m_0, m_1, $\cdots$, m_n. Subject to the requirements (a) and (b), the decision rule must control the chance of indecision. The case of three populations with known σ^2 is considered in detail, and the properties of a decision rule based on the auxiliary statistic $y = x_{(0)} - x_{(1)}$ are studied, where $x_{(0)} \geqq x_{(1)} \geqq x_{(2)}$ are the ordered sample means, the rule being to decide that $x_{(0)}$ comes from the population with the largest mean if $y > k$, and not to take a decision if $y \leqq k$. The general case when $n > 2$ and σ^2 is unknown is under consideration.

28. Most Economical Multiple-Decision Rules, William Jackson Hall, University of North Carolina.

Suppose x has an unknown distribution function F, belonging to one of m disjoint classes ω_1, $\cdots$, ω_m, and suppose A_1, $\cdots$, A_m are corresponding alternative decisions. A decision rule D_N, based on a sample of size N, is said to be a "most economical multiple-decision rule (M.E. d.r.) relative to $(\alpha_1, \cdots, \alpha_m)$, $0 \leqq \alpha_i < 1$, for choosing among A_1, $\cdots$, A_m" if it satisfies (1) $\Pr(D_n \text{ chooses } A_i \mid F) \geqq \alpha_i$ for all $F \in \omega_i (i = 1, \cdots, m)$ and if N is the least integer n for which (1) can be satisfied. It is proved that to obtain M.E. d.r.'s one need only consider d.r.'s in the sequence $\{D_n^0\}$, $n = 0, 1, 2, \cdots$, where D_n^0 denotes a minimax solution w.r.t. a certain weight function for samples of fixed size n. If ω_i contains but one distribution F_i $(i = 1, \cdots, m)$, D_n^0 is of the form: (2) choose A_i if $a_i L_i \geqq a_j L_j$ $(j = 1, \cdots, m)$ where L_1, $\cdots$, L_m are the likelihood functions of the sample corresponding to F_1, $\cdots$, F_m and a_1, $\cdots$, a_m are positive constants. In the general case, D_n^0 is of a similar form where now F_1, $\cdots$, F_m are "average" distribution functions, averaged w.r.t. least favorable conditional distributions over ω_1, $\cdots$, ω_m (if existent). Similar results are obtained for "M.E. d.r.'s relative to (β_{ij}), $0 < \beta_{ij} \leqq 1$," defined as above with (1) replaced by (1') $\Pr(D_n \text{ chooses } A_i \mid F) \leqq \beta_{ij}$ for all $F \in \omega_j (i \neq j; j = 1, \cdots, m)$; and (2) is replaced by: (2') choose A_i if $\sum_{k \neq i} b_k L_k \leqq \sum_{k \neq j} b_k L_k$ $(j = 1, \cdots, m)$, for some positive constants b_1, $\cdots$, b_m. Other properties of the d.r.'s are derived and various extensions and examples given.

NEWS AND NOTICES

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

Personal Items

Archie Blake is now employed as an Advisory Engineer in the Systems Analysis of Westinghouse Electric Corporation, Baltimore, Maryland.

E. L. Cox has left Operations Research Group, Case Institute of Technology, to take a position with Chemical Corps Biological Laboratories, Frederick, Maryland.

Harold Davis has transferred from Headquarters, United States Air Force to The Operations Analysis Office, Hq. Far East Air Forces.

Professor Hilda Geiringer is on leave of absence from Wheaton College in order to complete and prepare for publication on behalf of Harvard University some of the post-humous work of Richard von Mises.

Dr. S. G. Ghurye has accepted the position of Reader in Statistics, Department of Mathematics and Statistics, University of Lucknow, Lucknow, U.P., India.

The University of London has conferred the D.Sc. degree in Mathematical statistics on H. O. Hartley for his published contributions in the field of mathematical statistics, and he has accepted a position as professor on the permanent staff of the Department of Statistics and Statistical Laboratory, Iowa State College. Dr. Hartley has been visiting professor of statistics at Iowa State College since July 1, 1954.

Stanley L. Isaacson has returned to his position as Assistant Professor of Statistics at Iowa State College after spending a year on leave of absence as Visiting Assistant Professor of Statistics at Stanford University.

Dr. Hans Kellerer was nominated as fulship Professor for Statistics and as Direktor of the Statistical Seminar at the Wirtschafts- und Sozialwissenschaftliche Fakultät of the Freie Universität in Western-Berlin 1st of April 1953.

Dr. Nathan Keyfitz has resumed his duties as Senior Research Statistician of the Dominion Bureau of Statistics after a year's assignment with the Government of Indonesia.

