DRXRO-MA 24 June 1981

Professor Herbert A. David
Director and Head
Department of Statistics
Iowa State University
Ames, Iowa 50011

Dear Prof. David:

Mr. Philip G. Rust of Thomasville, Georgia, recently donated the sum of $10,000 to the U.S. Army. The proceeds of this gift will be used to establish an annual award in the form of an honorarium to a statistician for "contributions to the advancement of scientific or technical knowledge in Army statistics, ingenious applications of such knowledge, or successful activity in the fostering of cooperative scientific matters which coincidentally benefit the Army, the Department of Defense, the U.S. Government, and our country generally." The title of the new award is "The Wilks Award for Outstanding Contributions to Statistical Methodologies in Army Research, Development and Testing."

Mr. Rust has entrusted the Army Mathematics Steering Committee (AMSC) with coordinating the selection process and the presentation of this second Wilks Memorial Award at one of its meeting, namely, the annual Design of Experiments Conference. I was quite pleased to hear from Dr. Robert Launer that you have agreed to serve on the first Selection Committee for this award. We are sincerely interested in maintaining the highest level of professionalism in this new Wilks award. Your participation on the committee will help us achieve this goal.

Dr. Launer will contact you in the near future with details on how the Selection Committee will function. Once again, I am pleased and honored that you have accepted our invitation.

Sincerely,

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

DRXRO-MA

24 June 1981

Professor John W. Tukey
Department of Statistics
Princeton University
Princeton, NJ 08540

Dear Prof. Tukey:

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Sincerely,

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

DRXRO-MA 26 June 1981

Commander
US Army Materiel Systems Analysis
Activity
ATTN: DRXSY-RM (Dr. Larry Crow)
Aberdeen Proving Ground, MD 21005

Dear Larry:

As you know, the Army Mathematics Steering Committee has been extended the opportunity of coordinating a second Wilks Award. There have been some trying moments over the past several months, but I feel that we have now completed the arrangements satisfactorily. There remains the approval of the Secretary of the Army.

I recently received written and oral reassurance from Mr. Philip G. Rust, the donor of the endowment for both Wilks awards, that he feels that the Army Mathematics Steering Committee is the appropriate agency for administering the new award. (Encl 1 and 2). The new award is supposed to specifically cite service to the Army or DoD as well as contributions to the field of statistics.

The Selection Committee for the first "Wilks Award for Outstanding Contributions to Statistical Methodologies in Army Research, Development and Testing" have been invited to participate and all have agreed to serve. The committee consists of the following:

Gerald Andersen, DARCOM
H. A. David, Iowa State University
Robert Launer, ARO, Chairman
Douglas Tang, WRAIR
John Tukey, Princeton University

I urge each of you to send nominations to the committee chairman. Any information about the nominee's service to the U. S. Army and DoD would be very helpful to the committee in making its choice. We want to present the first award at this year's Design of Experiments Conference, so please, don't wait too long.

Sincerely,

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

Encls
1. Letter from Rust
2. Letter to Rust

DRXRO-MA 26 June 1981

Director
Ballistic Research Laboratory
ATTN: DRDAR-BLB (Dr. Stephen Wolff)
Aberdeen Proving Ground, MD 21005

Dear Steve:

As you know, the Army Mathematics Steering Committee has been extended the opportunity of coordinating a second Wilks Award. There have been some trying moments over the past several months, but I feel that we have now completed the arrangements satisfactorily. There remains the approval of the Secretary of the Army.

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Sincerely,

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

Encls
1. Letter from Rust
2. Letter to Rust

DRXRO-MA

26 June 1981

Mr. Carl B. Bates
Math Stat Team, CSCA-MCT
US Army Concepts Analysis Agency
8120 Woodmont Avenue
Bethesda, MD 20014

Dear Mr. Bates:

As you know, the Army Mathematics Steering Committee has been extended the opportunity of coordinating a second Wilks Award. There have been some trying moments over the past several months, but I feel that we have now completed the arrangements satisfactorily. There remains the approval of the Secretary of the Army.

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Sincerely,

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Chairman, Army Mathematics
Steering Committee

Encls
1. Letter from Rust
2. Letter to Rust

DRXRO-MA 26 June 1981

Director
Ballistic Research Laboratory
ATTN: DRDAR-BLB (Dr. Malcolm Taylor)
Aberdeen Proving Ground, MD 21005

Dear Dr. Taylor:

As you know, the Army Mathematics Steering Committee has been extended the opportunity of coordinating a second Wilks Award. There have been some trying moments over the past several months, but I feel that we have now completed the arrangements satisfactorily. There remains the approval of the Secretary of the Army.

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2. Letter to Rust

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

DRXRO-MA 26 June 1981

Commander
HQS, US Army Materiel Development
and Readiness Command
ATTN: Dr. Gerald Andersen
5001 Eisenhower Avenue
Alexandria, VA 22333

Dear Jerry:

As you know, the Army Mathematics Steering Committee has been extended the opportunity of coordinating a second Wilks Award. There have been some trying moments over the past several months, but I feel that we have now completed the arrangements satisfactorily. There remains the approval of the Secretary of the Army.

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2. Letter to Rust

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

DRXRO-MA 26 June 1981

Dr. Walter D. Foster
Armed Forces Institute of Pathology
Room M-127
Washington, DC 20306

Dear Wally:

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Encls
1. Letter from Rust
2. Letter to Rust

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

DRXRO-MA 26 June 1981

Dr. Douglas B. Tang
Chief, Department of Biostatistics/
Applied Math
Division of Biometrics & Medical
Info Processing
Walter Reed Army Institute of Research
Washington, DC 20012

Dear Doug:

As you know, the Army Mathematics Steering Committee has been extended the opportunity of coordinating a second Wilks Award. There have been some trying moments over the past several months, but I feel that we have now completed the arrangements satisfactorily. There remains the approval of the Secretary of the Army.

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Sincerely,

Encls
1. Letter from Rust
2. Letter to Rust

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

DRXRO-MA 26 June 1981

Commander
US Army Natick Research and Development
Laboratories
ATTN: DRDNA-ZSA
Dr. Edward W. Ross, Jr.
Natick, MA 01760

Dear Ed:

As you know, the Army Mathematics Steering Committee has been extended the opportunity of coordinating a second Wilks Award. There have been some trying moments over the past several months, but I feel that we have now completed the arrangements satisfactorily. There remains the approval of the Secretary of the Army.

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Sincerely,

Encls
1. Letter from Rust
2. Letter to Rust

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

SELECTION COMMITTEE GROUND RULES

a) Nominees for the new Wilks award may be accepted from anyone at anytime by any committee member. The names and all accompanying information should be forwarded to the committee chairman by August 1 of each year.

b) It is the responsibility of the person making the nomination to furnish the nature and extent of the contributions of the nominee. It is anticipated that this information will be known by the committee in the vast majority of cases. The committee will not be held accountable however, for obtaining this information. This does not preclude a member from doing so, nor does this imply that a member may not make nominations for the award.

c) Individuals while serving as committee members will not be considered for the new Wilks award.

d) The committee chairman is responsible for circulating the names and all pertinent information which he receives relating to the nominations to each committee member by August 15. Each committee member should deliberate privately and forward his or her vote to the chairman by September 1. The results will be circulated to the committee unless any member requests that his vote be kept in confidence.

e) Each member of the committee should vote for three nominees in a priority order; first, second, and third place.

The winner will be determined by first place votes. If this results in a tie, then those tied names will be compared with the vote count extended to first and second place votes. If this results in a tie, the second round winners will be compared with the vote count extended to first, second, and third place votes. If this results in a tie, then the chairman of the AMSC will cast the deciding vote.

f) The committee chairman will inform the chairman of the AMSC at least 30 days prior to the Design of Experiments Conference so that the travel arrangements for the winner to the conference can be completed and so that the winner's check can be prepared.

