

NEWS AND NOTICES

Readers are invited to submit to the Secretary of the Institute news items of interest.

Personal Items

Dr. David W. Alling has completed a period of graduate study in statistics at Cornell University and is now associated with the Therapeutic Trials Section, National Cancer Institute, Bethesda, Maryland.

Lt. David R. Barr has been appointed to an instructorship at the USAF Academy.

Dr. Richard E. Beckwith will join the Aeronutronic Division of the Ford Motor Company next month, as Supervisor of their Operations Research Section.

Gunnar Blom, formerly Statistician at MAB och MYA Textile Factories, Malmoe, and at Agricultural Research Institute, Swedish Sugar Co., Malmoe, has been appointed Docent in Mathematical Statistics at the University of Lund, Lund, Sweden.

Case Institute of Technology, Cleveland, Ohio, announces: Dr. R. C. Bose, on leave of absence from the University of North Carolina, has joined Case as a Visiting University Professor in Statistics.

Dr. Irwin D. J. Bross, who for the past seven years was Statistical Consultant at Cornell University Medical College and the Sloan-Kettering Institute for Cancer Research, has been made Chief of the Department of Statistics of Roswell Park Memorial Institute for Cancer Research in Buffalo, New York.

Dr. L. Dennis Cannon, who received the Ph.D. degree in Industrial Psychology from Purdue University on July 31, 1959, is now employed by the Armor Human Research Unit, a branch of George Washington University Human Resources Research Office.

Gregory C. Chow has been appointed associate professor in the Graduate School of Business and Public Administration, Cornell University.

Gertrude M. Cox has resigned as Director, Institute of Statistics of The Consolidated University of North Carolina. She will continue for the present as Professor of Statistics at North Carolina State College. Dr. Cox assumed a new position as Head, Statistics Research Division, The Research Triangle Institute on January 1, 1959.

Bruce A. Drew has been recently appointed Experimental Design Statistician for Research and Quality Control Division, Refrigerated Products, The Pillsbury Co., New Albany, Indiana.

Dr. Henry D. Friedman, formerly with General Electric Co., Syracuse, New York, is now with Technical Operations, Inc., Burlington, Massachusetts.

Alan H. Gefpert now resides at 420 Church Street, Evanston, Illinois with his bride of August 26, Mary Bosworth of Ohio. Gefpert is now providing a regular monthly series for the *Modern Railroads* publication entitled "Modern Railroads Chart the Railroad Business."

Sister Catherine J. Gillis received the Ph.D. degree in Statistics with the dissertation: *Some Problems Concerning The Wolfowitz Two-Sample Test*.

Irwin Guttman is now at McGill University as Associate Professor of Statistics in the Department of Mathematics.

William L. Harkness has completed the requirements for the Ph.D. degree in Mathematical Statistics at Michigan State University and has accepted a position as Assistant Professor in the Department of Mathematics at Pennsylvania State University.

William G. Howard, former Assistant for Operations Analysis, Hq., USAF, is now employed as Operations Analyst in The Operational Sciences Laboratory of the Research Triangle Institute, Durham, North Carolina.

Dr. Robert Hultquist received the Ph.D. degree in Mathematical Statistics from Oklahoma State University on August 8, 1959 and is now an Assistant Professor of Mathematics at DePauw University, Greencastle, Indiana.

Donald A. Jones, State University of Iowa, has been appointed assistant professor in the Mathematics Department of the University of Michigan.

Dr. A. R. Kamat, who was still recently Professor of Mathematics and Statistics at the Fergusson College and the B. M. College of Commerce, Poona- 4, India, is now Research Professor of Theoretical and Applied Statistics at the Gokhale Institute of Politics and Economics, Poona- 4, India.

Professor Leo Katz of Michigan State University will spend the academic year 1959-60 in the O.N.R. London Branch Office as Scientific Liaison Officer (Mathematical Statistics). Visiting statisticians are invited to drop in at Keysign House, 429 Oxford Street, W.1. He is living at 7 Porchester Gate, W.2 and may be reached there by dialing Bay 4108.

Dr. L. O. Kattsoff has become professor of Mathematics and Logic at Boston College, Chestnut Hill, Boston, Massachusetts.

Robert A. Koenig, formerly statistician with National Lead Company, South Amboy, N. J., is now employed by the Data Processing Division of the Royal McBee Corporation, 913 Penn. Avenue, Pittsburgh, Pa., as a computer applications analyst.

Albert Mindlin has transferred from the position of Technical Assistant to the Chief, Statistics Branch, Bureau of Old Age and Survivors Insurance, U. S. Department of Health, Education, and Welfare, to Chief Research Statistician, Department of General Administration, Government of the District of Columbia.

G. Baley Price is on leave from the University of Kansas, while spending the current academic year as a Visiting Professor at the California Institute of Technology.

M. M. Rao has accepted a position as Research Mathematician in the Mathematics Department of Carnegie Institute of Technology. Dr. D. K. Ray-Chaudhuri has been appointed a Research Associate in the Statistical Laboratory.

Howard R. Roberts has resigned the position as operations analyst in the Management Systems Division of the Johns Hopkins University Operations Research Office in order to accept a position as mathematical statistician in the Washington office of Booz-Allen Applied Research, Inc.

Murray Rosenblatt, formerly Associate Professor at Indiana University, has been appointed Professor of Mathematical Probability and Statistics in the Division of Applied Mathematics, Brown University, Providence, Rhode Island.

Elizabeth A. Shuhany received the Ph.D. degree from Boston University in Statistics with the dissertation: *The S_j -Test Against Linear Trend*.

Professor Jack Silber has returned from Europe where he was Consultant to the Operations Analysis Office, Hq. United States Air Forces in Europe.

Dr. B. V. Sukhutme has taken leave of absence from the Institute of Agricultural Research Statistics, New Delhi from September 1959 to spend a year as Visiting Associate Professor in the Department of Statistics at Michigan State University.

Howard G. Tucker, Assistant Professor of Mathematics at the University of California, Riverside, is on leave of absence for the academic year 1959-60. He is spending the year at the Berkeley campus on a research project "Stochastic Models for Carcinogenesis," under the direction of Professor J. Neyman.

Madanlal T. Wasan has joined the Department of Mathematics of Queen's University, Kingston, Ontario, Canada as Assistant Professor.

NEW MEMBERS

The following persons have been elected to membership in the Institute

- Abraham, John K.**, M.A. (University of California), Research Assistant, *University of California Statistical Laboratory, Department of Statistics, Berkeley, California.*
- Ammeter, Hans**, *Schweizerische Lebens-versicherungs-und Rentenanstalt, Zurich, Alpenquai 40, Switzerland.*
- Appleby, Robert H.**, B.S. (Washington College), Graduate Student, Virginia Polytechnic Institute, Blacksburg, Virginia; *709 Main Street, Apt. C-1, Blacksburg, Virginia.*
- Barton, David Elliott**, Ph.D. (London University), Lecturer, Department of Statistics, University College London; *University of London, Gower Street, London W.1., England.*
- Beatty, James K.**, M.S. (Ohio University), Head, Theoretical Analysis Sub-Group, Thio-sol Chemical Corporation, Elkton Division, Elkton, Maryland; *Maple Square Trailer Park, Rd. 2, Newark, Delaware.*
- Bergstrand, Karl-Georg**, Fil. Kand. (University of Stockholm), Mathematical statistician, *Skanska Attikfabriken, Perstorp, Sweden.*
- Bergstrom, Harold**, Ph.D. (University of Uppsala), Head, Applied Mathematics, *Charles University of Technology, Institute of Applied Mathematics, Gotebor, Sweden.*
- Bhargava, Triloki Nath**, M.Sc. (University of Lucknow), Research Assistant, *Department of Statistics, Michigan State University, East Lansing, Michigan.*
- Bolland, Thomas W.**, M.B.A. (University of Chicago), Research Analyst in Field of Marketing Research, Market Facts, Inc., 39 So. LaSalle Street Chicago 3, Ill., *213 Elgin, Forest Park, Illinois.*
- Buhlmann, Hans**, Ph.D. (Swiss Federal Institute of Technology), Actuary, *Swiss Re-insurance Company, Mythenquai 60, Zurich, Switzerland.*
- Burton, Robert C.**, B.Sc. (Brigham Young University), Student—National Science fellow, Dept. of Statistics, University of North Carolina, Chapel Hill, North Carolina; *3922 N. 4th Street, Apt. 1, Arlington 3, Virginia.*
- Campbell, R. Colin**, Ph.D. (University of Cambridge), Lecturer in Statistics and Honorary Officer-in-charge of Agricultural Research Council Statistics Group, *School of Agriculture, Downing Street, Cambridge, England.*
- Chaddha, Roshan L.**, M.S. (Agra University), Research Assistant, Virginia Polytechnic Institute, *Box A-304, V. P. I., Blacksburg, Virginia.*