Professor T. C. Koopmans will be on leave of absence from the University of Chicago and the Cowles Commission during the academic year 1954–55. He will spend this year at Yale University in teaching and research.

Dr. Richard F. Link has left the Analytical Research Group at the Forrestal Research Center, Princeton University to accept a position with the Sandia Corporation of Albuquerque, New Mexico.

Lt. Carl R. Ohman, formerly a graduate student at Princeton University, is now on active duty with the U. S. Army, stationed in Washington, D. C.

Donald B. Owen has resigned as Assistant Professor of Mathematics at Purdue University to accept a position as a Staff Member with the Sandia Corporation in Albuquerque, New Mexico.

K. C. S. Pillai, who was a Research Associate in the Department of Statistics, University of North Carolina, joined the Statistical Office of United Nations, New York in February, 1954. He has completed his work for Ph.D. degree in Statistics in the University of North Carolina.

John W. Richardson is employed as a Physicist at the Ramo-Wooldridge Corporation, Los Angeles, California.

Daniel E. Sands has accepted a position as Biometrician in the Statistics Section of the Squibb Institute for Medical Research, New Brunswick, New Jersey.

Major Oliver A. Shaw is now stationed at Hq. Air Research and Development Command where he is serving as Research Administrator in Mathematics and Mathematical Statistics.

George W. Snedecor has been elected an Honorary Fellow of the Royal Statistical Society "in consideration of the eminent services rendered to statistics."

James H. Straughan of Michigan State College has accepted a position as Assistant Professor, Department of Psychology, Montana State University, Missoula, Montana.

Dr. Joseph V. Talacko, Assistant Professor of Mathematics, is on leave of absence from the Marquette University, Milwaukee for the academic year 1954–55. He has a Ford Foundation Fellowship and plans to spend most of the year at the Statistical Laboratory, University of California in Berkeley and to visit several west coast universities.

Dr. Fred H. Tingey, formerly with the General Electric Company, Richland, Washington, has joined the staff of the Atomic Energy Division of Phillips Petroleum Company at Idaho Falls, Idaho where he will be responsible for all statistical studies arising from plant operations.

M. C. Throdahl, formerly Development Manager for Rubber Chemicals, Monsanto Chemical Company at Nitro, West Virginia, has been given a new assignment as Assistant Director of the company's Development Department in St. Louis.   .

Elizabeth Vaughan has transferred from the U. S. Fish and Wildlife Service to the Quality Evaluation Laboratory, Naval Ammunition Depot, Bangor, Washington, as an Analytical Statistician and head of the section on special investigations.

David L. Wallace, formerly at Massachusetts Institute of Technology, has been appointed an Assistant Professor of Statistics at the University of Chicago.

Samuel Weiss, formerly Chief Statistician and Chief of the Office of Statistical Standards, Bureau of Labor Statistics, has recently established a private statistical consulting office in Washington, D. C. He will, however, continue to act as a consultant to the Commissioner of Labor Statistics.

A. W. Wortham has completed the requirements for a Ph.D. degree at Oklahoma A. and M. College and has returned to his position with Chance Vought Aircraft, Dallas, Texas.

R. I. Piper of the Pacific Telephone and Telegraph Company, San Francisco, California, died on October 20, 1953 at the age of fifty-one years. He was a member of the Institute for ten years.

Fellowships in Statistics, University of Chicago

Members of the Institute of Mathematical Statistics are invited to nominate research workers whom they feel could benefit from three $4000 post-doctoral fellowships in Statistics offered for 1955–56 by the University of Chicago. The purpose of these fellowships, which are open to holders of the doctor's degree or its equivalent in research accomplishment, is to acquaint established research workers in the biological, physical, and social sciences with the role of modern statistical analysis in the planning of experiments and other investigative programs, and in the analysis of empirical data. The development of the field of Statistics has been so rapid that most current research falls far short of attainable standards, and these fellowships (which represent the fifth year of a five-year program supported by The Rockefeller Foundation) are intended to help reduce this lag by giving statistical training to scientists whose primary interests are in substantive fields rather than in Statistics itself. Nominations, which should be

made soon since the closing date for applications is February 15, 1955, may be addressed to any member of the University of Chicago Statistics Department, or to its Chairman, W. Allen Wallis.

