# Doctoral Degrees Conferred 1982–1983

THE ANNUAL AMS list of doctoral degrees in the mathematical sciences and related subjects reports 792 degrees conferred between July 1, 1982, and June 30, 1983 by 194 departments in 137 universities in the United States and Canada. Each entry contains the name of the recipient and the thesis title. The numbers in parentheses following the names of universities have the following meanings: the first number is the number of degrees listed for that university; the next seven numbers are the number of degrees in the categories of 1. Pure mathematics (i.e., algebra, number theory, analysis, functional analysis, geometry, topology, logic, or probability); 2. Statistics; 3. Computer science; 4. Operations research; 5. Applied mathematics; 6. Mathematics education; 7. Other.

## ALABAMA

### Auburn University
(3;3,0,0,0,0,0,0)

MATHEMATICS

Daniels, Margaret Mary, *Pixley-Roy spaces and an application to normal, locally compact spaces.*

O'Farrell, John Michael, *Some methods of determining total paracompactness.*

Robinson, Cecil Eugene, Jr., *Green's relations for substochastic matrices and positive operators.*

### University of Alabama, Tuscaloosa
(3;1,1,0,0,1,0,0)

APPLIED STATISTICS

O'Rear, Michael Ross, *Hypothesis testing for the small sample, incomplete data, multivariate normal growth-wear curve problem: Comparison of alternative models and determination of critical values and power.*

MATHEMATICS

Harris, James Kelly, *Invariants of posets under F-morphisms.*

von Bachhaus, Anton L. W., *A generalization of Hermite polynomials.*

## ARIZONA

### Arizona State University
(2;1,0,0,0,1,0,0)

MATHEMATICS

Andrews, James Arthur, *Non-Markovian infinite particle systems.*

Mistiri, Fatallah Saleh, *Star-product and linear dynamical systems.*

### University of Arizona
(3;1,0,0,0,2,0,0)

APPLIED MATHEMATICS

Doerr, Thomas, *An analysis of errors in the algebraic reconstruction technique with an application to geotomography.*

Przybytkowski, Stanislaw, *Unsteady transonic flow in wind tunnels.*

MATHEMATICS

Jacobson, Eliot Thomas, *Green functor constructions in the theory of associative algebras.*

## ARKANSAS

### University of Arkansas
(1;1,0,0,0,0,0,0)

MATHEMATICS

Smith, Robert Colman, *Uniform algebras: Localization and algebras of sequences induced by bounded analytic functions.*

## CALIFORNIA

### California Institute of Technology
(4;1,0,0,0,3,0,0)

APPLIED MATHEMATICS

Fawcett, John Alan, I. *Three dimensional ray-tracing and ray-inversion in layered media.* II. *Inverse scattering and curved ray tomography with applications to seismology.*

Hagstrom, Thomas Michael, *Reduction of unbounded domains to bounded domains for partial differential equation problems.*

Prendergast, Michael David Myers, *Linear programming methods for the numerical solution of parabolic equations backwards in time.*

MATHEMATICS

Hart, Dean Robert, *Disjointness preserving operators.*

### Claremont Graduate School
(1;1,0,0,0,0,0,0)

MATHEMATICS

Jow, Richard Leon, *Some contributions to the theory of random sets.*

### Stanford University
(38;4,16,0,12,2,0,4)

ENGINEERING-ECONOMIC SYSTEMS

Chion-Chacon, Sergio, *Some explanations for the recurrent problems in the balance of payments of developing countries.*

Fortes, Lauro, *Effects of consumer information on product selection and innovation.*

Horan-Hecker, Avshalom, *Air defense strategies: Analysis by differential games.*

Kim, Soung-Hie, *Markovian methodology for encoding and updating the prior probability assessment on dynamic processes.*

Martin, Alberto, *A concave discrete resource allocation.*

Mori, Shozo, *A theory of bargaining process: A game theoretical approach.*

Oh, Hyung Sik, *Product differentiation in markets with congestion.*

Parkinson, Thomas W., *Using complex profit models in decision analysis.*

Powell, Stephen, *The transition to non-depletable energy.*

Stoughton, Neal, *Corporate mergers and capital structure: Theory of financial market asymmetry.*

Tom, Jim, *Adaptive quota policies for the survival control of fisheries.*

Yamada, Takeo, *Structural controllability and observability of linear time-invariant descriptor systems.*

MATHEMATICS

Goodman, Jonathan Bernard, *Initial boundary value problems for hyperbolic systems of conservation laws.*

Nunan, Kevin Craig, *Effective properties of composite media containing periodic arrays.*

Williams, Ruth Jeannette, *Brownian motion in a wedge with oblique reflection at the boundary.*

Wiskott, Bettina, *Scattering theory and spectral representation of short-range perturbation in hyperbolic space.*

OPERATIONS RESEARCH

Abrahamson, Philip Gager, *A nested decomposition approach for solving staircase linear programs.*

Duvall, Steven Grant, *Parametric algorithms for the linear complementarity problem.*

Glynn, Peter Winston Gunnar, *Simulation output analysis for general state space Markov chains.*

Jow, Yung-Li Lily, *An autoregressive method for simulation output analysis.*

Sierra, Hector Francisco, *Price rigidities in a general equilibrium model for the Mexican economy.*

Wittrock, Robert James, *Advances in a nested decomposition algorithm for solving staircase linear programs.*

Wood, Alan Paul, *Multistate reliability.*

STATISTICS

Choi, Byoung-Seon, *A conditional limit characterization of the maximum entropy spectral density.*

Crager, Michael Richard, *Exponential tail quantile estimators for air quality data.*

Fairley, David, *Statistical analysis of ambient oak pollen concentrations: San Francisco Bay area case study.*

Galfond, Glenn Joseph, *Robust estimation of extreme quantiles.*

Gong, Gail Diane, *Cross-validation, the jackknife, and the bootstrap: Excess error estimation in forward logistic regression.*

Halpern, Jerry Ward, *Robust quantal assay, censored regression, and maximally selected chi-squared statistics.*

Huffer, Fred, *The moments and distributions of some quantities arising from random arcs on the circle.*

Iyengar, Satish, *On the evaluation of certain multivariate normal probabilities.*

Kuk, Anthony Y. C., *A mixing distribution approach to estimating particle size distributions.*

Orav, Endel John, *Discrete time alternating processes and effects due to noise.*

Peters, Stephen C., *Bootstrapping a regression equation: Some empirical results.*

Sellke, Thomas Martin, *Large sample theory for sequential analysis of the proportional hazards model.*

Takemura, Akimichi, *A statistical approach to zonal polynomials.*

Verducci, Joseph S., *Discriminating between two populations on the basis of ranked preferences.*

Wenocur, Michael Louis, *A production network model and its diffusion approximation.*

### University of California, Berkeley
(45;15,9,2,10,6,0,3)

BIOSTATISTICS

Johnson, Laura Derelle, *The geographic and statistical analysis of air quality data in the United States.*

Kaldor, John Martin, *Statistical procedures for the design and analysis of in vitro mutagenesis assays.*

Skurnick, Joan Hardy, *A class of bivariate distributions for paired continuous and discrete variables.*

INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH

Agrawal, Avinash, *Reliability analysis of rooted directed networks.*

Boysen, Joerg, *Aggregate project model for resource allocation within multiproject construction systems.*

Evnine, Jeremy Joseph, *Three essays in the use of option pricing theory.*

Perez-Galindo, Hector, *An explicit enumeration algorithm for distribution systems planning.*

Sevilla, Agustin Ramos, *A Lagrange-multiplier/surrogate-constraint model for resource allocation problems.*

Shachter, Ross D., *The economics of a difference of opinion: An incentive approach to eliciting probabilities.*

Wood, Roger Kevin, *Polygon-to-chain reductions and extensions for reliability evaluation of undirected networks.*

MATHEMATICS

Agahi, Massoud, *Second order differential partial equations of mixed type.*

Bao, David Dai-Wai, *Some aspects in the dynamics of super gravity.*

Chang, Mei-Chu, *Some results on stable rank 2 vector bundles and reflexive sheaves on* $\mathbf{P}^3$.

Dehnert, James Craig, *The analysis of errors in context free languages.*

Dussault, Robert William, *Picture and 3-dimensional homology classes.*

Dyck, Stephen Douglas, *Some applications of positive formulas in descriptive set theory and logic.*

Ghahramani, Saeed, *Finiteness of busy period moments of queueing systems.*

Janke, Steven John, *Recurrent sets for transient Levy processes.*

Langer, Therese, *Some self-dual* SO(3) *solutions of the Yang-Mills equation and a note on harmonic maps.*

Langlois, Jean-Pierre Patrick, *Repeated play in non-cooperative game theory.*

Lissauer, Jack Jonathan, *Dynamics of Saturn's rings.*

Lott, John William, *Applications of heat kernel expansions of quantum field theory.*

McMillen, Robert William, *Contractive and hypercontractive estimates on the unit circle.*

Nakata, Masaomi, *Quasi-linear evolution equations in non-reflective Banach spaces and applications to hyperbolic systems.*

Nakata, Mie, *Harmonic analysis on local fields.*

Palacios, José Luis, *The exchangeable sigma-field of Markov chains.*

Renegar, James Milton, *On the computational complexity of simplicial algorithms in approximating zeroes of complex polynomials.*

Schorow, David James, *Dihedral branched covers in knots in* $S^3$.

Shallit, Jeffrey Outlaw, *Metric theory of Pierce expanisons.*

Shokranian, Saladoddin, *Results on the dimension of the space of cusp forms on classical domains of type* IV.

Smith, Wayne Stewart, BMO($\rho$) *and Carlson measures.*

Taylor, Derek Roy, *Analysis of the look ahead Lanczos algorithm.*

Tong, Po, *Coding for band-limited channels.*

Tschantz, Steven Thomas, *Constructions in clone theory.*

Wells, Benjamin Franklin, *Pseudorecursive varieties and their implications for word problems.*

Willis, Catherine Marie, *Inverse eigenvalue problems with torsional modes.*

STATISTICS

Bolfarine, Heleno, *On combining experts' assessments.*

Burman, Prabir, *Smoothing in discrete multivariate analysis.*

Folledo, Manuel, *Robust/resistant methods in the estimation of the evoked response curve.*

Kempthorne, Peter James, *Variable selection and parameter estimation for normal linear regression models.*

Sagalovsky, Benjamin Dario Jarupskin, *Maximum likelihood and related estimation methods in point processes and point process systems.*

Ture, Tahsin Erkan, *On the construction and optimality of balanced treatment incomplete block designs.*

Veitch, James Garfield, *Minimum distance procedures in stationary time series.*

Wakim, Paul, *A Bayesian method for model discrimination using the Kalman filter.*

Wong, Chi-Wing, *Transformation of independent variables in regression models.*

### University of California, Davis
(6;5,0,0,0,1,0,0)

MATHEMATICS

Akis, Vladimir Nicholas, *Fixed-point theorems and almost continuity.*

Feitosa, Edilson De Castro, *Sets of constant width and inequalities in Minkowski spaces.*

Ghandehari, Mostafa, *Geometric inequalities in the Minkowski plane.*

Missel, Colin Hugh, *A complete structure theory for* $P^{\omega+1}$ *projective Abelian p-groups.*

O'Donnell, Mark Allen, *Boundary and interior layer behavior in singularly perturbed nonlinear systems.*

Pfiefer, Richard Edward, *The extrema of geometric mean values.*

### University of California, Irvine
(1;1,0,0,0,0,0,0)

MATHEMATICS

Stanke, Ronald Jay, *Intertwining operators and uniformly bounded representations of* $\mathrm{SU}(1,n+1)$, $n>0$.