- Chung, Sae Ho**, M.A. (University of Illinois), Teaching Assistant, *Department of Mathematics, University of Illinois, Champaign, Illinois.*
- Conner, Robert J.**, B.E.S. (The Johns Hopkins University), Operations Research Assistant, The Johns Hopkins Hospital, 601 N. Broadway, Baltimore 5, Maryland; *Industrial Engineering Department, The Johns Hopkins University, Baltimore 18, Maryland.*
- Davis, Miles**, S.M. (Harvard University), Student, *104 Richards Hall, Cambridge 38, Massachusetts.*
- Dhrymes, Phoebus J.**, B.A. (University of Texas), Student, *Department of Economics Massachusetts Institute of Technology, Cambridge 39, Mass.*
- Dunn, James E.**, B.Sc. (University of Nebraska), Graduate student, Department of Agronomy, Soil Chemistry Division, University of Nebraska, Lincoln, Nebraska; *% Russell Dunn, Rural Route 1, DeWitt, Nebraska.*
- Esseen, Carl-Gustav**, Ph.D. (University of Uppsala), Professor, *Division of Applied Mathematics, The Royal Institute of Technology, Stockholm 70, Sweden.*
- Farlie, Dennis J. G.**, B.Sc. (London University), Statistician, Research Laboratories of The General Electric Company Ltd., East Lane, North Wembley, Middlesex, England; *22 Bowerie Road, West Harrow, Middlesex, England.*
- Fellman, Johan Olof**, Cand.Phil. (University of Helsinki), Teacher, Tekniska Laroverket i Helsingfors (The Technical College of Helsinki), Appollogatan 8-10, Helsinki, Finland; *Magistervagen 14, Grankulla, Finland.*
- Furukawa, Nagata**, M.Sc. (Kyushu University), Assistant, *Faculty of Science, Kumamoto University, Kurokami-machi, Kumamoto-shi, Japan.*
- Ganelius, Cord H.**, Fil.Dr. (University of Stockholm), Professor, Institute for Mathematics, University of Goteborg, Goteborg, O, Sweden; *Kallebacksvagen 19, Goteborg S., Sweden.*
- Gillis, Paul P.**, Agregé de l'Enseignement Supérieur, (Université de Liege), Professor, President of the Institute of Statistics, University of Bruxelles, 50, F. D. Roosevelt Avenue, Bruxelles, Belgium; *134 rue de Livourne, Bruxelles, Belgium.*
- Henry, Patrick**, A.B. (San Diego State College), Research Engineer, Convair Astronautics San Diego, California; *591-10 San Diego, California.*
- Gundy, Richard F.**, A.B. (Illinois College), Student, *Indiana University Department of Psychology, Bloomington, Indiana.*
- Gustafsson, Stig S.**, M.S. (University of Helsingfors), Teacher, Chief Statistician, Finland Institute of Technology, Abrahamsg, 1-5 Helsingfors, Finland; *Stentorpsvagen 3, A. 8, Nunksnas, Finland.*
- Hahn, Gerald J.**, M.S. (Columbia University), Statistician—Experimental Design and Analysis, General Electric Co., General Engineering Laboratory, 1 River Road, Schenectady 8, New York; *7A2 Sheridan Village, Schenectady 8, New York.*
- Hyrenius, Hannes**, Ph.D. (Lund University), Professor of Statistics, *Statistical Institute University of Gothenburg, S. Vaegen 54, Gothenburg S, Sweden.*
- Jacobs, Konrad**, Dr.rer.nat. (Universität München), Professor, Universität Göttingen Institute für Mathematische Statistik und Wirtschafts mathematik, Göttingen, Deutschland, Bunsenstr. 3; *Göttingen, Deutschland, Düstere Eichenweg 39.*
- Jenkins, Gwilym M.**, Ph.D. (University College, London), Lecturer in Mathematical Statistics, Imperial College of Science, University of London, Exhibition Rd., Kensington, London, S. W. 7, England; *Department of Statistics, Stanford University, California.*
- Karhunen, Kari Ol**, Ph.D. (University of Helsinki), Docent, Institute of Mathematics, University of Helsinki, Helsinki, Finland; *Topeliuksenkatu 1.A. 17, Helsinki, Finland.*
- Krickeberg, Klaus**, Dr.rer.nat. (Humboldt-Universität Berlin), Professor, *Institut für Angewandte Mathematik der Universität Heidelberg, Tiergartenstr., Heidelberg, Germany.*

- Lewis, Tobias, M.A.** (Oxon), Lecturer in Mathematical Statistics, *University of Manchester, Manchester 13, England.*
- Lichtefeld, Merle H.** (Mrs.), Master of Public Health (University of North Carolina), Director—Division of Statistical Services, Kentucky State Department of Health, 620 S. Third Street, Louisville, Kentucky; *3112 Tremont Drive, Louisville 5, Kentucky.*
- Lipow, Myron, B.S.** (California Institute of Technology), Head, *Reliability Section, Propulsion Systems and Development Department, Propulsion Laboratory, Research and Development Division, Space Technology Laboratories, Inc., 5500 El Segundo Blvd., P.O. Box 95001, Los Angeles 45, California.*
- Mallows, Colin L., Ph.D.** (University of London), Lecturer, *University College London, Gower Street, London, W.1, England.*
- Mercer, Alan, M.A.** (Cambridge), Senior Scientific Officer, *Atomic Weapons Research Establishment, Aldermaston, Near Reading, Berks, England.*
- Mikulski, Piotr W.,** Master of Economics, (Main School of Plan., and Stat., Warsaw, Poland); Research Assistant, University of California, Department of Statistics, Berkeley 4, California; *2322 Haste, Street, Apt. 10, Berkeley, California.*
- Nievergelt, Erwin, Ph.D.II** (University of Zurich), Mathematician, Swiss Federal Railways, Generaldirektion der Schweizerischen Bundesbahnen, Hochschulstr. 6, Bern; *Fliederweg 4, Koniz (Bern) Switzerland.*
- Nolfi, P., Ph.D.,** *Versicherungskasse der Stadt Zurich, Nuschelerstrasse 31, Zurich, 1 Switzerland.*
- Norton, Wade A., M.A.** (George Peabody College for Teachers), Teaching Fellow, Alabama Polytechnic Institute, Auburn, Alabama; *Mathematics Department, Alabama Polytechnic Institute, Auburn, Alabama.*
- Orlando, Frank P., B.S.** (Villanova University), Mathematician, *Carpenter Steel, Co., Research Division, Front and Bern Streets, Reading, Pennsylvania.*
- Perkal, Julian,** Professor Doctor (University of Wroclaw), Professor Doctor University of Wroclaw and The Mathematical Institute of Polich Academy of Sciences, Institut Matematyczny, Wroclaw, Poland, ul. Kopernika Nr 186; *Wroclaw 21, Oporow, Harcerska 24, Poland.*
- Puri, Madan Lal, M.A.** (Punjab University), Research Assistant, University of California, *Department of Statistics, University of California, Berkeley 4, California.*
- Quesenberry, Charles P., M.D.** (Virginia Polytechnic Institute), Student, *Department of Statistics, Virginia Polytechnic Institute, Blacksburg, Virginia.*
- Reinhardt, Howard E., Ph.D.** (University of Michigan), Assistant Professor of Mathematics, *Montana State University, Missoula, Montana.*
- Rhyne, Alfred L., A.B.** (University of North Carolina), Student, University of North Carolina, Chapel Hill, North Carolina; *103 Maxwell Road, Chapel Hill, North Carolina.*
- Robison, Donald Edward, M.S.** (Ohio State University), Mathematician, Space Technology Laboratory, 5500 W. El Segundo, Los Angeles 45, California; *8903 Reading Avenue, Los Angeles 45, California.*
- Sakamoto, Takeshi, B.S.** (Wakayama University), Graduate Student, *Mathematical Institute, Faculty of Science Kyushu University, Fukuoka, Japan.*
- Sando, Frank D.,** Final Examination (Association Incorporated Statisticians), Statistician, Reed Paper Group, Nalling House, West Nalling, Kent; *12 New Road, Ditton Nr Maidstone, Kent, England.*
- Saw, John G., B.Sc.** (University of Birmingham), Lecturer (Statistics), *Department of Statistics, University of North Carolina, Chapel Hill, North Carolina.*
- Scrubby, Ralph E., Ph.D.** (University of Colorado), Senior Research Chemist, *E. I. DuPont de Nemours and Co., Bengel Laboratory, Waynesboro, Virginia.*
- Singer, Sidney, B.A.Sc.** (University of Toronto), Graduate Student in Operations Re-