First National Meeting, Society for Industrial and Applied Mathematics

The Society for Industrial and Applied Mathematics will hold its first national meeting in conjunction with the annual meetings of the American Mathematical Society, the Mathematical Association of America, and the Association for Symbolic Logic at the University of Pittsburgh, on December 27–29. The following addresses will be presented to an evening meeting: "The History of a Problem" Dr. Brockway McMillan, Bell Telephone Laboratories; "The Control of Industrial Operations", Professor Herbert A. Simon, Carnegie Institute of Technology; "Probability Theory in Liability and Property Insurance", Mr. C. W. Crouse, Actuary, Preslan and Company. Further information can be obtained from H. W. Kuhn, Dalton Hall, Bryn Mawr College, Bryn Mawr, Pennsylvania.

New Members

The following persons have been elected to membership in the Institute

May 14, 1954 to August 9, 1954

Abbott, James H., M.S. (Southern Methodist Univ.), Graduate Student, University of Illinois, *Box 64, University Station, Urbana, Illinois.*

Atkinson, Richard C., Ph. B. (Univ. of Chicago), Research Assistant, Psychology Department, Indiana University, Bloomington, Indiana.

Austin, Thomas L., Jr., BBA (Univ. of Georgia), Graduate Assistant, University of Georgia, College of Business Administration, Athens, Georgia, *195 Thirteenth Street, N.E., Atlanta, Georgia.*

Baade, William H., B.S. (Mass. College of Pharmacy), Chemist, Process Research and Development, Merck and Company, Inc., Rahway, New Jersey.

Barnes, Gerald W., M.A. (Univ. of Arkansas), Teaching Fellow, Indiana University, Department of Psychology, Bloomington, Indiana.

Binford, J. R., A.B. (DePauw), Teaching Fellow, Indiana University, Psychology Department, Bloomington, Indiana.

Blumenthal, Robert M., B.A. (Oberlin College), Graduate Student and Teaching Assistant, Department of Mathematics, White Hall, Cornell University, Ithaca, New York.

Box, George E. P., Ph.D. (London), Statistician, Statistical Research Section, M.C.S.D., Imperial Chemical Industries, Dyestuffs Division, Blackley, Manchester 9, England.

Bramwell, W. K., Jr., B.S. (Arizona Univ.), Vice President, Hardin County Savings Bank, Eldora, Iowa.

Brunelle, Robert H., B.A. (Univ. of the State of New York, Champlain College), Graduate Student, Institute of Statistics, University of North Carolina, Chapel Hill, North Carolina.

Buchbinder, Benjamin, B.A. (Brooklyn College), Graduate Student, Department of Statistics, University of North Carolina, Chapel Hill, North Carolina.

Carterette, E. C. H., B.A. (Harvard Univ. Honors), Graduate Student and Research As-

sistant, Hearing and Communication Laboratory, Department of Psychology, Indiana University, Bloomington, Indiana.

Chu, John T., Ph.D. (Iowa State College), Research Associate, Department of Statistics, University of North Carolina, Chapel Hill, North Carolina, *Box 132, Chapel Hill, North Carolina.*

Cisin, Ira H., M.A. (American Univ.), Director of Research in Motivation, Morale and Leadership, Human Resources Research Office, George Washington University, 2013 G Street N.W., Washington, D. C.

Colton, Theodore, B.A. (Brooklyn College), Graduate Student, Institute of Statistics, University of North Carolina, Chapel Hill, North Carolina.

Coons, Irma J., B.S. (Harding College), Graduate Student, Iowa State College, Ames, Iowa, *Bevier House, Iowa State College, Ames, Iowa.*

Davis, Don Allen, B.A. (Western Washington College of Education), Teaching Assistant, University of Washington, Seattle 5, Washington, *3748½ University Way, Seattle 5, Washington.*

Dillon, Thaddeus, III, M.S. (John Carroll Univ.), Instructor in Mathematics, John Carroll University, Cleveland 18, Ohio.

Doan, Elizabeth, A.B. (Oberlin College), Graduate Student in Mathematical Statistics, University of North Carolina, Chapel Hill, North Carolina, *Kenan Dormitory, Chapel Hill, North Carolina.*

Doto, Irene L., M.A. (Temple Univ.), Instructor, Temple University, Broad Street and Montgomery Avenue, Philadelphia 22, Pennsylvania, *5949 Nassau Road, Philadelphia 31, Pennsylvania.*

Ecimovic, Juraj P., diploma (Faculty of Economics, Zagreb), Expert on Statistical Sampling in Agriculture of the Food and Agriculture Organization of the United Nations, Technical Assistance Mission to Indonesia, Djakarta, Djalan, Hajam Wuruk 6, Indonesia.

Ferguson, Barbara June, B.S. (Univ. of Washington), Graduate Student, Mathematics Department, University of Washington, Seattle, Washington, *2736 60th Avenue, S.W., Seattle 6, Washington.*

Frankmann, Raymond W., A.B. (Harvard Univ.), Graduate Student, Department of Psychology, Indiana University, Bloomington, Indiana.