DRXRO-MA
Dr. Douglas B. Tang

6 August 1981

Please attempt to send your votes by 1 September 1981. With 10 nominees and 5 voters on the committee, we might have problems with a tie vote, even with the chairman of the AMSC voting! If that happens, I'll contact you by telephone.

Thanks for your patience and participation.

Sincerely,

ROBERT L. LAUNER
Mathematics Division

Inclosures
As stated

GROUND RULES AND GUIDELINES FOR THE SELECTION COMMITTEE FOR

THE WILKS AWARD FOR CONTRIBUTIONS TO STATISTICAL METHODOLOGIES IN ARMY RESEARCH, DEVELOPMENT, AND TESTING

July 1981

COORDINATED BY

THE ARMY MATHEMATICS STEERING COMMITTEE

BACKGROUND

A new Wilks award for contributions to Army Statistical Methodology has been established by a gift of $10,000 from Mr. Phillip G. Rust of Thomasville, Georgia on December 31, 1980. This award is to commemorate the late Professor Samuel S. Wilks and was given with the following conditions.

a) The new Wilks award must be presented at the annual Army Design of Experiments Conference.

b) The title of the award must contain the word Army and the name Wilks.

c) The award is to be given to an individual for contributions to statistical methodologies in Army research, development, and testing.

The Army Mathematics Steering Committee (AMSC) has accepted the responsibility of administering this gift. In its semiannual meeting of May 1-2, 1981 the AMSC decided to form a selection committee so that the first award could be presented at the 1981 Design of Experiments Conference. The following selection committee guidelines were adopted.

1) The award should be called The Wilks Award for Contributions to Statistical Methodologies in Army Research, Development and Testing.

2) The award winner should be chosen by a majority vote of an ad hoc committee of 5 statisticians. The committee should consist of at least 2 statisticians from the Army community and at least 2 statisticians from academia, each serving for 2-year staggered terms. The initial committee should be appointed by the chairman of the AMSC. Thereafter, the subcommittee on Statistics and Probability shall annually nominate one new member. The winner of the award may replace one member of the selection committee for the following year. The chairman of the AMSC may act as a nonvoting chairman of the selection committee, or he may appoint a representative to act in his stead (voting or nonvoting).

3) The chairman of the selection committee should convene the selection committee early enough that the award can be made at the annual Design of Experiments Conference.

4) Nominations of candidates for the award may be forwarded to any member of the selection committee. Solicitations may also be made through announcement letters for the annual DOE conference, or any other appropriate method.

5) The chairman of the selection committee should serve as the coordinator of the honorarium, which should be in the form of a check made payable to the winner of the award.

The AMSC adopted the following statement as the official basis for the award.

"The Wilks Award is given each year to a statistician and is based primarily on his contributions to the advancement of scientific or technical knowledge in Army statistics, ingenious application of such knowledge, or successful activity in the fostering of cooperative scientific matters which coincidentally benefit the Army, the Department of Defense, the U. S. Government, and our country, generally."

DEPARTMENT OF THE ARMY
U. S. ARMY RESEARCH OFFICE
P. O. BOX 12211
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

REPLY TO ATTENTION OF:

DRXRO-MA

6 August 1981

Dr. Douglas B. Tang
Chief, Department of Biostatistics
Division of Biometrics
Walter Reed Army Institute of
Research
Washington, DC 20012

Dear Dr. Tang:

This package contains (proposed) ground rules and guidelines for the selection committee for the new Army Wilks award, the official list of nominees for the 1981 award and some background material for the nominees.

The ground rules are not proposed as a perfect, finished product. I would appreciate any suggestions for improving the rules, especially the part about breaking ties on the vote. After incorporating your ideas, I'll submit a finished product to the AMSC for approval for future use.

There are 10 nominees for the first annual award. Please choose a first place winner, a second choice for winner, and a third choice for winner. In other words, your second choice should reflect what your first place vote would have been if your first place choice were not in the list, etc. In the interest of time and efficiency, either call your votes in to me or Mrs. Duke of the Math Division, (919) 549-0641, or write the names on a piece of paper and put them in the inclosed addressed envelope. Let me know if you feel that the voting record should not be circulated among the committee members. I would prefer to make the vote known to at least one other person in case there is ever a question about vote counting, etc.

The basis for the award (bottom of pg. 1 of the "Ground Rules") is a little vague. Mr. Rust intended that the new Army Wilks award should primarily recognize contributions to statical methodologies which are used regularly in Army labs or which have contributed to the solution of a particularly important statistical problem in an Army lab. The accumulation of other cooperative scientific matters such as consulting, tutorials, committee work, etc., can also establish relevance to the Army or the DoD.

The background material is something which I put together with Francis Dressel's help except for the bio of Marion Bryson. This was sent in by the person who nominated him. If any of you have other pertinent information on these nominees, please circulate it or send it to me for circulation.

NEW WILKS AWARD NOMINEES

Prof. Robert Bechhofer, Cornell University

Dr. Marion Bryson, Scientific Advisor, Combat Experimental Command, Ft. Ord, CA

Prof. A. C. Cohen, University of Georgia

Prof. John Gurland, University of Wisconsin

Prof. Bernard Harris, University of Wisconsin

Prof. Boyd Harshbarger, VPI&SU (Retired)

Prof. J. Stuart Hunter, Princeton University

Prof. Badrig M. Kurkjian, University of Alabama

Dr. Clifford J. Maloney, Consultant, Bethesda, MD

Prof. Frank Proschan, Florida State University

DRXRO-MA

3 August 1981

Mr. Philip G. Rust
Winnstead Plantation
Route 3
Thomasville, GA 31792

Dear Mr. Rust:

Just a short note to keep you up to date. We have twelve nominations for the award - all are excellent. I plan to distribute the list to the committee members today.

The enclosed brochure is the "ground-rules and guidelines" pamphlet for the committee. If you find anything in this document which is contrary to your wishes, please let me know at your earliest convenience. If I don't hear from you, I will assume that everything in the pamphlet is satisfactory.

Sincerely,

Encl
As stated

ROBERT L. LAUNER
Mathematics Division

Name for Willis award.

FROM. DOUG. TANG.

MARION BRYSON
STU HUNTER
BERNIE HARRIS
BOB BECHHOFER
JEFF KURKJIAN
~~JOHN GURLAND~~

FROM. WALLY FOSTER

BOYD HARSHBARGER
JOHN GURLAND
H. A. DAVID.
F. DRESSEL
A. C. COHEN
CLIFF. MALONEY
FRANK PROSCHAN

NEW WILKS AWARD NOMINEES

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Prof. Frank Proschan, Florida State University

Background of Some of the Wilks Nominees

BECHHOFER

Methodology: Initiated the area of statistical methodology called Selection and Ranking with his 1945 paper on the indifference zone approach. Recently, solved a long-standing important problem at BRL involving the testing of kinetic energy penetrators. In doing so, he provided the optimal solution to the sequential binomial selection problem.

Interactions: Invited speaker at the 11th and the 20th Design of Experiments Conferences. Invited panelist at numerous DOE Conferences. Served as advisor to the Probability and Statistics subcommittee of the AMSC. Presented a 2-day short course at BRL in June 1978 on Selection and Ranking and a 3-day course at ARRADCOM in September 1978. Presented two seminars at BRL (1980, 81) on recent developments in S&R.

BRYSON

Interactions: Please see enclosed Biography.

COHEN

Methodology: Extensive work in life testing, especially in parametric estimation using censored samples.

Interactions: Invited speaker at 4th and 16th DOE. Also clinical panelist at many DOE conferences and advisor to P&S subcommittee. COORDINATOR FOR BRL D.O.E.