- search, *Johns Hopkins University, % Industrial Engineering Dept., Baltimore 18, Maryland.*
- Singh, Darogak, M.A.** (University of Allahabad), Senior Research Statistician, *Institute of Agricultural Research Statistics, Indian Council of Agricultural Research, New Pusa, Library Avenue, New Delhi, India.*
- Sturtevant, Charles H., A.B.** (San Diego State College), Mathematician, Navy Electronics Laboratory, San Diego 52, California; *2226 Cardinal Drive, San Diego 11, California.*
- Sugimura, Masahiko, B.S.** (University of Osaka), Assistant Professor, *Department of Mathematics, Kumamoto Women's University, Oomachi, Kumamoto City, Japan.*
- Switlyk, George, M.S.** (Stevens Graduate School), Statistician, *Mathematics and Statistics Group, Engineering Department, E. I. duPont de Nemours and Co., Wilmington 98, Delaware.*
- Trawinski, Benon John, B.Sc.** (McMaster University), Research Assistant, *Dept. of Stat., Virginia Polytechnic Institute, Blacksburg, Virginia.*
- Urbanik, Kazimierz, Ph.D.** (Wroclaw University), Assistant Professor, *Institute of Mathematics, Wroclaw University; Institute of Mathematics, Polish Academy of Sciences; Spoldzielcza 22 m. 3, Wroclaw 12, Poland.*
- Uzendoski, Alberta, Ph.D.** (St. Louis University), Assistant Professor and Chairman, *Department of Mathematics, Lourdes Junior College, 6832 Convent Blvd., Sylvania, Ohio.*
- Vanamamalai, Seshadri, M.A.** (University of Madras), Graduate Assistant, *Department of Mathematics, Oklahoma State University, Stillwater, Oklahoma; Statistical Laboratory, Oklahoma State University, Stillwater, Oklahoma.*
- Vere-Jones, David, M.Sc.** (University of New Zealand), Research Student, *Oxford University, Magdalen College, Oxford, England.*
- Wadsworth, George P., Ph.D.** (Massachusetts Institute of Technology), Associate Professor of Mathematics, *Department of Mathematics, Room 2-367A, Cambridge 39, Massachusetts.*
- Webb, Kenneth W., B.A.** (George Washington University), Statistician, *Corporation for Economic and Industrial Research, 734 Fifteenth Street, N. W. Washington 5, D. C.*
- Weeks, David L., Ph.D.** (Oklahoma State University), Assistant Professor of Mathematics, *Oklahoma State University; Statistical Laboratory, Oklahoma State University, Stillwater, Oklahoma.*
- Wegmuller, W., Ph.D.**, Full professor of Mathematical Statistics, *University of Berne, Aegertenstrasse 1, Bern, Switzerland.*
- Weibull, Christer Felix, Fil.Lic.** (University of Lund), Fil.Lic., *Institute of Statistics, University of Lund, Sweden; Bokersgatan 1, Gotesborg S, Sweden.*
- Whittle, Peter, Fil.Dr.** (Uppsala University), University Lecturer, *Statistical Laboratory, Cambridge University, Statistical Laboratory, % University Chemical Laboratory, Lensfield Road, Cambridge, England.*
- Willke, Thomas A., M.S.** (Ohio State University), Assistant Instructor, *Department of Mathematics, Ohio State University, Columbus 10, Ohio.*
- Wind, Warren A., B.A.**, (Luther College), Statistician, *Frank N. Magid Associates, 424-425 Guaranty Building, Cedar Rapids, Iowa.*
- Wood, Ernest L.**, Chartered Life Underwriter (American College of Life Und.), Assistant Controller, *John Hancock Mutual Life Insurance Company, 200 Berkeley Street, Boston, Massachusetts.*
- Zackrisson, Uno, Fil.Lic.** (University of Gothenburg), Post-Graduate student, *Statistical Institute, University of Gothenburg, Virrelvindsgatan 16 B, Gothenburg H, Sweden.*
- Zubrzycki, Stefan, Ph.D.** (Mathematical Institute of the Polish Academy of Science), Docent, *Mathematical Institute of the Polish Academy of Science, Wroclaw u. Kateo-ralna nr 9, Poland.*

SUMMER OFFERINGS IN STATISTICS AT IOWA STATE UNIVERSITY

The Department of Statistics at Iowa State University will offer six applied courses in statistical theory and methods in its two 1960 summer sessions. These courses are planned primarily for graduate students or research workers with limited mathematical backgrounds who wish to use statistical techniques intelligently for application to other fields. In addition, courses in special topics in theoretical or applied statistics may be studied at the graduate level. Senior staff members will be available during most of the summer for consultations on research or special problems.

Students may register for either or both of the six-week summer sessions June 6–July 13 and July 13–August 19. The complete list of statistics offerings for the first session is as follows: Stat. 401, "Statistical Methods for Research Workers" (at the level of Snedecor's *Statistical Methods*); Stat. 447, "Statistical Theory for Research Workers" (mainly theory of experimental statistics at the level of Anderson and Bancroft's *Statistical Theory in Research*); Stat. 599, "Special Topics;" and Stat. 699, "Research." In the second session will be offered Stat. 402, a continuation of 401; Stat. 448, a continuation of 447; two courses in applied methods which are more specialized; Stat. 411, "Experimental Designs for Research Workers," and Stat. 421, "Survey Designs for Research Workers;" and finally Stat. 599 and 699. Additional information may be obtained from T. A. Bancroft, Department Head and Director, Statistical Laboratory, Iowa State University.

AMS Summer Institute on Finite Groups

With the support of the National Science Foundation, a Summer Institute on Finite Groups will be held at the California Institute of Technology in Pasadena from August 1 to August 28, 1960.

Two distinguished group theorists have been invited from abroad and have accepted our invitation. These are Professor Graham Higman of Oxford University and Professor Helmut Wielandt of the University of Tübingen.

Participation in the Summer Institute will be by invitation, but the lectures and seminars will be open to interested mathematicians who happen to be in the area.

The Program Committee consists of Professors Richard Brauer, Richard Bruck, H. S. M. Coxeter, Robert Dilworth, Herbert Ryser, and Marshall Hall, Jr., Chairman.

AMS Summer Seminar

This will be the second in the series of Summer Seminars on applied mathematics and mathematical physics which are being conducted by the American

Mathematical Society with the co-operation of the University of Colorado, Boulder, Colorado. The first Summer Seminar in the series was held in 1957. The Seminar will be sponsored by the Atomic Energy Commission, the National Science Foundation, the Office of Naval Research, and the Office of Ordnance Research, U. S. Army, and will be held from July 24 to August 19, 1960.

The purpose of the Seminar is primarily instructional, with emphasis on a number of carefully prepared basic courses. Lectures on selected topics given by outstanding scientists are an added feature. The Seminar is planned to give mature mathematicians the opportunity to hear from leading physicists about physical theories developed during recent years and to acquaint them with relevant mathematical notions and methods.

Application blanks for admission to the Seminar or for financial assistance should be directed to: Professor K. O. Friedrichs, Chairman of the Organizing Committee, New York University, 25 Waverly Place, New York 3, New York

OPERATIONS RESEARCH AND SYSTEMS ENGINEERING

The School of Engineering of the Johns Hopkins University is again offering an intensive course in Operations Research and Systems Engineering for business, industrial and government personnel. The course will take place in Baltimore from June 6 through June 17, 1960 at the Homewood Campus of the University.

The course will include studies and expository lectures on Operations Research, Systems Engineering, Cost Data, Models, Human Engineering, Computer Programming, Simulation, Information Theory, Quality Control, Design of Experiments, Game Theory, Flow Graphs, System Dynamics, Inventory Systems, Waiting Lines, Symbolic Logic, Stability and Linear Programming.

