NEWS AND NOTICES

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

Personal Items

H. J. Arnold has accepted an appointment as Assistant Professor in the Mathematics Department of Wesleyan University, Middletown, Connecticut, having resigned from a similar position at the University of Western Ontario, London, Canada.

Dr. Max Astrachan has resigned his position as Head of the Department of Accounting and Statistics, School of Business, Air Force Institute of Technology, to join the Logistics Department of the RAND Corporation in Santa Monica, California.

Richard E. Barlow received the Ph.D. degree from Stanford University in Mathematical Statistics and has accepted a position with the Communications Research Division of the Institute for Defense Analyses at Princeton University.

Dr. Gerald W. Barnes has accepted a position as Associate Professor of Psychology at the University of Arkansas, effective September 1, 1960.

Dr. Robert J. Buehler, Statistical Laboratory, Iowa State University, has been appointed as Visiting Lecturer in the Department of Statistics at the University of Minnesota for part of the summer term. He has also been promoted from the rank of Assistant Professor to Associate Professor.

Donald L. Burkholder of the Department of Mathematics, University of Illinois, has been promoted to Associate Professor.

Dr. Foster B. Cady of North Carolina State College has been appointed as Assistant Professor in Statistics at Iowa State University beginning July 1, 1960.

Richard L. Carter has been appointed Professor of Management Engineering at Rensselaer Polytechnic Institute. Dr. Carter was formerly Associate Professor of Industrial Engineering at the Illinois Institute of Technology.

Dr. I. M. Chakravarti, on leave of absence from the Indian Statistical Institute, who has been currently a Visiting Assistant Professor at the Department of Statistics, University of North Carolina, has now accepted the position of a Visiting Professor of Statistics at the Department of Mathematics, Case Institute of Technology, for one year commencing September, 1960.

Jack Chassan has accepted the position of Mathematical Statistician in the office of Education of the Department of Health, Education and Welfare. He has also recently been elected as a fellow of the American Association for the Advancement of Science.

S. D. Chatterji was awarded the Ph.D. degree in Statistics this June by Michigan State University and has now accepted a position of lecturership in Mathematics at the University of N. S. Wales for a period of three years, beginning August, 1960.

Clyde H. Coombs, Professor of Psychology at the University of Michigan, is

on leave this year at the Center for Advanced Study in the Behavioral Sciences.

Richard G. Cornell is now an Associate Professor in the Department of Statistics of the Florida State University, Tallahassee, Florida. He was formerly Chief of the Laboratory and Field Station Statistics Unit, Communicable Disease Center, Atlanta, Georgia.

John W. Cotton, formerly of Northwestern University, has been appointed Associate Professor of Psychology at the University of California, Santa Barbara.

Alfred E. Croftin, Jr., formerly an instructor at S.M.U., has accepted an Assistant Professorship at Pan American College in Edinburg, Texas.

Professor Herbert David, the Department of Statistics, Iowa State University, has been promoted from the rank of Assistant Professor to Associate Professor.

Dr. Reed Dawson has left government service to join American Systems Incorporated, a new electronic engineering company in Inglewood, California.

Satya Deva Dubey received the Ph.D. degree in Statistics from Michigan State University with the dissertation *Contributions to Statistical Theory of Life Testing and Reliability*, and is now a Senior Mathematical Statistician in the Department of Mathematics and Statistics at The Procter and Gamble Company, Cincinnati, Ohio.

Kenneth Ferrin recently completed the requirements for the Ph.D. degree in Mathematical Statistics at U.C.L.A. and has assumed a position as an Associate Mathematician at the IBM Research Center, Yorktown Heights, New York.

Raymond I. Fields received the degree of Doctor of Philosophy, with a major in Statistics, from the Virginia Polytechnic Institute on June 12, 1960. He has been director of the Computing Laboratory, University of Louisville since January 1959.

Dr. M. Fisz will be a visiting professor at the University of Washington during the period September 1960 to June 1961.

Mr. Fred Frishman, an employee of the U.S. Navy for more than 10 years and head of the Mathematics Division of the Naval Propellant Plant since 1954, recently accepted an appointment as a mathematician with the Army Research Office, Office of the Chief of Research and Development, Department of the Army.

William R. Gaffey, formerly with the Division of Biostatistics of the University of California School of Public Health, has accepted a position as Statistical Consultant with the Carifornia State Department of Public Health, Berkeley 4, California.

D. W. Gaylor received a Ph.D. in Experimental Statistics at North Carolina State College and has accepted a position with the Vallecitos Atomic Laboratory, General Electric Co., Pleasaton, California.

Leon Gilford has accepted a position as Mathematical Statistician with Operations Research Incorporated, Silver Spring, Maryland. He was formerly Chief of the Operations Research Branch, Statistical Research Division, U.S. Bureau of the Census.

Dr. John Gurland of the Department of Statistics, Iowa State University has

been appointed as Visiting Professor at the U.S. Army Mathematics Research Center, University of Wisconsin for the period July 1, 1960–June 30, 1961.

Preston C. Hammer of the Mathematics Department of the University of Wisconsin has returned from a research leave during the academic year 1959–1960 in Zurich, Switzerland.

Dr. H. O. Hartley, Department of Statistics, Iowa State University is spending the summer in England where he and Dr. E. S. Pearson are at work on the second volume of Biometrika Tables.

Bruce M. Hill has been appointed lecturer in the Department of Public Health Statistics of the University of Michigan, Ann Arbor, Michigan.

Terry A. Jeeves has been promoted to the position of Fellow Mathematician in the Mathematics Department of the Westinghouse Research Laboratories in Pittsburgh. He is presently concerned with consulting on statistical problems and doing research on the logical design of computers.

Dr. Cecil L. Kaller has accepted a position as assistant professor of Mathematics at the University of Saskatchewan for the fall term.

Professor Leo Katz has returned to his regular position at Michigan State University where he is Head of the Department of Statistics. He has spent the past academic year in the London Branch Office of ONR as Scientific Liaison Officer, visiting universities and research centers in Western Europe and other places where significant work in mathematical statistics was being performed.

Professor Oscar Kempthorne, Department of Statistics, Iowa State University, has been granted the research degree, Doctor of Science, ScD., by Cambridge University England on the recommendation of the faculty of mathematics and Board of Research Studies.

Susumu Kikuchi, formerly a lecturer at the Osaka City University, Japan, received his D. Eng. in Administrative Engineering from Keio University in March, 1960. He has joined the School of Engineering of the Okayama University, Japan, as Associate Professor of Mechanical Engineering.

Dr. Samuel J. Kilpatrick of Ireland is presently a Postdoctoral Fellow at the Statistical Laboratory, Iowa State University.

Dr. Allyn W. Kimball, Jr. has resigned his position as Chief of the Statistics Section of the Mathematics Panel at Oak Ridge National Laboratory and has been appointed Professor and Chairman of the Department of Biostatistics in the School of Hygiene and Public Health at Johns Hopkins University. Dr. Kimball has also been appointed Professor of Biomathematics in the School of Medicine.

Harold J. Larson has resigned his position as instructor of Iowa State University and is now working as a Mathematical Statistician with Stanford Research Institute, Fort Ord, California.

James A. Lechner, having been relieved of active duty in the Army, has joined the staff of the Mathematics Department of the Westinghouse Research Laboratories in Pittsburgh, Pennsylvania. He will be concerned with studies of the design of experiments and probability applications.

Mrs. Leone Y. Low, formerly of Oklahoma State University, has accepted a temporary position as instructor in the Mathematics Department, University of Illinois.

John W. Mayne, formerly Chief, Operations Research Branch, Air Defense Division at SHAPE, has recently been posted to SHAPE Air Defense Technical Centre, The Hague, Netherlands as Deputy Group Leader of the Systems Evaluation Group. He continues to be a member of Canada's Defense Research Board on special duty in Europe.

Gerard T. McLoughlin has recently joined the Mathematics Department at Baird-Atomic.

Mr. Clark T. Miller has accepted a position on the technical staff of the MITRE Corporation, Bedford, Massachusetts.

Donald F. Mills (Ph.D., University of Washington, 1957) has joined the staff of the V.A. Hospital, Knoxville, Iowa as a Counseling Psychologist.

Dr. Joseph Moder, Georgia School of Technology, is presently a Postdoctoral Fellow at the Statistical Laboratory, Iowa State University.

Roger H. Moore will begin work toward a Ph.D. degree in the Fall of 1960 at the Oklahoma State University. He will be studying under the Advanced Study Program of the Los Alamos Scientific Laboratory.

Dr. Wiktor Oktaba of Poland is presently a Postdoctoral Fellow at the Statistical Laboratory, Iowa State University.

Stephen Peters has established an independent consulting actuary office at 64 Mt. Vernon Street, Cambridge, Mass.

William E. Pruitt received his Ph.D. from Stanford University in June, 1960. He is now Assistant Professor of Mathematics at the University of Minnesota.

Ronald Pyke, formerly of Columbia University, is presently Assistant Professor in the Department of Mathematics, University of Washington.

Dana Quade received his Ph.D. in Statistics from the University of North Carolina in June 1960, and is now in the Public Health Service stationed at the Communicable Disease Center, Atlanta, Georgia.

Charles P. Quesenberry has joined the staff of the Mathematics Department, Montana State College, Bozeman, where he will be teaching and doing research.

Enders A. Robinson of the Mathematics Department of the University of Wisconsin will spend the academic year 1960-61 at Statistiska Institutionen vid Uppsala Universitet, Järnbrogatan 18, Uppsala, Sweden.

Jack Sawyer has been appointed assistant professor in the Departments of Psychology and Sociology at the University of Chicago, where he was previously postdoctoral fellow and lecturer.

Martin Schatzoff has been awarded a one year scholarship by IBM and will be attending Harvard University, Graduate School of Arts and Sciences, Department of Statistics.

Professor Seymoor Sherman of- the Moore School of Electrical Engineering,

University of Pennsylvania, has resigned and accepted a professorship in the Department of Mathematics at Wayne State University.

Dr. Ervin P. Smith, Associate Professor at Montana State College, has been appointed as Visiting Associate Professor in Statistics at Iowa State University for the academic year 1959–1960.

Dr. John H. Smith, Professor of Statistics, is on sabbatical leave from the American University to study mathematics at the University of Chicago. He will return to the American University in September, 1961.

Dr. Milton Sobel of the Bell Laboratories and New York University has joined the staff of the Statistics department at the University of Minnesota as an associate professor.

Dr. Melvin D. Springer has resigned from the staff of Technical Operations, Inc., Fort Monroe, Virginia to accept a position as Systems Operations Analyst with the Defense Systems Division of General Motors Corporation, Warren, Michigan.

Robert G. D. Steel was appointed as Professor of Experimental Statistics, North Carolina State College, September 1, 1960. Dr. Steel has been on the staff of Cornell University for several years. At Raleigh he will be engaged in teaching, research and consulting activities of the Department.