### University of California, Los Angeles
(9;3,3,0,0,3,0,0)

BIOSTATISTICS

Mickey, Ruth, *Estimation of partial association from many small strata.*

Morgan, Timothy Mack, *Value of covariates in randomized clinical trials.*

Schluchter, Mark Dale, *Distribution-free tests for randomized block designs when observations are subject to right censorship.*

MATHEMATICS

Cole, Susan L. Epps, *Near critical free surface flow past an obstacle.*

Frazier, Michael Wallace, *Functions of bounded mean oscillation characterized by a restricted set of martingale or Riesz transforms.*

Jackson, Stephen Craig, *A calculation of* $\delta_5^1$.

Maxey, Gilbert Charles, *Automorphic representation of the classical modular symbol.*

Prue, Howard Michael, *On the existence of travelling-wave solutions of second order nonlinear hyperbolic systems of conservation laws with singular viscosity matrices.*

Schleiniger, Gilberto Fontenla, *Study of non-axisymmetric flows in a gas centrifuge.*

### University of California, Riverside
(4;2,0,0,0,2,0,0)

MATHEMATICS

Chang, Derek Kong, *Bimeasures, harmonizable processes and filtering.*

Iroz, Juana Mary, *Associated primes, attached primes and cograde.*

Palosaari, Gary Clayton, *Spectral decomposition for non-selfadjoint perturbations of singular Bessel differential operators.*

Parsons, Bradley Niel, *General K-part stationary iterative solutions to linear solutions.*

### University of California, San Diego
(3;2,0,0,0,0,0,1)

MATHEMATICS

Chen, Young-Ming, *Combinatorial algorithms for plethysm.*

Finston, David Robert, *The algebra of polynomial functions on a non-associative algebra.*

Pritchard, Frank Leon, *Behavior of zeros of polynomials with coefficients in a finite dimensional k-algebra.*

**University of California, Santa Barbara**
(6;3,2,0,0,1,0,0)

MATHEMATICS

Abram, Thomas Joseph, *Parts in the maximal ideal space of $H^\infty$, a harmonic analysis approach.*

Hu, Shu-Ping, *Subset selection with inverse-sampling procedures and Dirichlet distributions.*

Huffman, Mark Randall, *Boundary behavior of harmonic functions.*

Kidman, Kent Owen, *Stochastic matrices and unitarily invariant norms.*

Sadek, Ibrahim Said, *Theory and application of a maximum principle for optimal control of systems with distributed parameters.*

Schweitzer, Robin Lesley, *On tests for the two-sample problem based on higher order spacing frequencies.*

**University of California, Santa Cruz**
(2;2,0,0,0,0,0,0)

MATHEMATICS

Migliore, Edward T., *Determination of the maximal subgroup of $G_2(q)$, q odd.*

Pierce, John, *Morse theory in the context of elastostatics: A prototypical problem.*

**University of Southern California**
(1;1,0,0,0,0,0,0)

MATHEMATICS

Hulbert, Douglas Strong, *Asymptotic behavior of solutions to nonlinear Volterra integral equations in Banach spaces.*

## COLORADO

**Colorado State University**
(6;1,2,0,0,3,0,0)

MATHEMATICS

Aston, Martha B., *An implicit scheme for water wave problems.*

Bowers, Kenneth L., *A mathematical model of oil shale retorting.*

Kouba, Duane A., *Regularization with nth order linear boundary value problems using mth order differential operators.*

Vogel, Curtis Rainer, *Probabilistic methods for the inversion of first kind integral equations.*

STATISTICS

Buonaccorsi, John Philip, *Inference and design for ratios of linear combinations in the general linear model.*

Ebong, Daniel Wilson Udo, *Some general statistical inferences on the 'hidden periodicity' model.*

**University of Colorado**
(2;0,1,0,0,1,0,0)

MATHEMATICS

Halasi, Kadosa, *Numerical solution of two dimensional potential problems using Fourier analysis, boundary integral equations and near-far concepts.*

Koslov, Judith W., *Confidence bounds for autoregressive spectral estimates.*

**University of Denver**
(1;0,0,0,0,1,0,0)

MATHEMATICS AND COMPUTER SCIENCE

Lahlou, Mourad, *Highly accurate inversion methods for 3-D stratified media.*

**University of Northern Colorado**
(3;1,1,0,0,1,0,0)

MATHEMATICS AND APPLIED STATISTICS

Abdel-Megeed, Samir, *Monte Carlo study of psychometric effects of scaling levels on the Pearson product moment correlation coefficient.*

Beran, David Frank, *A study of solution methods, stability properties, and applications of difference equations.*

Sawasdikosol, Kamol, *Techniques and applications of finding the indefinite integral of rational and other functions.*

## CONNECTICUT

**Wesleyan University**
(1;1,0,0,0,0,0,0)

MATHEMATICS

Mulvey, Irene T., *Periodic, recurrent and non-wandering points for continuous maps of the circle.*

**Yale University**
(10;8,2,0,0,0,0,0)

MATHEMATICS

Benson, Frederick Challoner, *Characteristic classes for symplectic foliations.*

Carlin, Kevin Joseph, *Extensions of Verma modules.*

Lee, Jyh-hao, *Analytic properties of Zakharov-Shabat inverse scattering problems with a polynomial spectral dependence of degree 1 in the potential.*

Marker, David Ellis, *Degree coding models of arithmetic.*

Michalek, Gary Edwin, *A formulation of a generalized Borel-Weil theorem.*

Murray, Margaret Anne-Marie, *Nonlinear operators and multilinear convolutions commuting with dilations.*

Ratcliff, Gail Dawn Loraine, *A symbolic calculus for 3-step nilpotent Lie groups.*

Tongring, Nils Ronald, *Multiple points of Brownian motion.*

STATISTICS

Arnold, Jonathan, *Statistics of natural populations: Seasonal variation in inversion frequencies of Mexican Drosophila pseudoobscura.*

Barry, Daniel Gerard, *Non-parametric Bayesian regression.*

## DELAWARE

**University of Delaware**
(3;1,0,0,0,2,0,0)

MATHEMATICAL SCIENCES

Dallas, Allan Gill, *On the scattering of electromagnetic waves by perfectly conducting bodies moving in vacuum.*

Esham, Benjamin Franklin, Jr., *A singular perturbation problem for a nonlinear evolution equation.*

Smith, Robert Thomas, *A class of inverse scattering problems in acoustics.*

## DISTRICT OF COLUMBIA

**American University**
(4;0,4,0,0,0,0,0)

MATHEMATICS, STATISTICS AND COMPUTER SCIENCE

Matthews, Peter, *New techniques for discrimination with nominal level variables.*

Samuhel, Michael E., *A general approach to the missing data problem.*

Schloss, Louis, *Weighted agreement with categorical data.*

Welsh, Anne Kramer, *A generalized covariance estimator for the analysis of asymmetric time series.*

**George Washington University**
(6;3,0,0,3,0,0,0)

MATHEMATICS

Arwini, Ali Saleh, *Order compactness and complete regularity in topological preordered spaces.*

Haynes, Tyler Henry, Jr., *Invariant means on semi-topological transformation semigroups.*

Pandian, Ramaiah Devadoss, *Relatively almost periodic and distal semigroup compactifications and related fixed point theorems.*

OPERATIONS RESEARCH

Arsham, Hossein, *Poisson process approximations of confidence regions for distribution functions based upon generalized K-S statistics.*

Mazzuchi, Thomas Andrew, *Some nonparametric Bayesian estimates of the failure rate function.*

Roqué, Diego Reyes, *Queueing networks structured via interacting overflow lines: A new perspective on queues.*

## FLORIDA

**Florida State University**
(8;3,4,0,0,1,0,0)

MATHEMATICS AND COMPUTER SCIENCE

Jou, Jong-Jhy, *Compositionally convective and morphological instabilities of a fluid layer of binary alloy with freezing at the lower boundary.*

Kutter, Mary, *Manifold factors that are the cell-like image of a manifold.*

Repovs, Dusan, *Topology of generalized three-manifolds with zero-dimensional singularities.*

STATISTICS

Brindley, Dennis Alfred, *Some results on the distribution of Grubbs estimators.*

Chaganty, Narasinga Rao, *Large deviation local limit theorems, with applications.*

Kim, Jee Soo, *Ranking and selection procedures for exponential populations with censored observations.*

Park, Dong Ho, *Testing whether new is better than used of a specified age.*

Sinclair, Dennis F., *Tests of displacement and ordered mean hypotheses.*

**University of Florida**
(8;5,2,0,0,0,0,1)

INDUSTRIAL AND SYSTEMS ENGINEERING

Sencer, Yeralan, *Analysis of serial production lines that are subject to breakdown.*

MATHEMATICS

Dow, Stephen John, *Some problems in incidence geometry.*

Kenoyer, David B., *Generalizations of ideal theory.*

Mason, Dorothy Alice, *Open mappings and dimension.*

Wijesinha, Alexander L., *Minimal class theorems in measure theory.*

Toledo, Manzur Juan, *Finite and compact actions on chainable and tree-like continua.*

STATISTICS

Schollenberger, John, *Categorical data analysis with an ordinal response variable and interval explanatory variable.*

Suissa, Samy, *Exact unconditional tests for $2 \times 2$ contingency tables.*

**University of Miami**
(6;3,0,0,0,0,0,3)

MATHEMATICS AND COMPUTER SCIENCE

Demsky, Scott Harvey, *Generalizations of addition sets and related structures.*

Drost, John L., *Unramified extensions of normal domains.*

Montes de Oca, Ana, *Unicoherence in topological spaces.*

Montes de Oca, Francisco, *Nonconstant periodic solutions of nonlinear differential equations.*

Sarmiento, Jorge, *Generalized Hadamard matrices.*

Shershin, Carmen Baytan, *Mathematics in cryptography and communication.*

## GEORGIA

**Georgia Institute of Technology**
(3;1,0,0,0,2,0,0)

MATHEMATICS

Bielecki, Daria Jan, *Initial value problems for some two and three dimensional arrays of harmonic oscillation.*

Raddatz, William Daniel, *Bounds and estimates for the linearly perturbed eigenvalue problem.*

Withers, William Douglas, *Extensions of the concept of derivative to all monotone functions.*

**University of Georgia**
(4;0,4,0,0,0,0,0)

STATISTICS AND COMPUTER SCIENCE

Badarinathi, Ravija, *Multivariate generalized classification statistics.*

Chen, Micah Yikman, *Modified moment and maximum likelihood estimators for parameters of the three-parameter inverse Gaussian distribution.*

Hungspruke, Rossukon, *Distribution of the largest and smallest characteristic roots: Evaluation, comparison with approximations and applications.*

Kim, Kee Young, *A study of the Dirichlet distribution family and applications.*

## HAWAII

**University of Hawaii**
(4;0,3,0,0,0,0,1)

PUBLIC HEALTH SCIENCES

Choe, Minja Kim, *Risks of infant and early childhood mortality: A multivariate analysis model with application to Korea 1960–1978.*

Chu, Susan Ying, *Assessment of the comparability of frequency and quantitative dietary intake measurements for epidemiologic studies of diet-disease associations.*

Joesoef, Mohamad, *Epidemiological model and resource allocation for tuberculosis control in the Republic of Korea.*

Meng, Kwang Ho, *Factors affecting the Korean secondary sex ratio—demographic and epidemiological consideration.*

## IDAHO

**Idaho State University**
(2;1,0,0,1,0,0,0)

MATHEMATICS

Olan, Michael John, *Mathematical modelling of inventory control.*

Oxenrider, Clinton John, *Dyad and Kronecker products of matrices.*

**University of Idaho**
(2;1,0,1,0,0,0,0)

MATHEMATICS AND APPLIED STATISTICS

Ayers, Kathleen Louise, *An acceptor for semilinear bounded and other context-sensitive languages.*

Smith, Bryan, *Even pretzel knots and property* P.