For further information, write to: Dean, School of Engineering, The Johns Hopkins University, Baltimore 18, Maryland.

NEW TITLE FOR MTAC

In January 1960 the title of *Mathematical Tables and Other Aids to Computation* was changed to *Mathematics of Computation*. The new name reflects the broadened scope of the journal, which has expanded to meet the need in this country for a publication devoted to numerical analysis and computation.

The change in name to *Mathematics of Computation* in no way represents a diminished interest in mathematical tables, which will continue to be given prime emphasis as in the past. It recognizes an increased interest in other areas in the field of mathematics of computation, which have grown in importance and in which rapid advances are now being made. The subscribers will find future issues of the journal to be a continuation of *Mathematical Tables and Other Aids to Computation* with similar style, format and character of contents,

and increased coverage of modern advances in the theory and application of computational methods.

Mathematics of Computation will continue to be published quarterly and the subscription rate will remain at \$8.00 per year. Send new and renewal orders to Printing & Publishing Office, National Academy of Sciences, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

TRANSLATIONS OF RUSSIAN JOURNALS

Theory of Probability and its Applications

The Society for Industrial and Applied Mathematics announces the appearance of the first issue of Volume IV of *Theory of Probability and Its Applications*. This is a complete translation into English of the corresponding issue of the Russian journal *Teoriya Veroyatnostei i ee Primeneniya*. During 1960 the Society will publish separately translations of all four issues of Volume IV (1959), will begin the translation of Volume V, and will publish in bound form full translations of Volumes I (1956), II (1957) and III (1958). It is expected that by early 1961 translations will be appearing within four months of publication of the Russian original.

Theory of Probability and Its Applications is a quarterly journal devoted, as its title indicates, to research papers in probability and statistics, and to related applications in physics and communication. For the most part, the journal has reported the work of Russian authors; its translation offers the first access to this material in a Western language.

The Society for Industrial and Applied Mathematics has been assisted in this translation project by a grant from the National Science Foundation.

Subscriptions to *Theory of Probability and Its Applications* are being offered at \$18.00 for four current issues (one year) (\$9.50 to members of the Society, add \$3.00 for subscriptions outside of the U. S. and Canada). Inquiries may be addressed to the Society at Box 7541, Philadelphia 1, Pennsylvania.

Soviet Mathematics—Doklady

This new American Mathematical Society journal, published under the sponsorship of the National Science Foundation, will contain translations of the entire Pure Mathematics section of the *Doklady Akademii Nauk SSSR*, the Reports of the Academy of Sciences of the USSR.

The *Doklady Akademii Nauk SSSR* presents short articles, averaging three to five pages, covering results of current research in Pure and Applied Mathematics, Physics, Astronomy, Chemistry, Geology, Botany, Zoology, etc. Only the Pure Mathematics section will be translated by the American Mathematical Society; other sections are being translated by other agencies.

All branches of Pure Mathematics are covered in the *Doklady* in short articles, similar to those in the Research Announcements section of the *Bulletin* of the

American Mathematical Society and in *Comptes Rendus, Paris*, which usually do not give proofs. Translation of these articles will provide a comprehensive, up-to-date survey of what is going on in Soviet mathematics, enabling American mathematicians to keep abreast of current developments in the USSR.

The Pure Mathematics section of the *Doklady* is expected to total about 1,500 pages in 1960. *Soviet Mathematics—Doklady* will be issued six times a year, the first issue to appear early in 1960. Rates are as follows: Domestic subscriptions, \$17.50; foreign subscriptions, \$20.00; single issues, \$5.00. Orders may be placed with the American Mathematical Society, 190 Hope Street, Providence 6, Rhode Island.

VISITING FOREIGN MATHEMATICIANS

The following list (dated October 12, 1959) of visiting foreign mathematicians has been received from the Division of Mathematics, National Academy of Sciences, National Research Council. The information given is, in order, the name, home country, host institution, and period of visit; AY stands for academic year, Ind. stands for indefinite. The names of persons whose visit terminates before March, 1960, have not been included. ABUAUAD ABUJATIM, CESAR, Chile, University of Chicago, Sept. 1959–June 1960; ALVAREZ DE ARAYA, JORGE, Chile, University of Washington, Sept. 1958–Aug. 1960; AMITSUR, SHIMSHON A., Israel, Yale University, Fall Term 1959–Ind.; ARAKI, SHÖRÖ, Japan, Institute for Advanced Study, Sept. 1959–April 1960; ASPLUND, O. EDGAR, Sweden, Institute for Advanced Study, Sept. 1958–April 1960; AUBERT, KARL E., Norway, Institute for Advanced Study, Sept. 1958–April 1960; BANASCHEWSKI, BERNHARD, Germany, Tulane University, AY 1959–60; BAUMSLAG, GILBERT, England, Princeton University, Sept. 1959–June 1960; BERNAYS, PAUL, Switzerland, Institute for Advanced Study, Nov. 1959–April 1960; BERGSTRÖM, H., Sweden, Catholic University, Sept. 1960–July 1961; BESICOVITCH, A. S., England, University of Pennsylvania, Sept. 1958–June 1961; BHATTACHARYYA, B. B., India, North Carolina State College, Raleigh, Oct. 1, 1959–Ind.; BOLT, BRUCE A., Australia, Lamont Geological Observatory, Columbia University, Jan. 1960–Oct. 1960; CHAKRAVARTI, I. M., India, University of North Carolina, Sept. 1959–Aug. 1960; CHRISTIAN, ULRICH, Germany, Institute for Advanced Study, Sept. 1958–April 1960; CLUNIE, J. G., U. K., Massachusetts Institute of Technology, Sept. 16, 1959–June 15, 1960; CONSTANTINE, ALAN, Australia, Yale University, Fall Term 1959–Ind.; DEMAZURE, MICHEL, France, Princeton University, Sept. 1959–June 1960; DEHEUVELS, RENÉ, France, Yale University, Fall Term 1959–Ind.; DEURING, MAX F., Germany, Institute for Advanced Study, Sept. 1959–April 1960; DOMBROWSKI, PETER L., Germany, Massachusetts Institute of Technology, Sept. 15, 1959–June 15, 1960; DUGUÉ, DANIEL, France, Catholic University, Mar. 1, 1960–July 1, 1960; DURBIN, JAMES, U. K., University of North Carolina, July 1959–June 1960; EICKER, FREDERICK,