David S. Stoller, Logistics Department, The RAND Corporation, received a part-time appointment to the faculty of the Graduate School of Business Administration, University of California, Los Angeles, as lecturer (Associate Professor) for the academic year, 1960–61. He is the instructor in the "Seminar in Operations Analysis" for the fall semester.

Dr. L. Takacs has been promoted to the position of Associate Professor at Columbia University.

Howard G. Tucker has concluded a year's leave of absence at the Statistical Laboratory at the Berkeley Campus and has resumed his teaching position in the Department of Mathematics at the University of California, Riverside.

Dr. David van Tijn has been appointed Director of Research of Applied Science, Incorporated. Dr. van Tijn was formerly Senior Staff Scientist.

G. A. Watterson, formerly a research scholar at the Australian National University, has taken up an appointment as Associate Professor of Statistics at the Virginia Polytechnic Institute, Blacksburg, Virginia.

Oscar Wesler has been promoted to Associate Professor of Mathematics at the University of Michigan, and spent the summer of 1960 as Visiting Associate Professor at Statistics at Stanford University.

Frank Wilcoxon, formerly in charge of the Statistical Laboratory, Lederle Labs. division of American Cyanamid Co. at Pearl River, N. Y., has accepted a position as Professor of Statistics at Florida State University Talahassee, Florida.

Dr. W. H. Williams has resigned from his position in the Department of Mathematics, McMaster University to join the Mathematics Research Group at the Bell Telephone Laboratories, Murray Hill, New Jersey.

Professor Leroy Wolins, Department of Statistics, Iowa State University, has been promoted from the rank of Assistant Professor to Associate Professor.

William Wolman received the Ph.D. degree in mathematics and statistics at the University of Rochester in June 1960. He has transferred from the Navy Department and has joined the newly organized Office of Reliability and Systems Analysis of the National Aeronautics and Space Administration, as chief statistician.

NEW MEMBERS

The following persons have been elected to membership in the Institute

Barndorff-Nielsen, Ole Eiler, Mag. Scient. (Arhus Universitet); Assistant Professor, Matematisk Institut, Arhus Universitet; *Tagtvez 30, Højbzerg, Denmark.*

Brøms, Hans K. Mag. Scient. (University of Copenhagen); Assistant Professor, Mathematical Institute, University of Copenhagen; *Petersborgvej 2, Copenhagen Ø, Denmark.*

Cho, Harry H., B. S. (M. I. T.); Statistician-Operations Research Analyst, Laboratory for Electronics, Inc.; *1079 Commonwealth Ave., Boston 15, Massachusetts.*

Choi, Keewhan, M. A. in Statistics (Harvard University); *202 B Holden Green, Cambridge 38, Massachusetts.*

Cohen, Leo J., A. B. Mathematics (Lehigh University); Head, Mathematical Analysis Group, Burroughs Research, Paoli, Pennsylvania; *6228 N. Third Street, Philadelphia, Pennsylvania.*

Farquhar, Rex D., B. A. (Illinois College); Quality Control Engineer, Aerojet-General Corporation; *1064 E. Granada Ct., Ontario, California.*

Fink, Donald A., M. A. (Yale University); Research Associate, *Graduate School of Industrial Administration, Carnegie Institute of Technology, Schenley Park, Pittsburgh 13, Pennsylvania.*

Ginsburg, Seymour, Ph.D. Math. (University of Michigan); Senior Mathematician, System Development Corporation, Santa Monica, California; *2417 W. 165th Street, Gardena, California.*

Gould, Henry W., M. A. (University of Virginia); Instructor in Mathematics, *West Virginia University, Department of Mathematics, Morgantown, West Virginia.*

Greenberg, Leonard, M. A. (Columbia University); Development Engineer, *Burroughs Research Center, Paoli, Pennsylvania.*

Halbrecht, Herbert Z., M. B. A. (University of Chicago), President, *Herbert Halbrecht Associates, Incorporated, 332 S. Michigan Avenue, Chicago, 4, Illinois.*

Heck, David L., M.A. (University of North Carolina); Associate Mathematician, *International Business Machines Corporation, Development Laboratory, Scientific Computation Lab, Dept. 284, Endicott, New York.*

Hill, Franklin, A., B.S. (Illinois Institute of Technology); Quality Control Specialist, Air Material Command, U. S. Air Force; *8029 Prairie Ave., Chicago 19, Illinois.*

Hiller, Norman H., B.S. (Lafayette College); Quality Control Engineer, Olin Mathieson Chemical Corporation; *8 Wood Ave., Milford, Connecticut.*

Ifram, Adnan Farhan, B.Sc. (American University of Beirut, Beirut, Lebanon); Assistant, *Mathematics Department, University of Illinois, Urbana, Illinois.*

Jowett, Geoffrey Harcourt, Ph.D. (Sheffield); Associate Director, *Technology Laboratory, University of Melbourne, Parkville N3, Victoria Australia.*

Khlentzos, Michael Theodore, M.D. (St Louis University School of Medicine); Director McAuley Clinic, St. Mary's Hospital, 2200 Hayes Street, San Francisco 17, California; *11 Middlefield Drive, San Francisco 27, Calif.*

Kirk, Jerome R., Student, Reed College, Portland 2, Oregon; *26 Baker Drive, Urbana, Illinois.*

Lange, William E., B.S. (Wyoming University); Research Analyst and Account Manager, *Coleman Investments, 1005 Union Center, Wichita, Kansas.*

Marcus, Leslie F., M.A. (University of California); Student Mathematical Statistician, Forest Service, U. S. Dept. of Agriculture, *Statistical Laboratory, University of California, Berkeley, California.*

Nagai, Takeaki, M.Sc. (Faculty of Science, Kyushu University); Assistant, *Mathematica 1 Institute, Faculty of Science, Kyushu University, Fukuoka City, Fukuoka Prefecture, Japan.*

Neveu, Jacques J. P., Doctor of Sciences (University of Paris); Maitre de Conferences, *University of Paris, 11 Rue Pierre Curie, Paris 5, France.*

Nomachi, Yukio, Graduated of Mathematics Department of Science (Kyushu University); Assistant Professor, *Shinionoseki City College of Commerce, Kifune-cho, Shiminoseki City, Japan.*

Sabto-Agami, Jacob C., E.E. (Columbia University); Development Engineer, ITT Laboratories, 390 Washington Avenue, Nutley—10, New Jersey, *340 Haven Avenue, New York 33, New York.*

Stephanides, Agatha S., B.A., (George Washington University); Mathematical Statistician, Navy Dept., Bureau of Yards and Docks; *9920 Georgia Ave., Silver Springs, Maryland.*

Wann, Marie D., Ph.D. (Columbia University); Mathematical Statistician, Census Bureau, Washington 25, D.C.; *5704 21st Place, Washington 21, D. C.*

Yu, Ruth Li, M.S. Business Statistics (University of Missouri); Senior Programmer, Remington Rand Univac, 19th and Allegheny Ave., Philadelphia 29, Pennsylvania; *School Lane House, Apt. 1109, 5450 Wissahickon Ave., Philadelphia 44, Pennsylvania.*

Yu, Tom Teng-Pin, Ph.D. (New York University); Manager of Research Department, Remington-Rand Univac, 19th and Allegheny Ave., Philadelphia 44, Penn.; *School Lane House, Apt. 1109, 5450 Wissahickon Ave., Philadelphia 44, Penn.*

A STUDY OF THE DESIGN OF FACILITIES FOR MATHEMATICS

As its first project, the Conference Board of the Mathematical Sciences will conduct a study of the design of building and facilities for mathematics; Educational Facilities Laboratories, established by the Ford Foundation in New York City, has agreed to provide the necessary funds.

There are many reasons why it is desirable to make a study of the design of facilities for the mathematical sciences at the present time. In the first place, mathematics has been very poorly housed in the past. In the second place, enrollments are now expanding rapidly. Many colleges and universities have five times as many majors in mathematics as they had only four or five years ago, and the great increases in enrollments for the nation as a whole are still to come.

In the third place, a study of the design of mathematics facilities is appropriate because of the many changes that have taken place in the mathematical sciences. The project will undertake a study of the design of facilities to support the total activities of the mathematical sciences. These activities include research and instruction in pure mathematics, applied mathematics, and statistics; preparation of the manuscripts of research papers; preparation of the manuscripts of

textbooks and expository manuscripts for instructional purposes; teacher training; instruction in the operation of desk calculators and electronic digital computers; and the operation of summer and academic year institutes. Modern facilities for the mathematical sciences must provide headquarters space; classrooms; seminar rooms; offices for the staff; library space; a statistics laboratory with desk calculators; a computation center for the electronic digital computer; facilities for the use of films, television, and other teaching aids; and a common room.

The construction of appropriately designed facilities for mathematics is important for a special reason at this time. There is a great shortage of mathematics teachers, and it is probable that this shortage will continue for many years. Under these conditions it is imperative that we make the teachers we do have more efficient than they have been in the past. Some universities are teaching elementary courses in sections of one to two hundred students; others would like to do so, but lecture rooms for classes of this size are not available. In many cases several staff members—even senior staff members—are crowded into one office. When one has a visitor, the others stop work. There are important universities that have never been able to provide one chair and desk per staff member. Better classrooms, better offices, and better facilities of all kinds will certainly make our mathematics staffs more efficient—will enable our mathematics teachers to teach more students and to teach them better.

FELLOWSHIP AND RESEARCH OPPORTUNITIES

The Division of Mathematics, National Academy of Sciences–National Research Council calls attention to a variety of fellowships and other support for basic research in mathematics to be awarded by agencies of the Federal Government during the year 1960–61. A list of sources of support is given in the bulletin, "A Selected List of Major Fellowship Opportunities and Publications for Educational Support," available from the Fellowship Office, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

THE CONFERENCE BOARD OF THE MATHEMATICAL SCIENCES

The Conference Board of the Mathematical Sciences had its origin in the War Policy Committee,[1] which was appointed by the American Mathematical Society and the Mathematical Association of America at the end of 1942 to deal

---

[1] The history of the War Policy Committee is sketched in the following references: *American Mathematical Monthly*, vol. 50 (1943), pp. 138, 205, 466, 593; vol. 51 (1944), pp. 112–115, 549; vol. 52 (1945), p. 115. *Bulletin of the American Mathematical Society*, vol. 49 (1943), p. 199.

with some of their common problems which arose out of World War II. The War Policy Committee was supported by a grant from the Rockefeller Foundation. The war over, the War Policy Committee was discharged in November, 1945. The American Mathematical Society immediately took the lead in the formation of the Mathematical Policy Committee, usually known simply as the Policy Committee.[2] This Committee grew and eventually had six of the mathematical organizations as its members.