Free, Spencer M., Jr., Ph.D., (North Carolina State College), Research Statistician, Smith Kline & French Laboratories, 1530 Spring Garden Street, Philadelphia 1, Pennsylvania.

Gart, John J., B.S. (DePaul Univ.), Graduate Assistant, Mathematics Department, Marquette University, Milwaukee 3, Wisconsin, *4925 N. Hamilton Avenue, Chicago 25, Illinois.*

Goen, Richard L., B.S. (Univ. of Washington), Graduate Student and Teaching Fellow, University of Washington, Seattle 5, Washington, *4407 Densmore, Seattle 3, Washington.*

Hudson, John B., B.A. (Univ. of Oregon), Graduate Student and Research Assistant, Department of Sociology, University of Washington, Seattle 5, Washington.

Imhof, Jean Pierre, Licence ès Sciences Mathematiques (Univ. of Geneva, Switzerland), Graduate Student, University of California, Berkeley, California, *2310 Ellsworth Apt. 1, Berkeley 4, California.*

Iqbal, M., M.A. (Panjab Univ., Lahore, Pakistan), Senior Lecturer in Statistics, Panjab University, Lahore, Pakistan, *Statistics Department, University of North Carolina, Chapel Hill, North Carolina.*

Jerger, James F., M.A. (Northwestern Univ.), Research Audiologist, Northwestern University, Evanston, Illinois, Hearing Clinic, Speech Annex Building, Northwestern University, Evanston, Illinois.

Jones, Lawrence, B.S. (Denison Univ.), Graduate Student, Statistics Department, Iowa State College, Ames, Iowa, *2010 McCarthy Road, Ames, Iowa.*

Kelley, H. Paul, M.A. (Princeton Univ.), Psychometric Fellow, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

Krakowski, Martin, Ph. D. (Carnegie Inst. of Tech.), Research Mathematician, California Research Corporation, P. O. Box 446, LaHabra, California.

Krueger, William D., B.B.A. (Western Reserve Univ.), Market Analyst, Harris-Seybold Company, 4510 East 71st Street, Cleveland 5, Ohio.

Kudō, Hirokichi, Rigakushi (Tokyo Univ.), Assistant Professor of Mathematics, Ochanomizu University, Department of Mathematics, Ootsukamachi, Bunkyo-ku, Tokyo, Japan.

Lancaster, Henry Oliver, Ph.D. (Univ. of Sydney), Lecturer in Medical Statistics, School of Public Health and Tropical Medicine, University Post Office, Sydney, Australia.

Lehman, Eugene, H., Jr., M.A. (Teachers College Columbia Univ., Graduate Student in Mathematical Statistics and Research Assistant in Statistics, Highway Cost Allocation Project, Civil Engineering Department, University of Washington, Seattle 5, Washington, *3408 Goldendale Place, Union Bay Villege, University of Washington, Seattle 5, Washington*.

Lemus, Ferdinand, B.A. (Michigan State Normal College), Graduate Student in statistics at Iowa State College, Ames, Iowa.

McKean, Harlley E., M.S. (Purdue Univ.), Research Assistant, Purdue University, Lafayette, Indiana, *5-4 Ross-Ade Drive, West Lafayette, Indiana*.

Maggio, Ralph A., A.B. (Boston Univ.), Graduate Student, Applied Statistics, Rutgers University, New Brunswick, New Jersey, *Apartment 42-A, Codrington Apartments, Bound Brook, New Jersey*.

Meshadani, Mahmoud H., M.S. (Iowa State College), Graduate Student, Iowa State College, Ames, Iowa, *44d/57 Jami Atta, Baghdad, Iraq*.

Miller, Clark T., M.A. (Univ. of Wisconsin), Graduate Student, Department of Mathematics, University of Wisconsin, Madison 6, Wisconsin, *1553 Adams Street, Madison 5, Wisconsin*.

Moser, Joseph M., B.A. (St. John's Univ.), Graduate Student and Assistant Instructor, St. Louis University, St. Louis 3, Missouri, *359 N. Whittier Street, St. Louis 8, Missouri*.

Na Nagara, Prasert, M.S. (Cornell Univ.), Graduate Student, Cornell University, Ithaca, New York, *107 Harvard Place, Ithaca, New York*.

Noel, Lionel M., B.S. (U.S. Naval Academy), Lieutenant, U. S. Navy, Washington, D. C., *413-A Devereux Avenue, Princeton, New Jersey*.

Page, Ewan S., M.A.(Cantab.), Lecturer in Mathematical Statistics, *55 Stanley Drive, Leicester, England*.