## ILLINOIS

**Northwestern University**
(2;1,1,0,0,0,0,0)

MATHEMATICS

Alho, Juho, *Uncertain population forecasting.*

Schwartz, Mark David, *New proofs and application of a theorem of Komlos.*

**Southern Illinois University, Carbondale**
(3;0,1,0,0,1,0,1)

MATHEMATICS

Holliday, Robert Lee, *Quasisymmetric block designs: Results concerning affine resolvability, parallelism properties and the case $y = \lambda$.*

Komanska, Henryka Krystyna, *Contributions to multipurpose and multivariate surveys.*

Setork, Ali, *Mathematical models and their numerical solutions for the flow field of high velocity water jets.*

**University of Chicago**
(12;7,3,0,0,2,0,0)

MATHEMATICS

Brandt, Jorgen, *Characteristic and table modules.*

Bump, Daniel, *Automorphic forms on* $\mathrm{GL}(3, \mathbf{R})$.

Eie, Minking, *Dimension formulas for the vector spaces of Siegel's.*

Haeberly, Jean-Pierre, *Completions in equivariant K-theory.*

Krop, Leonid Jeffini, *Tensor-type representations of* $\mathrm{Mat}_\infty(Z_p)$.

Milnor, Fabio Augusto, *Mixed finite element methods of quasilinear second order elliptic problems.*

Ramanathan, Jayakumar G., *Harmonic maps from surfaces to the Grassmannians.*

Santos, Juan Enrique, *Finite element methods for the simulation of wave propagation in two-dimensional inhomogeneous elastic media.*

Uchiyama, Akihito, *The Fefferman-Stein decomposition of smooth functions and its application to* $H^p(R^n)$.

STATISTICS

Schafer, Daniel William, *Use of the correction for attenuation estimator with judgemental information.*

Shott, Susan, *Limit theorems for mixing arrays.*

Tanner, Martin Abba, *Nonparametric estimation of the hazard function from censored data.*

**University of Illinois, Chicago**
(6;3,1,1,0,1,0,0)

MATHEMATICS, STATISTICS AND COMPUTER SCIENCE

Grace, Thomas, *Graceful, harmonious, and sequential graphs.*

Hull, David, *toward a theory of bisexual Galton-Watson branching processes.*

Hwang, Huen-Luen, *On (k,t) trades and the construction of bib designs with repeated blocks.*

Mohrherr, Jeanleah, *Index sets and truth-table degrees in recursion theory.*

Ryan, Dennis, *Stochastic optimal control applied to harvesting of a renewable resource in a disastrous environment.*

Walker, James, *Operator theory in Hilbert space.*

**University of Illinois, Urbana-Champaign**
(12;5,0,0,0,3,0,4)

MATHEMATICS

Blumer, Anselm Cyril, *Bounds on the redundancy of noiseless source coding.*

Dabrowski, André Robert, *Invariance principles for random processes generated by extrema and partial sums of random variables.*

Snader, Jon Christopher, *Bishop's condition beta and decomposable operators.*

Thomas, Mark Allen, *Generic reductions of an integrable g-structure and an infinitesimal version of Cartan-Sternberg reduction.*

Wingler, Eric Jeffrey, *Analytic unitary operators.*

Zimmerman, Jay James, *The occurrence of certain types of groups as automorphism groups.*

THEORETICAL AND APPLIED MECHANICS

Bowers, Glenn Lee, *The influence of pore fluid on the stability of a rock mass with a weakened zone.*

Kumar, Ranganathan, *Studies in unsteady thermal penetrative convection.*

Kuo, An-Yu, *Dynamic analysis of interfacial cracks in composite laminates.*

Lam, Poh-Sang, *Numerical analysis of stable crack growth in elastic-plastic materials in small scale and general yielding.*

Tung, Andrew Train-Chao, *Properties of conditional eddies in free shear flows.*

Yao, Chung-Sheng, *High Reynolds number unsteady thermal convection in a shallow layer.*

## INDIANA

### Indiana University
(8;3,2,0,0,2,0,1)

MATHEMATICS

Barab, Jacqueline E., *Globular behavior of solutions to the Cauchy problem for some nonlinear wave equations and hyperbolic systems.*

Brunson, Barry W., *Martingales indexed by a partially ordered set.*

Carlson, Mark Arnold, *Central limit theorem for linear rank statistic process.*

Cheney, Margaret, *Quantum mechanical scattering and inverse scattering in two dimensions.*

Kwak, Jin Ho, *Stable parallelizability of lens-like spaces.*

Raphael, Marc, *Quasisimilarity and cyclic subnormal operators.*

Schovanec, Lawrence, *Crack problems in nonhomogeneous bodies and related existence results.*

Wu, Tiee-Jian, *Gaussian approximation of signed linear rank statistics process with applications.*

### Purdue University
(21;7,2,1,7,2,0,2)

INDUSTRIAL ENGINEERING

Bengston, Neal Martin, *Development and use of operational analysis model error measures.*

Choi, Byoung Kyu, CAD/CAM *compatible tool-oriented process planning for machining centers.*

Dattero, Ronald Steven, *Stochastic models from event count data.*

Eswaran, P. K., *Interactive decision making with multiple criteria—algorithms and applications.*

Kachitvichyankul, Voratas, *Computer generation of Poisson, binomial, and hypergeometric random variables.*

Li, Cheng-Ming, *An integrated production planning and control system for steelmaking facilities with an energy conservation criterion.*

Malakooti, Behnam, *An interactive paired comparison method for multiple criteria decision making optimization.*

Sanii, Ezatollah, *A computerized process planning system using tool classification and coding.*

Suominen, Satu Marketta, *Impact of changes in physical fitness on the effectiveness of decision making.*

Swain, James Joseph, *Monte Carlo estimation of the sampling distribution of nonlinear least squares.*

MATHEMATICS

Chang, Chin-Huei, *Problems in partial differential equations and applications to several complex variables.*

Dyksen, Wayne Robert, *Tensor product generalized alternating direction implicit methods for solving separable second order linear elliptic partial differential equations.*

Fenton, William Ellis, *Axiomatic convexity theory.*

Huerta, Ivan, *Optimal difference formulas.*

Mulay, Shashikant B., *Modification of local rings by quadratic transformations.*

Senger, Steven Orville, *The existential theory of concatenation over a finite alphabet.*

Shehadah, Adel Afeif, *Embedding theorems for semigroups with involution.*

Shen, Nien-Tsu, *Embeddings of Hilbert bimodules.*

Welstead, Stephen Thomas, *Orthogonal polynomials applied to the solution of singular integral equations.*

STATISTICS

Kao, Tzu-Cheg, *Maximum likelihood discrimination and logistic regression.*

Tollar, Eric Steven, *On a multi-compartment storage model.*

### University of Notre Dame
(8;8,0,0,0,0,0,0)

MATHEMATICS

Beşe, Ekín Mukadder, *On the spannedness and very ampleness of certain line bundles on the blowups of* $\mathbf{P}^2_C$ *and* $F_r$.

Bradley, Michael J., *On the orders of automorphism groups of complex projective hypersurfaces.*

Cheng, Jih-Hsin, *Graded Lie algebras of the second kind.*

Coulton, Patrick, *A cylinder theorem for CR-manifolds.*

D'Souza, Harry, *Classification of threefolds whose hyperplane sections are elliptic surfaces.*

Livorni, E. Laura, *Classification of algebraic surfaces with the genus of a hyperplane section less than or equal to six.*

Patrizio, Giorgio, *Parabolic exhaustion for strictly convex domains.*

Spellecy, James W., *The defect relation on polydiscs.*

## IOWA

### Iowa State University
(15;1,13,0,0,1,0,0)

MATHEMATICS

Eucker, Bradley A., *Nonlinear resonances in spin-orbit coupling problems with three degrees of freedom.*

Gustafson, John Leroy, *Asymptotic formulas for elliptic integrals.*

STATISTICS

Amemiya, Yasuo, *Estimators for the errors-in-variables model.*

Auer, Richard E., *Shrinkage estimators for multiple parameters.*

Christenson, Peter David, *Variable selection in multiple regression.*

Fahrenholtz, Steven K., *Normal Bayesian two-armed bandits.*

Ihnen, Leigh A., *Computation of the incomplete beta function and the inverse incomplete beta function.*

Lin, Char-Lung, *Statistical computing support for* $L_p$ *estimation in augmented linear models under linear inequality restrictions.*

Nkansa, Paul T., *Network p-median problems: theory and applications.*

Pantula, Sastry Gouripathi, *Properties of estimators of the parameters of autoregressive time series.*

Peixoto, Julio León, *Estimation of random effects in the balanced one-way classification.*

Ponder, Wendell, *Investigations of model validity using residuals.*

Rangachari, Lakshmi, *Aspects of the analysis of variance.*

Razmpour, Ahmed, *Estimation of common location and scale parameters.*

Yeo, Woon Bang, *Selection through an associated characteristic.*

### University of Iowa
(7;3,3,0,0,0,0,1)

MATHEMATICS

Lin, Tzu-Chu, *The numerical solution of the Helmholtz equation using integral equations.*

Ortmeyer, William Albright, *Covering spaces of 3-manifolds.*

Pantoja-Marcari, José Eduardo, *Liftings of supercuspidal representations of* $\mathrm{Gl}_2$.

