

NEWS AND NOTICES

Personal Items

Readers are invited to submit to the Treasurer of the Institute news of interest

M. M. Desu, formerly D. M. Mahamunulu, has been promoted to Associate Professor at the State University of New York at Buffalo.

Dr. Carl M. Harris has joined the faculty of the Department of Engineering Administration and Operations Research at the George Washington University.

Dr. Arnljot Høyland has been appointed Professor of Mathematical Statistics at the University of Trondheim, NTH.

Dr. Colin L. Mallows has been promoted to Head, Statistical Models and Methods Research Department, at Bell Telephone Laboratories, Murray Hill, New Jersey.

Dr. Nozer D. Singpurwalla has joined the faculty of the Department of Engineering Administration and Operations Research at the George Washington University.

Dr. K. Subrahmaniam has been promoted to Professor in the Department of Statistics, University of Manitoba; Dr. (Mrs.) Kathleen Subrahmaniam has been appointed Assistant Professor in the same Department.

Professor Saw Swee-hock, formerly Chairman of the Division of Statistics, University of Malaya, is now Professor and Head of the Department of Statistics, University of Hong Kong.

Dr. Peter C.-C. Wang is on leave from the University of Iowa as Visiting Assistant Professor in the Department of Statistics, Stanford University, for 1969–1970.

New Members

Acker, Fredric M., Ph.D., (Washington University of St. Louis); Economist, Goldwater, Valente Fitzpatrick & Schall.

Ahmad, Ibrahim Ali, M.S., (Florida State University); Graduate Assistant, Florida State University.

Arroso, Aloisio Pessoa, M.A., (I.M.P.A., Rio de Janiero); Graduate Student, University of California, Berkeley.

Carlson, Roger A., Ph.D., (Harvard University); Assistant Professor, University of Missouri.

Carsrud, William J., M.S., (University of Oregon); Teaching Assistant, University of Oregon.

Dickinson, John P., M.S., (University of Leeds); Lecturer, University of Leeds.

Enns, Ernest G., Ph.D., (University of British Columbia); Assistant Professor, University of Calgary.

Fischer, Frederic P.II, M.S., (Rutgers University); Graduate Student, Purdue University.

Folsom, Ralph E. Jr., M.S., (Iowa State University); Graduate Student, University of North Carolina.

Gaines, Richard, M.A., (Western Michigan University); Graduate Student, Western Michigan University.

Gordon, Robert D., M.S., (University of Illinois); Teaching Assistant, University of Illinois.

Haack, Dennis G., M.S., (Illinois State University); Part-time Instructor, State University of Iowa.

Hellman, Martin E., Ph.D., (Stanford University); Assistant Professor, Massachusetts Institute of Technology.

- Hill, Geoffrey W.**, Ph.D., (University of Melbourne); Principal Research Assistant, Commonwealth Scientific and Industrial Research Organization.
- Huque, Mohammad Fazle**, M.A. (University of Missouri); Graduate Student, University of Missouri.
- Ip, Bing Fun**, M.A., (Wayne State University); Graduate Assistant, Wayne State University.
- Ko, Wilson Pi-chao**, B.S., (Taiwan Normal University); Graduate Student, Tennessee Technological University.
- Li, Yu-ku**, Ph.D., (University of California, Berkeley); Assistant Professor, Ohio State University.
- Mathias, John H.**, B.S.B.A., (Bucknell University); Graduate Student, Bucknell University.
- Mercer, Joseph O.**, M.S., (University of Illinois); Teaching Assistant, University of Illinois.
- Natarajan, Surrshmanya**, Ph.D., (Indian Statistical Institute, Calcutta); Research Associate, Florida State University.
- Neave, Henry R.**, Ph.D., (University of Nottingham); Lecturer, University of Nottingham.
- Ni, Tsee-shong**, M.S., (University of Wisconsin); Senior Statistician, Joseph Schlitz Brewing Company.
- Ninomiya, S.**, (Tokyo Municipal University); Professor, Aoyama Gakuin University.
- Nunn, Walter R.**, M.A., (University of California); Analyst, Center for Naval Analyses.
- Olson, Joel E.**, B.A., (Augustana College); Graduate Student, California State College, Hayward.
- Osteyee, David R.**, M.A., (University of California, Los Angeles); Graduate Student, Virginia Polytechnic Institute.
- Paine, Thomas B.**, Ph.D., (University of Oregon); Assistant Professor, Southern Illinois University.
- Parke, Darrel W.**, A.M., (University of Missouri); Research Assistant, University of Missouri.
- Patel, Jashbhai B.**, M.A., (Sardar Patel University); Graduate Student, Tennessee Technological University.
- Patrick, Shirley E.**, B.S., (University of Manitoba); Graduate Student, University of Manitoba.
- Thomas, Donald H.**, M.A., (Wayne State University); Associate Senior Research Mathematician, General Motors Research Laboratories.
- Tseng, Edward Wu-chieh**, B.S., (National Chenchi University); Graduate Student, Tennessee Technological University.
- Vergine, George H.**, B.A., (The American University); Research Analyst, National Security Agency.
- Walker, LeRoy H.**, Ph.D., (University of California, Los Angeles); Assistant Professor, Brigham Young University.
- Wallgren, Britt Berglund**, Fil. lic., (University of Stockholm); Forskar Assistant, University of Stockholm.
- Welsch, Roy E.**, Ph.D., (Stanford University); Assistant Professor, Massachusetts Institute of Technology.
- Yuan, William Jen Chun**, M.A., (Wayne State University); Graduate Student, University of California, Berkeley.