In 1958 the Policy Committee was developed into the Conference Organization of the Mathematical Sciences, and a constitution and by-laws were drawn up. In December, 1958, the Mathematical Association of America received a grant from the Carnegie Corporation of New York for the establishment of a Washington Office. At its Salt Lake City meeting in 1959 the Association recommended that the Washington office be established by the Conference Organization with the Carnegie grant. The Conference Organization accepted the responsibility for establishing the Washington Office with the Carnegie grant, and on February 25, 1960, the Conference Organization was incorporated in the District of Columbia with the new name Conference Board of the Mathematical Sciences. G. Baley Price, who had been appointed the first Executive Secretary, opened the Washington office on July 1, 1960.

The Conference Board of the Mathematical Sciences has six member organizations and no individual members. The six member organizations are the American Mathematical Society, the Association for Symbolic Logic, the Institute of Mathematical Statistics, the Mathematical Association of America, the National Council of Teachers of Mathematics, and the Society for Industrial and Applied Mathematics.

The Washington Office will not be involved in any way in the operation of the activities of the member organizations, and it is not expected that any of the activities of the member organizations will be transferred to the Washington Office or to the Conference Board.

The Washington Office will gather information about events and developments, especially those in Washington, which concern mathematics, and will relay this information to those member organizations, mathematicians, and others who may wish to receive it.

The Washington Office will supply information and help on mathematical matters as the opportunity arises. Furthermore, in carrying out this function, the Washington Office will arrange for assistance from the member organizations and individual mathematicians as the situation demands and opportunity permits. Member organizations may request the assistance of the Washington Office.

From time to time the Washington Office will manage or operate special projects which are compatible with the purposes and functions of the Conference

---

[2] The first reference to the formation of the Policy Committee occurs in the report of "The Twenty-Ninth Annual Meeting of the Association", *American Mathematical Monthly*, vol. 53 (1946), p. 178.

Board and which will serve the common interests of the member organizations. These projects may be supported by contracts or grants from foundations, government agencies, or other organizations.

The management of the Conference Board is vested in its Council, which consists of two representatives from each of the member organizations and of six representatives at large. The officers of the Conference Board are the following: Chairman, S. S. Wilks; Secretary, J. R. Mayor; Treasurer, A. E. Meder, Jr.; Executive Secretary, G. B. Price.

CONFERENCE BOARD SPONSORS CONTEMPORARY MATHEMATICS ON CONTINENTAL CLASSROOM

The Conference Board of the Mathematical Sciences is the mathematics sponsor of Contemporary Mathematics, the new Continental Classroom course for 1960–1961. The other sponsors are Learning Resources Institute and the National Broadcasting Company. The course begins on September 26 and runs for 32 weeks, and it will be presented from 6:30 to 7:00 a.m., Monday through Friday, in each time zone. The first semester of Contemporary Mathematics will be devoted to Modern Algebra, by Professor John L. Kelley with the assistance of Dr. Julius Hlavaty; the second semester will be devoted to Probability and Statistics, by Professor Frederick Mosteller with the assistance of Professor Paul C. Clifford.

The Conference Board appointed the following advisory committee, which has assisted Learning Resources Institute in planning Contemporary Mathematics: E. G. Begle (Chairman), L. W. Cohen, R. P. Dilworth, P. S. Jones, J. R. Mayor, E. J. McShane, A. E. Meder, Jr., and Mina S. Rees.

REGIONAL ORIENTATION CONFERENCES IN MATHEMATICS

The National Council of Teachers of Mathematics, with financial support from the National Science Foundation, will hold a series of eight Regional Orientation Conferences in Mathematics during October, November, and December of 1960. The purpose of the conferences is to bring to school administrators a comprehensive account of the new programs in secondary school mathematics that have been, and are being, developed on a national scale, and to give practical advice about how to introduce one of the new programs in a high school. Attendance will be by invitation. The project is under the direction of Mr. Frank B. Allen of LaGrange, Illinois.

The following program will be presented at each of the eight conferences: Address: "Progress in Mathematics and Its Implications for the Secondary School" G. Baley Price, Professor of Mathematics, The University of

Kansas, and Executive Secretary of the Conference Board of the Mathematical Sciences.

Address: "The Drive to Improve School Mathematics—Comparisons and Common Elements of Special Programs" Dr. Kenneth Brown, Specialist in Mathematics, United States Office of Education.

Panel Discussion: "Our Experience with the New Programs in Mathematics" (A local panel for each conference will be announced)

Address: "Implementing the New Mathematics Program in Your School" Dr. W. Eugene Ferguson, Head, Department of Mathematics, Newton High School, Newtonville, Massachusetts.

INTERNATIONAL SYMPOSIUM ON THE TRANSMISSION AND PROCESSING OF INFORMATION

The Professional Group on Information Theory of the Institute of Radio Engineers, in cooperation with the Center of Communication Sciences, Research Laboratory of Electronics, Massachusetts Institute of Technology, is planning to hold an International Symposium on the Transmission and Processing of Information on September 6–8, 1961. This Symposium will be held at the Massachusetts Institute of Technology, Cambridge, Massachusetts.

The purpose of the Symposium will be to provide an outstanding occasion for the presentation of significant new research contributions, of either a theoretical or experimental nature. As in the case of the similar 1954 and 1956 symposia, no tutorial papers will appear; the program will be planned specifically for active specialists in the field. In order to provide opportunity for creative and thorough discussion, the Symposium *Transactions* will be distributed at least two weeks prior to the meetings.

Submission of papers is hereby invited. In order to carry out the publication plan successfully, the following deadline schedule is necessary. Receipt of 500–1000 word Abstracts: 1 January 1961 Receipt of full-length Papers: 1 April 1961.

Authors will be notified of the preliminary acceptance of their Abstracts by 20 January; the final program selection will be made on the basis of the complete Papers, and authors notified by 1 May. Abstracts and Papers should be submitted to the Chairman of the Organizing Committee, R. M. Fano, R.L.E., M.I.T., Cambridge 39, Mass.

Additional information about the Symposium will be disseminated as plans develop.

NEW COURSES OFFERED

New courses in "Advanced Statistical Methods," "Sampling Theory and Practice" and "Linear Programming in Business and Industry," designed to provide

a comprehensive presentation of recent developments in statistical theory, applications, and procedures for graduate students and statistical technicians, will be offered for the first time this fall by City College's Baruch School, 17 Lexington Avenue.

Course descriptions and registration information may be obtained by writing to the Graduate Office, Room 1605, City College-Baruch School, 17 Lexington Avenue, New York 10, N.Y.

AMERICAN MATHEMATICAL SOCIETY SYMPOSIUM ON MATHEMATICAL PROBLEMS IN THE BIOLOGICAL SCIENCES

A Symposium on *Mathematical Problems in the Biological Sciences*, co-sponsored by the Office of Ordnance Research and the National Science Foundation, will be held in connection with the April Meeting of the American Mathematical Society at the Hotel New Yorker in New York City, on April 6, 7, and 8.

The objective of the Symposium will be to inform and interest mathematicians in the problems of biology and medicine, and to stimulate investigation of topics in both pure and applied domains. Some of the topics of the symposium are: *Self-reproduction problems:* How can machines be designed that are capable of reproducing themselves? *Reliability problems:* How design reliable machines (or organisms) using unreliable components? *Operation of the nervous system:* Analysis of the actual brain; Synthesis of computers to stimulate the brain: and *Mathematical problems of growth and form; Hydrodynamical problems of circulation, hormones, enzymes, etc.;* Information theory, mathematical logic, and combinatories arising in: *Problems in genetics, Statistical theory, Classical theory,* and *Genetic 'code'.*

The selection of speakers for the Symposium has been delegated to an Invitations and Steering Committee consisting of Dr. S. M. Ulam, (Los Almos Scientific Laboratory), Chairman; Dr Richard E. Bellman, (Rand Corporation), Secretary; Dr. John Jacquez, (Sloan Kettering Institute for Cancer Research); Professor Claud E Shannon, (Massachusetts Institute of Technology); Professor Anthony Bartholomay, (Biophysics Research Laboratory, Peter Bent Brigham Hospital, Harvard Medical School)

IMS OFFICERS, COMMITTEES, AND REPRESENTATIVES

This is as complete a listing for 1959 and 1960 as it was possible to obtain. The 1959 listing is an expanded version of the list on pages 552–553, *Annals of Mathematical Statistics*, Volume 31, June, 1960.   Ed.

Council Members and Officers

Terms Expire 1960	*Terms Expire 1962*
David Blackwell	T. W. Anderson

Harold Hotelling
Jerzy Neyman
I. R. Savage
Terms Expire 1961
F. J. Anscombe
T. E. Harris
Leo Katz
S. S. Wilks

J. L. Hodges, Jr.
Z. W. Birnbaum
W. Hoeffding
Terms Expire 1963
H. Chernoff
K. L. Chung
M. G. Kendall
C. Stein

1959

President: J. Wolfowitz
President-Elect: J. W. Tukey
Sectary: G. E. Nicholson, Jr.
Treasurer: A. H. Bowker
Editor: W. H. Kruskal
Program Coordinator: M. B. Wilk
Associate Secretaries:
Central: J. Silber
Eastern: J. Rosenblatt
Western: G. J. Lieberman
1959 Fellows
G. B. Dantzig, M. Fisz, G. A. Barnard,
G. J. Lieberman, I. Olkin, R. Sitgreaves

1960

President: J. W. Tukey
President-Elect: E. L. Lehmann
Secretary: G. E. Nicholson, Jr.
Treasurer: A. H. Bowker
Editor: W. H. Kruskal
Program Coordinator: D. M. Gilford
Associate Secretaries:
Central: J. Silber
Eastern: J. Rosenblatt
Western: G. J. Lieberman
1960 Fellows
To Be Announced

COMMITTEES

(The first person named is the chairman)

1959   1960

COMMITTEE ON *ANNALS* INDEX

I. R. Savage, T. E. Harris, J. L. Hodges,
Jr., W. H. Kruskal, G. E. Nicholson, Jr.

Continued from 1959

25th ANNIVERSARY COMMITTEE

B. Harshbarger, W. G. Cochran, C. C.
Craig, E. G. Olds, J. W. Tukey, S. S.
Wilks, J. Wolfowitz

Continued from 1959

BROCHURE COMMITTEE

E. Parzen, D. Blackwell, A. H. Bowker,
·J. F. Daly, B. G. Greenberg, M. H.
Hansen, G. E. Nicholson, Jr., S. S. Wilks

COMMITTEE ON EXCHANGES

P. S. Dwyer, A. H. Bowker, W. H. Kruskal,
G. E. Nicholson, Jr.

Continued from 1959

COMMITTEE ON FELLOWS

Z. W. Birnbaum, W. Hoeffding, E. S. Pear-
son, E. J. G. Pitman, E. L. Scott, H.
Solomon

W. Hoeffding, W. G. Cochran, J. L. Hodges,
Jr., E. S. Pearson, E. J. G. Pitman,
H. Solomon

COMMITTEE ON FINANCE

H. Levene, G. Noether, I. Olkin. A. H.
Bowker (ex officio)

Continued from 1959

1959   1960

COMMITTEE ON INSTITUTIONAL MEMBERS

M. E. Muller, Frank Akutowicz, K. J. Arnold, Z. W. Birnbaum, R. B. Murphy, S. S. Wilks

M. E. Muller, K. J. Arnold, E. L. Crow, M. Dwass, E. Lukacs, P. D. Minton, R. B. Murphy, E. Seiden

COMMITTEE INVESTIGATING THE POSSIBILITY OF BILLING FOR PUBLICATION IN THE *ANNALS*

A. M. Mood, T. W. Anderson, J. H. Curtiss

COMMITTEE ON MATHEMATICAL TABLES

D. B. Owen, G. P. Steck, R. L. Anderson, A. H. Bowker, P. C. Cox, E. E. Cureton, W. J. Dixon, C. Eisenhart, J. A. Greenwood, S. S. Gupta, H. L. Harter, H. O. Hartley, L. Katz, W. H. Kruskal (ex officio), F. C. Leone, M. E. Muller, P. S. Olmstead, J. W. Tukey, M. A. Woodbury, M. Zelen