Smith, William Maclean, *An extension of cone techniques to wedges with applications to biological models.*

STATISTICS AND ACTUARIAL SCIENCE

Iverson, Harald Karl, *Asymptotic properties of U-statistics with estimated parameters.*

Simon, Stephen David, *A class of non-iterative slope estimators in linear regression.*

Warrack, Anthony Giles, *Some hypothesis tests under order restrictions.*

## KANSAS

### Kansas State University
(4;1,3,0,0,0,0,0)

MATHEMATICS

Chima, Javed, *Near n-gons with thin lines.*

STATISTICS

Levy, Martin Stuart, *On prediction functions.*

Neill, James William, *Testing regression function adequacy without replication.*

Schwenke, James Robert, *Using a hold-out data set in a cross-validation scheme to test for instability of regression estimates.*

**University of Kansas**
(1;1,0,0,0,0,0,0)

MATHEMATICS

Darnel, Michael Roy, *Lattice-ordered groups.*

## KENTUCKY

**University of Kentucky**
(3;2,0,0,0,1,0,0)

MATHEMATICS

Greenwell, Catherine Elizabeth, *Finite element methods for partial integro-differential equations.*

Metcalf, Scott, *Finding a boundary for a Hilbert cube manifold bundle.*

STATISTICS

O'Cinneide, Colm Art, *Some results for the infinite server queue in a random environment.*

## LOUISIANA

**Louisiana State University, Baton Rouge**
(2;2,0,0,0,0,0,0)

MATHEMATICS

Kaiser, Raymond Joseph, *Eigenvalues of nuclear operators of diagonal type.*

Vicknair, J. Paul, *On valuation rings as homomorphic images of valuated domains.*

**Tulane University**
(2;2,0,0,0,0,0,0)

MATHEMATICS

Dimitric, Radaslov, *Slenderness in Abelian categories.*

Franzen, Berthold, *On torsion-free modules over valuation domains.*

**University of Southwestern Louisiana**
(1;1,0,0,0,0,0,0)

MATHEMATICS AND STATISTICS

Choate, David Beddoe, *Simple rings with idempotents.*

## MARYLAND

**Johns Hopkins University**
(4;2,0,0,1,0,0,1)

MATHEMATICAL SCIENCES

Beattie, Christopher A., *Some convergence results for intermediate operators that displace essential spectra.*

Robertson, Alastair Douglas, *Selection of tests in medical screening.*

MATHEMATICS

Tai, Bing-sheng, *On a generalization of Kronecker's limit formula.*

Wachter, Ralph Franklin, *On zeta functions.*

**University of Maryland, Baltimore**
(1;0,1,0,0,0,0,0)

MATHEMATICS AND COMPUTER SCIENCE

McCloskey, Joseph Paul, *Properties of r-potent matrices, extensions of Cochran's theorem, and distribution of complex quadratic forms.*

**University of Maryland, College Park**
(11;7,0,0,0,4,0,0)

MATHEMATICS

David, Nancy, *A first order theory of regression with errors in the variables.*

Dorr, Milo, *Piecewise polynomial approximation in the P-version of the finite element method.*

Dougherty, Daniel Joseph, Jr., *Resolution, Gentzen systems and literal trees for propositional logic.*

Duchon, Nicholas, *Involutions on plumbed manifolds.*

Jankins, Mark, *The space of homomorphisms of a Fuchsian group to* $\mathrm{PSL}(2,\mathbf{R})$.

Johnson, Thomas H., *On tangles and their polynomials.*

Joyner, William David, *The harmonic analysis of summation operators and the Riemann zeta function.*

Kramer, David, *Applications of Gauss's theory of reduced quadratic forms to zeta functions and modular forms.*

Tolstoy, Alexandra, *Influence of localized precipitation-induced D-region ionization enhancements on subionospheric* VLF *propagation.*

Trenholme, Alice Ruth, *Radial subalgebras of function algebras associated with the free group on n generators,* $\mathbf{Z}_3 * \mathbf{Z}_3$, *and* $\mathrm{PSL}(2,Z)$.

Szymczak, William, *An adaptive finite element method for convection diffusion problems.*

## MASSACHUSETTS

**Boston University**
(1;0,0,0,0,1,0,0)

MATHEMATICS

Pelikan, Stephen, *The dimension of attractors on surfaces.*

**Brandeis University**
(6;6,0,0,0,0,0,0)

MATHEMATICS

Artale, Maria, *On the resolution of the cokernel of the generic map induced between Schur functors corresponding to a partition.*

Goldberg, Lisa Robin, *K-flat structures on manifolds and exotic characteristic classes.*

Kaiser, Barbara Knight, *Some algebraic problems arising from the study of class groups in* $\mathbf{Z}_p^d$ *extensions.*

Knight, Karl, *Some invariants associated with deformations of hypersurface singularities.*

Schreyer, Frank Olaf, *Syzygies of curves with special pencils.*

Shimamoto, Don Harvey, *An integral version of the Brown-Gitler spectrum.*

**Clark University**
(2;2,0,0,0,0,0,0)

MATHEMATICS

El-Zohny, Habiba A., *Splice algebras.*

Kably, Abdel-Karim, *Extensions of the classical index.*

**Harvard University**
(19;6,3,3,0,4,0,3)

APPLIED SCIENCES

Cain, Kevin C., *Stock size estimation for commercial fish: Robust estimation and bounded influence regression applied to the groundfish survey data.*

Cassandras, Christos G., *Sample path analysis of discrete event dynamic systems.*

Feit, Elliot Jacob, *Procedures for fitting Gaussian linear time series models with independent and stationary components.*

Frankel, James L., *The architecture of closely-coupled distributed computers and their language processors.*

Herrmann, Jeffrey C., *Reference-based protection.*

Lai, Ming-Yee, *Multilevel concurrency control for database management systems.*

Newsam, Garry N., *Numerical reconstruction of partially known transforms.*

Papageorgiou, Nikolaos, *Nonsmooth and multivalued analysis with applications in optimization.*

Ramsdell, John Douglas, *Structural analysis of large sparse systems of nonlinear equations with application to fire modeling.*

Raubitschek, Ruth S., *Product differentiation and brand proliferation.*

BIOSTATISTICS

Parker, Robert A., *A Bayesian approach to the design and analysis of case-control studies.*

MATHEMATICS

Grinberg, Eric Liviu, *Integral geometry on compact symmetric spaces.*

Mantini, Lisa A., *An analog of the Penrose correspondence for representations of* $U(p,q)$ *on* $L^2$*-cohomology.*

Neeman, Amnon, *Topics in algebraic geometry.*

Previato, Emma, *Hyperelliptic curves and solitons.*

Vojta, Paul Alan, *Integral points on varieties.*

Yang, Deane, *Involutive hyperbolic differential systems.*

STATISTICS

Ryan, Louise Marie, Part I: *The weighted normal plot.* Part II: *Efficiency of tests for carcinogenicity.*

Tomberlin, Thomas Jerome, *A statistical perspective on predicting losses in automobile insurance.*

**Massachusetts Institute of Technology**
(25;16,2,1,4,1,0,1)

MATHEMATICS

Alexander, Kenneth Sidney, *Some limit theorems and inequalities for weighted and non-identically distributed empirical processes.*

Antoniano Mateos, Jose Luis Manuel, *Microlocal analogs of fractional integrals.*

Assmann, Susan Fera, *Problems in discrete applied mathematics.*

Bédard, Robert, *Brauer lifting of modular representations.*

Casian, Luis Guillermo, *A global Jacquet functor for Harish-Chandra modules.*

Colley, Susan Jane, *On the enumerative geometry of stationary multiple-points.*

Goerss, Paul G., *Results on Brown-Gitler spectra.*

Gupta, Rajiv, *Fields of division points of elliptic curves related to Coates-Wiles.*

Haran, Shai M. J., *p-adic L-functions for elliptic curves over CM fields.*

Harbourne, Brian, *Moduli of rational surfaces.*

Hriljac, Paul M., *The Neron-Tate height and intersection theory on arithmetic surfaces.*

Ierley, Glenn R., *Macrodynamics of alpha dynamos.*

Izen, Steven Henry, *Regularization of Sobolev norms of Lagrangian distributions.*

Johnson, Joseph Francis, *Lie algebra cohomology and representation theory.*

Landau, Susan E., *On computing Galois groups and its application solvability by radicals.*

Marcus, David Jeffrey, *Non-stable laws with all projections stable and relationships between Donsker classes and Sobolev spaces.*

Masujima, Michio, *Estimation of mean in the presence of inliers.*

Vardi, Ilan, *On the spectrum of the metaplectic group.*

Wu, Yihren, *Weighted homogeneous filtration on rings of pseudodifferential operators.*

Yao, Yi-Ching, *Estimation in the presence of noise, of a signal which is flat except for jumps.*

Yukich, Joseph Elliott, *Convergence of empirical probability measures.*

OPERATIONS RESEARCH

Bier, Vicki M., *A measure of uncertainty importance for components in fault trees.*

Chandru, Vijaya, *Complexity of the super-group approach to integer programming.*

Constantopoulos, Panagiotis Christos, *Computer-assisted control of electricity usage by consumers.*

Huang, Kuan-Tsae, *Query optimzation in distributed databases.*

**Northeastern University**
(2;1,0,0,0,0,0,1)

MATHEMATICS

Georges, John P., *Decomposable graphs and edge colorings of 3-regular graphs with small number of vertices.*

St. Vincent, Michael, *Some results on phase-locking of forced oscillators.*

**University of Massachusetts, Amherst**
(5;4,0,0,0,1,0,0)

MATHEMATICS AND STATISTICS

Fettes, Susan Elizabeth, *On the representation theory of the symmetric and general linear groups.*

Guy, Robert, *Singular points of nonlinear operators.*

Rosen, Jerry David, *Generalized rational identities and rings with involution.*

Rosen, Mary Peles, *Isomorphisms of a certain class of prime Lie rings.*

Seaman, Walter Iaan, *Hypersurfaces of constant mean curvature in euclidean space and groups of Heisenberg type.*

## MICHIGAN

**Michigan State University**
(6;3,0,0,0,3,0,0)

MATHEMATICS

Assiff, Thomas C., *Studies on the bending of elastic plates.*

Dizaji, Ahmad F., *Unfoldings of a class of singular free boundaries for the four dimensional axi-symmetric obstacle problem.*

Doan, Hai Thanh, *Invariant curves for numerical methods and the Hopf bifurcation.*

MacCluer, Barbara D., *Holomorphic self-maps of the unit ball iteration and composition operators.*

Shute, Gary M., *Ascending unions of Chevalley groups.*

Tingley, Daryl William, *The geometry of multidimensional scaling.*

**University of Michigan, Ann Arbor**
(27;16,6,1,3,0,0,1)

BIOSTATISTICS

Burns, Trudy Lynn, *Sampling considerations for the determination of genetic transmission mechanisms in quantitative traits.*

Feingold, Marcia, *Distribution of a test statistic based on combined intra- and inter-block treatment contrast estimates.*

Greenhouse, Joel Bruce, *The analysis of survival data when a proportion of patients are cured: A mixture model.*

Jolayemi, Emanuel T., *A $C_p$ method to select a log linear model.*

Rodriguez Vera, Angel, *Multipurpose optimal sample allocation using mathematical programming.*

INDUSTRIAL AND OPERATIONS ENGINEERING

Anderson, Charles Kevin, *A biomechanical model of the lumbosacral joint for lifting activities.*

Gana, Akli, *Studies in the linear complementarity problem.*

Marcellus, Richard L., *Markov chain disorder problems.*

Thomasma, Timothy Dale, *The triangulation graph as a data structure for computer aided design.*