DOCTORAL DISSERTATIONS IN STATISTICS, 1969

Listed below are doctorates conferred during 1969 in statistics and related fields. The university, major subject, and the title of the dissertation are given in each case. Readers are invited to notify the Editor of any omissions from the list.

- Abraham, John Kelso**, Stanford University, major in Statistics, "The local power of sequential tests subject to an expected sample size restriction"
- Abu-Salih, Muhammad**, University of Illinois, major in Mathematics, "On termination with probability one and bounds on sample size distribution of sequential probability ratio tests where the underlying model is an exponential family"

- Aiyar, Radhakrishnan**, University of California, Berkeley, major in Statistics, "On some tests for trend and autocorrelation"
- Ali, M. M.**, University of Wisconsin, major in Statistics, "Some aspects of the one way random effects model and the linear regression model with two random components"
- Ali, Mir Masoom**, University of Toronto, major in Mathematical Statistics, "On the 'Student'—Fisher ratio"
- Amsden, Robert T.**, Rutgers University, major in Statistics, "Stochastic theory of population density"
- Anderson, Charles L.**, Southern Methodist University, major in Statistics, "Generalized asymptotes for extreme value distributions"
- Anderson, Dwane E.**, Southern Methodist University, major in Statistics, "The characterization of multivariate normal integrals and the distribution of linear combinations of order statistics from the multivariate normal distribution"
- Anderson, Peter Ole**, Stanford University, major in Statistics, "Estimation of simultaneous systems of linear equations with nonlinear constraints among the coefficients"
- Atkinson, A. C.**, Imperial College of Science and Technology, major in Statistics, "Tests for discrimination between models"
- Attia, Faragg Abdel-Salem**, Oregon State University, major in Probability, "On the distribution function of the interval between zero-crossings of a stationary Gaussian process"
- Azen, Stanley**, University of California, Los Angeles, major in Biostatistics, "Classification of time dependent random variables"
- Baker, Kenneth Robert**, Cornell University, major in Operations Research, "Control policies for an integrated production and inventory system"
- Barron, Austin Michael**, Purdue University, major in Statistics, "A class of sequential multiple decision procedures"
- Beckenbach, Edwin**, University of California, Los Angeles, major in Biostatistics, "Some aspects of the computerization of high speed cineangiocardigraphic left ventricular volume determination"
- Beggs, W. J.**, University of Wisconsin, major in Statistics, "Errors in the factor levels and experimental design"
- Beus, Gary Boyd**, Virginia Polytechnic Institute, major in Statistics, "Testing hypotheses involving categorical data"
- Bingham, Michael Stephen**, University of Sheffield, major in Probability and Statistics, "Stochastic processes with independent increments taking values in an Abelian group"
- Bircher, John Jacob**, State University of New York at Buffalo, major in Statistics, "An age dependent branching process with arbitrary state space"
- Blake, Louis H.**, University of Maryland, major in Probability Theory, "The preservation of regularity of conditional probabilities"
- Bradley, Edwin Luther**, University of Florida, major in Statistics, "Queues with balking and their application to an inventory problem"
- Brand, Richard J.**, University of California, Berkeley, major in Biostatistics, "Adaptive experimentation for hypothesis testing in the empirical Bayes situation"
- Bratcher, Thomas L.**, Southern Methodist University, major in Statistics, "A Bayesian treatment of a multiple comparison problem for binomial probabilities"
- Breuer, Joseph**, Columbia University, major in Mathematical Statistics, "Tolerance intervals in a regression setting, based on Wilks' nonparametric technique"
- Broffitt, James D.**, Colorado State University, major in Statistics, "Estimating the probability of misclassification based on discriminant function techniques"
- Burnett, Thomas D.**, Oregon State University, major in Statistics, "Estimation of regression parameters which vary according to a stationary time series"
- Burt, John**, Carnegie-Mellon University, major in Industrial Administration, "Stochastic PERT networks"