GURLAND

HARRIS

Methodology: Extensive work in statistical reliability. Author of text in probability. Recently developed new methodologies and optimality results for the long unsolved problem of confidence bounds for system reliability.

Interactions: Member of the MRC, University of Wisconsin, for approximately 15 years. Clinical panelist at numerous DOEs. Served as advisor to P&S subcommittee and advisor to the DoD Nuclear Systems Reliability committee. Invited speaker at ARO workshop in 1981.

HARSHBARGER

Interactions: Invited speaker at 6th DOE and invited panel chairman at 14th DOE. Invited panelist at other DOEs and advisor to P&S subcommittee.

HUNTER

Interactions: Invited speaker at 11th, 18th, and 22nd DOE and invited panelist at 6th DOE. Several years as advisor to the P&S subcommittee.

KURKJIAN

Interactions: Chief Mathematician of the Army for approximately 10 years. Coordinated many consulting and research activities in Army Labs. Clinical panelist at several DOEs and member of the P&S subcommittee.

MALONEY

Interactions: Chief of the Statistics Branch at Fort Detrick for many years. Invited speaker at the 15th DOE. Chairman of local arrangements for the 5th DOE. Member of the P&S subcommittee for very many years and clinical panelist for several DOEs. PRESENTED PAPER AT 2ND D.O.E. AND MANY OTHERS.

PROSCHAN

Methodology: Very active in research in reliability and life testing. Joint author with Barlow of two texts on Probabilistic and Statistical Aspects of Reliability. A third is to appear in 1981-82 on Data Analytic Methods in Life Testing. Spent two days on consulting trip at Watervliet Arsenal, which resulted in a fundamental contribution to gun tube life analysis. Paper published in Naval Research Logistics Quarterly on the subject.

Interactions: Invited speaker at 9th, 13th, and 19th DOEs. Invited speaker at ARO workshop in 1977 on reliability. See also consulting above.

DRXRO-MA 6 August 1981

Commander
HQ DARCOM
ATTN: DRCDE-P (Dr. Gerald Andersen)
5001 Eisenhower Avenue
Alexandria, VA 22333

Dear Jerry:

This package contains (proposed) ground rules and guidelines for the selection committee for the new Army Wilks award, the official list of nominees for the 1981 award and some background material for the nominees.

The ground rules are not proposed as a perfect, finished product. I would appreciate any suggestions for improving the rules, especially the part about breaking ties on the vote. After incorporating your ideas, I'll submit a finished product to the AMSC for approval for future use.

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DRXRO-MA
Dr. Gerald Andersen

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Thanks for your patience and participation.

Sincerely,

Inclosures
As stated

ROBERT L. LAUNER
Mathematics Division

DRXRO-MA 6 August 1981

Professor Herbert A. David
Head, Statistics Department
Iowa State University
Ames, IA 50011

Dear Herb:

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DRXRO-MA 6 August 1981
Professor Herbert A. David

Please attempt to send your votes by 1 September 1981. With 10 nominees and 5 voters on the committee, we might have problems with a tie vote, even with the chairman of the AMSC voting! If that happens, I'll contact you by telephone.

Thanks for your patience and participation.

Sincerely,

Inclosures
As stated

ROBERT L. LAUNER
Mathematics Division

DRXRO-MA

6 August 1981

Professor John W. Tukey
Department of Statistics
P. O. Box 37
Princeton University
Princeton, NJ 08540

Dear John:

This package contains (proposed) ground rules and guidelines for the selection committee for the new Army Wilks award, the official list of nominees for the 1981 award and some background material for the nominees.

The ground rules are not proposed as a perfect, finished product. I would appreciate any suggestions for improving the rules, especially the part about breaking ties on the vote. After incorporating your ideas, I'll submit a finished product to the AMSC for approval for future use.

There are 10 nominees for the first annual award. Please choose a first place winner, a second choice for winner, and a third choice for winner. In other words, your second choice should reflect what your first place vote would have been if your first place choice were not in the list, etc. In the interest of time and efficiency, either call your votes in to me or Mrs. Duke of the Math Division, (919) 549-0641, or write the names on a piece of paper and put them in the inclosed addressed envelope. Let me know if you feel that the voting record should not be circulated among the committee members. I would prefer to make the vote known to at least one other person in case there is ever a question about vote counting, etc.

The basis for the award (bottom of pg. 1 of the "Ground Rules") is a little vague. Mr. Rust intended that the new Army Wilks award should primarily recognize contributions to statical methodologies which are used regularly in Army labs or which have contributed to the solution of a particularly important statistical problem in an Army lab. The accumulation of other cooperative scientific matters such as consulting, tutorials, committee work, etc., can also establish relevance to the Army or the DoD.

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DRXRO-MA

6 August 1981

Professor John W. Tukey

Please attempt to send your votes by 1 September 1981. With 10 nominees and 5 voters on the committee, we might have problems with a tie vote, even with the chairman of the AMSC voting! If that happens, I'll contact you by telephone.

Thanks for your patience and participation.

Sincerely,

Inclosures
As stated

ROBERT L. LAUNER
Mathematics Division

VITA OF ROBERT BECHHOFER

Name: Robert E. Bechhofer

Born: March 11, 1919

Education: A.B. (Mathematics and Statistics), Columbia College, 1941
Ph.D. (Mathematical Statistics), Columbia University, 1951

Professional Experience:

1941-45 Statistician, Asst. Chief of Analytical Section, Arms & Ammunition Division, Aberdeen Proving Ground, Maryland

1951-52 Assistant Professor, Dept. of Industrial Engineering, Columbia Univ., New York

1953-57 Associate Professor, Dept. of Industrial Engineering, Cornell Univ., Ithaca, New York

1958-59 Visiting Professor and Research Associate, Stanford Medical School and Dept. of Statistics, respectively, Stanford University, Stanford, California

1963-64 Cornell Aeronautical Laboratories Professor, Cornell Aeronautical Laboratories, Buffalo, New York

1957-67 Professor, Department of Industrial Engineering and Operations Research, Cornell University

1966-67 Visiting Professor, Statistical Laboratory, University of Cambridge, England

1973-74 Visiting Professor, Dept. of Management Science and Dept. of Mathematics, Imperial College of Science and Technology, London, England

1967-75 Professor and Chairman, Dept. of Operations Research, Cornell University

1975-77 Professor and Director, School of Operations Research and Industrial Engineering, Cornell University

1977-present
Professor, School of Operations Research and Industrial Engineering, Cornell University

Membership on Federal Government Public Advisory Committees:

1. Member (3-yr. term) on the Committee on Applied & Theoretical Statistics, National Research Council.

2. Member (3-yr. term) on Conference Board of Mathematical Sciences Regional Conferences Panel.

Additional Activities:

Co-organizer of and participant in (along with J.D. Gibbons, S.S. Gupta, and I. Olkin) the 1979 Annual Meeting Short Course on "Selecting and Ordering Populations" sponsored by the American Statistical Association in Washington, D.C., August 11-12, 1979. Video tapes of the course are to be available soon.

Honors:

Fellow of the American Association for the Advancement of Science (elected 1980)
Fellow of the American Statistical Association
Fellow of the Institute of Mathematical Statistics
Ordinary Member of the International Statistical Institute (elected 1975)
Fellow of the Royal Statistical Society
National Science Foundation Science Faculty Fellow, 1962-63
Phi Kappa Phi, Sigma Xi, Tau Beta Pi

Research areas:

Statistical ranking and selection procedures; design, analysis, and interpretation of experiments.

Publications and research in progress:

[1] "A single sample multiple decision procedure for ranking means of normal populations with known variances" in Annals of Mathematical Statistics, Vol. 25 (1954), 16-39.