MATHEMATICS

Bercovici, Hari, *The structure of $C_0$ operators.*

Canjar, Robert M., *Model theoretic properties of countable ultraproducts without the continuum hypothesis.*

Carstensen, Patricia J., *The complexity of some problems in parametric linear and combinatorial programming.*

Chang, Dar Jen, *Boundary value problems for a quasilinear elliptic equation.*

Foote, Robert,. *Curvature estimates for Monge-Ampère foliations.*

Hailat, Mohammad Qassem, *Structure of symmetrysets.*

Heckman, Nancy, *Repeated significance tests with random allocation.*

Hesaaraki, Mahmud, *Structure of shock waves in magnetohydrodynamics.*

Kazemi, Mohammad, *Necessary conditions for optimality of systems governed by ordinary and partial differential equations.*

Krisnangkura, Yati, *On harmonic measure level curves in k-domains.*

Langsam, Joseph, *Some results on $(BCP)$-operators.*

Lazerson, Earl, *The Jacobson radical of generalized polynomial rings.*

Ozluk, Ali, *Pair correlations of zeros of Dirichlet L-functions.*

Plantholt, Michael, *Coloring the lines of a graph.*

Robel, Gregory Frank, *On the structure of $(BCP)$-operators and related results.*

Stark, Christopher Warren, *Structure sets vanish for certain bundles over Seifert manifolds.*

Townsend, Michael, *The polynomial jump operator and complexity for type two relations.*

Walker, Janice, *Closure and expansions in series of complex exponentials.*

**Western Michigan University**
(1;0,0,0,0,0,0,1)

MATHEMATICS

Fink, John Frederick, *Random factors and isofactors in graphs and digraphs.*

## MINNESOTA

**University of Minnesota, Minneapolis**
(8;3,3,0,0,1,0,1)

MATHEMATICS

DeLong, Richard Peter, Jr., *Killing tensors and the Hamilton-Jacobi equation.*

Johnson, Gene Douglas, *Criteria for stability of minimal surfaces in n-dimensional Euclidean spaces.*

March, Peter Des Barres, *Fatou's theorem for harmonic functions of two-dimensional Ornstein-Uhlenbeck processes.*

Nerurkar, Mahesh G., *Generic theorems for lifting dynamical properties in the class of continuous cocycles.*

Takahashi, Jodi, *Partition and saturation properties of ideals.*

STATISTICS

Jennings, Dennis E., *Inference and diagnostics for logistic regression.*

Runger, George C., *Permutation tests in multivariate analysis.*

Wang, Pe-Cheng, *Diagnostics in regression models.*

## MISSOURI

### University of Missouri, Columbia
(3;0,2,0,0,1,0,0)

MATHEMATICS

Luxon, Bruce Arlie, *Parameter estimation: Mathematical modeling of hepatic transport kinetics.*

STATISTICS

Bachhuber, John, *Distribution free tests for comparing two multivariate populations relative to a one sided shift alternative.*

Feltz, Carol J., *Nonparametric maximum likelihood estimation of stochastically ordered survival functions.*

### University of Missouri, Kansas City
(1;1,0,0,0,0,0,0)

MATHEMATICS

Davila, Norbil, *On numerical ranges and norm isometries.*

### University of Missouri, Rolla
(3;0,3,0,0,0,0,0)

MATHEMATICS AND STATISTICS

Danial, Edward Joul, *Extension, generalizations, characterizations and testing for independence through infinite divisibility.*

Magel, Rhonda Cheryl Lank, *Topics in isotonic regression.*

Shiue, Wei-Kei, *Experiment size for Poisson and negative binomial sampling, approximations of ratios of F-variates and tests of equal gamma scale parameters.*

### Washington University
(8;6,1,0,0,1,0,0)

MATHEMATICS

Brega, Alfredo Oscar, *On uniformly bounded representations of the Lorentz groups.*

Carrington, Walter A., Jr., *Moment problems and ill-posed operator equations with convex constraints.*

Cifuentes, Patrico, *$H^p$ classes on rank one symmetric spaces of noncompact type.*

Cogswell, Richard L., *Leaves with growth dominating the quadratic function in foliations of codimension one.*

Colzani, Leonardo, *Hardy and Lipschitz spaces on unit spheres.*

Fernández, José Luis, *Coefficients of Bloch functions.*

Soria, Fernando, *Classes of functions generated by blocks and associated Hardy spaces.*

Van Eerdewegh, Paul, *Statistical selection in multivariate systems with applications in quantitative genetics.*

## MONTANA

### Montana State University
(2;0,1,0,0,1,0,0)

MATHEMATICAL SCIENCES

Chew, Robert, *Estimating toxicity curves by fitting a compartment-based model to median survival times.*

Winslow, Dennis Numan, *Interlacing theorems for interface Sturm-Liouville systems.*

### University of Montana
(1;0,1,0,0,0,0,0)

MATHEMATICAL SCIENCES

Rothan, Sister Adele, *A distribution-free scale test of the Kolmogorov-Smirnov type.*

## NEW HAMPSHIRE

### Dartmouth College
(1;0,0,0,0,0,0,1)

MATHEMATICS

Lenhart, William J., *Generalized quotient families and balancesd incomplete block designs.*

### University of New Hampshire
(1;1,0,0,0,0,0,0)

MATHEMATICS

Hofmann, Mark Challis, *On a conjugate class of subgroups determined by a formation.*

## NEW JERSEY

### Princeton University
(12;12,0,0,0,0,0,0)

MATHEMATICS

Bando, Shigetoshi, *On the classification of three-dimensional compact Kaehler manifolds of nonnegative bisectional curvature.*

Bartnik, Robert, *Existence theorems for maximal surfaces.*

Friedman, Eduardo Carlos, *Iwasawa invariants and Iwasawa theory for several primes.*

Grayson, Matthew Aaron, *Geometry and growth in three dimensions.*

Hook, Julian Lee, *A many-sorted approach to predicative mathematics.*

Jablow, Eric Robert, *Quadratic vector classes and invariance properties of the Riemann constant under the Torelli transformation group.*

Low, Erik, *Inner functions and boundary values in $H^\infty(\Omega)$ and $A(\Omega)$ in smoothly bounded pseudoconvex domains.*

Mosher, Lee D., *Pseudo-Anosovs on punctured surfaces.*

Nance, Dana Walter, *A priori integral geometric estimates for nonpositively curved surfaces.*

Noell, Alan Virgil, *Properties of peak sets in weakly pseudoconvex boundaries in $\mathbf{C}^2$.*

Orloff, Tobias Benjamin, *Analytic continuation of Dirichlet series associated to automorphic forms on unitary groups.*

Post, Steven, *Finite type and subelliptic estimates for the $\bar{\partial}$-Neumann problem.*

### Rutgers University, New Brunswick
(9;5,1,0,0,1,0,2)

MATHEMATICS

Amgott, Steven M., *Separable ringoids.*

Jiang, Jin-Sheng, *A Lagrange multiplier finite element for the stationary Stokes problem.*

Kadas, Zsuzsanna Margit, *Two species reaction-diffusion systems: A piecewise linear activator-inhibitor model.*

Keller, Carol Ann, *Cohomology and two-categories.*

Kwon, Kil Hyun, *Analytic hypoellipticity for a class of analytic pseudodifferential operators with double characteristics.*

Misra, Kailash Chandra, *Structure of the standard modules for $A_n^{(1)}$ and $C_n^{(1)}$.*

Monk, Peter B., *Some finite element methods for the approximation of the biharmonic equation.*

Siegel, Alan, *Smith equivalence of pseudo-free representations for cyclic groups of order $2^a$.*

STATISTICS

Davis, Linda June, *A comparative study of methods of estimating the parameter in a linear logistic regression model for binomial response data.*

## NEW MEXICO

### University of New Mexico
(1;0,1,0,0,0,0,0)

MATHEMATICS AND STATISTICS

Cornez, Richard Neil, *Markov chains in random environments with feedback.*

## NEW YORK

### Adelphi University
(1;0,0,0,0,0,0,1)

MATHEMATICS AND COMPUTER SCIENCE

Impagliazzo, John, *Deterministic models in mathematical demography.*

### Columbia University
(5;5,0,0,0,0,0,0)

MATHEMATICS

Cherowitzo, William Edward, *On the extension of harmonic pre-oval configurations.*

Klein, Peter, *The trace on* $\mathrm{SL}(2,\mathbf{C})$.

Kumar, Parameswaran, *Einstein series, Selberg trace formula and Rankin convolutions.*

McCarthy, John David, *Subgroups of surface mapping class groups.*

Resnicoff, Gita, *On a non-standard integral equation.*

### Cornell University
(22;9,0,0,6,7,0,0)

APPLIED MATHEMATICS

Bales, Laurence Albert, *Semidiscrete and single step fully discrete approximations for second order hyperbolic equations with time dependent coefficients.*

Belair, Jacques, *Phase locking in linearly coupled relaxation oscillators.*

Byers, Ralph, *Hamiltonian and symplectic algorithms for the algebraic Riccati equation.*

Chávez, Patrick F., *Automatic procedures in evolutionary finite element calculations: Restoration of deteriorated meshes, data transfer between meshes and mesh refinement.*

Friedman, Mark J., *Finite element formulation of the general magnetostatic problem in the space of solenoidal vector functions.*

McConnaughey, Helen V., *Three topics in combustion theory.*

MATHEMATICS

Bayer, Margaret Mary, *Facial enumeration in polytopes, spheres and other complexes.*

Bienenfeld, Mel, *Zeta- and L-functions at zero: The case of a non-totally imaginary algebraic number field.*

Bloch, Ethan David, *Pulling apart simplexwise linear near-embeddings of 2-disk in* $\mathbf{R}^2$.