D. B. Owen, G. P. Steck, R. L. Anderson, A. H. Bowker, P. C. Cox, E. E. Cureton, W. J. Dixon, C. Eisenhart, J. A. Greenwood, S. S. Gupta, H. L. Harter, H. O. Hartley, L. Katz, W. H. Kruskal (ex officio), F. C. Leone, M. E. Muller, P. S. Olmstead, M. A. Woodbury, M. Zelen

SUBCOMMITTEES OF CMT

Studentized Range

H. L. Harter, A. H. Bowker, C. Daniel, W. T. Federer, H. O. Hartley, G. E. Noether

H. L. Harter, A. H. Bowker, C. Daniel, W. T. Federer, H. O. Hartley, G. E. Noether

F and Related Distributions

P. C. Cox, R. L. Anderson, E. E. Cureton, D. Durand, J. A. Greenwood, L. H. Herbach, H. O. Hartley, E. S. Keeping, C. F. Kossack, G. Kulldorff, H. Solomon, D. Teichroew, L. Wine

P. C. Cox, R. L. Anderson, E. E. Cureton, D. Durand, J. A. Greenwood, H. O. Hartley, L. H. Herbach, E. S. Keeping, C. F. Kossack, G. Kulldorff, H. Solomon, L. Wine

Hypergeometric Distribution

L. Katz, B. F. Kimball, G. J. Lieberman, M. Sobel

L. Katz, B. F. Kimball, G. J. Lieberman, M. Sobel

Multivariate Distributions Related to the Normal

S. S. Gupta, T. W. Anderson, L. H. Herbach, E. S. Keeping, I. Olkin, D. B. Owen, H. Ruben, M. Sobel, M. Zelen, M. A. Woodbury

S. S. Gupta, T. W. Anderson, L. H. Herbach, E. S. Keeping, I. Olkin, D. B. Owen, H. Ruben, M. Sobel, M. A. Woodbury, M. Zelen

Availability of Simple Techniques

P. S. Olmstead, R. A. Bradley, E. E. Cureton, W. J. Dixon, T. A. Lamke, S. B. Littauer

P. S. Olmstead, R. A. Bradley, E. E. Cureton, W. J. Dixon, T. A. Lamke, S. B. Littauer

1959   1960

Cost-Free Machine Time and Computing Code Index for Statistical Functions

F. C. Leone, J. W. Hamblen, W. H. Horton,   F. C. Leone, J. W. Hamblen, W. H. Horton,
   G. F. Lunger, H. A. Meyer, P. D. Minton,   G. F. Lunger, H. A. Meyer, P. D. Minton,
   M. E. Muller, M. A. Woodbury   M. E. Muller, M. A. Woodbury

Republication of Tables

J. A. Greenwood, D. Durand, E. J. Gilbert,   J. A. Greenwood, D. Durand, E. J. Gilbert,
   N. C. Severo   N. C. Severo

COMMITTEE ON MEMBERSHIP

B. Epstein, H. E. Daniels, M. Dwass, S.   Continued from 1959
   Kullback, S. Moriguti, G. R. Seth, R.
   Sitgreaves, M. E. Terry

NOMINATING COMMITTEE

1960 *Election*   1961 *Election*

S. Karlin, M. Dwass, B. Epstein, G. E.   M. B. Wilk, B. Brown, W. G. Cochran, D. M.
   Noether, L. Weiss   Gilford, J. L. Hodges, Jr., P. D. Meier,
                                   E. S. Pearson, W. L. Smith

1959   1960

COMMITTEE ON PROFESSIONAL STANDARDS

J. Lev, R. W. Burgess, C. Eisenhart, G. M.   Continued from 1959
   Harrington, B. Kimball, A. W. Kimball,
   H. Marshall, R. Patton, J. Walsh

PROGRAM COMMITTEE FOR ANNUAL MEETING

E. Parzen, R. E. Bechhofer, J. R. Blum,   E. W. Barankin, F. C. Andrews, L. Katz, C.
   D. G. Chapman, M. B. Wilk (ex officio),   Kossack, P. S. Olmstead, S. N. Roy,
   L. LeCam, I. Olkin, J. Rosenblatt, R.   D. M. Gilford (ex officio)
   Sitgreaves, J. L. Snell, D. L. Wallace,
   M. Zelen

PROGRAM COMMITTEE FOR CENTRAL REGIONAL MEETING

F. Graybill, I. W. Burr, J. Gurland, H. L.   F. J. Anscombe, P. Billingsley, I. Blumen,
   Jones, P. R. Rider, F. C. Leone, B.   R. C. Bose, D. M. Gilford (ex officio),
   Rankin, M. B. Wilk (ex officio)   H. O. Hartley, E. Lukacs, H. Ruben,
                                  I. R. Savage, H. Teicher, R. A. Wijsman

PROGRAM COMMITTEE FOR EASTERN REGIONAL MEETING

B. Harshbarger, B. G. Greenberg, D. G.   R. Sitgreaves, R. E. Bechhofer, C. Y.
   Horvitz, C. Kossack, H. A. Meyer, J.   Cramer, D. M. Gilford (ex officio), M.
   Pratt, W. H. Horton, J. D. Hromi, M. B.   Halperin, W. L. Smith
   Wilk (ex officio)

PROGRAM COMMITTEE FOR WESTERN REGIONAL MEETING

F. J. Massey, F. C. Andrews, C. B. Bill,   Continued from 1959
   T. Ferguson, J. P. Gilbert, J. F. Hof-
   mann, R. F. Link, M. M. Sandomire,

1959   1960

D. S. Stoller, R. F. Tate, J. R. Vatnsdal,
M.B. Wilk (ex officio)

COMMITTEE TO REEXAMINE IMS FROM THE VIEWPOINT OF YOUNGER MEMBERS

W. L. Smith, P. Billingsley, S. H. Brooks,
B. W. Brown, Jr., D. L. Burkholder,
M. B. Danford, M. H. DeGroot, A. P.
Dempster, D. A. Gardiner, W. J. Hall,
J. W. Hamblen, J. E. Jackson, A.
Madansky, H. E. McKean, R. Pyke,
D. L. Wallace, O. Wesler, R. A. Wijsman

IMS REPRESENTATIVE TO AAAS—Harold Hotelling (1959 and 1960)

AMERICAN STANDARDS ASSOCIATION COMMITTEE ON STATISTICAL
NOMENCLATURE: IMS REPRESENTATIVE—P. G. Hoel (1959 and 1960)

IMS REPRESENTATIVE TO CONFERENCE ORGANIZATION OF THE MATHE-
MATICAL SCIENCES—W. M. Rosenblatt, Z. W. Birnbaum (1959 and 1960)

IMS REPRESENTATIVE IN DIVISION OF MATHEMATICS—NATIONAL RESEARCH COUNCIL

W. A. Wallis (1959)   F. C. Mosteller (from July 1, 1960)

IMS REPRESENTATIVES TO ORGANIZING COMMITTEE OF 4TH BERKELEY SYMPOSIUM—H. Robbins, A. H. Bowker (1959 and 1960)

1959   1960

IMS REPRESENTATIVES ON JOINT ASA-IMS BROCHURE COMMITTEE

S. S. Wilks, D. Blackwell, B. G. Green-
berg, W. H. Kruskal

IMS REPRESENTATIVE TO AMS-IMS COMMITTEE ON RUSSIAN TRANSLATIONS

E. Lukacs, I. Olkin

COMMITTEE ON RUSSIAN TRANSLATIONS

I. Olkin, K. L. Chung, J. L. Doob, E.   Continued from 1959
Lukacs, L. Weiss

COMMITTEE TO SELECT AUDITOR

W. R. Gaffey, M. V. Johns, Jr., E. L.
Kaplan

COMMITTEE ON SPECIAL PAPERS

K. L. Chung, T. W. Anderson, H. Chernoff,   T. W. Anderson, R. C. Bose, W. G. Coch-
W. G. Cochran, J. L. Hodges, Jr., W.   ran, D. M. Gilford, J. L. Hodges, Jr.,
Hoeffding   S. Karlin, W. H. Kruskal, S. S. Wilks

STATEMENT OF COMMITTEE ON EXCHANGES

During the years of its history, the Institute of Mathematical Statistics has entered into exchange arrangements involving the *Annals of Mathematical Statistics* and other journals. This statement is prepared so that the members of the Institute may know (a) something of the reasoning which has led to the establishing and continuation of these exchanges and (b) the titles of the journals with which we currently have exchange arrangements.

Some exchanges with the *Annals* were established by Professor Carver in the years prior to the founding of the Institute of Mathematical Statistics, which took over the *Annals* after its founding in 1935. The exchanges were continued and extended during the first fourteen years of the life of the Institute with responsibility for the exchanges largely in the hands of the Secretary-Treasurer. Since 1949 there has been a Committee on Exchanges to handle the exchange correspondence and to receive and organize the exchange journals. The exchange journals, though under the formal jurisdiction of the Secretary, are currently located in the Statistical Research Laboratory of The University of Michigan.

During the period subsequent to 1935, a general policy toward exchanges was established which led to the adoption of general principles by the Council on December 29, 1949. These principles have not been changed substantially by later Councils. In describing these principles, extracts are taken from the Report of the Committee on Exchanges which was presented to the Council in August, 1957.

"It has been the attitude that the chief reason for exchanges is that a Society, in a good financial position like ours, can well afford to place a few copies of its journal in strategic positions throughout the world. In addition to securing a wider use of the *Annals*, which is one of the objectives of the Institute, such a practice may be advantageous from the standpoint of selling back copies.

"The emphasis on placing the *Annals* in different parts of the world, rather than in creating a library of exchanges, has determined several aspects of policy.

"1. There has been no effort in recent years on the part of the Institute to initiate exchanges. All exchanges introduced during recent years arise from requests to us. Correlated with this policy is the policy of not rushing into an exchange and of making sure that the exchange is strongly desired by the journal making the request. For example, a printed notice requesting an exchange is not generally interpreted by us as a specific request for exchange.