- Callahan, Janice**, Johns Hopkins University, major in Statistics, "On some topics in sequential multiparameter estimation"
- Carrillo, Alfonso Fausto**, Iowa State University, major in Statistics, "Estimation of variance after preliminary tests of significance"
- Chang, Shang-Wang**, Iowa State University, major in Statistics and Mathematics, "Equilibrium points of non-zero-sum games and axiomatic derivation of decision criteria"
- Chang, Tseng C.**, Purdue University, major in Statistics, "On asymptotic expansions of the distribution of the characteristic roots of two matrices"
- Chapman, David W.**, Cornell University, major in Industrial and Labor Relations, "Cluster sampling and approximate distribution-free confidence intervals for a median"
- Chen, Edwin H. T.**, University of California, Los Angeles, major in Biostatistics, "Winsorization and trimming techniques applied to linear regression analysis"
- Chow, Irene Ai-ying**, University of California, Berkeley, major in Biostatistics, "A stochastic model of the distribution of polymorphonuclear granulocyte density in acute leukemia and its relationship to the patient's survival time"
- Clifford, Peter**, University of California, Berkeley, major in Statistics, "A stochastic model of survival where accumulated damage may be repaired"
- Cole, James W.**, University of North Carolina, major in Statistics, "Multivariate analysis of variance using patterned covariance matrices"
- Conn, Patricia Sullivan**, Iowa State University, major in Statistics, "Asymptotic properties of sequences of positive kernels"
- Conroy, John Elliott**, Florida State University, major in Statistics, "Bounds and comparisons of distributions of partial maxima of independent, identically distributed random variables"
- Cornell, John Andrew**, Virginia Polytechnic Institute, major in Statistics, "A response surface approach to the mixture problem when the mixture components are categorized"
- Crabill, Thomas Buskirk**, Cornell University, major in Operations Research, "Optimal control of a queue with variable service rates"
- Crofts, A. E. Jr.**, Southern Methodist University, major in Statistics, "An investigation of bivariate normal lognormal distributions"
- Davies, Robert Braithwaite**, University of California, Berkeley, major in Statistics, "The concept of beta-optimal tests and several applications, including the summary evaluation of independent experiments"
- DeAcosta, Alejandro Daniel**, University of California, Berkeley, major in Statistics, "Existence and convergence of probability measures in Banach spaces"
- DeGraft-Johnson, Kweku Twum**, Iowa State University, major in Statistics, "Some contributions to the theory of two-phase sampling"
- Deverman, Jerone N.**, Purdue University, major in Statistics, "A general selection procedure relative to the t best populations"
- Dickinson, Peter C.**, Rutgers University, major in Statistics, "Properties of some non-parametric two-sample tests based on exceedances"
- Dudewicz, Edward John**, Cornell University, major in Operations Research, "Estimation of ordered parameters"
- Dudgeon, C. Robert**, Ohio State University, major in Mathematics, "On the exact power of some rank tests"
- Dumonceaux, R. H.**, University of Missouri, major in Mathematics, "Statistical inferences for location and scale parameter distributions"
- Durham, Stephen**, University of California, Davis, major in Mathematics, "On a general critical branching process"
- Durling, Frederick C.**, Southern Methodist University, major in Statistics, "Bivariate probit, logit and burrit analysis"
- Dykstra, Otto**, Rutgers University, major in Statistics, "The augmentation of experimental data in more than one independent variable"

- Eicker, Patrick J.**, Colorado State University, major in Statistics, "A matrix occupancy problem"
- Ellefson, John**, University of New Mexico, major in Mathematics and Statistics, "Most stable tolerance limit for log convex distributions"
- Engelhard, Maxwell E.**, University of Missouri, Columbia, major in Probability, "Some results in stochastic approximation"
- Filliben, James John**, Princeton University, major in Statistics, "Simple and robust linear estimation of the location parameter of a symmetric distribution"
- Fong, Humphrey S.**, Ohio State University, major in Mathematics, "Contributions to the ergodic theory of semi-Markovian operators"
- Fossum, Robert R.**, Oregon State University, major in Statistics, "Statistical-dynamic forecasting of the 500mb surface"
- Fridshal, Donald**, University of Connecticut, major in Statistics, "Estimating ordered binomial parameters"
- Gelfand, Alan Enoch**, Stanford University, major in Statistics, "Seriation of multivariate observations through similarities"
- Genizi, Abraham**, The Hebrew University, major in Statistics, "Powers of some multivariate tests"
- George, Stephen L.**, Southern Methodist University, major in Statistics, "Partial prior information: Some empirical Bayes and G-minimax decision functions"
- Ghangurde, P. D.**, Texas A and M University, major in Statistics, "Contributions to sampling in time and Bayesian optimization sampling"
- Ghosh, Malay**, University of North Carolina, major in Statistics, "Asymptotically optimal non-parametric tests for miscellaneous problems of linear regression"
- Gibson, Allen Edward**, Virginia Polytechnic Institute, major in Statistics, "Some aspects of time-dependent one-dimensional random walks"
- Glick, Frederick Philip, Jr.**, Stanford University, major in Statistics, "Estimating unconditional probabilities of correct classification"
- Graney, Richard W.**, Rutgers University, major in Statistics, "Tests of concentration and identification of mixed samples"
- Gregory, Lowell D.**, Southern Methodist University, major in Statistics, "A general ranking model"
- Guthery, Scott**, Michigan State University, major in Statistics and Probability, "An inversion algorithm for one-dimensional f -expansions"
- Haas, G. N.**, University of Missouri, major in Mathematics, "Statistical inferences for the Cauchy distribution based on maximum likelihood estimators"
- Hadian, Abdollah**, University of Minnesota, major in Statistics, "Optimality properties of various procedures for ranking n different numbers using only binary comparisons"
- Hager, H. W.**, University of Missouri, major in Mathematics, "Statistical inferences for the generalized gamma distribution"
- Hall, William K.**, University of Michigan, major in Statistics and Management Science, "A queuing theoretic approach to the allocation and distribution of ambulances in an urban area"
- Halvorson, Wade K. Jr.**, Colorado State University, major in Statistics, "Sample editing in symmetric densities"
- Hardy, Robert J.**, University of California, Berkeley, major in Biostatistics, "Some statistical problems in matched control"
- Harrington, Leigh**, University of Connecticut, major in Statistics, "The generalized discriminant function and nuisance parameters in classification procedures"
- Hatch, Lawrence O.**, University of Connecticut, major in Statistics, "A quantitative approach to robustness"
- Hawkes, J.**, Imperial College of Science and Technology, major in Mathematics, "On sample function properties of stochastic processes with stationary independent increments"
- Hedayat, Abdossamad**, Cornell University, major in Biomathematics, "On the theory of the existence, non-existence, and the construction of mutually orthogonal F -squares and latin squares"
- Heiny, Robert L.**, Colorado State University, major in Statistics, "Some properties of runs"

