo stochastic approximation algorithms and generalized non-parametric mixed effects models.
- Ke, Chunlei*, Semi-parametric nonlinear regression and mixed effects models.
- Mackey, Howard*, Diagnostic for binary response mixed models.

**University of Southern  
California** (6)

MATHEMATICS

- Goukasian, Levon*, Lyapunov exponents for small perturbations of nilpotent and Hamiltonian systems.
- Nestler, Andrew*, Algebraic  $K$ -theory of curves and surfaces over finite fields.
- Stroila, Matei*, Arithmetic rigidity and algebraic cycles.
- Uzun, Hasan*, On maximum local roughness of random droplets in two dimensions.
- Will, Oliver*, Statistical inference in the fossil record.
- Zou, Xiaorong*, Geometry of the frame bundle.

**COLORADO**

**Colorado School of  
Mines** (1)

MATHEMATICAL AND COMPUTER SCIENCES

- Wang, Lan*, Estimation of multi-valued Green's function by dynamic ray tracing and true amplitude Kirchoff inversion in 4-D heterogeneous media.

**Colorado State  
University** (6)

MATHEMATICS

- Erdmann, Melissa Claire*, Cell exclusion algorithms.
- Martin, Shawn Bryan*, Techniques in support vector classification.

STATISTICS

- Bronson, Douglas*, Bootstrapping stochastic systems in survival analysis.
- Streett, Sarah*, Some observation driven models for time series.
- Thompson, Sandra*, Bayesian model averaging and spatial prediction.
- Trindade, Adao Alexandre*, Modified algorithms for multivariate subset autoregression.

**University of Colorado,  
Boulder** (8)

APPLIED MATHEMATICS

- Akmaev, Slava*, Phylogenetic approach to molecular structure prediction.
- Bloechle, Brian*, On The Taylor dispersion of reactive solutes in a parallel-plate fracture-matrix system.
- Chartier, Timothy*, Element-based algebraic multigrid (AMGe) and spectral AMGe.
- Codd, Andrea*, Elasticity-fluid coupled systems and elliptic grid generation (ECG) based on first-order system least squares (FOSLS).
- Jarman, Ken*, Stochastic immiscible flow with moment equations.
- MacMillan, Hugh*, First-order system least squares and electrical impedance tomography.
- Robins, Vanessa*, Computational topology at multiple resolutions.

- Trubatch, David*, Topics in solitons and inverse scattering: I. Discretization of the vector nonlinear Schrödinger equation. II. A new class of "reflectionless" potentials of the nonstationary Schrödinger equation and solutions of the Kadomtsev-Petviashvili I equation.

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

BIOSTATISTICS

- Ellison, Misoo*, Estimation of responder cell frequency and binomial three-level nonlinear mixed effects model in limiting dilution assays.

- Joseph, Coll*, Multivariate generalized linear mixed models with serial correlation: a state space approach with applications in HIV/AIDS.

- Mikulich, Susan*, Application of multivariate growth curve and univariate mixed models approaches to the cosinor analysis of spontaneous motility data.

- Tooze, Janet*, Analysis of repeated measures data with clumping at zero.

- Xu, Xuesheng*, The analysis of longitudinal binary data using a state space approach.

MATHEMATICS

- Doherty, Faun*, Topics on domination graphs of tournaments.
- Emsermann, Markus*, Variance reduction with quasi control variates.

**University of Northern  
Colorado** (4)

MATHEMATICAL SCIENCES

- Fatholah, Kassemi*, Pre-service teacher's conceptual understanding of rational numbers.
- Medina, Elsa*, Student understanding of span, linear independence, and basis in an elementary linear algebra class.
- Perrine, Vicki*, Effects of a problem-solving mathematics classroom on the proportional reasoning of preservice teachers.
- Zderad, Jon*, Understanding a student's oral, written and pictorial mathematical voice through engagement in and reflection on classroom episodes.