Bohorquez, Jaime Alejandio, *On the effective content of the theory of modules.*

Boyer, Steven Patrick, *Shake-slice knots.*

Desrochers, Maryse Camille, *Self-duality of integers rings as Galois modules.*

Ghosh, Nilotpal, *On the convergence of the boundary element method.*

Ikenaga, Bruce Masao, *Homological dimension and Farrell cohomology.*

Kazez, William Hilal, *On equivalence of branched coverings and their action on homology.*

Key, Eric Stephen, *Recurrence and transience criteria and a limit law for random walk in a random environment.*

Scowcroft, Philip Henry, *The real-algebraic structure of Scott's model of intuitionistic analysis.*

OPERATIONS RESEARCH AND INDUSTRIAL ENGINEERING

Alten, Susan Ellen, *An analysis of a multi-location, indentured inventory system for repairable items under nonstationary demand.*

Chang, Gerard, *K-domination and graph covering problems.*

Mandelbaum, Avishai, *Linear estimation of the mean of a Gaussian distribution on a Hilbert space.*

Marcotte, Odile, *Topics in combinatorial packing and covering.*

Tenga, Robert, *Testing goodness-of-fit to restricted families of distributions with complete and censored data.*

### New York University, Courant Institute
(14;8,0,0,0,6,0,0)

MATHEMATICS

Bourgeade, Antoine, *An analysis of three dimensional compressors.*

Chern, I-Liang, *On the perturbation of a strong wave of systems of hyperbolic conservation laws in one space dimension.*

Dee, Dick, *Computational aspects of adaptive filtering and applications to numerical weather prediction.*

Efrat, Isaac, *Selberg trace formulae, rigidity and cusp forms.*

Epstein, Charles, *Spectral theory of geometrically periodic hyperbolic three manifolds.*

Fogelson, Aaron, *A mathematical model and numerical study of platelet adhesion and aggregation in the early stages of blood clotting.*

Li, Luen-chau, *The Toda flow with infinitely many particles.*

Lin, Chang-shou, *The local isometric embedding in* $R^3$ *of two dimensional Riemannian manifolds with Gaussian curvature changing sign cleanly.*

Linfield, David, *On the relative determinancy of infinite games.*

Marcal, Michael, *Magnetic and drift surfaces in toroidal plasma equilibria.*

Micallef, Mario, *Stable minimal surfaces in Euclidean space.*

Ponce, Gustavo, *Long time stability of solutions of nonlinear evolution operators.*

Scovel, James, *Geometry of some nonlinear differential operators.*

Weinstein, Michael, *Self-focusing and modulational analysis for nonlinear Schrödinger equations.*

### SUNY at Albany
(2;1,1,0,0,0,0,0,0)

MATHEMATICS AND STATISTICS

Li, Lung-An, *Decomposition theorems, conditional probability, and finite mixture distributions.*

Subramanian, Ganesan, *On amenability of semigroup of probability measures on topological groups.*

### SUNY at Binghamton
(2;1,1,0,0,0,0,0,0)

MATHEMATICAL SCIENCES

Dimovski, Dončo, *Non-simply connected Casson handles.*

Menton, Ronald Glen, *A population model for calibration.*

### SUNY at Buffalo
(5;3,1,0,0,1,0,0)

MATHEMATICS

Abdullah, Saleh, *On solvability and entire ellipticity of convolution equations in the space of Beurling's distributions.*

El-Henawy, Ibrahim, *Multiple steady states of buoyancy induced flow in cold water and their stability.*

Hemasinha, Rohan, I: *The symmetric tensor algebra of a Banach space.* II: *Probability measures on Bergman space.*

Marzuq, Maher, *Properties of functions on bounded star-shaped circular domains in* $C^N$ $(N > 1)$.

STATISTICS

Bristol, David Ray, *Some selection procedures for comparison with a standard or a control.*

### SUNY at Stony Brook
(17;9,2,0,5,0,0,1)

APPLIED MATHEMATICS AND STATISTICS

Chen, Kim-Joan, *Estimation of parameters in underdetermined systems.*

Durinovic, Sanja, *On multiple objective Markov decision processes.*

Gupta, Suchitra, *On interpolation methods for boundary value ordinary differential equations.*

Johri, Pravin K., *On maximizing first passage probabilities in Markov chain models.*

Koshy, Mathew, *Quasi-Newton methods for unconstrained optimization of functions with sparse Hessians.*

Levine, Alan, *On the optimal operation of queueing systems—Asymptotic results.*

Lin, Zein Cheng, *Sequential test of composite hypothesis with normal population.*

Shankar, Shiva, *Singular nonlinear differential equations.*

Wilson, Donna, *Algorithms for coloring some classes of perfect graphs.*

Wu, Tsong-Ho, *An efficient algorithm for deciding circular-arc graph isomorphism.*

MATHEMATICS

Agrawal, Om P., *Invariant subspaces of shift operators for the quarter plane.*

Almeida, Sebastiao, *The geometry of manifolds of nonnegative scalar curvature.*

Chou, Arthur Wei-chung, *The Dirac operator on singular spaces.*

Durumeric, Oguz, *Manifolds with almost equal diameter and injectivity radius.*

Itokawa, Yoe, *On certain Riemannian manifolds with positive Ricci curvature.*

Misra, Gadadhar, *Curvature inequalities and extremal properties of bundle shifts.*

Vidaurrazaga, Julio, *Biquotients of compact Lie groups and their curvature.*

### University of Rochester
(7;3,3,0,0,0,0,1)

MATHEMATICS

Astheimer, Jeffrey, *Holomorphy in abstract harmonic analysis.*

Cowles, Jonathan, *Energy localization for Schrödinger operators derived from quadratic forms.*

Dotto, Oclide José, *Dilations and stochastic processes.*

Wathen, Judith, *On the loops of a certain family of very nice spaces.*

STATISTICS

Gheva, David, *Biplot approximate display of contingency table analysis.*

Huang, Wei-Min, *Parameter estimation when there are nuisance functions.*

Mathiason, David J., *Large sample procedures in the presence of nuisance parameters.*

## NORTH CAROLINA

### Duke University
(1;1,0,0,0,0,0,0,0)

MATHEMATICS

Prussner, Laird Drew, *Rigidity of stationary submanifolds of spheres: two examples.*

### North Carolina State University, Raleigh
(10;2,4,0,2,0,0,2)

MATHEMATICS

Holladay, Philip Michael, *Unitary matrices, matrix equations, and partial orderings.*

Lyons, David Michael, *A moving boundary problem modelling diffusion with nonlinear absorption.*

OPERATIONS RESEARCH

Dodd, Steven Louis, *Algorithms for shape-preserving bivariate interpolation and shape-preserving approximation in the plane.*

Dodin, Bajis M., *On the completion time of stochastic* PERT *networks.*

STATISTICS

Aguirre-Torres, Victor Manuel-Armando, *Testing nonnested multivariate nonlinear regression models with and without specification of the error distribution.*

Cantrell, Rayford Stephen, *Utilization, income and health: An economic analysis of U. S. urban-rural mortality rates.*

Dix, Lynn Dana Palmer, *Minimum norm quadratic variance-covariance estimation in a general multivariate one-way random model.*

Dohse, Lothar Albrecht, *A discrete model simulating the interfield movement of a multihost phytophagous beetle.*

Lieth, Johann Heinrich, *Light interception, growth dynamics and dry matter partitioning in a phytotron-grown snap bean (Phaseolus vulgaris L.) crop: A modeling analysis with reference to air pollution effects.*

Lopez-Alvarez, Maria Teresa Concepcion, *Synthetic estimation when only partial symptomatic information is available.*

### University of North Carolina, Chapel Hill
(24;5,19,0,0,0,0,0)

BIOSTATISTICS

Amara, Ingrid, *Strategies for multivariate randomization analyses and applications to health sciences data.*

Boyd, Michael Neal, UI-IMP *rank tests against restricted alternatives.*

Brooks, Camilla Anita, *A probabilistic survey error model with double sampling to correct for nonresponse.*

Christiansen, David H., *Algorithms for the generation of design and definitional matrices in linear models for crossed-factor designs.*

Connor, Michael John, *The implications of ecological inference on parameter estimates in health services research.*

Dat, Nguyen, *Tests for time-space clustering of disease.*

Feeney, Gregory, *Extreme value theory for non-stationary sequences with application to air pollution standards.*

Feuer, Eric J., *Linear and long-linear models of population heterogeneity for Markov chains.*

Gaynor, Jeffrey, *A framework that incorporates repeated measurements into the hazard.*

Ingram, Deborah, *A test for concordant nonrandom patterns among series with epidemiologic applications.*

Johnson, Robert E., *A comparison of error probabilities for two standard analyses of variance in unbalanced two way designs.*

Kempthorne, Wanda Joan, *The analysis of clustered attribute data from nested and/or classification designs using random effects models.*

Knuckles, Bettie N., *Strategies for investigating health outcome patterns and an extension of Mantel's generalized regression approach: Application to homicide and suicide data.*

Kovar, Mary Grace, *A methodological study of factors associated with whether children receive adequate medical care.*

McCanless, Imogene, *Analysis of covariance by matching for the K sample problem.*

Mendoza, Ophelia, *Taylor series variance estimation for selected indirect demographic estimators.*

Robinson, Rhonda, *The error-in-variables problem in the logistic regression model.*

Sollecito, Bill, *The time reversed crossover design in health services research.*

Steinberg, Seth Michael, *Confidence intervals for functions of quantiles using linear combinations of order statistics.*

MATHEMATICS

Gordon, Gary Peter, *Representations of matroids over prime fields.*

Kossowski, Marek, *Local differential geometry of transverse metric singularities.*

McMahon, Elizabeth W., *Separable extensions of noncommutative rings.*

Patterson, Samuel Eugene, SL-*stable limit set explosions.*

Umble, Ronald, *A computer assisted study of meta-stable primitivity in finite H-towers.*

## OHIO

### Bowling Green State University
(2;1,1,0,0,0,0,0)

MATHEMATICS AND STATISTICS

Javier, Walfredo R., *On the distributions of certain random matric variates and their functions.*

Myers, Gary Thomas, *Upper bound graphs of partially ordered sets.*

### Case Western Reserve University
(7;0,2,0,5,0,0,0)

BIOMETRY

Helmuth, Dennis, *A general order Markov chain model for the progression of chronic disease.*

McLaren, Christine Ellen Owens, *Statistical analysis of red blood cell volume distributions.*

OPERATIONS RESEARCH

Boukaabar, Boudjelal, *A multi-item multi-component two-echelon model for reusable items in a health care setting.*

Chitariance, Sedrak, *A long-range planning model for branch bank development.*

Lee, Chung Ung, *Principles for evaluating and selection of alternative systems.*

Paparrizos, Konstantinos, *Monotonic algorithms for the linear complementarity problem.*

Shusang, Prasert, *Functional approximation approach to multistate control problems.*

### Kent State University
(3;3,0,0,0,0,0,0)

MATHEMATICAL SCIENCES

Atwa, Mahmoud, *Core filing sequence transformations.*

Stanek, Gary L., *Studies in the iterated logarithm law for nonstationary processes and applications.*

Wilson, David Lynn, *Slidings in handlebodies.*

### Ohio State University
(11;5,4,0,0,0,0,2)

MATHEMATICS

Bonan', Stanford, *Weighted mean convergence of Lagrange interpolation.*

Carothers, Neal, *Symmetric structures in Lorentz spaces.*

Costello, Patrick, *Classification and construction of positive definite integral quadratic forms over* $\mathbf{Z}$ *and* $\mathbf{Z}[(1+\sqrt{5})/2]$.