[2] "A two-sample multiple decision procedure for ranking means of normal populations with a common unknown variance" with C.W. Dunnett and M. Sobel in Biometrika, Vol. 41 (1954), 170-176.

[3] "A single-sample multiple decision procedure for ranking variances of normal populations" with M. Sobel in Annals of Mathematical Statistics, Vol. 25 (1954), 273-289.

[4] "Multiple decision procedures for ranking means" in Transactions of the National Convention of the American Society for Quality Control, New York, NY, May 1955, 513-519.

[5] "A sequential multiple decision procedure for selecting the best one of several normal populations with a common unknown variance, and its use with various experimental designs" in Biometrics, Vol. 14 (1958), 408-429.

[6] "A single-sample multiple decision procedure for selecting the multinomial event which has the highest probability" with S. Elmaghraby and N. Morse in Annals of Mathematical Statistics, Vol. 30 (1959), 102-119.

[7] "A multiplicative model for analyzing variances which are affected by several factors" in Journal of the American Statistical Association, Vol. 55 (1960), 245-264.

[8] "A note on the limiting relative efficiency of the Wald sequential probability ratio test" in Journal of the American Statistical Association, Vol. 55 (1960), 660-663.

[9] "A sequential multiple-decision procedure for selecting the best one of several normal populations with a common unknown variance, II: Monte Carlo sampling results and new computing formulae" with S. Blumenthal in Biometrics, Vol. 18 (1962), 52-67.

[10] "A fixed-sample size procedure for ranking means of finite populations with an application to bulk sampling problems" in Report on Seminar on Sampling of Bulk Matrials, November 15-18, 1965, Tokyo, Japan sponsored by the National Science Foundation and the Japan Society for Promotion of Science, 39-49.

[11] "A two-stage subsampling procedure for ranking means of finite populations with an application to bulk sampling problems" in Technometrics, Vol. 9 (1967), 355-364.

[12] "Designing factorial experiments to rank variances" in Transactions of the Twenty-Second Annual Technical Conference of the American Society for Quality Control, Philadelphia, PA, May 1968, 69-73.

[13] Sequential Identification and Ranking Procedures, with J. Kiefer and M. Sobel, The University of Chicago Press, 1968.

[14] "Single-stage procedures for ranking multiply-classified variances of normal populations" in Technometrics, Vol. 10 (1968), 693-714.

[15] "Multiple comparisons with a control for multiply-classified variances of normal populations" in Technometrics, Vol. 10 (1968), 715-718.

[16] "Optimal allocation of observations when comparing several treatments with a control" in Multivariate Analysis, II (ed. by P.R. Krishnaiah), Academic Press, 1969, 463-473.

[17] "An undesirable feature of a sequential multiple-decision procedure for selecting the best one of several normal populations with a common unknown variance." Correction Note in Biometrics, Vol. 26 (1970), 347-349.

[18] "On ranking the players in a 3-player tournament" in Nonparametric Techniques in Statistical Inference (ed. by M.L. Puri), Cambridge University Press, 1970, 545-549.

[19] "Optimal allocation of observations when comparing several treatments with a control (II): 2-sided comparisons" with D.J. -M. Nocturne in Technometrics, Vol. 14 (1972), 423-436.

[20] "Optimal allocation of observations when comparing several treatments with a control (III): globally best one-sided intervals for unequal variances" with B. Turnbull in Statistical Decision Theory and Related Topics (ed. by S.S. Gupta and J. Yakel), Academic Press, 1971, 41-78.

[21] "An iterated integral representation for a multivariate normal integral having block covariance structure" with A.C. Tamhane in Biometrika, Vol. 61 (1974), 615-619.

[22] "A two-sample procedure for selecting the population with the largest mean from several normal populations with unknown variances: some comments on Ofosu's paper." Department of Operations Research Technical Report 233 (October 1974), Cornell University.

[23] "Chebyshev type lower bounds for the probability of correct selection, I: the location problem with one observation from each of two populations" with B.W. Turnbull. (Preliminary Report) Department of Operations Research Technical Report 236 (December 1974), Cornell University.

[24] "Ranking and selection procedures" in Proceedings of the Twentieth Conference on the Design of Experiments in Army Research Development and Testing, ARO Report 75-2, Part 2, 1975, 929-949.

[25] "Selecting the largest interaction in a two-factor experiment" with T.J. Santner and B.W. Turnbull in Statistical Decision Theory and Related Topics II (ed. by S.S. Gupta and D.S. Moore), Academic Press, 1977, 1-18.

[26] "A two-stage minimax procedure with screening for selecting the largest normal mean" with A.C. Tamhane in Communications in Statistics - Theory and Methods, Vol. A6 (11), 1977, 1003-1033

[27] "On selecting the process with the highest fraction of conforming product" with B.W. Turnbull in Proceedings of the 31st Technical Conference of the American Society for Quality Control, Philadelphia, Pa., May 1977, 568-573.

[28] "Selection in factorial experiments" in Proceedings of 1977 Winter Simulation Conference, Gaithersburg, Md., December 1977, Vol. I, 65-70.

[29] "Two (k+1)-decision selection procedures for comparing k normal means with a fixed known standard" with B.W. Turnbull in Journal of the American Statistical Association, Theory and Methods Section, Vol. 73 (1978), 385-392.

[30] "A two-stage minimax procedure with screening for selecting the largest normal mean (II): an improved PCS lower bound and associated tables" with A.C. Tamhane in Communications in Statistics - Theory and Methods, Vol. A8 (4), 1979, 337-358.

[31] "Sampling plans for testing combination drugs." Abstract of paper read at the Eastern and Western North American Regions of the Biometric Society, Chicago, Ill., August 1977 in Biometrics, Vol. 34 (1978), 153-154. (In preparation.)

[32] "A note on the lower bound for the $P\{CS\}$ of Gupta's subset selection procedure" with T.J. Santner, School of Operations Research and Industrial Engineering Technical Report 401 (1979), Cornell University.

[33] "Incomplete block designs for comparing treatments with a control: general theory" with A.C. Tamhane in Technometrics, Vol. 23 (1981), 45-57.

[34] "Incomplete block designs for comparing treatments with a control (II): optimal designs for $p = 2(1)6$, $k = 2$ and $p = 3$, $k = 3$" with A.C. Tamhane. Accepted for publication in Sankhya, subject to minor revision.

[35] "Incomplete block designs for comparing treatments with a control (III): optimal designs for $p = 4$, $k = 3$ and $p = 5$, $k = 3$" with A.C. Tamhane, School of Operations Research and Industrial Engineering Technical Report 436 (October 1979).

[36] "Incomplete block designs for comparing treatments with a control (IV): optimal designs for $p = 4$, $k = 4$" with A.C. Tamhane, School of Operations Reserch and Industrial Engineering Technical Report 440 (January 1980).

[37] "Incomplete block designs for comparing treatments with a control (V): optimal designs for $p = 6$, $k = 3$" with A.C. Tamhane, School of Operations Research and Industrial Engineering Technical Report 441 (June 1980).

[38] "Incomplete block designs for comparing treatments with a control (VI): conjectured minimal complete class of generator designs for $p = 5$, $k = 4$ and $p = 6$, $k = 4$" with A.C. Tamhane, School of Operations Research and Industrial Engineering Technical Report 453 (April 1980).

[39] "Review of Selecting and Ordering Populations: A New Statistical Methodology by J.D. Gibbons, I. Olkin, and M. Sobel (John Wiley 1977), Journal of the American Statistical Association, Vol. 75 (1980), 751-756.

[40] "Closed adaptive sequential procedures for selecting the best of $k \geqq 2$ Bernoulli populations" with R.V. Kulkarni. To appear in the Proceedings of the Third Purdue Symposium on Statistical Decision Theory and Related Topics (ed. by S.S. Gupta and J. Berger).