- Henschke, Claudia Ingrid**, Rutgers University, major in Statistics, "Manpower systems and classification theory"
- Hern, Thomas A.**, Ohio State University, major in Mathematics, "Error estimates for the weak convergence to certain infinitely divisible probability distributions"
- Hinkley, D. V.**, Imperial College of Science and Technology, major in Statistics, "Problems associated with points of discontinuity"
- Hirunraks, Anek**, Oregon State University, major in Statistics, "An information theory approach to selection problems involving the multinomial distribution"
- Hoem, Jan M.**, University of Oslo, major in Statistics, No title
- Holley, Richard**, Cornell University, major in Mathematics, "The motion of a heavy particle in an infinite one-dimensional gas of hard spheres"
- Hull, David L.**, Ohio State University, major in Mathematics, "Limit theorems with weighed averages of random variables"
- Iversen, Gudmund R.**, Harvard University, major in Statistics, "Estimation of cell entries in contingency tables when only margins are observed"
- Jaeckel, Louis Alan**, University of California, Berkeley, major in Statistics, "Robust estimates of location"
- Jaquette, David Leaf**, Cornell University, major in Operations Research, "Mathematical models for the optimal control of epidemics and pest populations"
- Joshi, Prakash C.**, University of North Carolina, major in Statistics, "Some contributions to order statistics"
- Joshi, S. W.**, Pennsylvania State University, major in Statistics, "Certain estimation and structural problems for a class of multivariate discrete distributions"
- Jouris, Gary Michael**, Purdue University, major in Statistics, "On some classical and complex multivariate normal distribution problems"
- Kakumanu, Prasadarao Vara**, Cornell University, major in Operations Research, "Continuous time Markov decision models with applications to optimization problems"
- Kalbfleisch, J. D.**, University of Waterloo, major in Statistics, "Likelihood methods"
- Kapadia, Asha S.**, Harvard University, major in Statistics, "A comparative study of queue disciplines"
- Kappenman, Russell F.**, State University of New York at Buffalo, major in Statistics, "Posterior regions for the ratios of means and for parallel profile differentials"
- Katiyar, A. S.**, Texas A and M University, major in Statistics, "Contributions to variance estimation in sample surveys"
- Kennedy, William Jo**, Iowa State University, major in Statistics, "Model building for prediction in regression analysis based on repeated significance tests"
- Kettenring, Jon R.**, University of North Carolina, major in Statistics, "Canonical analysis of several sets of variables"
- Kingman, Albert**, Colorado State University, major in Statistics, "Quadratic forms with random coefficients"
- Kuenzi, Norbert James**, University of Iowa, major in Statistics, "An investigation of some problems concerning the additivity of conditional expectation with respect to a sigma-lattice"
- Kunes, Laurence E.**, Ohio State University, major in Mathematics, "Error estimates for the normal approximation to normed sums of random variables of a Markov chain"
- Kuntz, Richard A.**, University of Maryland, major in Algebra, "Primary decomposition in commutative rings"
- Lamb, Charles, W.**, University of Illinois, major in Mathematics, "Boundary theory for Markov chains"
- LaMotte, L. R.**, Texas A and M University, major in Statistics, "An investigation of maximum likelihood estimates of variance components"
- Lasater, H. Alan**, Rutgers University, major in Statistics, "On the robustness of a class of continuous sampling plans under certain types of process models"

