

1761 Pine Tree Road
Winter Park, Florida
August 20, 1964

Mr. Philip G. Rust
Winnstead Plantation
Route 3
Thomasville, Georgia

Dear Mr. Rust:

At last, I have at hand a manuscript which just about gives complete answers --- in easy, non-technical form, but completely documented in a technical appendix or by references --- to all the questions that you asked me about rifle-fire, targets and gunnery, circa-1963.

As you remember, I declined to accept the task of relating and inter-interpreting various measures of accuracy and correspondence, even though you offered me \$150.00 a day for my work, on the grounds that (a) I did not feel entirely competent, and (b) that the work would require determining probability density distributions which would demand great time and effort, and that success could not be assured.

Instead, I discussed the matter with several competent statisticians to see if I could interest them in the problem. Perhaps you remember Gumble (in whose field of competence the most difficult problems lay) showed no interest. My very good friend, Dr. Frank E. Grubbs, whom I referred to as one of the top two or three mathematical and applied statisticians in the country, said that he was interested, and would work on it, but could not say when. I thought that he never would; and his motivation certainly was more science for science sake than a positive response to my inquiry (my opinion only). However, his almost sudden conclusion of the work may be partly in the nature of a "quid-pro-quo" to me for a job that he hooked me for to do for him, and on which I am working. I shall say more about this later.

Grubbs has the monograph (47 pages typed double spaced, which is not long, considering that this includes the appendix) in my hands for comments, suggestions, criticisms and correction of obvious errors. I have been over it once, and except for some minor omissions and similar matters it is really first rate. It is addressed to the rifleman, although the principles that it teaches are applicable to any

measurable phenomenon from birth of calves to production of transistors. It is simple to read (not above good high school level) and easy to apply by means of simple printed tables for samples from 2 to 15 for all ten of the fairly popular measures of variation.

He clearly defines (both graphically and in words) the following measures:

Standard Deviation
Extreme Horizontal Dispersion
Extreme Vertical Dispersion
Mean Horizontal Deviation
Mean Vertical Deviation
Radial Standard Deviation
Mean Radius
Extreme Spread
Radius of Covering Circle
Diagonal of the including Rectangle

He discusses each measure briefly, and then gives a table from which one can readily express any given or observed measure for any sample-size; e.g., Extreme Spread for a sample of 10, in terms of its equivalent or expected value if one had used Mean Deviation, Radial Standard Deviation, etc. Also, one can make a valid comparison of the dispersion of a target of five shots (irrespective of the measure used) against another target of 10 (or any other number up to 15), irrespective of the measure used for the second target. One can also compare the efficiencies for the various measures; one can infer approximately the confidence level one might associate with the hypothesis that the target came from sources that are different levels of accuracy. Brief illustrative examples are given for the application of each table. Is this or is it not a rather complete answer to what you were looking for?

Grubbs asks me what to do with the paper. He recollects vaguely that I was asked the questions by a "Col. Rust or Col. Rusk". I shall recommend that he allow John Wiley & Sons publish it as a monograph in their scientific series. I am reasonably sure that Wiley will do so, and Grubbs may get some small royalties out of it. However, if you are anxious to see it, I would be willing to ask Grubbs, if he could return to me the copy that I am marking up, after it has served its usefulness, and permit me to send it to you. Publication may be a year from now. But, I have two other matters to cover, before I make a possible suggestion to you.

Grubbs did not do all the work himself. He was stuck on dead center on Extreme Spread. He turned to our mutual friend, Professor S. S. Wilks, of Princeton University, probably the top-most Mathematical Statistician in the Country, for nine years the Editor of the Annals of Mathematical Statistics. Look him up in Who's Who in America. Wilks did not succeed by classical attacks, and finally solved the problem in connection with some Air Force work by a Monte Carlo sampling procedure with the help of Mr. Paul Raynauld on an IBM 7090

Computer using Fortan language. It was Wilks that suggested to me, when I was Chief of Research and Development of Army Ordnance, that I establish an Annual Symposium of Statistical Design of Experiment. He Chairmanned the Symposium for nine years.