[41] "Multiple comparisons for orthogonal contrasts: tables and applications" with C.W. Dunnett. Accepted for publication in Technometrics, subject to minor revision.

[42] "Tables of optimal allocation of observations for comparing treatments with a control" with A.C. Tamhane. Accepted for publication in Technometrics, subject to minor revision.

[43] "Tables of admissible and optimal balanced treatment incomplete block (BTIB) designs for comparing treatments with a control" with A.C. Tamhane. Submitted for publication.

[44] "On the performance characteristics of a closed adaptive sequential procedure for selecting the best Bernoulli population" with R.V. Kulkarni. (In preparation.)

[45] "Closed sequential procedures for selecting the multinomial events which have the largest probabilities" with R.V. Kulkarni. (In preparation.)

[46] "Optimal allocation of observations for selecting the best of several normal populations with known unequal variances" with A.C. Tamhane. (In preparation.)

[47] "Some design problems for nonadditive models" with T.J. Santner. (In preparation.)

[48] "Selection in factorial experiments without interaction" with C.W. Dunnett. (In preparation.)

[49] "Sequential procedures for k-sample problems concerning normal means with unknown variances" with B.W. Turnbull and L. Weiss. (In preparation.)

29 July 81

Hope this will provide
you with some
needed info on
Marion Bryson

Dan

BIOGRAPHY

22 July 1981

PERSONAL DATA

Name: Marion R. Bryson

Name of Command: US Army Combat Developments Experimentation Command

Title: Scientific Advisor

Business Address: HQ USACDEC, Fort Ord, CA 93941

Business Telephone: (408) 242-5701

Home Address: 25820 Tierra Grande, Carmel, CA 93921

Home Telephone: (408) 625-1144

Date and Place of Birth: 26 August 1927, Centralia, Missouri

Citizenship: USA

Marital Status: Married

Military Service: One year, US Army, 1946-1947

Education: BS in Ed, June 1949, University of Missouri

MA, August 1950, University of Missouri

Ph.D., August 1958, Iowa State University

WORK EXPERIENCE

Assignments:

1973 - present	Scientific Advisor, USACDEC. Serves as the senior scientist and advisor to the Commanding General and his staff.
1968 - 1973	Technical Director, Systems Analysis Group, USACDC, Fort Belvoir, VA. Served as director of the group which performed systems analysis studies for the Combat Developments Command. There were about 30 military and 100 civilian scientists in the group.

1958 - 1968	Associate Professor of Mathematics; Associate Professor of Community Health Sciences; Director of Special Research in Statistics, Duke University. Served 1/3 time as teacher of statistics and faculty member in Department of Mathematics; 1/6 time as consultant to Duke Medical School on statistical problems; and 1/2 time as a consultant and research person with the Army Research Office, Durham, North Carolina.
Consultant Positions:	Not currently a consultant except as a normal part of current position.
1958 - 1968	During ten years with Army Research Office, Durham, NC, served as consultant to numerous Army organizations. Below is a partial list: Office, Chief of Research and Development Office, Chief of Ordnance Engineering Strategic Studies Group Redstone Arsenal White Sands Missile Range US Army Electronics Command Rock Island Arsenal Special Warfare Center
Membership on Boards or Committees:	Not currently a member of any DA or DoD committees. Have served on several committees in the past.
Membership in Professional and Scientific Societies:	Past president and member of the Board of Directors, Military Operations Research Society American Statistical Association Institute of Mathematical Statistics Operations Research Society of America

DR. BRYSON'S PUBLICATIONS FOR BIBLIOGRAPHY

1. "Physical Inventory Using Sampling Methods," Applied Statistics, Volume 9, Number 3, 1960.

2. "Practical Applications of Operations Research in Physical Inventory Control." Invited to address the 1961 SAE International Congress and Exposition of Automotive Engineering, Detroit, Michigan, January 9-13, 1961.

3. "Errors of Misclassifications in Binomial Populations," Journal of the American Statistical Association, Volume 60, Number 1, March 1965.

4. "Judging of Cleft Palate and Normal Neonatal Cries," with Raymond Massengill, Jr. and Galen W. Quinn, Perceptual and Motor Skills, Volume 22, June 1966.

5. "A Study of Velopharyngeal Function as Related to Perceived Nasality of Vowels, Utilizing a Cinefluorographic Television Monitor," with Raymond Massengill, Folia Phoniatricia, 19: 1967.

6. "Effect of US Intensity on Salivary Conditioning," with Ben W. Feather and Frederick Delse, Journal of Experimental Psychology, Volume 74, Number 3, 1967.

7. "Physiological Characteristics of Stuttering as Detected by Cineflorograph Analysis," with Raymond Massengill, Linda Gertner, and Harold Luper. Folia Phoniatrica, 1967.

8. "Therapeutic Exercises in Velopharyngeal Closure," with Raymond Massengill, Kenneth L. Pickrell, Galen W. Quinn, and Carole M. Levinson, the Cleft Palate Journal, 1967.

9. "Lingual and Labial Movements of Pierre-Robin Syndrome Patients Treated by Beverly Douglas Procedure," with Carole Levinson, Raymond Massengill, and Kenneth Pickrell, reprinted from the Cleft Palate Journal, Volume 6, Number 1, January 1969.

10. "Air-to-Ground and Ground-to-Air Detection Experiments." Proceedings of the Target Acquisition Symposium, Orlando, Florida, November 1972.

11. "A Method for Estimating the Distribution of Alveolar Sizes from Histological Lung Sections," with Albert W. Klein and R. Frederick Becker, Transaction American Microscopy Society 91 (2), 1972.

12. "Attack Helicopter Effectiveness and Survivability Based on Real Time Experimentation" with L. P. Withers and D. S. Grieshop. Proceedings of Military Operations Research Symposium, Fort Lee, VA, December 1972.

13. "On the Ground-to-Ground Intervisibility." Proceedings of the Twelfth Annual US Army Operations Research Symposium, Durham, NC, 1973.

14. "Tactical Effectiveness Testing of Antitank Missiles." Proceedings of the Twelfth Annual US Army Operations Research Symposium, Durham, NC, 1973.

15. "Data Generation for Model Validation." Proceedings of the NATO/SPOSS Conference on Modeling Land Battle Systems for Military Planning, Munich, FRG, 1974.

16. "Maximum Information From Samples," with William Mallios, BDM, CDEC. Proceedings of the US Army Design of Experiments Conference, Fort Belvoir, VA, 1974.

17. "On the Difference between Actual and Perceived Threat from a Suppressive Weapon." Report of the Army Scientific Advisory Panel Ad Hoc Group on Fire Suppression, July 1975.

18. "Designing a Field Experiment Within Constraints." Paper presented to AORS, Fort Lee, VA, 28 October 1976.

19. "A Time Step Model for Replaying Simulated Battles," Proceedings, AORS, Fort Lee, VA, 12 October 1977.

20. "The Multi-Dimensional Black Box." To be published, PHALANX, October 1981.

IOWA STATE
UNIVERSITY

Statistical Laboratory
and
Department of Statistics
Snedecor Hall
Ames, Iowa 50011

Telephone: 515-294-3440

August 21, 1981

Dr. Robert L. Launer
U.S. Army Research Office
P.O. Box 12211
Research Triangle Park, North Carolina 27709

Dear Bob:

My choices for the new Army Wilks award are as follows:

1) Frank Proschan
2) Robert Bechhofer
3) Bernard Harris

The information provided on the candidates was quite helpful. I certainly have no objections to having my votes known. In fact, if there is any difficulty about picking the winner, it would be nice to know how each of the panel members voted in order to revise one's own vote possibly. Of course, this presumes that other panel members do not mind having their votes divulged.