**CONNECTICUT**

**University of  
Connecticut** (11)

MATHEMATICS

- Englert, Burkhard*, A necessary and sufficient condition for embedding principally decomposable finite lattices into the c.e. degrees preserving greatest element.
- Galperin, Yevgeniy*, Uncertainty principles as embeddings of modulation spaces.
- Han, Lixing*, Trust region methods for unconstrained optimization.
- Kang, Sheon Young*, Numerical solution of integral equations with non-smooth kernels and applications.
- Kanuni, Muge*, Dense ideals and maximal quotient rings of incidence algebras.
- Pascu, Mihai*, Probabilistic approaches to eigenvalue problems.
- Rasoanaivo, Guy*, Stochastic modeling for long-term care insurance.
- Stricevic, Slaven*, Continuous time models.

STATISTICS

*Banerjee, Sudipto*, Multivariate spatial modeling in Bayesian settings.

*Kottas, Athanasios*, Bayesian nonparametric and semiparametric modeling using Dirichlet process mixing: full inference with novel applications.

*Patra, Kaushik*, Innovative approaches to reliability and survival analysis.

**Wesleyan University** (2)

MATHEMATICS

*Recoder-Nunez, Luis*, Three classes of dense subspaces of products.

*Tysdal, Kimberly*, Dependent edges in acyclic orientations of graphs.

**Yale University** (6)

MATHEMATICS

*Comerford, Mark D.*, Properties of Julia sets for the arbitrary composition of monic polynomials with uniformly bounded coefficients.

*Coppi, Andreas*, Least-square generalized quadratures and a fast stable numerical method for the Calderon commutator.

*Liakhovskaia, Anna V.*, Structure and representations of small quantum groups.

*Malkin, Anton*, Geometric methods in the theory of Hall algebras; Yale University; Mathematics.

*Yun, Aaram*, Discrete subgroups of the special linear group with thin limit sets.

STATISTICS

*Novak, Laura*, Classification and prediction of stock price behavior.

DELAWARE

**University of Delaware** (3)

MATHEMATICAL SCIENCES

*Berensel Tanoglu, Gamze*, Phase boundaries and anisotropy via multiple order parameter theory for an FCC alloy.

*Li, Pingqian*, Boundary value problems for generalized  $n$  hypercomplex equations.

*Naire, Shailesh*, Gravitationally-driven drainage of thin films.

DISTRICT OF COLUMBIA

**George Washington University** (2)

MATHEMATICS

*Ankney, Rachelle*, The geometries  $PG(n-1, q) \setminus PG(k-1, q)$ .

*Pirnazar, Amir*, Girth, genus, and fractional chromatic number.

**Howard University** (2)

MATHEMATICS

*Farmer, Shurron M.*, The analysis of a two-age-class single species, discrete-time climax population model.

*Fleming, Jeffrey S.*, Weighted and parameter dependent Bergman projection, Bergman kernel, and  $D$ -bar equations on weakly pseudo convex complete Kahler manifolds.

FLORIDA

**Florida Institute of Technology** (2)

MATHEMATICAL SCIENCES

*Terbeche, Mekki*, Sequential design for estimation.

*Yakar, Coskun*, Stability analysis of nonlinear differential systems with initial time difference.

**Florida State University** (7)

MATHEMATICS

*Arsuaga, Javier*, Using knots as an assay for DNA organization inside bacteriophage P4 capsids.

*Denny, Jeffrey*, Geometry of proteins with applications to solid-state NMR.

*Felkel, Brian*, Decay estimates on oscillatory integrals with polynomial phase.

*Jia, Hong-qi*, Classification of QC Hopf algebras.

*Szecssei, Denise*, A convolution property of some measures with self similar fractal support.

*Vazquez, Maria*, Tangle analysis of site-specific recombination: Gen and Xer systems.

STATISTICS

*Zhang, Shaojun*, Building tracking portfolios and modeling risk management programs.

**University of Central Florida** (2)

MATHEMATICS

*Al-Habash, Ammar*, The aperture averaged scintillation of the intensity of a gaussian laser beam propagated through strong optical turbulence and reflected by various targets.