"2. In general the exchange should be with a journal which is established with regular dates of appearance.

"3. Exchanges with journals whose contents are somewhat similar to the contents of the *Annals* are preferred.

"4. In general it is preferred to establish exchanges with journals of scientific organizations rather than with governmental publications or with journals of universities.

"5. In general it is desired to have at least one exchange in each of the countries of the world so that the statisticians there may have a chance of making contact with the *Annals*. Sometimes this takes precedence over (2), (3), or (4).

"6. As the number of exchanges in a given country increases, the prospect for granting a given exchange decreases, even though the proposed exchange journal is appropriate. For example, we were more liberal with exchanges introduced in Japan directly after the war than we are now."

Several valuable sets (though not necessarily complete during the exchange period) of statistical and other journals are now the property of the Institute. It is possible that the Institute, at some future data, if conditions are suitable, may wish to place these issues in a national office and make them available to members through a library service.

A special effort was made, during the period from August, 1958, through December, 1959, to correspond with the sponsors of all journals with which we had exchanges as well as with those who have recently indicated a desire to establish an exchange with us. As a result of this exchange of correspondence, we are convinced that the exchanges we have in effect are, for the most part, consistent with our policy aims. Also we have established thirteen new exchanges in China, Czechoslovakia, Peru, Roumania, and Russia. The list of active exchanges, now in effect, follows.

In view of the objectives outlined above, it seemed wise to list the exchange journals by the countries to which the issues of the *Annals* are sent, even for journals which have an international clientele. The problem of determining a suitable title for this listing was resolved in most cases by using one of the titles which appeared on the cover of the journal.

IMS EXCHANGES IN EFFECT, 1960

Argentina
    Mathematicae Notae

Austria
    Monatshefte für Mathematik

Brazil
  Anuário Estatístico do Brasil
  Revista Brasileira de Estatística
Canada
  Canadian Journal of Mathematics
China
  Acta Mathematica Sinica
  Progress in Mathematics
Cuba
  Boletín Informativo, Consejo Nacional de Economiá
Czechoslovakia
  Czechoslovak Mathematical Journal
Denmark
  Mathematica Scandinavica
El Salvador
  Boletín Estadístico
England
  Annals of Human Genetics
  Biometrika
  Journal of the London Mathematical Society
  Journal of the Royal Statistical Society, Series A and B
  Proceedings of the Cambridge Philosophical Society
Finland
  Annals of the Finnish Academy of Sciences, Series A, I. Math.-Phys.
France
  Annales de l'Institut Fourier
  Journal de la Société de Statistique de Paris
Germany
  Metrika (formerly *Mitteilungsblatt für Mathematische Statistik* and *Statistische Vierteljahresschrift*)
Hungary
  Demográfia
  Publications of the Mathematical Institute of the Hungarian Academy of Sciences
  Publicationes Mathematicae
India
  Calcutta Statistical Association Bulletin
  Sankhyā
Israel
  Bulletin of the Research Council of Israel, Section C, Technology. Section F, Math.-Phys.
  Statistical Bulletin of Israel
Italy
  Metron
  Revista Italiana di Economia Demografia e Statistica

Japan
  Annals of the Institute of Statistical Mathematics
  Annals of the Hitotsubashi Academy
  Journal of the Mathematical Society of Japan
  Mathematica Japonicae
  Memoirs, Faculty of Science, Kyushu University, Series A, Math.
  Nagoya Mathematical Journal
  Tôhoku Mathematical Journal, Second Series
  Yokohama Mathematical Journal
Mexico
  Boletín del Centro de Documentación Científica y Técnica de México
Netherlands
  Indagationes Mathematicae
  Revue de l'Institut International de Statistique
Pan America
  Ciencia y Tecnología
  Estadística
Peru
  Anuario Bibliográfico Peruano
Poland
  Annales Universitatis Mariae Curie-Sklodowska
Portugal
  Revista do Centro de Estudos Económicos
Roumania
  Revue de Mathématiques Pures et Appliquées
  Studii și Cercetări Matematice
Russia
  Isvestiía Akademii Nauk, Seriía Matematicheskaía
  Mathematics
  Teoriía Veroiatnosteĭ i ee Prilozheniĭa
  Trudy Moskovskogo Matematicheskogo Obshchestva
Scotland
  Proceedings of the Royal Society of Edinburgh
Spain
  Spanish-American Trade
  Trabajos de Estadística
Switzerland
  Revue suisse d'Économie politique et de Statistique
United States
  Annals of Mathematics
  Econometrica

Journal of the American Statistical Asso-
   ciation
Pacific Journal of Mathematics
Uruguay
   Publicaciones del Instituto de Matemática y
     Estadística

Yugoslavia
   Glasnik, Series II
   Indeks
   Statistički Bilten
   Statistička Revija

<div align="right">PAUL S. DWYER</div>

QUESTIONNAIRE CONCERNING THE ANNALS

JOHN W. TUKEY

Princeton University

The questionnaire reproduced as Figure 1 was sent to the approximately 1800 members of the Institute of Mathematical Statistics with the program of the 1960 Annual Meeting at Stanford University in Palo Alto. This report describes the first 430 replies. (If later replies indicate any substantial change in interpretation, a further report will be made.)

1. Overall response. Replies were made as follows:

Question	Danger of resignation	Affiliation weaker	Neutral*	Affiliation stronger
1	11	77	175	167
2	19	164	214	33
3	5	38	90	297
4	33	209	160	28
5	14	94	214	108
6	5	68	308	49

* Includes "no change" and blanks.

The general tendencies can be summarized as follows: some preference for more probability, stronger preference for more directly applicable mathematical statistics, balanced attitude toward tables (with little pro-or-con about less space for tables).

2. Direction and strength of response. The category "danger of resignation" having no parallel on the strong side, it seems reasonable to compare responses to "more" and "less" questions on the basis of a trichotomy: L = "danger of resignation" or "affiliation weaker", 0 = "no change" or blank, H = "affiliation stronger" and to combine the answers to "more" and "less" questions into a score as follows:

"more" questions	H	H	O	H	O	L	O	L	L
"less" questions	L	O	L	H	O	L	H	O	H
score	+2	+1	+1	0	0	0	−1	−1	−2

MEMORANDUM

TO: The Members of The Institute of Mathematical Statistics

FROM: John W. Tukey, President

A new, separate journal dealing with probability and its applications has recently been discussed in terms of sponsorship other than The Institute of Mathematical Statistics. Such a journal would substantially reduce the number of papers on probability in the ANNALS, and the officers of the Institute regard the possible formation of the proposed journal with mixed feelings.

The founding of such a journal in the near future seems altogether unlikely. Since it is, and will continue to be, important for the officers of The Institute of Mathematical Statistics to understand the relative strengths of the conflicting feelings of the members about various aspects of the contents of the ANNALS, however, this discussion seemed to provide a good opportunity to take stock of these feelings.

Accordingly, I ask those members who have definite feelings in this matter to express themselves as provided below, and to send their expressions to me at the temporary address indicated. The officers of the Institute can only be responsive to its membership if that membership speaks its mind.

-- --

Mail to: John W. Tukey, 2245 Page Mill Road, Palo Alto, California

The effect of the following changes in the content of the ANNALS OF MATHEMATICAL STATISTICS on

my relation to The Institute of Mathematical Statistics would probably be:

		Danger of Resignation	Affiliation Weaker	No Change	Affiliation Stronger
1.	More papers about probability	☐	☐	☐	☐
2.	Very few papers about probability	☐	☐	☐	☐
3.	More emphasis on directly applicable mathematical statistics	☐	☐	☐	☐
4.	Less emphasis on directly applicable mathematical statistics	☐	☐	☐	☐
5.	More space devoted to tables	☐	☐	☐	☐
6.	Less space devoted to tables	☐	☐	☐	☐

COMMENTS:

Signature desirable

FIG 1.

The numbers of replies in terms of such scores were as follows:

Score	Probability	Dir. appl.	Tables
+2	129	228	55
+1	81	82	67
0	138	75	199
−1	54	21	62
−2	28	24	46
Mean Score..........	+0.53	+1.09	+.05

When the response in terms of these scores is broken down in terms of the most obvious characteristics of those replying, the observed mean scores and certain of their standard errors are as in Table 1. While some of the tendencies are in directions which might have been expected, none of the differences are statistically significant. (The most noticable appearances are a greater perference for more directly applicable mathematical statistics by "none of the above" as compared to "fellows of IMS", and a greater preference for more space devoted to tables by "have published two or more papers in the *Annals*" as compared with "Eastern hemisphere addresses" (all 3 reports common to these two groups are neutral). These selected differences reach 2.3 and 1.3 times their standard error, respectively.)

In view of the editorial policy of the *Annals*, which is to accept good papers

TABLE 1

Means and standard errors of difference responses
(Detailed breakdowns and totals in parentheses)

Respondents	Probability	Directly applicable	Tables
36 Eastern hemisphere addresses*	0.44 ± .24	1.08 ± .21	−.11 ± .17
48 Fellows of IMS*	0.58 ± .16	0.81 ± .14	−.02 ± .15
114 Annals authors*	0.59 ± .10	0.94 ± .11	+.06 ± .11
(75 with two or more papers)	(0.53)	(0.93)	(+.16)
(38 with one paper only)	(0.71)	(0.95)	(−.12)
(91 with paper(s) since 1950)	(0.56)	(0.89)	(+.03)
(23 with no paper since 1950)	(0.62)	(1.13)	(+.09)
(73 not Fellows)	(0.55)	(1.05)	(+.05)
7 Unsigned	(1.00)	(0.86)	(−.14)
274 None of above	0.55 ± .07	1.17 ± .07	+.09 ± .07
(430 Total)	(0.53 ± .04)	(1.09 ± .06)	(+.05 ± .05)
(First 213 received)	(0.55)	(0.94)	(−.04)

* Overlaps: 41 Fellows are *Annals* authors, 7 Eastern hemisphere addresses are *Annals* authors, 3 Eastern hemisphere addresses are Fellows, 2 persons fall in all three categories.

D/A.41 Author-Fellows 0.72, 73 non-Fellow authors 1.05, 28 non-author, non-Fellow, eastern hemisphere 1.11, 274 others 1.17.

without regard to their emphases within the domain covered, it is clear that the authors who write for the *Annals* have the greatest influence on the way its space is divided. *Since the expressed views of authors are in the same directions, and of approximately the same strengths, as those of the general membership, it would seem to be up to these same authors to readjust the emphasis of the Annals by submitting more of the kinds of papers they would like to see themselves.*

3. Correlations. When the scores used in the analysis of the previous section were replaced by the means of the corresponding sections of a unit normal distribution [1], viz.,

Score for Section 2	Score used in correlation computation		
	Probability	Dir. appl.	Tables
+2	1.16	.75	1.64
+1	.28	−.32	.83
0	−.25	−.88	.03
−1	−1.16	−1.42	−.92
−2	−1.95	−2.02	−1.72

and the results correlated, the following results were found:

Probability vs. Directly applicable $r = -.32$
Probability vs. Tables $r = -.20$
Directly applicable vs. Tables $r = +.77$

Since the largest value for the last r consistent with the marginals is 0.83, the correlation between preference for directly applicable mathematical statistics and preference for tables, while not surprising in sign, is somewhat surprising in strength. (This fact needs to be considered in company with the fact that the overall mean response to tables is neutral, while that to directly applicable mathematical statistics is strongly favorable.)