Our good friend, Wilks, died last February. This is how I got the hard job that I am working on for Grubbs. Grubbs is Chairman of the Program Committee for the Tenth Annual Symposium at the Hotel Statler in Washington, this coming November. He insisted that I give a paper at the Tenth Symposium in commemoration of Wilks. I have been working on it off and on for several months; and now I have an idea that could greatly affect all of us. Mark that it is just an idea, so you do not have to feel sorry for me, if you do not go along with it.

I think that a rather masterful work has been turned out, as a result of your inquiring mind. You did not do the work; I did not do the work; but a number of people did it -- not really for you, but for Science. It may be a satisfaction to you, it may be a help to many smallarms men, but far more important, it is an addition to human knowledge that benefits many people and aids in the solution of other problems of other types. It is of general application.

You can not pay me. I have just been a kind of broker in exchanges of knowledge. However, if you see fit, and if you can afford it, I would like the honor of announcing, at the conclusion of my commemorative paper on Wilks that you had founded THE WILKS AWARD -- say, a medal and a honorarium to be presented annually to the person judged by the Symposium Committee to have made an outstanding contribution to the aims and purposes of this continuing symposium. I would like also to explain how this particular instance of a significant contribution came about i.e., the progress of your inquiries from one scientific mind to another until, with no material reward in view, willing minds had cooperated, until the whole regime of the problem was solved, and the fruits left as an enduring value in our field of knowledge. I would like also for you to be a guest at the symposium and to say something about it -- it could be mere thanks to those who cooperated or could include your own thoughts on human relations, on stimulus to thought, or benefits to mankind.

I think that the award could be established for the order of three or four thousand dollars, depending on the honorarium contemplated. It is the honor that would be important, rather than the specific sum of money. Even a hundred dollars would be significant.

This is correct
Sen. in Copy
As above

I think also that it would particularly "top it off" if Grubbs (who did the great bulk of the work) were given the initial medal by you or your designee (not the first medal: this procedure is not unusual), together with a special honorarium of say \$500.00. That would pay him perhaps a dollar an hour for his work. If this should go thru, would you permit me to recommend that you present the initial medal?

Of course, I do not have the authority to do any of these things. I need first, the authority from you to commit you to what extent, if any, you see fit. I need consultation with you and with the Committee about the rules that might govern the award. The question is, do you wish me to get to work on this job? I will do this one. In any event, give me your thoughts.

With kindest regards,

Leslie E. Simon
Maj Gen USA(Ret'd)

P.S. By the way, it takes a bit of time to get a medal designed and struck, and some haste will be required to meet the date of November 4 to 6, when the Symposium convenes.

L.E.S.

* He is willing to furnish the \$500.00 honorarium to go with the initial medal to Grubbs provided that I secure whatever approval is necessary for giving Grubbs the initial medal. Incidentally, I would like to conceal from Grubbs the matter of the special honorarium, and leave it as a surprise at the time of the presentation of the medal, again provided concurrence is obtained from the proper organization.

1761 Pine Tree Road
Winter Park, Florida
September 6, 1964

Dr. F. G. Dressel
U.S. Army Research Office - Durham
Box CM
Duke Station
Durham, North Carolina 27706

Dear Dr. Dressel:

I need some action on a matter very, very fast. I talked to Frank Grubbs about the matter on the telephone last night, and he suggested that I look to you to get it done.

In order to understand the matter, please stop at this point and read the enclosed carbon copy of a letter that I wrote to Mr. Philip G. Rust.

I assume that you have read the copy of my letter to Rust. I talked with Rust last night on the telephone; and, believe it or not, he accepts all of my suggestions with delight, except he wishes to remain anonymous. He is willing to pay for the medal and is aware both of the first cost of striking the medal and of the smaller subsequent cost per medal. He is willing to furnish a \$100.00 honorarium to go with future medals either by paying it at the time of presentation or by establishing a fund or endowment for it, estimate at \$3600.00. This is the substance of my oral conversation with Mr. Rust, who, incidentally, knows and liked Wilks.