D'Mello, Joseph, *Class groups of* $\mathbf{Z}_l$*-extensions and solvable automorphism groups of algebraic function fields.*

Hajela, Dhananjay, *On counting points in hypercubes, additive sequences and* $\Lambda(p)$ *sets.*

Mahoney, Carolyn Ray, *On unimodality of the independent set numbers of a class of matroids.*

Shih, Ching-Hsien, *On graphic subspaces of graphic spaces.*

STATISTICS

Mishra, Satya Narayan, *Selection of extreme populations.*

Stefansson, Gunnar, *Multiple comparisons under order restrictions.*

Taneja, Baldeo, *Ranking and selection in designed experiments.*

Yousry, Iman Abdalla, *On a class of generalized distributions with applications.*

### Ohio University
(1;1,0,0,0,0,0,0)

MATHEMATICS

Ruth, Rickey Eugene, *Complete* $\Sigma$*-spaces and* $\theta$*-space.*

### University of Cincinnati
(3;1,2,0,0,0,0,0)

EPIDEMIOLOGY AND BIOSTATISTICS

Dietrich, Kathleen Karpenter, *Shelf life estimation from nonaccelerated data.*

MATHEMATICAL SCIENCES

Ceritto, Patricia A. B., *Random walks and measures on topological groups and semigroups.*

Heeg, Richard A., *Jordan automorphisms on semiprime ratings.*

### University of Toledo
(1;0,0,0,0,1,0,0)

MATHEMATICS

Bick, Richard Yee, *Continuous alphabet channels: The* $\overline{\rho}$*-topology,* $\overline{\rho}$*-finite memory and block coding.*

## OKLAHOMA

### Oklahoma State University
(3;0,3,0,0,0,0,0)

STATISTICS

Abdullah, Mat Yusoff, *Bayesian inferences with the poly-t distribution.*

Al-Mahmeed, Mohammad Abdulhadi, *The analysis of autoregressive processes: The identification and the prior, posterior, and predictive analysis.*

Chou, Wen-Shen, *Selecting the best treatment through likelihoods.*

### University of Oklahoma
(2;2,0,0,0,0,0,0)

MATHEMATICS

Anderson, Stuart Neal, *A study of generalized absolute neighborhood retracts.*

Walker, Anita M. Ransdell, *Generalized iterative methods and nonlinear functional equations.*

## OREGON

### Oregon State University
(9;4,3,0,0,2,0,0)

MATHEMATICS

Bashir, Mohammed Ali, *Zero-rest-mass fields from the formula of the volume of a tube in complex projective three-space.*

Gerlach, Jürgen, *A free boundary value problem for the gas dynamic equations.*

Mohamed, Fouad, *Nonlinear free boundary problems arising from soil freezing in a bounded region.*

Ojha, Murari Prasad, *Smooth approximations and Quermassintegrals.*

Scarborough, Stephen Douglas, *A moment rate characterization for stochastic integrals.*

Treuden, Micheal L., *Asymptotically compact operator approximation theory.*

STATISTICS

Gray, Robert J., *Goodness-of-fit tests for censored survival data.*

Thomas, Dana L., *Confidence bands for percentiles in the linear regression model.*

Wildman, Valerie Jean, *A new estimator of effective area surveyed in wildlife studies.*

### University of Oregon
(1;1,0,0,0,0,0,0)

MATHEMATICS

Bahrampour, Yousef, *Subtransversality.*

## PENNSYLVANIA

### Carnegie-Mellon University
(6;0,3,0,1,2,0,0)

MATHEMATICS

Hsieh, Ying-Hen, *Demographic prediction under varying vital statistics.*

Polak, George Gregory, *Multihour multicommodity design synthesis under queueing demand for flows.*

Trutzer, Victor, *Existence and asymptotic stability for solutions to stochastic hereditary equations.*

STATISTICS

Buhite, Sally Greenberg, *A decision theoretic approach to optimal selection from a candidate pool.*

Chmelynski, Harry James, *A new multivariate error structure for multiple regression based on a Bayesian analysis of the gamma process.*

Fung, Kon, *Criterion functions for regressor selection.*

### Drexel University
(1;0,0,0,0,1,0,0)

MATHEMATICAL SCIENCES

Soyka, Michael George, *Computer-aided applications of non-Markovian macrosimulation models to the study of human populations.*

### Lehigh University
(1;1,0,0,0,0,0,0)

MATHEMATICS

Shiskowski, Kenneth Michael, *Euler-Poincaré characteristic and higher order sectional curvature.*

### Pennsylvania State University
(2;2,0,0,0,0,0,0)

MATHEMATICS

Almeida, Jorge Manuel Menesses Guimaraes, *Some algorithms related to the star operation applied to finite and rational languages.*

Sunderland, Benjamin Bruce Jr., *Generalized totient functions in two variables.*

### University of Pennsylvania
(1;0,1,0,0,0,0,0)

STATISTICS

Shoemaker, Anne Clarke, *Effects of misspecification of the link function in models for binomial data.*

### University of Pittsburgh
(14;3,2,0,0,1,0,8)

BIOSTATISTICS

Barton, Bruce Alan, *The assessment of the growth rate of human breast tumors.*

Guo, Shu-Mei, *Some new mathematical models of exposure to a carcinogen in the multistage theory with application to an epidemiologic study.*

Lee, Seung Wok, *An investigation of dependence of latent periods on dose levels in occupation-related lung cancer.*

Seth, Anand K., *Statistical analysis of incomplete data on weight of cleft palate children.*

Sieber, William Karl, *Statistical evaluation of prehospital emergency medical care.*

MATHEMATICS AND STATISTICS

Cha, Anna En-Tzu, *Analysis of Krzhivitski and Ladyzhenskaya discretization of the stationary Navier-Stokes equations.*

Currie, Melvin R., *A metric characterization of the irrationals via a group. operation.*

DeSilva, Santhushta, *Non-linear superposition of gravitational plane waves.*

Ellison, John H., *Analysis of finite difference discretizations of Navier-Stokes problems on mapped domains.*

Kent, Steven L., *Yang-Mills theory in null path space.*

Krishna, Kottekai, *Commutativity of differentiation and discretization with special reference to finite element and finite difference discretizations.*

Nguyen, Truc T., *Positive dependence of the bivariate discrete distributions.*

Saigol, Shakeel Ahmed, *Point-countable k-networks and $k_1$-spaces.*

Weissfeld, Lisa Anderson, *Bounds on efficiencies of commonly used nonparametric statistics.*

## RHODE ISLAND

### Brown University
(12;8,2,0,0,1,0,1)

APPLIED MATHEMATICS

Erdal, Aytul, *Cross validation for ridge regression and principle component analysis.*

Laprade, Robert, *Stochastic control methods applied to eigenvalue problems.*

Levine, Daniel C., *Multidimensional scaling with dissimilarity as a nonmonotone function of distance.*

Murphy, Katherine, *A spline-based approximation method for inverse problems for a hyperbolic system including unknown boundary parameters.*

Nagurney, Anna, *Stability, sensitivity, analysis, and computation of competitive network equilibria.*

Nascimento, Arnaldo, *Dynamics in a parabolic equation.*

Shatah, Jalal, *Stability properties of steady state and standing wave solutions of nonlinear wave equations.*

Stead, Sarah, *Smooth multistate multivariate approximation.*

MATHEMATICS

Keem, Changho, *A remark on the variety of special linear systems on an algebraic curve.*

Khavinson, Dmitry S., *On a geometric approach to problems concerning Cauchy integrals and rational approximation.*

Migliore, Juan Carlos, *Topics in the theory of liaison of space curves.*

Vilonen, Kari, *Intersection homology D-module on hypersurfaces with isolated singularities.*

## SOUTH CAROLINA

### Clemson University
(3;1,1,0,1,0,0,0)

MATHEMATICAL SCIENCES

Gray, Jerry Brian, *The detection and assessment of influence in regression analysis.*

Minton, Roland Bertram, *An operator approach to linear-quadratic stochastic control theory.*

Rudisill, John Franklin, *A simulation model for evaluating the performance and cost effectiveness of a residential photovoltaic energy system.*

**University of South Carolina**
(3;0,0,0,0,1,0,2)

MATHEMATICS AND STATISTICS

Austria, Nieves McNulty, *Quasi-Newton methods using LU-updates.*

Blitch, Patricia M., *Domination in graphs.*

Monroe, Ted R., *Point unstable and almost point unstable graphs.*

## TENNESSEE

**Memphis State University**
(1;1,0,0,0,0,0,0)

MATHEMATICAL SCIENCES

Loomis, Irene Hejzler, *Isometries of Banach spaces.*

**University of Tennessee**
(2;0,0,0,0,2,0,0)

MATHEMATICS

Antonios, Medhat Naquib, *Input-output analysis of mathematical models of ecosystems.*

Harrod, William Joseph, *Rank modification method for certain singular systems of linear equations.*

**Vanderbilt University**
(3;3,0,0,0,0,0,0)

MATHEMATICS

Cyphert, Daniel Scott, *Generalized functions of bounded variation and their application to the theory of harmonic functions.*

Iskra, Joseph Aloysius, Jr., *Globals of semigroups.*

Lee, Jeh Gwon, *Almost distributive lattice varieties.*

## TEXAS

**Rice University**
(6;2,1,2,0,1,0,0)

MATHEMATICAL SCIENCES

Allen, John Randal, *Dependence analysis for subscripted variables and its application to program transformations.*

Cooper, Keith Daniel, *Interprocedural data flow analysis in a programming environment.*

Hathaway, Richard Joseph, *Constrained maximum-likelihood estimation for a mixture of m univariate normal distributions.*

MATHEMATICS

Palmer, Owen James, *Error estimates for finite element methods applied to contaminant transport equations.*

Orosz, Luiz Pedro, *Characterizing semisimple Lie groups by certain finite subgroups.*

Yasinovskaya, Victoria, *Cauchy problem for nonlinear hyperbolic systems of PDE's.*

**Southern Methodist University**
(2;0,2,0,0,0,0,0)

STATISTICS

Conerly, Michael David, *A comparison of three variance component estimators using symmetric balanced incomplete block designs.*

Hahn, Suk-ki, *A Bayesian approach, using a two-stage priori, to the symmetric multiple comparison problem.*

**Texas A & M University**
(3;0,3,0,0,0,0,0)

STATISTICS

Ball, Gerald Dannie, *Classification based on dichotomous and continuous variables: Krzanowski's procedure.*

Lam, Frederic Che-Yuen, *Nonparametric tests for homogeneity of the marginal distributions of paired data.*

Woodfield, Terry Joe, *Statistical modeling of bivariate data.*

**University of Houston**
(3;1,0,0,0,1,0,1)

MATHEMATICS

Jones, Kathryn Lois Fraughnaugh, *Independence in graphs with maximum degree four.*

Suen, Ching-Yun, *Representation theory of completely bounded maps on C*-algebras.*

Vu, Phuong Anh, *Inacurracy in least change secant update methods.*

**University of Texas, Arlington**
(3;2,0,1,0,0,0,0)

MATHEMATICS

Countryman, William Mark, *Computation of periodic solutions of forced nonlinear hyperbolic problems.*

Du, Sen-Wo, *Contribution to global problems of some nonlineardifferential equations.*

Vargas, Cristobal, *A discrete model for the recovery of oil from a reservoir.*

**University of Texas, Austin**
(4;3,0,0,1,0,0,0)

MATHEMATICS

Fonken, David William, *A simple version of the Malliavin calculus with applications to the filtering equation.*

Katz, Daniel Lane, *Asympototic primes and applications.*

Lovegren, Victoria Marie, *Informatics, analysis, and solution of a class of constrained integer network problems.*

Marivani, Syrous, *Inequalities for character sums.*

**University of Texas, Dallas**
(2;0,2,0,0,0,0,0)

MATHEMATICAL SCIENCES

Jennings, Linda Wulf, *Discrimination between Gaussian time series.*

Peck, Roger Wayne, *Confidence bounds for the number of clusters in cluster analysis.*