4. Dangers of resignation. There is food for thought in the following breakdown of the number of respondents checking a particular question "danger of resignation";

Question	Number checking this "danger of resignation"	
	as one of two or three	alone
1	6	5
2	6	13
3	4	1
4	10	23
5	8	6
6	4	1

The discrimination between questions is clearly much better for those checking only one danger of resignation. Except for a greater sensitivity toward more tables rather than fewer, the results for these, most specifically critical, respondents parallel those obtained in Section 2.

5. Summary of comments. Since no specific questions were being answered, the numbers of responses of a given sort are not easy to interpret.

Journals: 15 favored a separate probability journal, 4.5 more if IMS were to be the sponsor, 11.5 were against a separate probability journal (one individual scored 0.5 in each of two classes). (In general, those whose affiliation with IMS would be strengthened by more probability in the *Annals* tended to favor a separate journal.) 1 each favored (i) a journal intermediate between Annals and JASA, (ii) a separate journal for statistical mathematics.

Directly applicable mathematical statistics: 2 felt that it would be impossible to have less, 1 that increase would lead to more UK members.

Tables: 8 felt they should appear elsewhere, 1 more felt extensive tables should appear elsewhere, 3 felt they should be separately issued by IMS. 1 that *Annals* should accept all good tables. 1 that machine computed tables should be photographically reproduced to avoid errors.

Broad editorial policy of the Annals: 11 favored present standards and policy, 7 wanted higher standards, 2 each said (i) don't over-specialize, (ii) theory, not applications, (iii) accept all good papers. 1 each wanted (i) acceptance of papers even distantly related to statistics, (ii) concentration on original ideas, (iii) all papers on probability to be accompanied with statistical applications. (iv) no papers, only descriptive summaries, (v) page charges eliminated.

More emphasis was sought on: expository papers and surveys (6), statistical inference (2), papers not requiring highest mathematical sophistication (1), notes (1), papers like 30's and early '40's (1), statistics (and less mathematics) (1), stochastic models for physics in language intelligible to physicists (1), greater similarity to Biometrika and JRSS, Series B (1).

Less emphasis on: specialized experimental design was sought by 4 respondents.

Space and readability: 3 asked for more space; 3 for more readable, less concise papers; 8 for easier transition to application.

Current Annals papers: 1 each felt that (i) there are too many steretyped papers, (ii) some papers belong in "orbit", (iii) "a collection of sterile and useless exercises", (iv) there should be less "thesis work".

Operating practices: 3 suggested 6 issues a year, 1 that reprints should be available, 1 that there should be fewer misprints and errors.

6. Summary. The present and past Editors of the *Annals* can take pride in the generally favorable response, and in the clear fact that much of the responsibility for the changes in *Annals* emphasis which the overall membership desires falls upon authors. This responsibility includes both readjustment of emphasis and more expository papers.

REFERENCES

[1] HOLLIS M. LEVERETT, "Table of mean deviates for various portions of the unit normal distribution," *Psychometrika*, Vol. 12 (1947), pp. 141–152.

REPORT OF THE PRESIDENT FOR 1960

Most details of the affairs of the Institute will be covered by reports of other officers. The responses to the questionnaires about the *Annals* are reported elsewhere in this section. It remains for me to mention our Council action of special interest, to announce the names of the nominating committee, and to explain how this has been a year of continuation and preparation for the Institute.

1961 Annual Meeting: The Council debated the place and time of the next annual meeting very carefully. The desires of the membership, as expressed by mail ballot a few years ago, to have *only one* nation-wide meeting, and to meet *alternately*, so far as possible, with the American Mathematical Society and the American Statistical Association, were judged by the Council to be controlling. As a result, the next annual meeting of the Institute will be in Seattle, Washington, during the week of 12 June 1961, a week in Seattle which will include a special AMS symposium on convex sets, and regional meetings of AMS and MAA. (No reasonable solution to a meeting with AMS in 1961 *east* of the Mississippi could be found.) The chairman of the program committee for this meeting will be David L. Wallace. F. J. Anscombe, J. Blum, E. L. Crow, J. L. Folks, R. Gnanadesikan, A. T. James, M. R. Mickey, R. G. Miller, R. Radner, and G. S. Watson have been invited to serve with him. I urge all members of the Institute to help this committee make the 1961 Annual Meeting an outstanding success.

Nominating Committee for the 1961 Election: This consists of M. B. Wilk (chairman), L. T. B. Brown, W. G. Cochran, D. M. Gilford, J. L. Hodges, P. R. Meier, E. S. Pearson, and W. L. Smith.

The Annals: The *Annals* continues to grow in size. The reactions of the membership to the relative emphasis it has placed on various aspects of our subject have been assessed, with results which can only encourage the editor.

Younger Members: A committee of younger members under the chairmanship of Walter L. Smith is re-examining the state of the Institute. Other steps have been taken to bring more younger members into the Institute's activities.

Activity Outside North America: The question of how the Institute may best serve that portion of its membership, present and future, outside North America and may best participate in international statistical activities has been studied, with results that seem likely to lead to action during 1961.

Membership: The Committee on Institutional Members, under the chairmanship of Mervin E. Muller, has had another extremely successful year. The time would now seem to be ripe for a very active drive for new individual members. I ask every IMS member to cooperate with the activities of the Membership Committee, both in 1961 and afterwards.

Finances: At the present level of dues, neither the very substantial actual increase in institutional members, nor any possible increase in individual membership would suffice to meet the increased costs of the Institute, which come mainly from the increased size of the *Annals* and the increased cost per page of printing it. The inauguration of page charges, a step taken reluctantly and after extended and careful consideration, should meet this financial crisis for the immediate future.

JOHN TUKEY

REPORT OF THE TREASURER FOR 1960

Since I am nearing the end of my tenure as Treasurer I recommended a thorough audit of our operation; the firm was selected some months after the close of the 1959 calendar year, and the auditors urged an audit of an eighteen months' period ending June 30, 1960. The audit was completed early this month and I am able to present an up-to-date account of our financial position.

In general the trend of the last few years has continued with small revenue increases more than offset by larger expenses, principally as a result of continued large issues of the *Annals* and ever-increasing printing costs. At the 1959 Annual Meeting a series of steps were proposed to reverse this trend; and the following propositions were approved:

Subscription rates to be increased from $12. to $15. for U.S.
and Canada and from $10. to $12. for foreign.
Back Issue rates increased from $12. to $15. per volume and
$3.50 to $4. per issue beginning with Volume 27. Advertising
would be accepted in the *Annals*

The increased rate for Back Issues was effective for 1960, but the subscription rate increase does not become effective until Volume 32 (1961). The shift in policy on the acceptance of advertising has been disappointing financially. A policy of page charges, also to be effective beginning in 1961, was approved; but as this report is being prepared before the Council meeting I am not able to present the detailed operation at this time.

A quick review of the Revenue and Expense Summary shows that dues income is continuing to climb. It should be noted that the work of the Committee for Institutional Members has been most successful and that we now have 45 Institutional members. We had a continuing increase in subscriptions and our investment income was also up. The sales of Back Issues continue to reflect that the later more expensive volumes are being sold to a greater extent and this results in less net income.

On the expense side of the ledger, cost of the *Annals* reflects another increase in printing costs. The higher salary expense results from continuing studies of

means to get the Institute on at least a break-even basis and also the result of increased membership and subscriber activity. The editorial expenses are also up following approval of the editor's request for more assistance.

The cumulative deficit for 1958, 1959 and 1960 will be $20,781. Of this, $18,000. will be paid for by a NSF publication subsidy grant, leaving a cumulative deficit of $2,781. for the last three years.

The budget for 1961 is our forecast following the institution of new policies *except for page charges*. The biggest income increase results from increased subscription rates based on the assumption that not many subscribers will cancel as a result of the rate increase. We have been told by the printer that the 1960 prices will hold through 1961 so the printing expense will be dependent upon the size of Volume 32. This budget is based on an *Annals* of 1,300 pages, as the editor reports that there is an unusually large number of papers circulating through the refereeing channels. Even these actions fail to increase revenue enough to get us back in the black.

A Balance Sheet as of June 30, 1960 is also attached.

ALBERT H. BOWKER

INSTITUTE OF MATHEMATICAL STATISTICS

Revenue and Expense Summary

	1956	1957	1958	1959	Tentative 1960	Budget 1961
Revenue						
Dues, Indiv. U. S. and Canada)	$12,969.00	$13,394.00	$14,076.00	$15,199.00	$16,000.00	$16,800.00
Dues, Indiv. Other	1,478.75	1,548.00	1,550.00	1,810.00	1,950.00	2,100.00
Dues, Institution	1,100.00	1,500.00	1,800.00	2,900.00	4,500.00	4,800.00
Subscriptions	11,091.50	11,949.75	12,702.62	13,712.35	14,000.00	17,000.00
Inc. from Investments	1,886.49	2,240.75	2,602.09	3,250.72	3,900.00	4,000.00
Sale of Back Issues	3,627.16	5,863.17	3,936.29	4,746.61	3,000.00	4,000.00
Other	28.66	27.72	140.41	132.22	500.00	500.00
Total Revenue	$32,181.56	$36,523.39	$36,807.41	$41,750.90	$43,850.00	$49,200.00
Expenses						
Annals (current)	20,727.01	24,675.55	30,451.65	31,347.69	32,241.00	35,438.00
Misc. Prtg, St'ry, Post.	1,744.25	2,634.78	1,981.88	1,853.76	2,876.00	2,400.00
Salaries	2,325.08	3,195.34	4,111.96	5,839.15	5,200.00	5,200.00
Misc. Office Exp.	1,283.72	858.20	1,116.69	2,327.21	1,500.00	2,500.00
Contributions	200.67	131.38	185.03	129.89	150.00	150.00
Capital Expenditure				376.95		
Editorial Expense	250.00	250.00	3,212.25	1,765.00	6,000.00	4,800.00
Travel	439.62	678.73	397.00	174.31	900.00	900.00
F.I.C.A. Tax	46.54	71.94	82.19	69.56	80.00	90.00
Meeting Expense	194.69	23.00	—	—	—	—
Binding Expense	33.14	112.84	51.00	66.00	120.00	300.00
Total Expense	$27,244.72	$32,631.76	$41,589.65	$43,949.52	$49,067.00	$51,778.00
Excess Revenue over expense	4,936.84	3,891.63	(4,782.24)	(2,198.62)	(5,217.00)	(2,578.00)
			737.33[1]			
Reserve for addition to Annals inventory	2,091.00	2,217.00	2,802.00	2,670.00	2,376.00	2,637.00
Retained Earnings	2,845.84	1,674.63	(8,319.57)	(4,868.62)	(7,593.00)	(5,215.00)

[1] Correction of physical Inventory on hand at Waverly Press.