Now, let me indicate briefly the things that I think need to be done; certainly there will be others in addition:

(1) ARO will have to grind through the necessary red tape to set up the acceptance by the Army of an award sponsored by an individual. In this connection, I would suggest that if it becomes burdensome, enlist the assistance of Joe Lane. He is not only competent but also a good friend.

(2) Have the necessary authority established for some group e.g., the program committee, to establish the rules for the award. They might be as simple as:

"to be presented annually to a meritorious person who has made significant contributions to statistical methods used by the Army, and whom the program committee judges to be deserving of the award".

(3) Designate to me the extent to which I can use the instance of the award as an illustration of scientific cooperation due to the stimulus and example of Wilks, when stimulated himself by scientific inquiry.

(4) Get the above package to me swiftly so that I can get in touch with Mr. Rust and get him to transmit the necessary funds to the proper person or office. This needs to be specific, even down to who the check should be made out. We would not wish to cast any undue burdens on Mr. Rust.

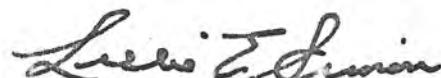
(5) Start as early as practicable after authorization and funding with the job of getting the medal designed and the first one, two, or more medals struck. Perhaps a facsimile of Wilks, a place for engraving the recipient's name and some dates on one side and on the obverse side a notation to the effect that the award is in honor of Wilks and is awarded annually on such and such a basis -- make the wording brief. (I used to be on the Shewhart Medal committee) Failing in point of time, one can resort to the old hoax of presenting an empty box.

The above is all I can think of at the present time but I am sure there will be more to be done. Even if you do it yourself, you will need to appoint a worthy subordinate as a pusher, or am I mistaken? Oh, yes! I am sure you will not fail to secure promptly the approval of your very fine commanding officer, Nils Bengtson; I am sure he would be glad to lend every assistance.

Personally, I am not at all in favor of Rust's remaining anonymous. He was a research chemist before he went into the plantation and brokerage business; he is not without a modest degree of competence in applied statistics; and he has an inquiring mind and the perseverance of a basic research worker. He specifically wishes to attend the symposium; and I think that his name should be used at least by me in my paper and that consideration should be given to requiring him or his wife as designee to present the initial medal to Grubbs. I think he will do it if the committee puts the screws on him by way of a personal letter from Bengtson.

Please telephone me Area Code 305--647-7155 about any significant matter. The acceptance or turn-down on this will affect my paper which I know you will want more promptly than I can turn it out.

With sincere regards,



Leslie E. Simon
Maj Gen USA(Ret'd)

Copy to:

Frank E. Grubbs

14 September 1964

Dr. Francis G. Dressel
Army Research Office-Durham
Box CM, Duke Station
Durham, North Carolina

Dear Francis:

Thank you for sending copies of General Simon's two letters. Frankly, after reading them, I have mixed and confused feelings about the intent of the award. Consequently, I will disregard the letter that he wrote to Mr. Rust and comment on his letter to you.

Any individual or organization (just about) can give awards to in-house personnel. Thus, Mr. Rust has the prerogative of establishing an award and developing the appropriate rules for determining the recipient of such an award. As a result of talking to the Personnel people, we've been informed that we can play no role in handling the funds or creating the medal. However, we can assist, if Mr. Rust so desires, in establishing a committee to choose an appropriate recipient provided that Mr. Rust establishes the award procedure or delegates that task to the committee.

I want to add that I am somewhat unhappy that there is consideration being given to awarding a different sum for different people. It seems to me that a fixed prize should be established to be given with the proposed medal. Again, this is Mr. Rust's option. I might note that since a medal is proposed, I think that permission should be obtained from Mrs. Wilks to use Professor Wilks' name.