- Lawless, J. F.**, University of Waterloo, major in Statistics, "Quasi-residual balanced incomplete block designs"
- Layard, Maxwell, W. J.**, Stanford University, major in Statistics, "Asymptotically robust tests about covariance matrices"
- Lee, Yoong Sin**, University of Toronto, major in Mathematical Statistics, "Invariant structures in inference"
- Lehoczký, John Paul**, Stanford University, major in Statistics, "Stochastic models in traffic flow theory: Intersection control"
- Lemon, Glen Hortin**, Virginia Polytechnic Institute, major in Statistics, "Empirical Bayes analysis of some sequential experiments"
- Lewis, James L.**, Purdue University, major in Electrical Engineering, "A study of stationary point processes and their passage through memoryless systems"
- Li, Hung-Chiang**, Purdue University, major in Statistics, "Asymptotic expansion for distribution of the characteristic roots of two matrices from classical and complex Gaussian populations"
- Light, Richard J.**, Harvard University, major in Statistics, "Analysis of variance for categorical data"
- MacNeill, Ian Bruce**, Stanford University, major in Statistics, "Limit processes for spectral distribution functions with applications to goodness-of-fit testing"
- Mann, Charles R.**, University of Missouri, Columbia, major in Statistics, "Bayesian estimation of probability densities"
- Marshall, Jack**, University of Chicago, major in Statistics, "On Yates's approximation for the missing value problem in Model I analysis of variance"
- Meilijson, Isaac**, University of California, Berkeley, major in Statistics, "A bargaining problem"
- Menon, V. V.**, Oxford University, major in Statistics, "Some studies of the monomer-dimer problem"
- Milliken, George A.**, Colorado State University, major in Statistics, "Extensions of the general linear model"
- Mount, Kenneth Stephan**, Iowa State University, major in Statistics, "Minimax properties of likelihood ratio tests related to goodness of fit"
- Munroe, Itriel**, University of Washington, major in Mathematics, "On realizing preassigned distributions with stopping times of Brownian motion"
- Mureika, Roman A.**, The Catholic University, major in Mathematics, "The maximization of entropy of discrete denumerable distributions"
- Murty, Vedula Narayana**, Purdue University, major in Statistics, "Optimal designs of individual regression coefficients with a Tchebycheffian spline regression function (TSF)"
- McCaughran, Donald A.**, Cornell University, major in Biomathematics, "A method for constructing joint confidence limits on an ordered set of parameters"
- McDonald, Gary Carl**, Purdue University, major in Statistics, "On some distribution-free ranking and selection procedures"
- McGuire, John W.**, University of California, Berkeley, major in Biostatistics, "A multivariate analysis of survival rates"
- McKenna Sr. Marian Joan**, St. Louis University, major in Mathematics, "Some test statistics based on the theory of spacings"
- Naqvi, Syed Taqi Mohammad**, Iowa State University, major in Statistics, "Inference for components of variance models"
- Nelson, Paul I.**, Rutgers University, major in Statistics, "Knightingales: Orthogonal series related to Martingales"
- Oaten, Allan**, Michigan State University, major in Statistics and Probability, "Approximation to Bayes risk in compound decision problems"
- Obenchain, Robert L.**, University of North Carolina, major in Statistics, "Rank tests invariant only under linear transformations"

- Oosterhoff, J., University of Leiden, major in Mathematics, "Combination of one-sided statistical tests"
- Oppel, Ulrich G., Universität München, major in Mathematics, "Das Marginalproblem für Wahrscheinlichkeitsmasse"
- Panchapakesan, S., Purdue University, major in Statistics, "Some contributions to multiple decision (selection and ranking) procedures"
- Paranjape, Suresh Ramkrishna, Purdue University, major in Statistics, "On some estimation and distribution problems"
- Parot, James, Texas Tech. University, major in Statistics, "Residual analysis and truncated observations"
- Patel, Harjibhai I., Rutgers University, major in Statistics, "Structure and distance of logical patterns"
- Phillips, Charles, Oregon State University, major in Statistics, "Estimation of prior distributions with application to acceptance sampling"
- Phillips, Robert Dale, George Washington University, major in Statistics, "On the species problem with an information-theoretic approach to smoothing"
- Pope, Paul Terrell, Southern Methodist University, major in Statistics, "On the stepwise construction of a prediction equation"
- Portnoy, Stephen Lane, Stanford University, major in Statistics, "Formal Bayes estimation with application to a random effects analysis of variance model"
- Price, Bertram P., Ohio State University, major in Mathematics, "Distribution free estimation"
- Ramberg, John Schmidt, Cornell University, major in Operations Research, "A multiple decision approach to the selection of the best set of predictor variates"
- Rand, William, University of California, Los Angeles, major in Biostatistics, "The development of objective criteria for evaluating clustering methods"
- Randles, Ronald H., Florida State University, major in Statistics, "T-minimax procedures for the use of incomplete prior information in selection and classification problems"
- Rao, A. Vijaya, Florida State University, major in Statistics, "The log-zero Poisson distribution"
- Read, Cambell, B., University of North Carolina, major in Statistics, "On minimizing the risk in certain sequential tests, for known or unknown cost"
- Read, Kenneth L. Q., University of Exeter, major in Mathematics, "Some problems in applied statistical estimation"
- Reinmuth, James, Oregon State University, major in Statistics, "Variance estimation in the recursive linear model"
- Rencher, Alvin C., Virginia Polytechnic Institute, major in Statistics, "The empirical Bayes approach to analysis of variance and linear regression"
- Rennie, Robert R., University of British Columbia, major in Mathematics, "Finite mixtures of distributions with common central moments"
- Reynolds, David S., Florida State University, major in Statistics, "Random wear models in reliability theory"
- Robertson, Christopher A., University of Exeter, major in Mathematics, "Estimation of mixed distributions"
- Robillard, Pierre, University of North Carolina, major in Statistics, "Combinatorial problems in the theory of factorial designs and error correcting codes"
- Rodda, Bruce E., Tulane University, major in Biostatistics, "An analytic system for the statistical analysis of Markov chains"
- Rodriguez, Dennis M., University of California, Riverside, major in Mathematics, "Martingales and processes obtainable from Brownian motion by means of a random time change"
- Rollier, Dwayne Allen, Florida State University, major in Statistics, "Heterogeneous block variances in incomplete block designs"
- Romboski, Lawrence D., Rutgers University, major in Statistics, "An investigation of quick switching acceptance sampling systems"