INSTITUTE OF MATHEMATICAL STATISTICS

Balance Sheet
June 30, 1960[1]

Assets

Current Assets:

Cash in bank—checking account		$1,232.56
Cash in banks—savings accounts		70,778.91
Investments:		
U. S. Government bonds—at cost	$8,857.25	
Savings certificate	5,000.00	
Total investments		13,857.25
Accounts receivable:		
Dues	$1,963.50	
Subscriptions	275.00	
Back issues of ANNALS	1,496.25	
Total receivables		3,734.75
Inventory of ANNALS		24,236.80
Total assets		$113,840.27

Liabilities and Surplus

Liabilities

Accounts payable		64.60
Payroll taxes payable		111.48
Dues advanced by members		200.00
Advanced subscriptions		469.50
Wald Royalties payable		96.40
Grant from National Science Foundation		12,435.26
Total liabilities		13,377.24

Surplus

Reserve for life members	$2,757.50	
Available for maintaining supply of ANNALS issued	33,452.52	
Available for general purposes	64,253.01	
Total surplus		100,463.03
Total liabilities and surplus		$113,840.27

[1] The income from subscriptions and memberships for the calendar year 1960 was substantially realized in the first six months, while the majority of the expenses have not yet been incurred. The operations for the calendar year 1960 are expected to produce an excess of expenditures over receipts at least as large as the excess of expenditures over receipts for the calendar year 1959.

REPORT OF THE EDITOR FOR 1960

During the operating year August 1, 1959, to July 31, 1960, there were 206 manuscripts submitted to the *Annals*, about a thirteen per cent increase over the

level during the preceding three years. Final decisions were made for 160 manuscripts during the 1959–60 operating year, and 179 manuscripts were under editorial consideration on July 31, 1960. The size of the printed volume for 1960 is 1,254 printed pages, slightly under the number authorized by the Council. There is no backlog, so that all accepted manuscripts are sent to the printer as soon as possible.

A detailed statistical report of *Annals* operations in 1959–60 will be sent to interested members on request.

During the year, paid advertising was instituted. Page charges will be instituted shortly. A cumulative Index-Guide to the *Annals* is to be prepared at the University of Minnesota, under the direction of I. Olkin and I. R. Savage.

I am grateful to the Associate Editors for their time-consuming and effective work. Mr. D. L. Wallace acted as Editor during a two month period when I was absent from my office; I wish to express special thanks to him. Mrs. Cynthia Zilliac, and later Mrs. Juanita Isherwood and Mrs. Doris Jacques, have labored devotedly and efficiently with the multitude of typographical, clerical, and miscellaneous tasks of the Editor's office; I am very grateful to them. I also thank the University of Chicago for its continued material aid.

Finally, I have the pleasure of listing the names of referees of papers for which final editorial decisions have been made during the period February 1960 to September 1960, inclusive. *Annals* referees have great responsibilities for the choice of manuscripts to be published and for the revision of manuscripts towards greater accuracy and clarity. Authors, readers, and members of the editorial staff should all be grateful for the generous work of the referees.

Abbott, J. H.	Dwass, Meyer	James, Allan
Anderson, T. W.	Ellison, B. E.	James, G. S.
Andrews, Fred	Fano, R. M.	Johnson, N. L.
Anscombe, F. J.	Feldman, Jack	Karlin, S.
Bellman, Richard	Fix, Evelyn	Katz, Leo
Billingsley, Patrick	Foster, F. G.	Kempthorne, Oscar
Birnbaum, Allan	Fraser, D. A. S.	Kendall, M. G.
Blackwell, David	Gardiner, D. A.	Kensten, Harry
Blum, Julius R.	Geisser, Seymour	Kiefer, Jack
Blumenthal, R. M.	Ghurye, S. G.	Kraft, Charles H.
Breiman, Leo	Good, I. J.	Kullback, S.
Burkholder, D. L.	Goodman, Leo A.	Laha, R. G.
Chapman, Douglas G.	Gupta, S. S.	Lamperti, John
Chernoff, Herman	Gurland, John	LeCam, Lucien
Connor, William S.	Hall, Marshall, Jr.	Lehmann, E. L.
Craig, C. C.	Hammersley, J. M.	Lukacs, Eugene
Daly, Joseph	Hannan, James	Madansky, A.
Daniels, H. E.	Hansen, Morris	Mandelbrot, Benoit
David, Herbert T.	Harris, T. E.	Mauldon, J. G.
Dempster, A. P.	Hartley, H. O.	Miller, Rupert
Derman, Cyrus	Herbach, Leon	Moore, P. G.
Dixon, W. J.	Hunter, J. S.	Moses, Lincoln E.
Donsker, M. D.	Hutton, E. J.	Nadler, Jack

Noether, Gottfried
Owen, Donald B.
Olkin, Ingram
Parzen, Emanuel
Paulson, E.
Pillai, K. C. S.
Pollaczek, F.
Pratt, John
Pyke, Ronald
Quenouille, M. F.
Ruben, Harold
Sargan, John Dennis
Saunders, S.

Savage, I. R.
Savage, L. J.
Sitgreaves, Rosedith
Smith, Walter
Steck, G. P.
Stein, Charles M.
Taylor, William
Teicher, Henry
Teichroew, D.
Throckmorton, Neal
Tintner, G.
Wallace, David L.
Watson, G. S.

Weiss, Lionel
Welch, B. L.
Whittle, Peter
Wijsman, Robert A.
Wilk, M. B.
Wolfowitz, J.
Young, D. H.
Zelen, Marvin
Zyskind, George

October 1, 1960
William Kruskal, Editor

REPORT OF THE STANFORD, CALIFORNIA MEETING OF THE INSTITUTE OF MATHEMATICAL STATISTICS

The eighty-fifth meeting of the Institute of Mathematical Statistics, the twenty-third annual meeting, was held at Stanford University, Stanford, California, on August 23–26, in conjunction with the meetings of the American Statistical Association, the Biometric Society (ENAR), the Biometric Society (WNAR), the Econometric Society, the Western Economic Association, and the Western Farm Economics Association.

There were 294 members of the Institute registered for the meeting. The program of the meeting was as follows:

TUESDAY, AUGUST 23, 1960

8:30 a.m.—Invited Papers I: Times Series, Stochastic Processes (ASA and IMS)

Chairman: M. LOÈVE, University of California, Berkeley.
1. *"New Light on the Classical Problem of Decomposing an Observed Time Series into Trend, Periodic and Stationary Components,"* J. DURBIN, Stanford University and University of London.
2. *"The Design of Experiments with Auto-Correlated Errors,"* G. M. JENKINS, Stanford University and Imperial College, London.
3. *"On a Model of Queueing Theory and its Application to the Problem of Market Equilibrium,"* J. LUKASZIEWICZ, Wroclaw University.
4. *"The Ranking Limit Problem for Markov Chains,"* R. COGBURN, University of California, Berkeley.

8:30 a.m.—Contributed Papers I

Chairman: D. GUTHRIE, JR., Stanford Research Institute.
1. *"The Use of Sample Quasi-Ranges in Setting Confidence Intervals for the Population Standard Deviation,"* F. C. LEONE, Y. H. RUTENBERG, AND C. W. TOPP, Case Institute of Technology.
2. *"Expected Values of Normal Order Statistics,"* H. L. HARTER, Air Force Research Division, Wright-Patterson Air Force Base.
3. *"Two Sample Nonparametric Tests for Scale Parameter"* (Preliminary Report), J. KLOTZ, University of California, Berkeley.

4. "*Distribution of Quantiles in Samples from a Bivariate Population,*" M. M. SIDDIQUI, Boulder Laboratories, National Bureau of Standards.
5. "*On the Distribution of the Ratio of the Largest of Several Chi-Squares to an Independent Chi-Square with Application to Ranking Problems,*" S. S. GUPTA AND M. SOBEL, Bell Telephone Laboratories, Inc.
6. "*On the Non-Null Distribution of the Studentized Difference between the Two Largest Sample Values*" (Preliminary Report), A. CROTEAU AND J. ST. PIERRE, Université de Montreal.

10:30 a.m.—Invited Papers II: Statistics (ASA and IMS)

Chairman: J. W. TUKEY, Princeton University and Bell Telephone Laboratories.
1. "*Successive Process of Statistical Controls,*" T. KITAGAWA, Kyusyu University.
2. "*Likelihood as a Basic Concept in Inductive Inference,*" A. BIRNBAUM, New York University.
3. "*Non-parametric Several-Sample Tests,*" F. C. ANDREWS, University of Oregon.

2:00 p.m.—Special Invited Paper

Chairman: K. L. CHUNG, Syracuse University.
   "*Statistical Methods in Markov Chains,*" P. BILLINGSLEY, University of Chicago.

3:00 p.m.—Invited Papers III: Information Theory

Chairman: D. BLACKWELL, University of California, Berkeley.
1. "*A Calculus of Information,*" B. McMILLAN, Bell Telephone Laboratories.
2. "*Another Approach to Information Theory,*" L. BREIMAN, University of California, Los Angeles.
3. "*On the Quantity of Information of Kolmogorov,*" S. P. LLOYD, Bell Telephone Laboratories.

3:00 p.m.—Contributed Papers II

Chairman: M. V. JOHNS, JR., Stanford University.
1. "*Approximations to Neyman Type A and Negative Binomial Distributions in Practical Problems*" (Preliminary Report), S. K. KATTI, Florida State University.
2. "*Elements of the Sequential Design of Experiments,*" S. A. BESSLER, Sylvania Electronic Defense Laboratories, Mountain View, California.
3. "*On a Property of a Test for the Equality of Two Normal Dispersion Matrices Against one-sided Alternatives,*" W. F. MIKHAIL, University of North Carolina.
4. "*Two New Continuous Sampling Plans,*" J. S. WHITE, General Motors Technical Center, Warren, Michigan.
5. "*Power Characteristics of the Control Chart for Means,*" F. A. SORENSEN, United States Steel Corporation Applied Research Laboratory, Monroeville, Pennsylvania.
6. "*A Note on Simple Sampling Plans,*" T. V. NARAYANA AND S. G. MOHANTY, University of Alberta.

4:00 p.m.—Spectral Analysis of Time Series (ASA and IMS)

Chairman: J. M. CAMERON, National Bureau of Standards.
1. "*General Considerations in the Estimation of Spectra,*" G. M. JENKINS, Stanford University.
2. "*Mathematical Considerations in the Estimation of Spectra,*" E. PARZEN, Stanford University.