With kind regards.

Sincerely yours,

Herb

H. A. David

HAD:mln

DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

16 SEP 1981

REPLY TO ATTENTION OF DAAG-PSI

SUBJECT: The Wilks Award for Outstanding Contributions to Statistical Methodologies in Army Research, Development and Testing

Commander
US Army Finance and Accounting Center
ATTN: FINCO-BD, Department 130
Indianapolis, Indiana 46249

1. Reference letter, DAAG-PSI, 6 August 1981, subject: Acceptance of Gift to the US Army Research Office.

2. In response to the desires of Mr. Philip G. Rust, donor of the gift, this letter is to inform you that the Army Research Office (ARO) intends to draw on the principal of the original $10,000.00 for the purpose of awarding a deserving individual at its 21 October 1981 Annual Army Design of Experiments Conference. Although the original acceptance stated that the proceeds would be used to establish the award, ARO desires to present its first annual award this year; therefore, this letter authorizes the use of the original principal for the first award and the proceeds thereafter.

FOR THE ADJUTANT GENERAL:

WILLIAM P. BOCK
Major, GS
Chief, Installation and
Personnel Support Division

Princeton University

DEPARTMENT OF STATISTICS
(609) 452-4195
FINE HALL, P.O. BOX 37
PRINCETON, NEW JERSEY 08544

18 September 1981

Mr. Robert L. Launer
Mathematics Division
Department of the Army
P. O. Box 12211
Research Triangle Park, N.C. 27709

Dear Bob:

Imprimatur!

Regards,

John

John W. Tukey

DRXRO-MA

28 September 1981

Professor Herbert A. David
Director and Head
Statistical Laboratory and
Department of Statistics
Iowa State University
Ames, Iowa 50011

Dear Herb:

Just a note to disclose the voters and the votes for the 1981 Army/Wilks Award.

Andersen	David	Launer	Tang	Tukey
Kurkjian	Bechhofer	Bechhofer	Kurkjian	Bryson
Bechhofer	Harris	Harris	Bechhofer	Bechhofer
			Harris	

Thanks again for participating.

Sincerely yours,

ROBERT L. LAUNER
Mathematics Division

DEPARTMENT OF THE ARMY
U. S. ARMY RESEARCH OFFICE
P. O. BOX 12211
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

REPLY TO ATTENTION OF:

DRXRO-MA

8 December 1981

Professor Robert Bechhofer
School of Industrial Engineering
and Operations Research
Cornell University
Ithaca, NY 14853

Dear Professor Bechhofer:

It is a pleasure to forward the enclosed check which represents the honorarium associated with the first Wilks Award for Contributions to Statistical Methodologies in Army Research, Development and Testing.

The regrettable delay was entirely due to administrative complications associated with a new award. I sincerely hope that your personal feeling of honor is not diminished because of the delay.

I would like to sincerely congratulate you on behalf of the Army Mathematics Steering Committee and the Subcommittee on Probability and Statistics.

Sincerely,

Jagdish Chandra

JAGDISH CHANDRA
Chairman, Army Mathematics
Steering Committee

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School of Operations Research
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Ithaca, NY 14853

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HTT 11/23/81

POSITION FORM

of this form, see AR 340-15; the proponent agency is TAGO.

AGENCE OR OFFICE SYMBOL	SUBJECT
ARO- MA	Request for Supplies or Services Purchase/Delivery Order No.: DAAG29-81-M-~~0045~~ 0058

TO EM/PBO FROM Mathematics Division DATE 13 November 1981 CMT 1

PART I: REQUEST

1. Identification of supply or service including all pertinent data. For honorariums provide all data on a separate sheet, including tasks to be performed and reasons for selecting the candidate on a sole source basis. Please arrange for $500 (from Gift Allocation fund from DARCOM) to be given to Professor Robert Bechhofer, Cornell University. The purpose for this award is attached.

TOTAL: $500.00

KOT

NSN:

2. The supply or service is required by ASAP

Jagdish Chandra

JAGDISH CHANDRA, Director 13 Nov 81

Signature, Division/Office Chief DATE

PART II: EM/PBO ACTION

( ) Authorized ( ) Not authorized

( ) GSA Stores/Depots ( ) Federal Supply Schedules

( ) Federal Prison Industries (supplies/services)

( ) Agencies for the Blind (supplies/services) ( ) Other

( ) DARCOM Excess Equipment List (X) None of the above

(X) Not applicable PD

Document Number

SVC	Requisitioner	Date	Serial

Norman D Latta 16 Nov 81

NORMAN D. LATTA, EM/PBO DATE

PART III: APPROVAL/DISAPPROVAL

FUNDS:

( ) Admin ( ) Mission

Recommend (✓) Approval ( ) Disapproval

Mary A. Lucas

ROBERT R. COLLIER, DAC, F&A Officer

(✓) Approved ( ) Disapproved

Paul E Nixon Jr.

PAUL E. NIXON, JR., LTC, IN, Exec. Ofcr.

OR

( ) Approved ( ) Disapproved

ROBERT MACE, Associate Technical Director

( ) Approved ( ) Disapproved

HERMANN ROBL, Technical Director

PART IV: IMPREST FUND ACTION

TO CH, SSB, ASSO FROM Procurement Office DATE

( ) Purchase of supply/service will be made from the ARO Imprest Fund.

( ) Additional comments, see reverse.

Signature, Contract Specialist DATE

PART V: FUNDING COORDINATION 24 Nov 81

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Contact: Edward Sullivan
Manager, Communications

230 West Wells Street
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For Immediate Release

Chicago-- Robert Bechhofer, Professor of Operations Research, Cornell University, has been elected a Fellow of the American Society for Quality Control. He was recognized during the Honors and Awards Breakfast held during the 38th Annual Quality Congress and Exposition, May 14-16, 1984 in Chicago for his outstanding work on statistical theory, design analysis and interpretation of experiments and for innovative research in the area of statistical ranking and selection.

Bechhofer earned his AB and PhD degrees in Mathematical Statistics form Columbia College. During WWII he seved as a civilian statistician at the Aberdeen Proving Ground, Maryland and thereafter worked at the Carbide and Carbon Chemicals Corporation. After teaching for one year at Columbia, he moved to Cornell University and has been based in the College of Engineering to this date. At Cornell, he was professor and Chairman of the Department of Operations Research and Director of the School of Operations Research and Industrial Engineering. He has been a Visiting Professor at Standford University, Cambridge University, England, and the Imperial College of Science and Technology in London.

An accomplished lecturer and author, Mr. Bechhofer has received numerous honors and Fellowships. For many years he has been a member of the Corning-Elmira Section of ASQC and has contributed to the educational activities of the Section.

-more-

His current research and teaching interests are in the design, analysis and interpretation of experiments, and in statistical selection and ranking procedures. He published extensively in these areas in the Annals of Mathematical Statistics, Biometrics, Communications in Statistics, among other journals.

#

BECHHOFER RECEIVES FIRST ARMY/WILKS AWARD

Robert E. Bechhofer was awarded the first Wilks Award for contributions to Statistical Methodologies in Army Research, Development and Testing. The presentation was made at the 27th annual Army Design of Experiments Conference held at the North Carolina State University, Raleigh, North Carolina, on October 21-23, 1981. The citation reads "for pioneering contributions to the field of statistics, especially in the areas of Statistical Selection and Ranking Procedures, and Design of Experiments; for generously contributing time and energy to interactions with Army laboratory personnel over many years, including significant basic research for the Aberdeen Proving Ground; and for frequent presentations at Army conferences and tutorials.