## UTAH

**University of Utah**
(4;2,0,1,0,1,0,0)

MATHEMATICS

Collingwood, David H., *Harish-Chandra modules with the unique embedding property.*

Little, Frank F., *Convex combination surfaces.*

Sindler, Frank, *Nonlinear second order elliptic and parabolic systems with upper and lower solutions.*

Stone, William Dean, *Systems of differential-delay equations weakly coupled by diffusion.*

## VIRGINIA

**University of Virginia**
(11;5,0,4,0,1,0,1)

APPLIED MATHEMATICS AND COMPUTER SCIENCE

Adams, Loyce Mae, *Iterative algorithms for large sparse linear systems on parallel computers.*

French, James Cornelius, *An investigation of* IDAM *file organizations.*

Furtney, Mark, *Kernel-control optimization of sequential code for uni- and multi-processor systems.*

Hartley, Stephen Judd, *Improving the performance of programs in virtual memory systems.*

Mehrotra, Piyush, *Parallel computations on large arrays.*

MATHEMATICS

Frech, Bruce H., *Ultrasemifree actions and bordism.*

Grosvenor, John Ralph, *Invariant means on Lie groups and their discrete subgroups.*

Hopkins, Nora Carol, *Some results on the classification of triple systems.*

Kirkwood, James R., *Stochastic inequalities and phase transitions for Markov semigroups.*

Nolan, John P., *Local nondeterminism and local times for stable processes.*

Vella, David Charles, *Parabolic subgroups of algebraic groups and induction.*

**Virginia Polytechnic Institute and State University**
(10;5,3,0,0,2,0,0)

MATHEMATICS

Blum, Dorothee Jane, *Circularity of graphs.*

Chen, Jih-Hsiang, *Gauss-type formulas for positive linear functionals.*

Hao, Hsin-Seng Fred, *The Fermat equation over quadratic fields.*

Marciniak, Zbigniew, *Idempotents in group rings.*

Miller, Thomas Len, *Functions of subnormal operators.*

Torgrimson, Mark Thomas, *Asymptotic stochastic analysis of a gravity model for internal navigation systems.*

Yamasaki, Masayuki, *Surgery groups of crystallographic groups.*

STATISTICS

Chang, Cheng-Tao, *On the construction of balanced and partially balanced factorial experiments.*

Marcucci, Mark O., *On monitoring the attributes of a process.*

Tripp, Robert, *Nonstochastic ridge regression and defective rank of the regressor's matrix.*

## WASHINGTON

### University of Washington
(7;4,1,0,0,0,0,2)

MATHEMATICS

Boyle, McBlaine Michael, *Topological orbit equivalence and factor maps in symbolic dynamics.*

Chen, Yenn-Kunn Oliver, *Infinitely divisible probability measures on locally compact Abelian groups.*

Fisher, Albert M., *Gurevich flows of the same entropy are finitarily isomorphic.*

Manber, Rachel, *Graph theoretic approach to sign-solvability of linear systems.*

Shelton, Brad Scot, *Algebraic constructions of principal series and generalized principal series representations for a real semisimple Lie group.*

Sigurdsson, Gunnar, *Prime ideals in differential operator rings.*

STATISTICS

Percival, Donald Bame, *The statistics of long memory processes.*

### Washington State University
(3;2,0,0,0,1,0,0)

MATHEMATICS

Dearden, Bruce G., *Quasi-multipliers of Pedersen's ideal of a C*-algebra.*

Sriranganathan, Rukmini, *A theoretical investigation of cellular structure during the solidification of a dilute binary alloy.*

Wiest, Mary Ann, *Collineation groups of translation planes.*

## WISCONSIN

### University of Wisconsin, Madison
(12;12,0,0,0,0,0,0)

MATHEMATICS

Biagioli, Anthony John, *Products of transforms of the Dedekind eta function.*

Bickford, Mark, *The jump operator in strong reducibilities.*

Flapan, Erica Leigh, *Non-periodic knots and homology spheres.*

Gethner, Robert M., *A Polya "shire" theorem for entire functions.*

Hanson, Bruce Howard, *The zero distribution of holomorphic functions on the unit disc.*

Johnson, Daniel Peter, *Diffusion approximations for optimal filtering of jump processes and for queueing networks.*

Kim, Hong Oh, *Derivatives of inner functions.*

Mills, Charles Frederick, *Supercompact spaces and related structures.*

Slattery, Michael Charles, *$\pi$-blocks of $\pi$-separable groups.*

Soares, Eliana F. E., *Big primes and character values for solvable groups.*

Souganidis, Panagiotis E., *Approximation schemes with applications for the viscosity solution of Hamilton-Jacobi equations.*

Stanton, Charles Stuart, *Riesz mass and growth problems for subharmonic functions.*

### University of Wisconsin, Milwaukee
(1;1,0,0,0,0,0,0)

MATHEMATICAL SCIENCES

Schmitz, Michael Bruce, *A metric property concerning function theoretic null sets.*

## WYOMING

### University of Wyoming
(5;0,5,0,0,0,0,0)

STATISTICS

Abdullah, Shalal H., *The detection and testing of partial multivariate outliers.*

Al-Atheri, Faris, *Inferences about the location parameters of the arc sine and the parabolic distributions.*

Edgeman, Rick L., *Optimal and quasi-optimal sequences of decisions for cooperative nested multistage games.*

Ogbi, Mohamed, *A study of joint-probabilities for ocean wave properties.*

Shi, Mei Pin, *Determination of the ocean wave directional spectrum from ship motion time series.*

## CANADA

### Carleton University
(3;3,0,0,0,0,0,0)

MATHEMATICS AND STATISTICS

Estrada Navas, Luis, *On self-injective algebras of finite representation type.*

Nassrallah, Bassam G., *Some quadratic transformations and projection formulas for basic hypergeometric series.*

Roldan, Oscar E. S., *Tilted algebras of type $\mathbf{A}_n$, $\mathbf{B}_n$, $\mathbf{C}_n$ and $\mathbf{BC}_n$.*

### Dalhousie University
(3;2,0,0,0,1,0,0)

MATHEMATICS, STATISTICS AND COMPUTING SCIENCE

Abdalkhani, Javad, *Collocation and Runge-Kutta-type methods for Volterra integral equations with weakly singular kernels.*

Khoshkam, Mahmood, *Perturbations of operator algebras.*

Mingo, James A., *K-theory and multipliers of stable C*-algebras.*

### McGill University
(5;4,0,0,0,1,0,0)

MATHEMATICS

Cheng, Koun-Ping, *The holonomy group and the differential geometry fibred Riemannian spaces.*

Collins, David Albert Charles, *A numerical study of the stability of a stratified mixing layer.*

Eigen, Stanley, *Groups of measurable and measure-preserving transformations.*

Mair, Bernard, *Fine and parabolic limits.*

Meyer, Carol Vincent, *Composition of categories under certain limits.*

### Queen's University
(3;1,1,0,0,1,0,0)

MATHEMATICS AND STATISTICS

Barry, Brian M., *The minimum stress problem for nonlinear hybrid train models.*

Broughton, Sean Allen, *On the topology of polynomial hypersurfaces.*

Burnett, Richard Thomas, *The piecewise proportional hazards model.*

### Université de Montréal
(9;7,2,0,0,0,0,0)

MATHÉMATIQUES ET STATISTIQUE

Baddou, Jamal Addin, *Sur la théorie du repère mobile suivant Elie Cartan.*

Ducharme, Gilles R., *La collapsibilité de tableaux de contingence.*

Dufour, Robert, *Tests d'ajustement pour des échantillons tronqués ou censurés.*

Frappier, Clément, *Quelques problèmes extrémaux pour les polynômes et les fonctions entières de type exponentiel.*

Horvath, Charles, *Points fixes et coincidences sans convexité.*

Labrèche, Martine, *De l'approximation harmonique uniforme.*

Lalonde, François, *Homologie de Shih et applications au problème de Cauchy global.*

Oudadess, Mohamed, *Caractères et formes positives dans des algèbres topologiques ou bornologiques.*

Todor, Fabian, *La règle du trapèze pour l'intégrale de Riemann-Stieltjes. Les problèmes de l'inversion d'une règle du trapèze.*

### University of British Columbia
(3;2,1,0,0,0,0,0)

MATHEMATICS

Genest, Christian, *Towards a consensus of opinion.*

Gentle, Ronald, *A study of the sequence category.*

Verster, Jan Frans, *Formality and finite ambiguity.*

### University of Calgary
(1;0,0,0,0,1,0,0)

MATHEMATICS AND STATISTICS

Sezgin, Münevver, *Some mixed boundary value problems in magnetohydrodynamics.*

### University of Manitoba
(2;0,2,0,0,0,0,0)

STATISTICS

Amoh, Raymond Kwabena, *Classification procedures associated with the inverse Gaussian distribution.*

Weiss, Günter Max Theodor, *A large deviation study of consistent estimation of a translation invariant location parameter.*

### University of Toronto
(1;0,0,0,1,0,0,0)

INDUSTRIAL ENGINEERING

Rao, Badeti Madhusudan, *On the analysis of dependent parallel exponential queues.*

### University of Waterloo
(9;2,1,0,0,1,0,5)

APPLIED MATHEMATICS

Al-Zanaidi, Mansour Abdullah, *Water wave generation and attenuation by wind—A numerical study.*

COMBINATORICS AND OPTIMIZATION

Fukuda, Komei, *Oriented matroid programming.*

Korach, Ephraim, *On dual integrality, min-max equalities and algorithms in combinatorial linear programmes.*

Locke, Stephen Charles, *Extremal properties of paths, cycles and K-colourable subgraphs of graphs.*

Mandel, Arnaldo, *Topology of oriented matroids.*

Roy, Bimal Kumar, *On isomorphic subgraphs having minimum intersection.*

PURE MATHEMATICS

Amer, Khaled, *Commutative monoids with monus.*

Ralph, William James, *Variants of the singular complex and their connections with Banach algebras, Čech cohomology and co-products.*

STATISTICS

Desmond, Francis Anthony, *Local maxima of stationary stochastic processes and stochastic modelling of fatigue.*

**University of Western Ontario**
(2;1,0,0,0,1,0,0)

APPLIED MATHEMATICS

Wilkinson, Steven Ray, *Boundary layer flow in streamwise concave corners.*

MATHEMATICS

Sayre, John Edward, *Generalized Hausdorff matrices with applications to strong and absolute summability.*

**University of Windsor**
(1;0,1,0,0,0,0,0)

MATHEMATICS

Srivenkataramana, Talapady, *Contribution to sampling theory and practice using auxiliary information.*

# Doctoral Degrees Conferred 1981-1982

## *Supplementary List*

The following entry supplements the list of thesis titles published in the November 1982 *Notices*, pages 639-653, and in the April 1983 *Notices*, page 359.

### WISCONSIN

**University of Wisconsin, Madison**
(1;1,0,0,0,0,0,0,0)

MATHEMATICS

Kosciuk, Steven A., *Non-standard stochastic methods in diffusion theory.*