Peterson, Henry H., B.S. (Univ. of Washington), Graduate Student and Teaching Assistant, University of Washington, Seattle, Washington, *8336 32nd Avenue, N.W., Seattle 7, Washington*.

Porter, Lee Burton, MBA (Univ. of Michigan), Actuarial Assistant, North Carolina Mutual Life Insurance Company, P. O. Box 201, Durham, North Carolina.

Richardson, Jack M.S. (Northwestern Univ.), Graduate Student, Psychology Department, Northwestern University, Evanston, Illinois.

Salveson, Melvin E., Ph.D. (Univ. of Chicago), Procedures Research Manager, Major Appliance Division, General Electric Company, Appliance Park, Louisville 1, Kentucky.

Schwartz, Lorraine, B.A. (Univ. of California), Research Assistant, Statistical Laboratory, University of California, Berkeley, California, *2208 Bancroft Way, Berkeley 4, California*.

Shapiro, Marvin, B.A. (Cornell Univ.), Graduate Student, Columbia University, New York 27, New York, *3202 Cleveland Avenue, Niagara Falls, New York*.

Sheldahl, Loren R., B.A. (Iowa State Teachers College), Instructor, School of Public Health, University of Minnesota, Minneapolis 14, Minnesota.

Soto-Alarcon, Jose L., B.S. (Univ. of Puerto Rico), Graduate Student, The Johns Hopkins University, 615 N. Wolfe St., Baltimore 5, Maryland.

Strehler, Allen F., Ph.D. (Univ. of Wisconsin), Head, Department of Mathematics, The Lovelace Foundation for Medical Education and Research, 4800 Gibson Boulevard, S.E., Albuquerque, New Mexico.

Takano, Kinsaku, Rigakushi (Faculty of Science, Osaka Univ.), Member of the Institute of Statistical Mathematics, *No. 203 Tóei Apartments, 1548 Hatagaya-Nakamachi, Shibuya-ku, Tokyo, Japan.*

Tamargo, M. A., M.S. (Louisiana State Univ.), Head of the Grain & Root Crop Bureau (Acting Chief Statistics Department, Fiber Coop. Commission, Agricultural Experiment Station, Santiago Vegas, Cuba), Ministerio de Agricultura, Havana, Cuba, *Linea 656 altos ent. A y B, Vedado-Havana, Cuba.*

Taylor, Howard L., M.S. (Iowa State College), Associate and Student, Statistical Laboratory, Iowa State College, Ames, Iowa, *1323 Carroll Avenue, Ames, Iowa.*

Tucker, Thomas F., M.B.A. (Univ. of Pennsylvania, Wharton School), Assistant Actuary, Commonwealth of Pennsylvania, Insurance Department, 600 Packard Building, Philadelphia 2, Pennsylvania.

Van Der Bÿl, Willem, Doctor (State Univ. of Utrecht, Netherlands), Research Associate KNMI, Koninklÿk Nederlands Meteorologisch Instituut, KNMI, DeBilt, Netherlands.

Van Natta, Pearl A. (Mrs. E.A.), M.A. (Univ. of Oregon), Research Assistant in Mathematical Statistics, University of Oregon, Eugene, Oregon.

Weber, Donald C., M.S. (Univ. of Wisconsin), Instructor in Mathematics, North Dakota Agricultural College, State College Station, Fargo, North Dakota, *414 S. Seventh Avenue, Wausau, Wisconsin.*

Weigel, E. Charles, B.S. (Rutgers Univ.), Accountant, Harry Rubenstein, C.P.A., 313 State Street, Perth Amboy, New Jersey, *423 Compton Avenue, Perth Amboy, New Jersey.*

Wertz, Frederick E., B.S. (Manhattan College), Graduate Student, Rutgers University, New Brunswick, New Jersey, *121 West 69th Street, New York 23, New York.*

White, Robert F., M.S. (Univ. of Connecticut), Graduate Assistant and Student, Iowa State College, Statistical Laboratory, Ames, Iowa.

Witeck, Eugene F., B.S. (Marquette Univ.), Graduate Student, University of Washington, Seattle, Washington, *8335 13th Avenue, N.W., Seattle 7, Washington.*

Young, Gregory O., M.S. (California Inst. of Tech.), Research Engineer, Technical Staff, Hughes Aircraft Company, Department 04, Culver City, California.