Professor Bechhofer received the baccalaureate degree in statistics from Columbia University in 1941 and immediately accepted employment at the Aberdeen Proving Ground. During this time he made significant findings to the solution of problems encountered in ballistic accuracy. In 1945 he resigned from Aberdeen to work under Cuthbert Daniel at Oak Ridge, Tennessee. In 1951 he received his Ph.D. in mathematical statistics from Columbia University under the tutelage of Theodore Anderson - his thesis advisor, Henry Scheffé, Abraham Wald and Jacob Wolfowitz. ~~His fellow graduate students included Kenneth Arrow, Alan Birnbaum, Herman Chernoff, Jack Kiefer, Richard Savage, and Charles Stein.~~ He taught for a year at Columbia University followed by two years as a visitor at Cornell University where he held a joint appointment in Mathematics and Biometrics. In 1953 he joined the permanent faculty as an Associate Professor in the Department of Industrial Engineering. He subsequently served as Chairman of the Department of Operations Research for eight years and as Director of the School of Operations Research and Industrial Engineering for two years.

Professor Bechhofer is one of the ~~worlds leading~~ developers and proponents of statistical selection and ranking procedures. Beginning with his ~~ground-breaking~~ paper in the 1954 Annals of Mathematical Statistics, he has written about 60 articles which have appeared in the statistical literature of which at least 40 are in the area of selection and ranking. Most of his other papers are on the design and analysis of experiments. He is co-author with Jack Kiefer and Milton Sobel of a research monograph entitled Sequential Identification and Ranking Procedures published by the University of Chicago Press in 1968. He recently made an important contribution, with R. V. Kulkarni, to the sequential selection of binomial populations. This has an important application to the test and evaluation process in the U. S. Army R&D laboratory system.

Professor Bechhofer is a Fellow of the American Statistical Association, Institute of Mathematical Statistics, American Association for the Advancement of Science and the Royal Statistical Society and an elected member of the International Statistical Institute. He has served as member of the Committee on Applied and Theoretical Statistics, National Research Council, and on the Conference Board of Mathematical Sciences Regional conferences panel.

Professor Bechhofer has conducted many seminars and tutorials in statistical selection and ranking and has consulted frequently with many Army laboratories on the design and analysis of experiments.

CITATION

The First Wilks Award for Contributions to Statistical Methodologies in Army Research, Development and Testing is presented to:

Dr. Robert E. Bechhofer

for:

contributions to the field of statistics, especially in the areas of selection and ranking, and design of experiments;

generously contributing ~~personal~~ time and energy to many interactions with Army laboratory personnel during the past 40 years;

frequent presentations at Army conferences and tutorials;

and for solving an important projectile problem at the Ballistic Research Laboratory.

for pioneering contributions to the field of statistics, especially in the areas of Statistical Selection and Ranking Procedures, and Design of Experiments;

for generously contributing time and energy to interactions with Army laboratory personnel over many years, including significant basic research at the Aberdeen Proving Ground during World War II; and for frequent presentations at Army conferences and tutorials.

CITATION

The first Wilks Award for Contributions to Statistical Methodologies in Army Research, Development and Testing is presented to

Dr. Robert E. Bechhofer

for: PIONEERING contributions to the field of statistics, especially in the areas of Statistical Selection and Ranking PROCEDURES, and Design of Experiments;

FOR, generously contributing time and energy to ~~many~~ interactions with Army laboratory personnel ~~during the past 40~~ OVER MANY years, INCLUDING SIGNIFICANT BASIC RESEARCH AT THE A.P.G. DURING WORLD WAR II; AND FOR frequent presentations at Army conferences and tutorials; ~~and for solving an important projectile problem at the Ballistic Research Laboratory.~~ WHICH ORIGINATED

SCHOOL OF OPERATIONS RESEARCH
AND INDUSTRIAL ENGINEERING

Cornell University
COLLEGE OF ENGINEERING
UPSON HALL
ITHACA, NEW YORK 14853

Director 607/256-3410
Associate Director 607/256-5088
Faculty 607/256-4856

October 2, 1981

Dr. Robert L. Launer
Mathematics Division
U.S. Army Research Office
P.O. Box 12211
Research Triangle Park
North Carolina 27709

Dear Bob:

Enclosed is an up-to-date copy of my vita.

Here are a few supplementary biographical notes that perhaps may be of interest.

1) As an undergraduate at Columbia I majored in statistics taking courses with Professors Frederick Croxton and Harold Hotelling. It was they, particularly Professor Croxton, who first aroused my interest in statistics.

2) Immediately following graduation from Columbia in 1941 I was hired as a civilian Jr. Statistician by Leslie E. Simon (then a Major, and Assistant Director of the Ballistic Research Laboratory, Aberdeen) to work in the newly-formed Analytical Section of the Arms and Ammunition Division at Aberdeen. (This was a service group, and not part of the BRL.) I worked there from July 1941 through late 1945, and became Assistant Chief of the Section. Mr. David M. Kinsler was the Chief. The Officer in charge of the Division was John W. Cave. The responsibility of our Section was to design almost all of the tests of items of ordnance conducted by our Division, and to analyze and interpret the results of these tests. After working in the Section for about two years I was given a special assignment involving the 105mm. howitzer. My co-worker during most of this period was Mr. Joseph Sperrazza. One of our main projects was to try to find the cause of the erratic range dispersion of this howitzer. After more than a year of study we were able to establish that the poor performance of this weapon was due to differences in the surface finish of the projectiles (which came about because of different manufacturing methods), a cause which before that time had not been suspected. This finding proved to be of major importance.

3) I resigned from Aberdeen in fall 1945 to work as a Technical Engineer for the (then) Carbide and Carbon Chemicals Corporation at Oak Ridge, Tenn. My immediate

superior was Mr. Cuthbert Daniel (with whom I have maintained a close relationship ever since). We worked together at K-25, the gaseous diffusion plant.

4) In 1946 I left Oak Ridge to start graduate studies for a Ph.D. in Mathematical Statistics at Columbia University. Among my professors at that time were Abraham Wald (Chairman of the Department), Henry Scheffe, Jacob Wolfowitz and Theodore Anderson (my dissertation advisor). Professors R.C. Bose, Harold Cramer, Jerzy Neyman, E.J. Pitman and S.N. Roy were among the visiting faculty. Among my co-graduate students at that time were Kenneth Arrow, Alan Birnbaum, Al Bowker, Herman Chernoff, Leon Herbach, Jack Kiefer, William Kruskal, Ingram Olkin, John Neter, Gottfried Noether, Edward Paulson, Richard Savage, Rosedith Sitgreaves, Milton Sobel, Charles Stein, Henry Teicher and Lionel Weiss.

5) Following receipt of my Ph.D. degree I taught for a year in the Department of Industrial Engineering at Columbia, serving at the same time as the Director of the Statistical Consulting Service of the Department of Mathematical Statistics at Columbia.

6) When Professor Jacob Wolfowitz left Columbia with Jack Kiefer in 1951 to join the Department of Mathematics at Cornell, he invited me to visit there. I spent the 1952-53 academic year at Cornell, with a joint appointment as Research Associate in the Department of Mathematics and Visiting Associate Professor in the Biometrics Unit of the Department of Plant Breeding. I joined the permanent faculty at Cornell in Fall 1953, starting as Associate Professor in the Department of Industrial Engineering. I have been with that Department ever since as it has evolved into its present status of School of Operations Research and Industrial Engineering. During this evolutionary period I served eight years as Chairman of the Department of Operations Research, and two years as Director of the present School.

7) Ever since leaving Aberdeen I have maintained close contact with the statistical groups there. I have attended and participated in a major fraction of the Annual Conferences on the Design of Experiments in Army Research Development and Testing, and have received substantial research support over many years from the Army Research Office - Durham as well as from the Office of Naval Research.