*Boissy, Young*, Parameter estimates for fractional autoregressive spatial processes.

**University of Florida** (9)

MATHEMATICS

*Bodmann, Bernhard*, Path integrals.

*Riazati, Farzan*, On the lattice of  $\Pi_1^0$  classes.

*Shaska, Tanush*, Curves of genus two covering elliptic curves.

*Tomerlin, Andrew*, Representation and realization of bounded holomorphic functions defined on a polydomain.

*White, Richard*, An algebraic characterization of Minkowski space.

*Yi, Tae-il*, A classification of tree and application of topology and graph theory to neurosurgery.

STATISTICS

*Cantrell, Amy*, On the strong law of large numbers for sums of random elements in Banach spaces.

*McGoff, Philip*, A unified approach to process optimization.

*Robinson, Kevin*, Quantile dispersion graphs for design comparisons for logistic models and other modelling issues.

**University of South Florida** (6)

MATHEMATICS

*Benko, David*, Approximation by weighted polynomials.

*Dai, Ming*, Identification of the parameters of a multivariate normal distribution by the distributions of maximum.

*Jelsovsky, Daniel*, Quandle cohomology and state-sum invariants of knots.

*Maymeskul, Victor*, On some problems in complex and multivariate approximation and interpolation.

*Roberts, Henry*, Predicting the performance of software via the power law process.

*Yanez, George*, Statistical modeling of epidemic disease propagation via branching processes and Bayesian inference.

GEORGIA

**Emory University** (9)

BIostatistics

*Allen, Andrew*, Multivariate random length and missing data.

*Price, Dionne*, Survival models for heterogeneous populations with cure.

MATHEMATICS & COMPUTER SCIENCE

*Bailey, Dionne*, Computational approaches to representation theorems for finitely generated real algebras.

*Brania, Abdelkrim*, The controlled modulus condition and quasiconformality in metric spaces.

*Hynds, Emily*, 2-factors and line graphs.

*Kanarsky, Margarita*, On quasicircles and dilatations of quasisymmetric homeomorphisms.

*Robinson, Maria*, Classification of Heegaard splittings for (compact nonorientable surface)  $\times S^1$ .

*Skokan, Jozef*, Uniformity of set systems.

*Xu, Taixi*, Finite dimensional completely integrable Hamiltonian systems associated with soliton equations.

**Georgia Institute of Technology** (9)

MATHEMATICS

*Baker, Anthony*, Bounding entropy and finding symbolic dynamics via the spectrum of the Conley index.

*Gonzalez, Luis*, Some generalizations of the Knaster-Kuratowski-Mazurkiewicz theorem.

*Harrelson, Dyana*, Dependence and limit theorems for stationary infinitely divisible sequences.

*Jacobs, Denise*, Multiwavelets in higher dimensions.

*Labate, Demetrio*, Time-frequency analysis of pseudodifferential operators.

*McShine, Lisa*, Random sampling of combinatorial structures.

*Rivera, Roberto*, On properties of completely flexible loops.

*Thomson, Jan McDonald*, Cyclically 5-connected graphs. Their relevance to Tutte's 4-flow conjecture.

*Vougalter, Vitali*, Diamagnetic behavior of sums of Dirichlet eigenvalues.

## University of Georgia (11)

### MATHEMATICS

*Croot, Ernest*, Unit fractions.

*Cutter, Pamela*, Finding prime pairs with particular gaps and square free parts of polynomials.

*Khalil, Dina*, On the  $p$ -divisibility of class numbers of quadratic fields.

*Xu, Xiangming*, Construction of two dimensional non separable orthonormal wavelets of short support.

*Zhang, Mucheng*, Calculation of transfer maps and associated primes.

### STATISTICS

*Berenhaut, Kenneth*, Geometric renewal conversion rates and discrete life time distribution class.

*Fukasawa, Takeshi*, Inference for nonlinear state space models.

*Lee, Li-Jen*, Modeling the malaria epidemic.