Germany, University of North Carolina, March 1959–Ind.; ELSTON, R. C., U. K., University of North Carolina, July 1959–June 1960; ENGELER, ERWIN, Switzerland, University of Minnesota, 1958–1960; FOGUEL, SHAUL R., Israel, University of California, Berkeley, Sept. 1958–June 1960; FUJISAKI, G., Japan, Massachusetts Institute of Technology, Sept. 1, 1959–Aug. 31, 1960; FULLERTON, G. H., N. Ireland, Massachusetts Institute of Technology, Sept. 15, 1959–June 15, 1960; GODEMENT, ROGER J., France, University of California, Berkeley, AY 1959–60; GOES, GUNTHER, Germany, Northwestern University, Sept. 1, 1959–Sept. 1, 1960; GRIBBEN, RONALD J., England, Massachusetts Institute of Technology, Sept. 16, 1958–June 15, 1960; GRÜNBAUM, BRANKO, Israel, Institute for Advanced Study, Sept. 1958–April 1960; GUTWIRTH, AZRIEL, Israel, University of California, Berkeley, Sept. 15, 1959–Aug. 1, 1960; HA, KWANG CHUL, Korea, University of North Carolina, Sept. 15, 1958–June 30, 1960; HAEFLIGER, ANDRÉ, Switzerland, Institute for Advanced Study, Sept. 1959–April 1960; HANANI, HAIM, Israel, University of Wisconsin, Mathematics Research Center (Army), Sept. 1959–Aug. 1960; HANNAN, EDWARD J., Australia, University of North Carolina, Oct. 1959–May 1960; HEALY, M. J. R., England, Bell Telephone Laboratories, Oct. 1959–Ind.; HELGASON, SIGURDUR, Iceland, Columbia University, Sept. 1959–June 1960; HIRZEBRUCH, FRIEDRICH, Germany, Institute for Advanced Study, Sept. 1959–April 1960; IGUSA, JUN-ICHI, Japan, Institute for Advanced Study, Sept. 1959–April 1960; IONESCU, CASSIUS I., Rumania, Yale University, 1957–Ind.; JENKINS, GWILYM M., U. K., Stanford University, Sept. 1959–Sept. 1960; KAMPÉ DE FÉRIET, JOSEPH, France, David Taylor Model Basin (Navy), and Harvard University, March–April 1960; KATZNELSON, Y., Israel, University of California, Berkeley, AY 1959–60; KINOSHITA, SHIN'ICHI, Japan, Institute for Advanced Study, Sept. 1959–April 1960; KOCAK, CEVDET, Turkey, University of Maryland, Sept. 1959–July 1960; KOSINSKI, A. A., Poland, University of California, Berkeley, AY 1959–60; KUREPA, DJURO, Yugoslavia, Institute for Advanced Study, Fall Semester 1959, University of Colorado, Spring Semester 1960, Sept. 1959–June 1960; KUREPA, SVETOZAR, Yugoslavia, Tulane University, Second Semester 1959–60, and University of Maryland, Feb. 1960 to June 1961, 1959–June 1961; LAHA, RADHA G., India, Catholic University, Sept. 1957–Sept. 1960; LAMBKE, JOACHIM, Canada, Institute for Advanced Study, Sept. 1959–April 1960; LANCZOS, C., Ireland, Mathematics Research Center (Army), University of Wisconsin, Oct. 1959–March 1960; LEE, SHING, MEN, Formosa, Northwestern University, Sept. 1, 1959–Sept. 1, 1960; LEVY, AZRIEL, Israel, Massachusetts Institute of Technology, Sept. 16, 1958–June 15, 1959, University of California, Berkeley, AY 1959–60, Sept. 1958–June 1960; LOS, JERZY, Poland, University of California, Berkeley, Oct. 1, 1959–Aug. 1, 1960; MASANI, PESI R., India, Brown University, Sept. 1959–June 1961; MCMAHON, JAMES J., Ireland, Fordham University, Sept. 1959–June 1960; MICHAEL, DAVID H., U. K., Harvard University, Sept. 1959–July 1960; MITSUI, T., Japan, Massachusetts Institute of Technology, Sept. 1, 1959–Aug. 31, 1960; MORDELL, L. J., U. K., University of

Colorado, Sept. 1959–June 1960; MORIKAWA, HISASI, Japan, Institute for Advanced Study, Sept. 1958–April 1960; MROWKA, S., Poland, University of Michigan, Sept. 1959–June 1960; MURRE, JACOB P., Netherlands, Northwestern University, Sept. 1, 1959–Sept. 1, 1960; NAGATA, JUN-ITI, Japan, University of Washington, Sept. 16, 1959–June 15, 1960; NAIM, LINDA, Israel, University of California, Berkeley, Spring Term 1960; NAKAOKA, MINORU, Japan, Institute for Advanced Study, Sept. 1958–April 1960; NÉRON, ANDRÉ, France, Institute for Advanced Study, Sept. 1959–April 1960; NIETO, JOSÉ, Colombia, University of Maryland, June 1960–June 1961; OBATA, MORIO, Japan, University of Illinois, Sept. 1958–Aug. 1960; ONESTO, NELLO, Italy, Massachusetts Institute of Technology, Oct. 1959–July 1960; ONO, TAKASHI, Japan, Institute for Advanced Study, Sept. 1959–April 1960; OSTROWSKI, ALEXANDER M., Switzerland, American University and National Bureau of Standards, Sept. 2, 1958–Feb. 1959; Mathematics Research Center (Army), University of Wisconsin, Oct. 1959–June 1960, Sept. 1958–June 1960; PAPAKYRIAKOPOULOS, CHRISTO, Greece, Princeton University, Sept. 1959–June 1960; PARK, SAMUEL, Korea, Columbia University, Sept. 1959–June 1960; PEDERSEN, FLEMMING P., Denmark, University of Southern California, July 1958–June 1960; PONCET, JEAN, Switzerland, Institute for Advanced Study, Sept. 1959–April 1960; RAMANUJAN, M. S., India, University of Michigan, Sept. 1956–June 1961; RASLOWA, H., Poland, University of Chicago, Oct. 1, 1959–Mar. 31, 1960; REE, RIMHAK, Korea, Columbia University, Sept. 1959–June 1960; REIS, F. B., Brazil, University of Maryland, Sept. 1, 1959–June 30, 1960; REMMERT, REINHOLD, Germany, Institute for Advanced Study, Sept. 1959–April 1960; RIBENBOIM, PAULO, Brazil, University of Illinois, Sept. 1959–June 1960; RIM, DOCK SANG, Korea, Columbia University, Sept. 1959–June 1960; ROBERTSON, ALEX, Scotland, University of Kansas, Sept. 1, 1959–May 31, 1960, In U. S. summer 1960; ROBERTSON, WENDY, Scotland, University of Kansas, Sept. 1, 1959–May 31, 1960, In U. S. summer 1960; ROY, JOGABRATA, India, University of North Carolina, Oct. 1959–Sept. 1961; SAKURAI, A., Japan, Institute of Mathematical Sciences, New York University, Sept. 1958–Aug. 1959, Massachusetts Institute of Technology, Sept. 1959–Sept. 1960, Sept. 1958–Sept. 1960; SAMUEL, PIERRE, France, University of Illinois, Sept. 1959–June 1960; SATAKE, ICHIRO, Japan, Institute for Advanced Study, Sept. 1958–April 1960; SAW, JOHN G., U. K., University of North Carolina, Aug. 1959–May 1960; SCHAEZT, R. L., Germany, University of Michigan, Sept. 1959–June 1960; SCHÜTTE, KURT, Germany, Institute for Advanced Study, Sept. 1959–April 1960; SHAH, S. M., India, University of Wisconsin, Fall Semester I, 1958–59; Northwestern University, Sept. 1, 1959–Sept. 1, 1960; Sept. 1958–Sept. 1960; SHAIKH, MOHAMMAD YUSUF, Pakistan, University of Tennessee, Sept. 1, 1959–Aug. 31, 1960; SHIMRAT, M., Israel, University of Michigan, Sept. 1959–June 1960; SINGH, S. K., India, University of Kansas, Sept. 1, 1958–May 31, 1960; SKOVGAARD, H., Denmark, California Institute of Technology, Jan. 1, 1959–June 30, 1960; STAAL, R. A., Canada, University of California, Berkeley, Academic Year 1959–60; SUNOUCHI,

GENICHIRO, Japan, Northwestern University, Sept. 1, 1959–Aug. 31, 1960; SZMIELEW, WANDA, Poland, University of California, Berkeley, Spring Term 1960; TAKEUTI, GAISI, Japan, Institute for Advanced Study, Sept. 1959–April 1960; TEMPLE, GEORGE F. J., U. K., Institute for Advanced Study, Sept.–Dec. 1959; Applied Mathematics Laboratory, David Taylor Model Basin (Navy), Jan. 1960–Mar. 31, 1960; Sept. 1959–March 1960; THOMA, ELMAR, Germany, University of Washington, Sept. 16, 1959–June 15, 1960; TODA, HIROSI, Japan, Institute for Advanced Study, Sept. 1959–April 1960; TOGO, S., Japan, Northwestern University, June 1, 1958–Mar. 31, 1960; VAN, PING-CHANG, Taiwan, Texas Technological College, Sept. 1959–June 1960; VAN DE VEN, TON, Netherlands, Institute for Advanced Study, Sept. 1959–April 1960; VARADJAN, D. S., India, Princeton University, Nov. 1, 1959–Aug. 31, 1960; WALKER, A. G., U. K., University of Washington, Sept. 16, 1959–June 15, 1960; WALLACE, DAVID, U. K., Princeton University; and Harvard University, Sept. 1958–July 1960; WALTERS, KENNETH, U. K., Brown University, Sept. 1959–July 1960; WESTON, JEFFREY D., U. K., California Institute of Technology, Jan. 1, 1960–June 30, 1960; WHITEHEAD, J. H. C., U. K., University of Chicago, Fall Term, Oct. 1959–Dec. 1959; Institute for Advanced Study, Spring Term, Jan.–April 1960, Oct. 1959–April 1960; YOUNG, EUTQUIO C., Philippines, University of Maryland, Sept. 1958–Aug. 1960.