Zastrow, Marvin C., B.S. (Wisconsin State College), Graduate Assistant in mathematics, Marquette University, Milwaukee, Wisconsin, *1901 S. 24th Street, Milwaukee 4, Wisconsin.*

REPORT OF THE MONTREAL MEETING OF THE INSTITUTE

The sixteenth summer meeting, 62nd meeting of the Institute of Mathematical Statistics was held in Montreal, Canada, September 10–13, 1954. Other organizations meeting in Montreal at the same time were the American Statistical Association, the Econometric Society, the American Society for Quality Control (Montreal Section), and the Biometric Society (Eastern North American Region). On the evening of September 10, the City of Montreal held a reception for the members of the societies, and on the evening of September 11, there was an informal party for the members of the societies.

The following 199 members of the Institute registered for the meeting:

Helen Abbey, R. L. Anderson, F. J. Anscombe, K. J. Arnold, J. C. Bain, J. D. Bankier, R. Bechhofer, C. A. Bennett, J. Berkson, C. A. Bicking, C. I. Bliss, I. Blumen, R. C. Bose,

A. H. Bowker, R. A. Bradley, A. E. Brandt, R. Brickley, S. H. Brooks, R. W. Burgess, P. J. Burke, I. W. Burr, L. D. Calvin, A. G. Carlton, D. G. Chapman, A. Charnes, H. Chernoff, C. W. Churchman, A. G. Clark, W. G. Cochran, A. C. Cohen, Jr., E. L. Cox, Gertrude M. Cox, J. H. Curtiss, C. Daniel, G. B. Dantzig, R. B. Dawson, Jr., B. B. Day, A. De la Garza, F. Del Priore, D. B. DeLury, W. E. Deming, L. Derrick, J. L. Dobby, T. Donnelly, J. E. Dowd, J. R. Duffett, A. J. Duncan, D. B. Duncan, C. W. Dunnett, G. L. Edgett, C. Eisenhart, B. Epstein, J. W. Fertig, D. Fraser, J. E. Freund, Kathryn Froelich, L. Gerende, R. Goodman, C. H. Goulden, M. H. Gourary, F. Graybill, B. G. Greenberg, S. W. Greenhouse, L. Gunlogson, P. Gunther, M. Gurney, I. Guttman, R. K. Haddad, R. J. Hader, K. W. Halbert, M. Halperin, J. F. Hannan, M. H. Hansen, G. W. Brier, G. M. Harrington, B. Harris, B. Harshbarger, H. L. Harter, L. H. Herbach, G. R. Herd, W. Hoeffding, R. G. Hoffman, P. G. Homeyer, W. C. Hood, L. H. Hook, W. H. Horton, H. Hotelling, E. E. Houseman, C. J. Hoyt, J. F. Hudson, J. S. Hunter, P. Irick, J. E. Jackson, Carol M. Jaeger, H. L. Jones, M. Kac, L. Katz, Harriet J. Kelly, N. Keyfitz, A. W. Kimball, B. F. Kimball, E. P. King, C. J. Kirchen, L. Kish, K. H. Kramer, W. Kruskal, R. B. Ladd, R. O. Laine, T. A. Lamke, F. C. Leone, R. Lessard, G. J. Lieberman, R. Likert, B. Lipstein, S. B. Littauer, G. F. Lunger, C. J. Maloney, J. Mandel, E. S. Marks, R. H. Matthias, J. W. Mauchly, P. Meier, Margaret Merrell, W. J. Merrill, H. A. Meyer, R. Mirsky, S. Monro, C. B. Moore, R. Moore, M. Morrison, N. Morse, J. Moshman, G. E. McCreary, Horace W. Norton, James A. Norton, Jr., G. E. Noether, F. G. Cornell, G. E. Nicholson, Jr., Ingram Olkin, E. G. Olds, Robert E. Odeh, W. R. Pabst, Jr., Boyd Z. Palmer, W. E. Patte, A. E. Paull, E. W. Pike, Howard Raiffa, Mrs. L. K. Randolph, J. S. Rhodes, Robert Roeloffs, John H. Roseboom, H. M. Rosenblatt, Joan R. Rosenblatt, Murray Rosenblatt, Irving Roshwalb, S. N. Roy, Jacques St. Pierre, Daniel E. Sands, A. E. Sarhan, F. E. Satterthwaite, Henry Scheffé, Marvin Schneiderman, H. L. Seal, Daniel Seigel, Richard H. Shaw, Loren R. Sheldahl, David Sheppard, Walt R. Simmons, H. F. Smith, Walter Smuk, Herbert Solomon, Paul N. Somerville, F. F. Stephan, David S. Stoller, Hale C. Sweeney, Nancy Symons, Donovan J. Thompson, W. A. Thompson, Jr., William R. Thompson, Leo J. Tick, John W. Tukey, Charles R. M. Tuttle, G. W. Tyler, W. Vander Byl, D. F. Votaw, Jr., A. J. Wadman, John R. Walter, Lionel Weiss, Samuel Weiss, John S. White, Alfred G. Whitney, William Wolman, Max A. Woodbury, R. Wormleighton, A. W. Wortham, W. J. Youden, Samuel Zahl, Marvin Zelen, George Zyskind.