*Qi, Yongcheng*, Abysian minimum hellinger distance approaches to inference with application.

*Smith, David*, Bayesian & minimum hellinger distance approaches to inference of applications.

*Smith, Wendy*, Asymptotic & small sample properties for dependent bootstrapping.

## HAWAII

### University of Hawaii (1)

### MATHEMATICS

*Higa, Jonathan*, Application of logic to probability.

## IDAHO

### Idaho State University (2)

### MATHEMATICS

*Priddy, Jerry*, An algorithm to construct generator matrices for shortened cyclic codes.

*Skoug, Muriel*, On certain classes of cones of linear transformations on matrices.

## ILLINOIS

### Illinois State University (6)

### MATHEMATICS

*Benson, Carol*, Assessing students' thinking in modeling probability contexts.

*Lannin, John*, Developing middle school students' understanding of recursive and explicit reasoning.

*Leonard, Bill*, Implementation of a computer algebra system in the calculus classroom: a multiple case study.

*Marshall, Gerald*, Using the history of mathematics to improve secondary student's attitudes toward mathematics.

*Muckerheide, Paul*, Becoming standards-like: changes in elementary preservice teachers through reflective intervention.

*Polaki, Victor*, Using instruction to trace Basotho elementary students' growth in probabilistic thinking.

### Northern Illinois University (5)

### MATHEMATICAL SCIENCES

*Butler, Svetlana*,  $Q$ -functions, extreme points and density theorems in the space of quasi measures.

*Molefe, Daniel*, Survival function estimation when lifetime and censoring time are dependent.

*Park, Hyung Kor*, Studies on matrices under phi maps.

*Riehl, Suzanne*, Spectral functions associated with Sturm-Liouville and Dirac equations.

*Weiss, Matthias*, Limit point action of discrete Mobius groups.

### Northwestern University (11)

### MATHEMATICS

*Mauger, Justin*, The cohomology of Lie algebras associated with  $p$ -groups.

*Moar, Scott*, Trapping regions for unstable manifolds via prime ends.

*Pushin, Oleg*, Steenrod operations in motivic cohomology.

*Qian, Tifei*, Heteroclinic orbits and chaotic invariant sets for monotone twist maps.

*Stawiska, Margarete*, Repellers for regular polynomial endomorphisms  $C^k$ .

*Thatcher, Scott*, Rank-two Hecke eigenfunctions on elliptic curves.

*Wiseman, James*, Sofic shifts and the Conley index.

*Wu, Tao*, On Grayson's motivic complexes.

### STATISTICS

*Huang, Shuguang*, Higher-order inference in models for census survival data.

*Li, Hua*, An exponential response model for bivariate association.

*Liu, Xian-lang*, Model selection in unbiased equations.

### University of Chicago (14)

### MATHEMATICS

*Bolt, Michael*, Vanishing properties and spectral analysis in the Kerzman-Stein theory.

*Cushman, Matthew*, The motivic fundamental group.

*Fausk, Halvard*, The non-positive equivariant stems.

*French, Christopher*, The equivariant  $J$ -homomorphism.

*Hemmer, David*, Extensions of hook and completely splittable modules for the symmetric group.

*Li, Paul*, On the universal embeddings of the binary symplectic and unitary dual polar spaces.

*Oberman, Adam*, Level set motion by advection, growth, and mean curvature as a model for combustion.

*Ou, Winston*, Natural extremal operators on BMO and  $A^\infty$ : symmetries and near-reciprocities.

*Prasad, Amritanshu*, The almost unramified discrete spectrum for split groups over a rational function field.

*Schmitz, David*, Finite subgroups of formal groups.

### STATISTICS

*Craiu, Virgil Radu*, Multivalent framework for approximate and exact sampling and resampling.

*Song, Seongjoo*, Options and discontinuity: an asymptotic decomposition for trading algorithms.

*Wit, Ernst*, The categorical imperative: extendibility considerations for statistical models.

*Zhang, Lan*, From Martingales to ANOVA: implied and realized volatility.