REPORT OF THE WASHINGTON, D. C. MEETING OF THE INSTITUTE OF MATHEMATICAL STATISTICS

The eighty-second meeting of the Institute of Mathematical Statistics, the twenty-second annual meeting, was held in Washington, D. C., on December 27–30, 1959 in conjunction with meetings of the American Statistical Association and the Biometric Society (ENAR).

There were 492 members of the Institute registered for the meeting. The program of the meeting was as follows:

SUNDAY, DECEMBER 27, 1959

10:00 a.m.—Contributed Papers I

Chairman: S. S. GUPTA, Bell Telephone Laboratories.

1. "A 'Renewal' Limit Theorem for General Stochastic Processes," V. E. BENĚS, Bell Telephone Laboratories and Dartmouth College.
2. "Examples of Two Independent Separable Processes whose Sum is Not Separable," T. FERGUSON, Princeton University.
3. "First Emptiness of Two Dams in Parallel," J. M. GANI, Columbia University.
4. "Optimum Decision Procedures for a Poisson-Process Parameter," J. A. LECHNER, University of Maryland.
5. "Inference in Stochastic Processes I: Testing Composite Hypotheses" (Preliminary Report), M. M. RAO, Carnegie Institute of Technology.
6. "Testing of Hypotheses on Categorical Data," S. N. ROY, University of North Carolina and V. P. BHAPKAR, University of North Carolina and University of Poona, India.

7. "*Some Nonparametric Problems: I*," V. P. BHAPKAR, University of North Carolina and University of Poona, India. (By title)
8. "*A Rank Sum Test for Comparing all Pairs of Treatments*," R. G. D. STEEL, Cornell University.
9. "*Mathematical Models for Ranking from Paired Comparisons*," H. D. BRUNK, University of Missouri. (By title)
10. "*Some Nonparametric Problems: II*," V. P. BHAPKAR, University of North Carolina and University of Poona, India. (By title)
11. "*Stochastic Approximation and 'Minimax' Problems*," L. A. GARDNER, JR., MIT Lincoln Laboratory. (By title)

10:00 a.m.—Contributed Papers II

Chairman: JACK NADLER, Bell Telephone Laboratories.

1. "*On the Problem of Negative Estimates of Variance Components*," W. A. THOMPSON, JR., University of Delaware.
2. "*On the Exactness of the Missing Plot Procedure in a Randomized Block Design*," J. L. FOLKS, Texas Instruments Incorporated.
3. "*Some Randomization Consequences in Balanced Incomplete Blocks*," G. ZYSKIND, University of North Carolina and Iowa State University.
4. "*Main-Effect Designs for Asymmetrical Factorial Experiments*," S. ADDELMAN, Iowa State University.
5. "*On the Efficiency of Experimental Designs*," S. N. ROY, S. S. SHRIKHANDE, AND P. R. KRISHNAIAH, University of North Carolina.
6. "*Reduction of Multiple Regression Systems by Use of Direct Products of Matrices*," J. LIEBLEIN, David Taylor Model Basin.
7. "*Small Sample Behavior of Estimators of Parameters in a Linear Functional Relationship*," M. DORFF AND J. GURLAND, IOWA STATE UNIVERSITY.
9. "*Remarks on 'Standard Coefficients' in Normal Regression Analysis*," P. R. KRISHNAIAH AND M. M. RAO, University of Minnesota. (By title)

1:00 p.m.—Multivariate Analysis I (ASA, BS, and IMS)

Chairman: S. S. WILKS, Princeton University

1. "*Multivariate Chebyshev Type Inequalities*," A. W. MARSHALL, Stanford University.
2. "*Some Applications of Multivariate Chebyshev Inequalities*," I. OLKIN, Michigan State University.
3. "*A Representation of the Wishart Matrix*," R. A. WIJSMAN, University of Illinois.

2:00 p.m.—Wald Lecture I

Chairman: K. L. CHUNG, Syracuse University

"*Balanced and Group Divisible Designs*," R. C. BOSE, University of North Carolina.

3:00 p.m.—Special Invited Address

Chairman: H. CHERNOFF, Stanford University

"*Recent Work in the Theory of Dams*," W. L. SMITH, University of North Carolina.

4:00 p.m.—Invited Papers I

Chairman: P. P. BILLINGSLEY, University of Chicago

1. "*On a Problem of Queues with Single Server*," L. TAKACS, Columbia University.
2. "*Recent Developments in Inventory Theory*," H. SCARF, Stanford University.
3. "*Semi-Markov Processes—Denumerable State Space*," R. PYKE, Columbia University.

4:00 p.m.—Contributed Papers III

Chairman: J. F. PAULS; Smith, Kline and French Laboratories

1. "*On Time Series Analysis and Reproducing Kernel Space*," N. D. YLVISAKER, Columbia University. (By title)
2. "*Asymptotic Expansions for the Mean and Variance of the Serial Correlation Coefficient*," J. S. WHITE, Minneapolis Honeywell Regulator Company.
3. "*On the Distribution of a Noncircular Serial Correlation Coefficient with Lag 1 When the Mean of the Observations is Unknown*," F. EICKER, University of North Carolina.
4. "*On the Distribution of the Sum of Circular Serial Correlation Coefficients and the Effect of Non-Normality on its Distribution*," V. K. MURTHY, University of North Carolina.
5. "*On the Monotonic Character of the Power Functions of Two Multivariate Tests*," S. N. ROY AND W. F. MIKHAIL, University of North Carolina.
6. "*On Tests of Certain Types of Hypotheses Involving the Dispersion Matrices of Two or More Multivariate Normal Distributions and the Associated Confidence Bounds*." S. N. ROY, University of North Carolina AND R. GNANADESIKAN, Bell Telephone Laboratories.
7. "*On the Determinants and Characteristic Equations of a Class of Patterned Matrices*," S. N. ROY, B. G. GREENBERG AND A. E. SARHAN, University of North Carolina.
8. "*Further Results on Hypothesis of No Interaction in Multidimensional Tables*," P. R. KRISHNAIAH AND V. K. MURTHY, University of North Carolina. (By title)
9. "*A Solution of the Classification Problem*," S. N. ROY, University of North Carolina. (By title)

8:00 p.m.—1959 Council Meeting

President: J. WOLFOWITZ, Cornell University.

MONDAY, DECEMBER 28, 1959**9:00 a.m.—Wald Lecture II**

Chairman: W. G. COCHRAN, Harvard University. "*Orthogonal Squares and Orthogonal Arrays*," R. C. BOSE, University of North Carolina.

10:30 a.m.—Invited Papers II

Chairman: D. B. DUNCAN, University of North Carolina.

1. "*Multiple Decision Rules Which Control All Kinds of Errors*," W. J. HALL, University of North Carolina.
2. "*Remarks about a Paired Comparison Model*," G. NOETHER, Boston University.
3. "*Rank Tests of Locally Most Powerful Type*," H. UZAWA, Stanford University.

10:30 a.m.—Invited Papers III

Chairman: E. LUKACS, Catholic University.

1. "*The Spectral Theory of Operators in a Hilbert Space and its Application to the Derivation of Some Statistical Theorems*," E. J. HANNAN, Canberra University College, Australia.
2. "*On Explicit Solutions to Problems of Linear Prediction and Regression Analysis of Continuous Parameter Time Series*," E. PARZEN, Stanford University.

10:30 a.m.—Multivariate Analysis II, (ASA and IMS)

Chairman: R. L. ANDERSON, North Carolina State College.

1. "*Sequential Chi-Square and T^2 Tests*," J. E. JACKSON, Eastman Kodak Company AND R. A. BRADLEY, Florida State University.

2. "*Multivariate Correlation Models with Mixed Discrete and Continuous Variables*," R. F. TATE, University of Washington.
3. "*Analysis of Multi-Factor Multi-Response Experiments with Mixed Factor and Response Types*," S. N. ROY, University of North Carolina.