- Rothman, Edward**, Johns Hopkins University, major in Statistics, "Properties and applications of test statistics invariance under rotation of a circle"
- Roux, Carl Ziervogel**, Iowa State University, major in Statistics and Animal Breeding, "The mathematical theory of genetic loads"
- Roy, Roch**, University of Montreal, major in Mathematics, "Processus stochastiques sur la sphere"
- Rubinovitch, Michael**, Cornell University, major in Operations Research, "Ladder regenerative events with application to dam models"
- Ruud, Paul G.**, Texas A and M University, major in Statistics, "An algorithm for the optimization of response surface designs"
- Samuels, Myra Jordan**, University of California, Berkeley, major in Statistics, "Distribution of the population among generations in an age-dependent branching process"
- Sanathanan, Lalitha**, University of Chicago, major in Statistics, "Estimating population size in the particle scanning context"
- Sedransk, Nell**, Iowa State University, major in Statistics, "Contributions to discriminant analysis"
- Seely, Justus Frandsen**, Iowa State University, major in Statistics, "Estimation in finite-dimensional vector spaces with application to the mixed linear model"
- Sengupta, Sailes Kumar**, University of California, Berkeley, major in Statistics, "The 'two-armed bandit problem' with finite memory"
- Sherbrooke, Craig**, University of California, Los Angeles, major in Biostatistics, "Improved decision rules for the empirical Bayes problem"
- Shildar-Baxi, Hari Ramchandra**, Rutgers University, major in Statistics, "On the design of a unit-stratified, rotational sampling plan for a changing universe"
- Siegle, Martha J.**, University of Rochester, major in Mathematics, "On birth and death processes"
- Singh, Jokhan**, University of California, Berkeley, major in Statistics, "A sometimes pool test procedure for the analysis of variance Model II"
- Skwish, Joseph**, Johns Hopkins University, major in Statistics, "On the robustness of optimum designs for polynomial regression problems"
- Smith, Mark W.**, Southern Methodist University, major in Statistics, "An optimum discrete space sequential search procedure which considers false alarm and false dismissal instrument errors"
- Smith, Robert F.**, Rutgers University, major in Statistics, "Estimation of the mean of the exponential distribution under modified type II censoring"
- Smith, Woolcott**, Johns Hopkins University, major in Statistics, "Two stochastic models in molecular biology"
- Sornberger, George Clinton**, The Catholic University, major in Mathematics, "On a weighted renewal theorem"
- Sowden, Ronald R.**, University of Exeter, major in Mathematics, "Some problems in multivariate analysis arising out of the consideration of respiratory symptoms in human populations"
- Sparks, Arthur G.**, Clemson University, major in Mathematics, "Intersections of maximal L_n sets and the generalized convex kernel"
- Speed, Michael**, Texas A and M University, major in Statistics, "A new approach to the analysis of linear models"
- Stefansky, Wilhelmine von Turk**, University of California, Berkeley, major in Statistics, "On the rejection of outliers by maximum normed residual"
- Straf, Miron Lowel**, University of Chicago, major in Statistics, "A general Skorohod space and its application to the weak convergence of stochastic processes with several parameters"
- Strawderman, William**, Rutgers University, major in Statistics, "Generalized Bayes estimators and admissibility of estimators of the mean vector of a multivariate normal distribution with quadratic loss"
- Styan, George P. H.**, Columbia University, major in Mathematical Statistics, "Multivariate normal inference with correlation structure"