### University of Illinois, Urbana-Champaign (23)

### MATHEMATICS

*Baxter Bauer, Kristine*, On Hopf algebra type and rational decompositions of functors.

*Chaoha, Phichet*, Obstructions for constructing the Taylor tower of finite degree functions of spectra.

*Chiang, River*, Complexity one Hamiltonian  $Su(2)$  actions.

*Choi, Geumlan*, A certain generalization of Rogers Ramanujan continued fraction.

*Hill, Christopher*, Uniform distribution, Behrend sequences, and some spaces of arithmetic functions.

*Ho, Kejia*, Kolmogorov complexity, strong reducibilities, and computably enumerable sets.

*Hyeon, Donghoon*, Moduli questions for augmented bundles.

*Jiang, Tao*, Some problems in structural and extremal graph theory.

*Kahng, Byunqik*, Dynamics of symplectic piecewise affine elliptic rotation maps on tori.

*Kapitza, Paul*, On small geometric invariants of 3-manifolds.

*Kilmurray, Donough*, Geometry on affine actions.

*Lee, Donghi*, Some conjectures on free groups in combinatorial group theory.

*Pomper, Markus*, Double dual types of Banach spaces.

*Retzlaff, Todd*, The rate of decay of concentration functions on locally compact groups.

*Scalari, Alberto*, Stationary discs and CR geometry.

*Sohn, Jaebum*,  $q$ -continued fractions and related  $q$ -series.

*Steichen, Jennifer*, Heavy traffic limit theorems for the closed Lu-Kumar network.

*Yi, Jinhee*, The construction and applications of modular equations.

*Yifan, Yang*, Topics in analytic, combinatorial and probabilistic number theory.

STATISTICS

*Froelich, Amy Goodwin*, Assessing unidimensionality of test items and some asymptotics of parametric item response theory.

*Galfalvy, Hanga*, Censored regression models with applications for infrastructure degradation studies.

*Liu, Li*, Building a nonparametric model after dimension reduction.

*Trachtenberg, Felicia*, Contributions to estimation in item response theory.

INDIANA

Indiana University, Bloomington (7)

MATHEMATICS

*Jadallah, Hala*, The onset of superconductivity in a domain with a corner.

*Jakelic, Dijana*, Structure of some representations of quantum groups, their crystal bases and completions.

*Kim, Se-Goo*, Polynomial splittings of Casson-Gordon invariants.

*Kostov, Stoyko*, Norm-ideal perturbations and simultaneous diagonalization of sets of operators.

*Oh, Myunghyun*, Stability analysis of periodic solutions of viscous conservation laws.

*Perdomo, Oscar*, First eigenvalue and index: two characterizations of Clifford minimal hypersurfaces of spheres.

*Wojnar, Gregory*, Generalized Wishart distributions on convex homogeneous cones.

Purdue University (13)

MATHEMATICS

*Asgari, Mahdi*, On holomorphy of local Langlands  $L$ -functions.

*Jackson, Michael*, Vector bundles over BG whose Euler classes are effective.

*Ko, Yangsuk*, Analysis of solutions to a Ginzburg-Landau system for layered superconductors.

*Mendez, Pedro*, Sharp estimates of Dirichlet heat kernels of the Laplacian, fractional Laplacian and applications.

*Osawa, Ryo Ichi*, A surface, integral points an automorphism groups.

*Patyi, Imre*, Analytic cohomology vanishing in infinite dimensions.

*Shin, Eunjee*, On the analysis of a non-isothermal model for superconductivity.

*Vassilev, Dimiter*, Yamabe equations on Carnot groups.

*Wu, Lih-Ing*, On bifurcations of codimension greater than two arising from a childhood disease model.

*Zhuang, Gongyuan*, Convergence analysis of a domain decomposition method for separable PDE.

STATISTICS

*Mukhopadhyay, Nitai Das*, Bayesian model selection for high dimensional models with prediction error loss and 0-1 loss.