Discussion:

   J. W. TUKEY, Princeton University

   D. E. ZILMER, Naval Ordnance Test Station, China Lake

   N. R. GOODMAN, Space Technology Laboratories

7:00 p.m.—1960 Council Meeting

8:00 p.m.—Committee on Mathematical Tables

WEDNESDAY, AUGUST 24, 1960

8:30 a.m.—Invited Papers IV: Discriminant Functions and Classification Techniques (ASA, BS, and IMS)

Chairman: A. H. BOWKER, Stanford University.

   1. *"The Theory of Discriminant Functions and Classification Techniques,"* R. SITGREAVES Columbia University.

   2. *"Reduction of Variates Relative to Classification,"* R. H. SHAW, I.B.M. Research Center.

   3. *"On the Generalization of Classification Techniques,"* C. F. KOSSACK, I B.M. Research Center.

   4. *"A General Computer Program for Multivariate Analysis of Variance with Special Reference to the Multiple Discrimination Problem,"* L. B. JONES, University of North Carolina.

8:30 a.m.—Contributed Papers III

Chairman: D. HALEY, Acadia University, Nova Scotia, and Stanford University.

   1. *"Best Fit to a Random Variable by a Random Variable Measurable with Respect to a σ-lattice,"* H. D. BRUNK, University of Missouri.

   2. *"Random Noise in Relay Control Systems,"* R. C. DAVIS, Convair/Pomona.

   3. *"Estimating the Infinitesimal Generator of a Finite State, Continuous Time Markov Process,"* A. ALBERT, Columbia University.

   4. *"On a Class of Covariance Kernels Admitting a Power Series Expansion"* (Preliminary Report), N. D. YLVISAKER, Columbia University.

   5. *"Phase Interpretation of Coherence,"* A. SHAPIRO, Bell Telephone Laboratories.

11:00 a.m.—Special Invited Paper

Chairman: C. STEIN, Stanford University.

   "Fiducial Probability," D. A. S. FRASER, University of Toronto.

2:00 p.m.—Invited Papers V: Applied Probability

Chairman: S. KARLIN, Stanford University.

   1. *"Some Problems of Dams with Ordered Inputs,"* J. GANI, University of Western Australia.

   2. *"The Solution of Queueing and Inventory Models by the Theory of Semi-Markov Processes,"* A. J. FABENS, Dartmouth College.

   3. *"Queues in Series,"* J. SACKS, Columbia University.

   4. *"Continuous Time Storage Systems with Linear Inputs and Outputs,"* R. MILLER, Stanford University.

4:00 p.m.—I.M.S. Business Meeting

9:00 p.m.—Gateway Singers—Stanford University, Host

THURSDAY, AUGUST 25, 1960

8:30 a.m.—Invited Papers VI: Probability

Chairman: J. NEYMAN, University of California, Berkeley.
1. *"On Invariant Probability Measures,"* J. R. BLUM, Sandia Corporation.
2. *"A Representation of the Bivariate Cauchy Distribution,"* T. S. FERGUSON, University of California, Los Angeles.
3. *"On Random Walks in the Plane,"* G. E. BAXTER, University of Minnesota.
4. *"The Law of Large Numbers in Banach Spaces,"* A. BECK, University of Wisconsin and Cornell University.

10:30 a.m.—Invited Papers VII: Multifactor-Multiresponse Experiments–Continuous Responses, Normal or Non-Normal (ASA, BS, and IMS)

Honoring Harold Hotelling at his 65th Birthday

Chairman: D. M. GILFORD, Office of Naval Research.
1. *"General Introduction,"* S. N. ROY, University of North Carolina.
2. *"One Degree of Freedom Plots in Multi-Response Factorial Experiments,"* R. GNANADE- SIKAN AND M. B. WILK, Bell Telephone Laboratories.
3. *"Continuous Responses, Not Necessarily Normal, with Applications,"* R. BARGMANN, Virginia Polytechnic Institute.
4. *"Applications in Psychometry,"* R. D. BOCK, University of North Carolina.

2:00 p.m.—Special Invited Paper (ASA and IMS)

Chairman: H. HOTELLING, University of North Carolina.
 "A Survey of Time-Series Analysis," E. PARZEN, Stanford University.

3:00 p.m.—Invited Papers VIII: Statistics

Chairman: F. ANDREWS, University of Oregon.
1. *"Admissible and Optimal Designs in the Presence of Nuisance Parameters,"* G. ELFVING, University of Helsingfors.
2. *"Tolerance Regions,"* I. GUTTMAN, McGill University, Montreal.
3. *"Some Comparisons Among Different Types of Random Allocation Designs,"* A. P. DEMPSTER, Harvard University.
4. *"Estimating a Mixed Exponential Response Law,"* F. J. ANSCOMBE, Princeton University.

3:00 p.m.—Contributed Papers V

Chairman: A. W. MARSHALL, Stanford University.
1. *"Expansions for Convolutions,"* R. DAWSON, American Systems Incorporated.
2. *"Maximal Independent Stochastic Processes,"* C. B. BELL, JR., San Diego State College.
3. *"Normal Approximation to the Chi-square and Non-central F Probability Functions,"* N. C. SEVERO AND M. ZELEN, University of Buffalo and National Bureau of Standards.
4. *"Estimation of the Scale Parameter in the Weibull Distribution by Means of a Life Test Censoring by Both Time and Number of Failures,"* E. H. LEHMAN, JR., University of North Carolina.

5:00 p.m.—1961 Council Meeting

10:00 p.m.—Informal Party (All Societies)

FRIDAY, AUGUST 26, 1960

8:30 a.m.—Contributed Papers IV

Chairman: I. OLKIN, University of Minnesota.
1. *"Sequential Model Building for Prediction in Regression Analysis, I"* (Preliminary Report), H. J. LARSON AND T. A. BANCROFT, Iowa State University.
2. *"On Sampling with Varying Probabilities and with Replacement in Sub-Sampling Designs,"* J. N. K. RAO, Iowa State University.
3. *"A Calculus for Factorial Arrangements,"* M. ZELEN AND B. KURKJIAN, National Bureau of Standards and Diamond Ordnance Fuze Laboratories.
4. *"Three Quarter Replicates of 2^3 and 2^4 Designs,"* P. W. M. JOHN, California Research Corporation, Richmond, California.
5. *"Alias Sets of Error Vectors in the Theory of Error Correcting Group Codes,"* R. C. BOSE, University of North Carolina and Case Institute of Technology.
6. *"Some Results on Transformations in the Analysis of Variance,"* M. M. RAO, Carnegie Institute of Technology.

10:30 a.m.—Invited Papers IX: Multifactor-Multiresponse Experiments (continued)–Categorical or discrete responses

Honoring Harold Hotelling at his 65th Birthday

Chairman: H. SOLOMON, Stanford University.
1. *"General Introduction,"* S. N. ROY, University of North Carolina.
2. *"Asymptotic Power of the Tests,"* E. DIAMOND, Johns Hopkins University.

Contributed Papers Presented by Title:

1. *"Zero Correlation and Independence,"* H. O. LANCASTER, University of Sydney, Australia.
2. *"On the Generalization of Sverdrup's Lemma and Its Applications to Multivariate Distribution Theory,"* D. G. KABE, Karnatak University, Dharwar. (Introduced by B. D. TIKKIWAL).
3. *"On the Unbiasedness of Yates' Method of Estimation Using Interblock Information,"* F. A. GRAYBILL AND V. SESHADRI, Oklahoma State University.
4. *"Minimal Sufficient Statistics for Eisenhart's Model II in a Class of Two-way Classification Models,"* D. L. WEEKS AND F. A. GRAYBILL, Oklahoma State University.
5. *"Minimal Sufficient Statistics for the Two-way Classification Mixed Model Design,"* R. A. HULTQUIST AND F. A. GRAYBILL, Oklahoma State University.
6. *"A Set of Sufficient Statistics for Variance Components in a Two-way Classification Model with Unequal Numbers in the Subclasses,"* D. L. WEEKS AND F. A. GRAYBILL, Oklahoma State University.
7. *"Sample Size for a Specified Width Confidence Interval on the Variance of a Normal Distribution,"* F. A. GRAYBILL AND R. D. MORRISON, Oklahoma State University.
8. *"Limiting Distribution of the Maximum in an Infinite Sequence of Exchangeable Random Variables,"* S. M. BERMAN, Columbia University.
9. *"The Covariance Function of a Simple Trunk Group, with Applications to Traffic Measurement,"* V. E. BENEŠ, Bell Telphone Laboratories and Dartmouth College.
10. *"The Sequential Design of Experiments for Infinitely Many States of Nature,"* A. ALBERT, Columbia University.

11. *"On a Geometrical Method of Construction of Cyclic PBIB"* (Preliminary Report), E. SEIDEN, Northwestern University.
12. *"Circular Error Probabilities,"* H. L. HARTER, Air Force Research Division, Wright-Patterson Air Force Base.
13. *"Comparison of Normal Scores and Wilcoxon Tests,"* J. L. HODGES, JR. AND E. L. LEHMANN, University of California, Berkeley.
14. *"Maximal Independent Stochastic Processes,"* C. B. BELL, JR., San Diego State College.
15. *"On Sufficient Conditions for Consistent Parameter-Estimates in a Stochastic Difference Equation with Regression on Several Lagged and Non-Stochastic Variables,"* F. EICKER, University of North Carolina.
16. *"Multivariate Extremal Distributions,"* E. J. GUMBEL, Columbia University.

PUBLICATIONS RECEIVED

Anuario Estadistico de España, 1960 Edicion Manual, Presidencia del Gobierno, Instituto Nacional de Estadistica, Ferraz 41, Madrid, Spain, 1001 pp.

Finney, D. J., *An Introduction to the Theory of Experimental Design,* University of Chicago Press, Chicago, 1960, 223 pp., $7.00.

Handbook on Data Processing Methods, Part I, Provisional Ed., United Nations Food and Agriculture Organization, Rome, 1959, 111 pp., $1.00 or 5s.

Khintchine, A. Y., *Mathematical Methods in the Theory of Queueing,* No. 7 of Griffin's Statistical Monographs and Courses, Ed. M. G. Kendall, Hafner Pub. Co., New York, 1960, 120 pp., $5.50.

Proceedings of the Symposia in Applied Mathematics, Volume 10, "Combinatorial Analysis," American Mathematical Society, Providence, R. I., 1960, 311 pp., $7.70.

Runnenburg, J. Th., *On the Use of Markov Processes in One-Server Waiting-Time Problems and Renewal Theory,* Ph.D. thesis, University of Amsterdam, Klein Offsetdrukkerij Poortpers N. V., Amsterdam, 1960, 139 pp.

Youden, W. J., *Statistical Design,* (a collection of articles by W. J. Youden, reprinted from *Industrial and Engineering Chemistry*), American Chemical Society, Washington, 1960. Copies may be obtained from Reprint Department, ACS Applied Publications, 1155 Sixteenth St., N.W., Washington 6, D. C., for $2.00.