8) My principal area of research interest over these years has been in "Statistical Selection and Ranking Procedures" as well as in various aspects of the statistical design, analysis and interpretation of experiments. Much of my thinking and the motivation for my research stems from outlooks I developed while at Aberdeen. I have given tutorial seminars on these subjects at the BRL in June 1978, at the Picatinny Arsenal in January 1979, for the Annual Meeting Short Course of the ASA in summer 1979, in Berlin, Germany in November 1980 under the auspices of the George Washington University, and elsewhere.

I hope that the above is helpful.

With all good wishes,

Cordially,

Bob

Robert Bechhofer

Enclosure: Vita of Robert Bechhofer

Laumer Wilks Award
Dc

SCHOOL OF OPERATIONS RESEARCH
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Cornell University
COLLEGE OF ENGINEERING
UPSON HALL
ITHACA, NEW YORK 14853

Director 607/256-3410
Associate Director 607/256-5088
Faculty 607/256-4856

December 18, 1981

Dr. Jagdish Chandra
Chairman, Army Mathematics
Steering Committee
U.S. Army Research Office
Post Office Box 12211
Research Triangle Park
North Carolina 27709

Dear Jagdish:

I want to thank you, the Army Mathematics Steering Committee, the Subcommittee on Probability and Statistics and all others associated with the Wilks award for having selected me as the first winner of this new award. As I mentioned at our dinner, I truly feel deeply honored, and appreciative of this special recognition. I have enjoyed a long and happy research association with the Army and particularly with ARO-D, and look forward to continuing to make contributions to the total effort. The honorarium associated with the award has arrived. Thanks very much for that, too.

I look forward to seeing you again at the next Design of Experiments meeting if not before.

Cordially,

Bob

Robert Bechhofer
Professor

RB:pm

SCHOOL OF OPERATIONS RESEARCH
AND INDUSTRIAL ENGINEERING

Cornell University
COLLEGE OF ENGINEERING
UPSON HALL
ITHACA, NEW YORK 14853

Director 607/256-3410
Associate Director 607/256-5088
Faculty 607/256-4856

August 31, 1982

Dr. Robert L. Launer
Mathematics Division
U.S. Army Research Office
Post Office Box 12211
Research Triangle Park
North Carolina 27709

Dear Bob:

Thanks very much for sending me the Proceedings of the 27th Conference on the Design of Experiments in Army Research Development and Testing.

I am particularly appreciative of the very kind remarks that you wrote about me concerning the first Wilks Award for Contributions to Statistical Methodologies in Army Research Development and Testing. In fact the entire writeup including your open letter on the new Wilks Award is very well written and in good taste. You did a fine job.

Again many thanks. With warm regards.

Cordially,

Bob

Robert Bechhofer
Professor

pm

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Associate Director 607/256-5088
Faculty 607/256-4856

April 6, 1983

Dr. Malcolm Taylor
Ballistics Modelling Division
Ballistics Research Laboratory
Aberdeen Proving Ground
Aberdeen, Maryland 21005

Dear Malcolm:

The plaque associated with the Wilks Award in Army Research, Development and Testing arrived safely, and I want you to know just how delighted I was to receive it. I truly felt greatly honored when I learned of the award, and the plaque added great luster to it. I am particularly grateful for I know of the many obstacles that you had to overcome with respect to the plaque. I will display it with pride.

Please thank all of the Committee for me for this vote of confidence. And I especially want to thank you for all of your efforts.

With warm regards.

Cordially,

Bob

Robert Bechhofer
Professor

cc: Dr. Robert Launer ✓

pm

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Professor Bechhofer is one of the major developers and proponents of statistical selection and ranking procedures. Beginning with his pioneering paper in the 1954 Annals of Mathematical Statistics, he has written about 60 articles which have appeared in the statistical literature of which at least 40 are in the area of selection and ranking. Most of his other papers are on the design and analysis of experiments. He is co-author with Jack Kiefer and Milton Sobel of a research monograph entitled Sequential Identification and Ranking Procedures published by the University of Chicago Press in 1968. He recently made an important contribution, with R. V. Kulkarni, to the sequential selection of binomial populations. This has an important application to the test and evaluation process in the U. S. Army R&D laboratory system.

Professor Bechhofer is a Fellow of the American Statistical Association, Institute of Mathematical Statistics, American Association for the Advancement of Science and the Royal Statistical Society and an elected member of the International Statistical Institute. He has been a member of the Board of Directors, and Chairman of the Committee on Fellows of the ASA. He has served as member of the Committee on Applied and Theoretical Statistics, National Research Council, and on the Conference Board of Mathematical Sciences Regional conferences panel, and on the Ad Hoc Committee on Energy, Statistics, ASA.

Professor Bechhofer has conducted many seminars and tutorials in statistical selection and ranking and has consulted frequently with many Army laboratories on the design and analysis of experiments.

The selection committee for the First Wilks Award for Contributions to Statistical Methodologies in Army Research, Development and Testing consisted of the following individuals: Dr. Gerald Andersen, Army Materiel Development and Readiness Command; Prof. H. A. David, Iowa State University; Dr. R. L. Launer, Army Research Office; Dr. D. B. Tang, Walter Reed Army Institute of Research; and Prof. J. W. Tukey, Princeton University and Bell Labs.

NEW WILKS AWARD ESTABLISHED

A new award in statistics entitled the "Wilks Award for Outstanding Contributions to Statistical Methodologies in Army Research, Development and Testing" has been established by a recent gift from Mr. Philip G. Rust of Thomasville, Georgia. This award, first mentioned in the AMSTAT News, September-October 1981, Number 78, should not be confused with the "Wilks Memorial Medal and Award" which was also established by a gift from Mr. Rust in 1964 at the suggestion of Major General Leslie E. Simon, United States Army. That award continues to be administered by the American Statistical Association. The new award is administered by the Army Mathematics Steering Committee through its subcommittee on Probability and Statistics. Dr. Jagdish Chandra of the Army Research Office is chairman of the steering committee and Dr. Douglas B. Tang of the Walter Reed Army Institute of Research serves as chairman of the subcommittee. The new Wilks Award is given each year to a statistician for his or her advancement of scientific or technical knowledge in Army statistics and for contributions to statistical theory.

The purpose of the new award is to commemorate the late Professor Samuel S. Wilks, Princeton University. It is to be given subject to the following conditions: 1) The new Wilks Award must be presented at the annual Army Design of Experiments Conference. 2) The title of the award must contain the word Army and the name Wilks, and 3) The award is to be given to an individual for contributions to statistical methodologies in Army research, development and testing. It is Mr. Rust's desire that the award should be given for the solution or contribution to the solution of an important problem arising in an Army research laboratory or significant contributions to general methodologies which are regularly used in Army research laboratories. The award is not meant to honor administration services performed in connection with research and development.

Mr. Rust first met Professor Wilks during World War II. In those days, Mr. Rust was at the Franklin Institute working on the problem of .50 caliber gun barrel erosion and related ballistic problems. In fact, he maintained a private 300 yard firing range and made it his avocation to study certain statistical measures related to the firing patterns of .22 caliber rifles. He also performed simulation studies to determine the distribution of the "extreme spread" of firing patterns using the bivariate normal distribution. Sam Wilks became interested in the analytical aspects of this problem through conversations with Mr. Rust. This resulted in a friendship and professional association which lasted until Sam Wilks' death in 1964. This work was continued by Dr. Frank E. Grubbs, of the Aberdeen Proving Ground (now retired) at the suggestion of General Simon. For this work, Dr. Grubbs was awarded the Initial Wilks Memorial Medal and Award at the 1964 Design of Experiments Conference. More background information about this award is given in the December 1964 issue of The American Statistician. General Simon was awarded the Second Wilks Memorial Medal and Award in 1966.