*Tsai, Wen-Chi*, Some contributions to stochastic geometry.

*Yan, Liqing*, Convergence of the Euler scheme for stochastic differential equations with irregular coefficient.

University of Notre Dame (3)

MATHEMATICS

*Arana, Rebekah*, A Jordan algebraic approach to primal-dual algorithms and an exterior point algorithm for linear programming.

*Brown, Karen*, Extensions of “thickened” Verma modules of the Virasoro algebra.

*Vassiliev, Evgueni*, Expansions of rank 1 structures.

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**Wayne State University (3)**

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**MINNESOTA**

**University of Minnesota, Minneapolis (5)**

STATISTICS

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**University of Minnesota (6)**

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### St. Louis University (1)

MATHEMATICS & COMPUTER SCIENCE

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STATISTICS

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MATHEMATICS & STATISTICS

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## NEBRASKA

### University of Nebraska, Lincoln (9)

MATHEMATICS & STATISTICS

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**NEW MEXICO**

**New Mexico State  
University** (1)

MATHEMATICAL SCIENCES

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**University of New  
Mexico** (6)

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**NEW YORK**

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

MATHEMATICS

*Bak, Daniella*, Properties of shuffle groups and their relation to cryptography.

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**Clarkson University** (1)

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*Stenson, Cathrine*, Linear inequalities for flag  $F$ -vectors of polytopes.

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**Duke University (5)**

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VIRGINIA

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*Crofts, Theresa*, Accounting for treatment by noise factor interactions in sample size determination for the generalized linear mixed model.

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**Virginia Polytechnic Institute & State University (4)**

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*Joseph, Daniel*, Parameter identification for the Preisach model of hysteresis.

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*Noble, Robert*, Multivariate applications of Bayesian model averaging.

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**University of Washington (31)**

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*Knaub, Karl R.*, On the asymptotic behavior of internal layer solutions of advection-diffusion-reaction equations.

*Luke, David Russell*, Analysis of optical wavefront reconstruction and deconvolution in adaptive optics.

*Moskowitz, Benjamin Michael*, An analysis of frictional feedback in the Madden-Julian oscillation.

*Orbist, Dominik*, On the stability of the swept leading-edge boundary layer.

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*Arbogast, Patrick*, Statistical methods for case-control studies.

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*Dasgupta, Abhijit*, Parametric identifiability and related problems.

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*Craigmile, Peter F.*, Wavelet-based estimation for trend contaminated long memory processes.

*Das, Barnali*, Global covariance modeling: a deformation approach to anisotropy.

*Golinelli, Daniela*, Bayesian inference in hidden stochastic population processes.

*Jones, Beatrix*, Likelihood inference for parametric models of dispersal.

*Ruczinski, Ingo*, Logic regression and statistical issues related to the protein folding problem.

*Walsh, Daniel Charles Islip*, Detecting and extracting complex patterns from images and realizations of spatial point processes.

*Wegelin, Jacob A.*, Latent models for cross-covariance.

**Washington State University (2)**

PURE & APPLIED MATHEMATICS

*Felt, Andrew*, A computational evaluation of interior point cutting plane algorithms for the stochastic programs.

*Pierce, Donna*, Planar functions.

**WISCONSIN**

**Marquette University (2)**

MATHEMATICS, STATISTICS & COMPUTER SCIENCE

*Manuel, Albert*, Mathematical model for evaluation of velocity profile effects on cross-sectional concentration with application to x-ray imaging.

*Murphy, Brian*, Modeling the time to engraftment of white blood cells and platelets following autologous peripheral blood stem cell tran.

**Medical College of Wisconsin (1)**

BIOSTATISTICS

*Wu, Jingtao*, Statistical methods for discretizing a continuous covariate in a censored data regression problem.

**University of Wisconsin, Madison (24)**

MATHEMATICS

*Berger, Kurt*, Asymptotic and numerical analysis of free surface flows: lump solitons and wave turbulence.

*Borges, Maria*, Homoclinic and heteroclinic solutions for a Hamiltonian system in the plane.