- Suryanarayana, K. V.**, University of North Carolina, major in Statistics, "Contributions to partially balanced weighing designs"
- Sylvan, Marshall**, Stanford University, major in Statistics, "Estimation and hypothesis testing for Wishart matrices when part of the covariance matrix is known"
- Tenenbein, Aaron**, Harvard University, major in Statistics, "Estimation from data subject to measurement error"
- Tharakan, C. Thomas**, University of Michigan, major in Statistics, "Some contributions to the theory of sampling finite populations"
- Thoman, D. R.**, University of Missouri, major in Mathematics, "Inferences on the parameters of the Weibull distribution"
- Thomas, Marlin Amos**, Virginia Polytechnic Institute, major in Statistics, "A comparison of the classical and inverse methods of calibration in regression"
- Thompson, Mary E.**, University of Illinois, major in Mathematics, "Some aspects of optimal stopping theory"
- Thorntett, Michael L.**, University of Melbourne, major in Statistics, "Models of topographic variation"
- Trout, J. Richard**, Rutgers University, major in Statistics, "Uniform confidence bands and inverse estimation in certain regression models"
- Ullman, Betty M.**, University of Michigan, major in Biostatistics, "On Bayesian estimation of a binomial parameter"
- Van Bowen, Jacob Jr.**, Virginia Polytechnic Institute, major in Statistics, "Maximum likelihood estimation of parameters using grouped data samples"
- Waterman, Michael S.**, Michigan State University, major in Statistics and Probability, "Some ergodic properties of multidimensional f -expansions"
- Weldon, Kenneth Laurence**, Stanford University, major in Statistics, "Stochastic storage processes with multiple slope linear inputs and outputs"
- Whitt, Ward**, Cornell University, major in Operations Research, "Weak convergence theorems for queues in heavy traffic"
- Wichern, D. W.**, University of Wisconsin, major in Statistics, "Studies in the identification and forecasting non-stationary time series"
- Wilson, Richard**, Ohio State University, major in Mathematics, "An existence theory for pairwise balanced designs"
- Wolfe, Douglas Alan**, University of Iowa, major in Statistics, "A new approach to statistical inference about certain probabilities"
- Wong, James Teng**, Oregon State University, major in Probability, "On the generalization of the distribution of the significant digits under computation"
- Woo, Warren**, Rutgers University, major in Statistics, "A statistical decision model for optimal control of a class of continuous manufacturing processes"
- Wysocki, Robert K.**, Southern Methodist University, major in Statistics, "Some useful generalizations in Markov renewal processes"
- Yang, Y. S.**, University of Southern California, major in Mathematics, "Stationary measures on branching processes"
- Yarbrough, Charles Joseph**, University of California, Berkeley, major in Statistics, "Sequential discrimination with likelihood ratios"
- Yohai, Victor Jaime**, University of California, Berkeley, major in Statistics, "Optimal strategies of a buyer when price information is costly"
- Yu, Chin Shih**, University of Maryland, major in Statistics, "On upper bounds of asymptotic power and Pitman efficiencies of Kolmogorov and Smirnov tests"

Supplementary list of doctorates conferred in 1968 but not listed in the April 1969 *Annals*.

- Bowden, David C.**, Colorado State University, major in Mathematics and Statistics, "Simultaneous confidence bands"
- Bryson, Maurice**, Colorado State University, major in Mathematics and Statistics, "Topics in survival time distributions"
- Burkard, R.**, University of Vienna, major in Mathematics, "Zur Theorie der Gleichverteilung mod Δ "
- Dick, Ronald Stewart**, Columbia University, major in Mathematical Statistics, "On single server queues with balking and single or batched service"
- Dorfler, W.**, University of Vienna, major in Mathematics, "Kontinuierliche Gleichverteilung"
- Dykstra, Richard L.**, University of Iowa, major in Mathematical Statistics, "Characterizations of a conditional expectation with respect to a σ -lattice"
- Fleiss, Joseph L.**, Columbia University, major in Mathematical Statistics, "Analysis of variance methods in assessing errors in interview data"
- Heiny, Robert L.**, Colorado State University, major in Mathematics and Statistics, "Stochastic models for surpluses and deficits"
- Kohutsek, P.**, University of Vienna, major in Mathematics, "Die Verwendung elektronischer Datenverarbeitungsanlagen zur Untersuchung der Existenz von Untergraphen"
- Miller, Robert B.**, University of Iowa, major in Mathematical Statistics, "Risk theory in the light of statistical decision theory"
- O'Fallon, William M.**, University of North Carolina, major in Statistics, "A mathematical model for the study of granulocyte kinetics using labelled DNA"
- Schmidt, K.**, University of Vienna, major in Mathematics, "Über die Gleichverteilung von Folgen bezüglich einer Folge von Massen"
- Slivka, John J.**, State University of New York at Buffalo, major in Statistics, "On the strong law of large numbers"
- Stark, R.**, University of Vienna, major in Mathematics, "Einige stetige lineare Transformationen in Räumen von Distributionen"
- Uthoff, Vincent A.**, University of Iowa, major in Mathematical Statistics, "Some scale and origin invariant tests for distributional assumptions"
- Wegman, Edward J.**, University of Iowa, major in Mathematical Statistics, "On estimating a unimodal density"
- Willitsch, P.**, University of Vienna, major in Mathematics, "Gleichverteilung von Folgen von Teilmengen eines lokal kompakten Hausdorff-Raumes"