2:00 p.m.—Contributed Papers IV

Chairman: J. DURBIN, University of North Carolina

1. "*On the Foundations of the Theory of Testing Hypotheses*" (Preliminary Report), A. BIRNBAUM, New York University.
2. "*Multiple-Decision Ranking Problems Arising from Factorial Experiments on Variances of Normal Populations*" (Preliminary Report), R. E. BECHHOFFER, Cornell University.
3. "*A Modified Procedure for Group Testing*," M. SOBEL, Bell Telephone Laboratories and New York University.
4. "*A Problem in Restrictive Group Testing*," M. SOBEL, Bell Telephone Laboratories and New York University AND P. A. GROLL, Bell Telephone Laboratories.
5. "*A Single Sample Decision Procedure for Selecting a Subset Containing the Best of Several Normal Populations and Some Extensions*," S. S. GUPTA, Bell Telephone Laboratories.
6. "*Use of Prior Knowledge in Finding the Maximum Response*," R. J. BUEHLER, Iowa State University.
7. "*Partnership Games with Secret Conventions Prohibited*," M. FOX AND H. RUBIN, Michigan State University.
8. "*On a Single Sample Procedure for Selecting from Several Normal Populations a Subset Containing the Population with the Smallest Variance*," S. S. GUPTA, Bell Telephone Laboratories AND M. SOBEL, Bell Telephone Laboratories and New York University. (By title)
9. "*On the Distribution of the Ratio of the Smallest of Several Chi-Squares to an Independent Chi-Square*," S. S. GUPTA, Bell Telephone Laboratories AND M. SOBEL, Bell Telephone Laboratories and New York University. (By title)

2:00 p.m.—Recent Developments in Information Theory (in cooperation with the Professional Group on Information Theory, Institute of Radio Engineers).

Chairman: D. SLEPIAN, Bell Telephone Laboratories.

1. "*Information Theory and Statistics*," S. KULLBACK, George Washington University.
2. "*Error Correcting Codes*," D. K. RAY-CHAUDHURI, Case Institute of Technology.

2:00 p.m.—Classification and Discrimination I, (ASA, BS, and IMS)

Chairman: H. SOLOMON, Stanford University.

1. "*Classification into Multivariate Normal Distributions with Unequal Covariance Matrices*," T. W. ANDERSON, Columbia University AND R. R. BAHADUR, Indian Statistical Institute.
2. "*A Representation for Anderson's W Statistic*," A. BOWKER, Stanford University.
3. "*An Asymptotic Expansion for the Distribution Function of Anderson's Classification Statistics W* ," R. SITGREAVES, Columbia University.

4:00 p.m.—Contributed Papers V

Chairman: R. BECHHOFFER, Cornell University.

1. "*Asymptotically Optimal Stopping Rules in Sequential Analysis*" (Preliminary Report), H. CHERNOFF, Stanford University.
2. "*Unbiased Sequential Estimation for Certain Two Parameter Problems*" (Preliminary

- Report), B. BRAINERD, University of Western Ontario AND I. CHORNEYKO, AND T. V. NARAYANA, University of Alberta.
3. "*Minimax Sequential Tests of Some Composite Hypotheses*," M. H. DEGROOT, Carnegie Institute of Technology.
 4. "*Optimum Properties and Admissibility of Sequential Tests*," D. L. BURKHOLDER AND R. A. WIJSMAN, University of Illinois.
 5. "*Distribution of Sample Size in Sequential Sampling*," L. L. LASMAN, Florida State University AND E. J. WILLIAMS, North Carolina State College.
 6. "*Power Characteristics of the Control Chart for Number of Defects, No Standard Given*," E. B. McCUE, Ohio University.
 7. "*Confidence Bounds for an Integral Function of an Estimate with Applications to Reliability Theory*," S. C. SAUNDERS, Boeing Scientific Research Laboratories.
 8. "*The Method of Moments Applied to a Mixture of Two Exponential Distributions*," P. R. RIDER, Wright-Patterson Air Force Base.

4:00 p.m.—The Organization of Statistical Instruction in Colleges and Universities, (ASA and IMS)

- Chairman: E. PARZEN, Stanford University.
- Panel: T. A. BANCROFT, Iowa State University.
J. NEYMAN, University of California.
G. E. NICHOLSON, JR., University of North Carolina.
S. S. WILKS, Princeton University.
- Discussion: F. MOSTELLER, Harvard University.
H. SOLOMON, Stanford University.

4:00 p.m.—Classification and Discrimination II (ASA, BS, and IMS)

- Chairman: S. W. GREENHOUSE, National Institutes of Health.
1. "*Some Problems in Multivariate Classification Using Discrete Variates*," W. G. COCHRAN, Harvard University AND C. E. HOPKINS, University of Oregon.
 2. "*A Descriptive Application of Discriminant Functions in Physical Anthropology*," M. J. R. HEALY, Bell Telephone Laboratories and Rothamsted Experimental Station.
 3. "*Linear Multivariate Models as Representative of Clinical Judgment*," P. J. HOFFMAN, University of Oregon.

4:00 p.m.—Contributed Papers VIII

- Chairman: H. NISSELSON, Bureau of the Census.
1. "*A Simplified Method for finding Confidence Limits on the Relative Risk in 2×2 Tables*," J. J. GART, The Johns Hopkins University. (By title)
 2. "*Stationary Probabilities for a Semi-Markov Process with Finitely Many States*," R. PYKE, Columbia University.
 3. "*On Estimating the Mean of a Finite Population*," J. ROY AND I. M. CHAKRAVARTI, Indian Statistical Institute and University of North Carolina. Introduced by R. C. Bose.
 4. "*On the Probability of Detection of Noise-Like Signals*," W. M. STONE, Boeing Airplane Co. and Oregon State College, AND K. J. HAMMERLE, Boeing Airplane Co. Introduced by J. B. Tysver.
 5. "*Identifiability of Mixtures*," H. TEICHER, Purdue University.
 6. "*Generalization of a Theorem of Polya, and Applications*," R. R. RAO, Indian Statistical Institute. Introduced by R. R. Bahadur. (By title)
 7. "*When to stop*," H. ROBBINS, Columbia University. (By title)

6:00 p.m.—Business Meeting

President: J. WOLFOWITZ, Cornell University.

8:00 p.m.—1960 Council Meeting

President: J. W. TUKEY, Princeton University and Bell Telephone Laboratories.

TUESDAY, DECEMBER 29, 1959**9:00 a.m.—Wald Lecture III**

Chairman: W. HOEFFDING, University of North Carolina.

"Factorial Designs—Confounding and Fractional Replication," R. C. BOSE, University of North Carolina

10:30 a.m.—Invited Papers IV

Chairman: M. SOBEL, Bell Telephone Laboratories and New York University.

1. *"Construction of Optimum Experimental Designs,"* J. KIEFER, Cornell University.
2. *"Generalized Bayes Solutions in Estimation Problems,"* J. SACKS, Columbia University.
3. *"On a Unified Theory of Estimation,"* A. BIRNBAUM, New York University.

10:30 a.m.—Mathematical Models in the Life Sciences, (ASA, BS, and IMS)

Chairman: H. F. BRIGHT, George Washington University.

1. *"The Two-Stage Mutation Model for Carcinogenesis and Experimental Means of its Verification,"* J. NEYMAN AND E. L. SCOTT, University of California.
2. *"On the Relation Between the Structural Geometry and the Function of Individual Neurons,"* W. RALL, National Institutes of Health.
3. *"Competing Risks and the Follow-up Study,"* C. L. CHIANG, University of California.

2:00 p.m.—Rietz Lecture

Chairman: J. WOLFOWITZ, Cornell University.

"The Problem of Two Samples from Continuous Distributions," S. S. WILKS, Princeton University.

3:00 p.m.—Special Invited Address

Chairman: C. DERMAN, Columbia University.

"Sufficiency and Approximate Sufficiency," L. LECAM, University of California.

4:00 p.m.—Invited Papers V

Chairman: M. ROSENBLATT, Brown University.

1. *"Group Representation Methods in Multivariate Distribution Theory,"* A. T. JAMES, Yale University.
2. *"Recent Developments in the Convergence of Stochastic Processes,"* G. KALLIANPUR, Michigan State University.
3. *"Toeplitz Forms and Generalizations of Bernoulli Trials,"* F. SPITZER, University of Minnesota.

4:00 p.m.—Contributed Papers VI

Chairman: M. GURNEY, Bureau of the Census.

1. *"Cross-Compounded Distributions,"* R. A. EPSTEIN AND L. R. WELCH, California Institute of Technology.

2. "*Generalizations of Thompson's Distribution, II*," A. G. LAURENT, Wayne State University.
3. "*On the Decomposition of Certain Characteristic Functions*," B. RAMACHANDRAN, Catholic University. Introduced by E. Lukacs.
4. "*Certain Extensions of a Theorem of Marcinkiewicz*" (Preliminary Report), I. CHRISTENSEN, Catholic University.
5. "*On the Characterization of a Family of Populations which Includes the Poisson Population*," E. LUKACS, Catholic University.
6. "*Generalized Power Series Distribution and Certain Characterization Theorems*," G. P. PATIL, University of Michigan.
7. "*On Characterization Problems Connected with Quadratic Regression*," R. G. LAHA AND E. LUKACS, Catholic University.
8. "*Certain Uncorrelated Statistics*," R. V. HOGG, University of Iowa.