*Chen, Bohui*, A smooth compactification of moduli of instanton and its application.

*Choi, Jongho*, Long nonlinear water waves over a periodic bottom topography.

*Eghbalnia, Hamid*, A complex-valued overcomplete representation of information for visual search: a learning theoretic approach based on multiscale symmetry.

*Felcyn, Pawel*, Classifying spaces of moduli spaces of Morse shale flows.

*Hildebrand, Jeffrey*, Some results on down-up algebras over fields of prime characteristic.

*Holtz, Olga*, Theorems and counterexamples on structured matrices.

*Kung, David Tsung-Shiao*, Local smoothing phenomena for operators failing the cinematic curvature condition.

*Lang, Michael*, Some results on bipartite distance-regular graphs.

*MacLean, Mark*, Bipartite distance-regular graphs and their primitive idempotents.

*MacNair, Simon*, Valuation problems in incomplete markets.

*Zhang, Wanchuan*, A vanishing theorem in local mirror symmetry.

STATISTICS

*Chan, Kin-Yee*, Logistic regression trees.

*Chen, Yonghua*, Flexible group sequential designs for clinical trials.

*Chen, Yun-Fei*, Efficient clustering algorithms via multivariate techniques and mixture models.

*Cheung, Ken*, Dose escalation strategies for phase 1 clinical trials with late-onset toxicity.

*Fan, Xiaoyin*, Conditional estimation methods for the analysis of group sequential studies.

*Gaffney, Patrick*, An efficient reversible jump Monte Carlo approach to detect multiple loci and their effects in inbred crosses.

*Gai, Chunyang*, Pruning methods for classification trees.

*Hoff, Peter*, Constrained nonparametric estimation via mixtures.

# Doctoral Degrees Conferred 2000–2001

## Supplementary List

The following list supplements the list of thesis titles published in the February 2002 *Notices*, pages 241–58.

## CALIFORNIA

### University of California, Berkeley (8)

#### STATISTICS

*Benjamin, Morris*, Random walks in convex sets.

*Cawley, Simon*, Statistical models for DNA sequencing and analysis.

*Gat, Yoram*, Overfit bounds for classification algorithms.

*Hui, Wang*, Multiple shrinkage estimator.

*Kwon, Jaimyoung*, Calculus of statistical efficiency in general setting; kernel plug-in estimation for Markov chains; hidden Markov modeling of freeway traffic.

*Li, Wei*, Modelling marked point processes with an application to currency exchange rates.

*Liang, Chyng-lan*, The detection of stellar occultations by Kuiper belt objects.

*Schweinsburg, Jason*, Coalescents with simultaneous multiple collisions.

### University of California, Santa Barbara (2)

#### MATHEMATICS

*He, Chiyu*, Moment problems and operator theory.

*Stanger, Adrian*, Vector spaces of modular functions and powers of the partition function.

## DISTRICT OF COLUMBIA

### George Washington University (4)

#### STATISTICS

*Chen, Xuejun*, The estimation and asymptotic theory of the multiplicative frailty model.

*Moriarity, Christopher*, Statistical properties of statistical matching.

*Sellers, Kimberly*, Vague coherent systems.

*Yu, Binbing*, Some problems arising in observational studies: Potential effect of selection bias and omitted variables.

## MASSACHUSETTS

### Harvard University (3)

#### BIOSTATISTICS

*Bellamy, Scarlett*, Clustered data methods with applications to community-based research.

*French, Jonathan*, Analysis of environmental health data with missing values.

*Morales, Knashawn*, Statistical methods for risk assessment based on epidemiological data.

## MISSOURI

### University of Missouri, Columbia (3)

#### MATHEMATICS

*Goward, Russel*, A simple algorithm for principalization of monomial ideals.

*Hollenbeck, Brian*, Best constants for operators involving the Hilbert transform.

*Stanislavova, Milena*, Spectral mappings theorems and invariant manifolds for infinite-dimensional Hamiltonian systems.