The Program was as follows:

FRIDAY, SEPTEMBER 10, 1954

10:00 a.m. Theory of Sampling Fish Populations (Cosponsored by A.S.A. and Biometric Society)

Chairman: D. B. DeLury, Ontario Research Foundation
Papers: 1. *Combined Estimation Methods in Sampling Fish Populations*, D. G. Chapman, University of Washington
       2. *Some Admissible Tag-Recapture Procedures*, D. S. Robson, Cornell University
Discussion: E. L. Cox, Case Institute of Technology

3:00 p.m. The Joint Effects of Reading Errors and Grouping on Standard Methods of Statistical Inference. (Invited address). (Cosponsored by A.S.A. and Biometric Society)

Chairman: R. L. Anderson, North Carolina State College
Speaker: Churchill Eisenhart, National Bureau of Standards

4:00 p.m.   **Multiple Comparison and Multiple Decision Procedures. (Cosponsored by A.S.A. and Biometric Society)**

Chairman: John W. Tukey, Princeton University
Papers: 1. *A Survey of Multiple Comparison Procedures*, Jerome Cornfield, National Institute of Health
           2. *A Survey of Multiple Decision Procedures*, Robert Bechhofer, Cornell University
Discussion: R. C. Bose, North Carolina State College and W. G. Cochran, Johns Hopkins University

7:15 p.m.   **Council Meeting**

SATURDAY, SEPTEMBER 11, 1954

10:30 a.m.   **Invited Addresses (Cosponsored by Econometric Society)**

Chairman: Howard Raiffa, Columbia University
Papers: 1. *Estimation of the Components of Stochastic Structures*, J. Wolfowitz, Cornell University
           2. *Nonparametric Large Sample Theory*, Wassily Hoeffding, University of North Carolina. Special invited address.

2:00 p.m.   **Contributed Papers I**

Chairman: G. Lieberman, Stanford University
Papers: 1. *On Quadratic Estimates of Variance Components in Balanced Models*, A. W. Wortham, Chance Vought Aircraft and Oklahoma A and M College
           2. *The coefficients in the Best Linear Estimate of the Mean in Symmetric Populations*, A. E. Sarhan, University of North Carolina
           3. *Distribution of Linear Contrasts of Order Statistics*, Jacques St. Pierre, University of North Carolina
           4. *Note on Fourier Periodogram Analyses of Time Series*, B. F. Kimball, New York State Public Service Commission
           5. *Univariate Two-Population Distribution-Free Discrimination*, David S. Stoller, Rand Corporation
           6. *New Types of Easily Constructed Partially Balanced Incomplete Block Designs*, John Mandel and Marvin Zelen, National Bureau of Standards
           7. *The Stochastic Convergence of a Function of Sample Successive Differences*, Lionel Weiss, University of Virginia
           8. *On a Modified T^2 Problem*, Ingram Olkin, Michigan State College and S. S. Shrikhande, College of Science, Nagpur
           9. *The Validity of Sheppard's Corrections for Grouping*, F. J. Anscombe, University of Cambridge and Princeton University
          10. *Unbiased Tests Based on Unbiased Estimators*, Reed B. Dawson, Department of Defense
          11. *The Mean Square Error of the Sample Median*, Harold Hotelling, University of North Carolina
          12. *The Moments of the Sample Median*, J. T. Chu and Harold Hotelling, University of North Carolina
          13. *Distribution of the Largest Vote in Unstructured Random Balloting*, Leo Katz, Michigan State College

14. *Statistical Programming*, D. F. Votaw, Jr., Yale University
15. *Exact Tests of Significance for Combining Inter- and Intra-Block Information in Incomplete Block Designs (Preliminary Report)* (By title), Marvin Zelen, National Bureau of Standards
16. *Moments and Related Quantities of the Null Distribution of Linear Contrasts of Order Statistics in the Case of Three Populations* (By title), Jacques St. Pierre, University of North Carolina.
17. *Application of Faà di Bruno's Formula in Mathematical Statistics* (By title), Eugene Lukacs, Office of Naval Research.
18. *On Simultaneous Minimax Point Estimation* (By title), Waldo A. Vezeau and Koichi Ito, St. Louis University
19. *Estimation of Structural Parameters when the Number of Incidental Parameters is Unbounded* (By title), J. Wolfowitz, Cornell University
20. *On Power Properties of Certain Simultaneous Tests* (By title), K. V. Ramachandran, University of North Carolina.
21. *On Tests of Normality and Other Tests of Goodness of Fit Based on Distance Methods* (By title), M. Kac, J. Kiefer, and J. Wolfowitz, Cornell University
22. *Tolerance Regions* (By title), D. A. S. Fraser and I. Guttman, University of Toronto.