10:00 p.m.—Informal Party (ASA, BS, and IMS)

WEDNESDAY, DECEMBER 30, 1959

9:00 a.m.—Wald Lecture IV

Chairman: E. PARZEN, Stanford University.

"*Construction of Error Correcting Codes*," R. C. BOSE, University of North Carolina.

10:30 a.m.—Invited Papers VI

Chairman: R. GNANADESIKAN, Bell Telephone Laboratories.

1. "*Moment Generating Functions of Quadratic Forms of Normal Order Statistics*," H. RUBEN, Columbia University.
2. "*Some Nonparametric Tests in Multivariate Problems*," L. WEISS, Cornell University.
3. "*The Actual Distribution of One Sample Kolmogorov-Smirnov Statistics*," M. DWASS, Northwestern University.

10:30 a.m.—Final Report of the Advisory Committee on Weather Control

Chairman: A. H. BOWKER, Stanford University.

1. "*Criticism of the Final Report of the Advisory Committee on Weather Control*," J. NEYMAN, University of California.
2. "*Bias in the Evaluation of Cloud Seeding Operations Introduced by the Transformation of Variables*," E. L. SCOTT, University of California.
3. "*Problems of Experimental Design*," J. YOUNDEN, National Bureau of Standards.
4. "*Stochastic Theory of Precipitation*," L. LECAM, University of California.

10:30 a.m.—Contributed Papers VII

Chairman: D. RUBINSTEIN, General Electric Co.

1. "*The Estimation of the Location of a Discontinuity in Density*," H. RUBEN, Michigan State University.
2. "*A Subfield Containing a Sufficient Subfield is Not Necessarily Sufficient*," D. L. BURKHOLDER, University of Illinois.
3. "*Polya Type Distributions of Convolutions*," S. KARLIN, Stanford University AND F. PROSCHAN, Sylvania Electronic Products, Inc.
4. "*On Infinite Packing Theorem for Spheres: A New Application of the Borel-Cantelli Lemma*," O. WESLER, University of Michigan.
5. "*Conditional Expectations of Banach-valued Random Variables*," S. D. CHATTERJII, Michigan State University. Introduced by K. J. Arnold.

6. "*Some Asymptotic Results for a Coverage Problem*," M. HALPERIN, Knolls Atomic Power Laboratory. (By title)
 7. "*A Law of Large Numbers for Dependent Random Variables*," E. PARZEN, Stanford University. (By title)
 8. "*A New Inversion Formula*," E. PARZEN, Stanford University. (By title)
 9. "*A New Proof of the Continuity Theorem of Probability Theory*," E. PARZEN, Stanford University. (By title)
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REPORT OF THE SECRETARY FOR 1959

During the year the Institute has held its 80th through 82nd meetings in Pittsburgh, Pennsylvania, Cleveland, Ohio, and Washington, D. C., respectively. A Business Meeting was called during the 82nd meeting (22nd Annual) and subsequently made the necessary decisions for carrying on the work of the Institute for the coming year. The Institute is gratified with the presentation of the programs at all of its meetings. M. B. Wilk, Program Coordinator, with the help of the local Program Chairmen, Franklin Graybill, Boyd Harshbarger, and Emanuel Parzan and their committees are to be congratulated. The Assistant Secretaries, Donovan J. Thompson, Fred C. Leone, and Joan Rosenblatt should be mentioned also for making very satisfactory arrangements for these meetings. Dorothy Gilford and Jack Silber as Associate Secretaries competently carried out the duties of the Secretary with respect to meetings.

REPORT OF THE EDITOR FOR 1959

During the operating year August 1, 1958, to July 31, 1959, the number of manuscripts submitted to the *Annals* remained approximately the same as in the two preceding years, about 180. The size of the printed volume for the calendar year 1959, about 1300 printed pages, has been adequate to keep the backlog of accepted but unprinted pages to a negligible size, virtually zero. Increased costs continue to form a serious problem that will be met by a series of actions, including the institution of page charges and of paid advertising.

I thank the Associate Editors for their skillful and difficult work, which forms an essential part of our editorial procedure. Mrs. Cynthia Zilliac has transcended the literal duties of her position as Editorial Assistant in setting up and carrying on the activities of my editorial office; I am deeply grateful to her.

My thanks also go to the University of Chicago for its considerable material aid. Finally, it is a pleasure to list the names of the referees of papers for which final editorial decisions have been made during the period December 1958 to January 1960, inclusive. The work of referees forms the core of *Annals* editorial activity, and I regret that this public expression of thanks can perforce only take the form of a listing.

- S. Addelman
 T. W. Anderson
 F. J. Anscombe
 R. R. Bahadur
 T. Bancroft
 E. W. Barankin
 G. A. Barnard
 G. Baxter
 E. M. L. Beale
 R. E. Beard
 R. E. Bechhofer
 P. Benkhard
 P. Billingsley
 A. Birnbaum
 D. Blackwell
 J. R. Blum
 R. M. Blumenthal
 C. R. Blyth
 R. C. Bose
 G. E. P. Box
 R. Bradt
 R. J. Buehler
 D. L. Burkholder
 H. C. Carver
 D. G. Chapman
 S. S. Chern
 K. L. Chung
 B. Clarke
 A. Cohen, Jr.
 W. S. Connor
 J. Cornfeld
 L. Cote
 D. R. Cox
 R. Curnow
 H. E. Daniels
 D. A. Darling
 H. A. David
 H. T. David
 C. Derman
 P. S. Dhruvarajan
 J. L. Doob
 L. Dubins
 M. Dwass
 P. S. Dwyer
 E. Elfving
 D. Feldman
 T. Ferguson
 J. L. Folks
 F. G. Foster
 M. Fox
 D. A. S. Fraser
 W. Gautschi
 M. O. Glasgow
 R. Gnanadesikan
 H. J. Godwin
 K. Goldberg
 I. J. Good
 L. A. Goodman
 B. Greenberg
 U. Grenander
 S. S. Gupta
 J. Gurland
 M. Halperin
 J. M. Hammersley
 J. Hannan
 J. L. Hodges, Jr.
 Wassily Hoeffding
 A. James
 G. M. Jenkins
 M. Johns
 N. L. Johnson
 G. Kallianpur
 S. Karlin
 L. Katz
 O. Kempthorne
 M. G. Kendall
 J. Kiefer
 C. Kraft
 P. R. Krishnaiah
 M. D. Kruskal
 S. Kullback
 L. LeCam
 D. V. Lindley
 E. Lukacs
 C. L. Mallows
 J. Mandel
 H. B. Mann
 A. W. Marshall
 J. G. Mauldon
 J. C. P. Miller
 R. G. Miller
 L. Moses
 H. McKean
 Morris Newman
 C. J. Nesbitt
 P. Nidditch
 G. Noether
 I. Olkin
 D. B. Owen
 E. Parzen
 G. W. Peglar
 W. Perks
 R. L. Plackett
 N. W. Please
 John Pratt
 Ronald Pyke
 M. F. Quenouille
 R. Radner
 I. Rabinowitz
 H. Raiffa
 M. M. Rao
 S. K. Ray
 Edgar Reich
 J. Riordan
 Herbert Robbins
 D. Robson
 M. Rosenblatt
 S. N. Roy
 Harold Ruben
 I. R. Savage
 L. J. Savage
 E. L. Scott
 B. V. Shah
 S. S. Shrikhande
 M. M. Siddiqui
 R. Sitgreaves
 J. G. Skellam
 D. Slepian
 L. J. Snell
 C. M. Stein
 P. Suppes
 J. C. Tanner
 R. F. Tate
 Mary N. Torrey
 D. R. Truax
 J. W. Tukey
 Hans Ury
 M. Van Aarde
 H. R. Van der Vaart
 W. Vogel
 D. L. Wallace
 G. S. Watson
 Lionel Weiss
 B. L. Welch
 James Wendel
 R. F. White
 R. A. Wijsman
 M. B. Wilk
 J. Wolfowitz
 A. Wortham
 M. Zelen
 G. Zyskind

February 1, 1960

William Kruskal, Editor