## NEW YORK

### Columbia University (3)

#### MATHEMATICS

*Chau, Albert*, Flow on noncompact Kahler Einstein metrics.

*Kamizono, Kenji*, Hedging and optimization under transaction costs.

*Langmead, Gregory*, A supersymmetric quantum field theory formulation of the Donaldson polynomial invariants.

## OHIO

### University of Cincinnati (1)

#### MATHEMATICAL SCIENCES

*Gonchigdanzan, Khurelbaater*, Almost sure central limit theorems.

## OREGON

### Oregon State University (3)

#### STATISTICS

*Hamilton, Evan*, A linear programming and sampling approach to the cutting-order problem.

*Ritter, Kerry*, Statistical aspects of two measurement problems: Defining taxonomic richness and testing with unanchored responses.

*Suh, Euh-Young*, Semiparametric maximum likelihood for nonlinear regression with measurement errors.

## PENNSYLVANIA

### Carnegie Mellon University (8)

#### STATISTICS

*DiMatteo, Ilaria*, Bayesian curve fitting using tree-knot splines.

*DiPietro, Michele*, Bayesian inference for discretely sampled diffusion processes with financial applications.

*Huang, Tzee-Ming*, Convergence rates for posterior distributions.

*Johnson, Matthew S.*, Parametric and nonparametric extensions to unfolding response models.

*Jones, Bobby L.*, Analyzing longitudinal data with mixture models: A trajectory approach.

*Lockwood, John R., III*, Estimating joint distributions of contaminants in U.S. community water system sources.

*Nichols, Thomas E.*, Spatiotemporal modeling in positron emission tomography.

*Tang, Feng*, A model-based Bayesian fault diagnostic system with applications to semiconductor manufacturing processes.

## Temple University (5)

### STATISTICS

*Hyslop, Terry*, The assessment of individual and population bioequivalence in crossover designs.

*Kwagyan, John*, Further investigations of the disposition model for correlated binary outcomes.

*Lupinacci, Paul*, D-optimal designs for a class of nonlinear models.

*Xie, Yang*, Split-plot type residual effects designs.

*Zhang, Daozhi*, Pareto optimal designs in behavioral experiments.

## TENNESSEE

### University of Memphis (8)

#### MATHEMATICAL SCIENCES

*Ackeriman, Michael*, On the diameter of graphs after vertex and edge deletion.

*Balog, Jozsef*, Graph properties and bootstrap percolation.

*Ingram, Debra*, The construction of generalized minimum aberration designs by efficient algorithm.

*Li, Yingfu*, Construction of generalized minimum aberration designs through Hadamard matrices and orthogonal arrays.

*Soeharyadi, Yudi*, Regularity for hyperbolic balance laws.

*Wang, Wei*, Stochastic and state space model in carcinogenesis and cell population.

*Yang, Wenjian*, On some exact statistical procedures for analyzing correlated binary.

*Zhang, Zhaohua*, Natural language sensing and metacognition modeling in software agents.

## TEXAS

### Rice University (4)

#### STATISTICS

*Boekenhaver, Rachel*, Estimating nonlinear functionals of a random field.

*Cramer, Roxy*, Parameter estimation for discretely observed continuous-time Markov chains.

*Shaw, Chad A.*, Genealogical methods for multitype branching processes with applications in biology.

*Wojciechowski, William C.*, Robust modeling.

## UTAH

### Utah State University (5)

#### MATHEMATICS AND STATISTICS

*Cui, Xiangchen*, MSE bounds and perfect sampling for conditional coding.

*Florin, Catrina*, Positive solutions obtained as local minima via symmetries, for nonlinear elliptic equations.

*Moisen, Gretchen*, Comparing nonlinear and nonparametric modeling techniques for mapping and stratification in forest inventories of the interior western USA.

*Yan, Huey*, Generalized minimum penalized Hellinger distance estimation and generalized penalized Hellinger deviance testing for discrete generalized linear models.

*Zhao, Guohua*, A new perspective on classification