SHORT COURSE ON MODERN STATISTICAL METHODS FOR SCIENTISTS AND ENGINEERS

A one-week short course on modern statistical methods for scientists and engineers will be offered by the University of Maryland June 22–26, 1970. The course includes lectures and seminars on the following topics: decisions under uncertainty, sequential analysis, linear models, dynamic programming with application, Monte Carlo methods, and stochastic models. For further information, please contact

Dr. Ryszard Syski, Chairman
Statistics and Probability Division
Department of Mathematics
University of Maryland
College Park, Maryland 20742.

REGIONAL CONFERENCE IN THE MATHEMATICAL SCIENCES AT UNIVERSITY OF IOWA

A regional conference in the mathematical sciences, sponsored by the National Science Foundation, will be held at the Department of Statistics, University of Iowa, Iowa City, Iowa on August 31-September 4, 1970. The title of the conference is "Topics in Weak Convergence". The principal lecturer is Professor Patrick Billingsley, University of Chicago, who will give two lectures per day and later organize these lectures into an expository manuscript.

The objective of the conference is to stimulate research in the theory of probability and statistics. Inquiries from professional statisticians and probabilists and very advanced graduate students are invited. It is anticipated that financial assistance for participants will be available for (a) travel or (b) lodging-meals or both (a) and (b). In the case of a student, a letter should be sent by the major professor attesting to the student's preparedness for the lectures. While priority on financial assistance will be given to persons in the central region of the country, the conference is open to others outside of this region.

For further information, write Professor Robert V. Hogg, Department of Statistics, University of Iowa, Iowa City, Iowa, 52240. It is hoped to complete the arrangements by August 1, 1970.

1971 IMS SUMMER RESEARCH INSTITUTE

Preliminary Announcement

The Institute of Mathematical Statistics is planning to hold its first in a new series of Summer Research Institutes some time during the summer of 1971. The tentative plans are to invite some of the most distinguished experts who will survey some of the selected areas, disseminate recent research, discuss the major open problems and provide stimulation for further research and scholarship through informal contacts and discussions. In order to stimulate communication between the applied and mathematical statisticians, people will be invited from universities as well as industries. Persons interested in participating are requested to send suggestions including the topic for the Summer Research Institute to:

Professor Madan L. Puri, Chairman
IMS Committee on Summer Research Institutes
Department of Mathematics
Indiana University
Bloomington, Indiana 47401.

IMS SUMMER INSTITUTES FOR TEACHERS

The Institute of Mathematical Statistics has appointed a committee to study the possibility of the Institute of Mathematical Statistics sponsoring summer institutes for teachers. This committee will consider all problems related to the teaching of statistics. The committee would be happy to receive any ideas that you have relative to these proposed summer institutes for teachers. Please send these to:

Dr. Franklin A. Graybill, Chairman
IMS Committee on Summer Institutes for Teachers
Statistical Laboratory
Colorado State University
Fort Collins, Colorado 80521.

JOURNAL OF MULTIVARIATE ANALYSIS

A new international Journal entitled *Journal of Multivariate Analysis* will be published by Academic Press starting from early 1971 on a quarterly basis. This Journal has been created in an attempt to provide a central medium for publication of the most significant work currently done in the general area of multivariate analysis. The Journal will publish papers on basic theoretical aspects of multivariate analysis; it will also publish papers dealing with important applications.

A partial list of the members of the editorial board includes Professors A. P. Dempster (U.S.A.), T. Hida (Japan), E. Lukacs (U.S.A.), P. A. P. Moran (Australia), K. C. S. Pillai (U.S.A.), C. R. Rao (India), M. M. Rao (U.S.A.), M. Rosenblatt (U.S.A.), Yu. A. Rozanov (U.S.S.R.), L. Schmetterer (Austria), P. K. Sen (U.S.A.), K. Urbanik (Poland), and H. Wold (Sweden). Prospective authors are invited to submit their papers to an appropriate member of the editorial board or the editor for consideration. Authors should submit three copies of their manuscripts. When a paper is submitted to a member of the editorial board, the author should send the editor a copy of the covering letter. Further details may be obtained by writing to P. R. Krishnaiah (Editor), Aerospace Research Laboratories, Wright-Patterson Air Force Base, Ohio 45433, U.S.A.

CHANGE OF EDITOR

New manuscripts arriving after July 1, 1970, should be submitted to the incoming Editor, Ingram Olkin, Department of Statistics, Stanford University, Stanford, California 94305. Correspondence about old manuscripts should be directed to Z. W. Birnbaum.