SUNDAY, SEPTEMBER 12, 1954

12:00 noon. Council Meeting

2:00 p.m. Contributed Papers II

Chairman: Roger Lessard, Ecole Polytechnique de Montreal
Papers:
1. *Comparison of the Power of Nonparametric Two Sample Tests against Normal Alternatives*, Benjamin Epstein, Wayne University
2. *On the Distribution of Radial Errors Having Normally Distributed Components*, A. C. Cohen, Jr., University of Georgia
3. *Confidence Bounds on Departures from a Particular Kind of Multi-Collinearity of Means*, S. N. Roy, University of North Carolina
4. *The Efficiency of Tests*, Wassily Hoeffding and Joan R. Rosenblatt, University of North Carolina
5. *On a Decision Procedure to Select the Population with the Largest Mean (Preliminary Report)*, R. C. Bose and Jacques St. Pierre, University of North Carolina
6. *Most Economical Multiple-Decision Rules* (By title), William Jackson Hall, University of North Carolina

4:00 p.m. Business Meeting

MONDAY, SEPTEMBER 13, 1954

8:30 a.m. Computing Techniques (Cosponsored by Econometric Society)

Chairman: George B. Dantzig, The Rand Coporation
Papers:
1. *Linear Programming on the I.B.M. 701*, Kurt Eisemann, International Business Machines Corp.
2. *Recent Extensions and Revisions of the Simplex Method*, William Orchard-Hays, The Rand Corporation
3. *Separable Convex Functionals and Generalized Simplex Methods*, C. E. Lemke and A. Charnes, Carnegie Institute of Technology
Discussion: Alan J. Hoffman, U.S. Department of Commerce

10:30 a.m.   **Biological Cycles (Cosponsored by A.S.A., Biometric Society, and Econometric Society)**

Chairman: J. W. Hopkins, National Research Council (Canada)
Papers: 1. *Population Dynamics*, D. A. MacLulich, Royal Canadain Air Force
              2. *Statistical Problems and Techniques in Population Cycle Analysis*, Mark Kac, Cornell University
Discussion: D. B. DeLury, Ontario Research Foundation

LIONEL WEISS
Associate Secretary

MINUTES OF MEMBERSHIP MEETING, SEPTEMBER 12, 1954

A business meeting was called to order at 4:10 P.M., September 12, 1954 in the Sheraton Mount Royal Hotel, Montreal, P.Q. by President E. G. Olds. About 55 members were present.

The Secretary read the minutes of the Annual Meeting of December 29, 1953.[1] The minutes were approved as read.

The Secretary moved, on behalf of 43 members of the Institute, the adoption of the following amendment to the Bylaws:

"All meetings of the Institute shall be held on the basis of no racial segregation. In particular, prior to determining the place of a forthcoming meeting the Secretary of the Institute shall ascertain that meeting halls, eating facilities, and housing accommodations adequate for the expected attendance shall be available on a nonsegregated basis, and that all social events connected with the meeting shall be nonsegregated."

The Secretary then moved, on behalf of 31 members of the Institute, the substitution of the following amendment for the one given immediately above:

"It is the policy of the Institute of Mathematical Statistics that all its meetings shall be held on a completely nonsegregated basis. In particular, prior to determining the place of a forthcoming meeting, the Secretary of the Institute of Mathematical Statistics shall ascertain that meeting halls and eating facilities adequate for the expected attendance will be available on a nonsegregated basis and that all social events connected with the meetings shall be nonsegregated. Every effort shall be made to provide nonsegregated housing accommodations consistent with the laws of the locality of a forthcoming meeting."

The President announced that members present would be asked to vote on the same ballot forms as used by those voting by mail and called for discussion of both questions. There was no discussion. Ballots were collected and the tellers retired to count the ballots. After adjournment of the meeting the results of the balloting were posted as follows: 575 ballots were cast. On the question of substituting the second amendment above for the first, 126 voted "yes," 437 voted "no," 12 ballots contained no vote on the question. The next vote was therefore on the adoption of the first amendment above. On this question 311 voted "yes,"

[1] Published in the *Annals*, Vol. 25 (1954) pp. 191–193.