IVAN R. HERSHNER, JR.
Chief, Physical Sciences
Division

Assoc. of U.S. Army

Soc. of the Army

forwarded to Gen. Simon by Dr. Dressel on 25 Sept.
for him to make choice

1761 Pine Tree Road
Winter Park, Florida
September 24, 1964

Lt. Col. Kenneth R. Bull
Executive Sec'y,
Army Scientific Advisory Panel
Dept. of the Army
Office of the Chief of R&D
Washington, D. C. 20310

Dear Colonel Bull:

I enclose a copy of a letter that I wrote to Mr. Philip G. Rust. Please read it so that you will understand a proposal that I am trying to put over, and so that you will be able to do something about it.

Astonishingly enough, Mr. Rust accepted my proposal, lock, stock, and barrel. Immediately upon receipt of Rust's telegraphic acceptance, I wrote a letter to Dr. F. G. Dressel, who is in charge of the program for the Tenth Symposium urging him to take immediate steps to get the "Wilks' Award" set up on a business basis. A business basis for the award is indispensable to having the endowment that Rust is willing to give (estimated at three to five thousand dollars) accepted by an established body and properly administered -- this in addition to getting the medal designed and struck, if practicable by the November 4 - 6, 1964 symposium.

After almost three weeks, Dressel does not seem even to have found an avenue of approach. I am greatly embarrassed because of not being able to inform Mr. Rust of the dollar value of the funding required, the organization to whom the check should be made, and what will be done relative to the presentation of the initial medal at the November symposium. I can handle the last matter myself, but the other two require swift action in the Pentagon. I am sure that Mr. Hawkins would lend all the power of his office to getting this thing through. It is tragic to allow a thing that can be of such benefit to the Army to die by default. It would be a continuing and beneficial stimulus to our whole scientific effort and a reward to the best of our enterprising people. Please lend your competence and effectiveness to getting this thing through swiftly.

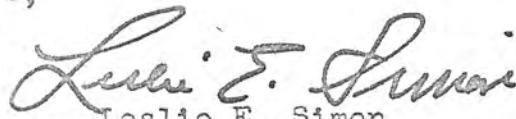
I asked Dressel yesterday by telephone to get this matter into your hands but I doubt seriously that he will

explain it to you adequately. If I were in Washington, I would go to Mr. Hawkins myself but I do not wish to burden him with reading the three and one-half page letter that I have imposed on you. You can give him a three minute oral synopsis of it. Please return the letter to me because it is my file copy.

Note that it is not necessary that the handling of the money be done by Government. It can be done by a university, any non-profit and patriotic organization, or perhaps by the National Academy of Arts and Sciences. Whereas some Army action giving the award an official status is desirable, I am not at all sure that even Army approval of the award is necessary. Could you check this? Better check with Legal or perhaps with the Executive Secretary of the National Academy if you choose. Telephone me as early as you can to get me off the hook with Rust. I will deeply appreciate your efficient help in this matter.

I would like to keep secret from Dr. Grubbs the matter of the honorarium to accompany the award of the initial medal. He is aware of all other matters and so is Dressel.

Sincerely yours,


Leslie E. Simon
Maj Gen USA(Ret'd)

1 incl:

My file copy to Philip G. Rust

1761 Pine Tree Road
Winter Park, Florida
October 3, 1964

Lt. Col. Kenneth R. Bull
Executive Secretary
Army Scientific Advisory Panel
Department of the Army
Office of the Chief of R&D
Washington D. C. 20310

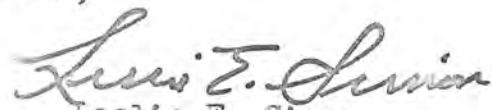
Dear Colonel Bull:

After our conversation of Wednesday, I wasted two days trying to get in touch with Dr. W. Allen Wallis, President of Syracuse University and President-Elect of the American Statistical Association. After that, I called Donald Riley, Executive Secretary of ASA, who was absolutely tops in his cooperation. To bring you up-to-date, please let me impose upon you to read all three of the enclosed documents; and send them in this order, (1) copy of letter to Dr. Dressel (2) copy of letter to Mr. Donald C. Riley (3) copy of "Obligations of ASA".

We have really got this ball to rolling, thanks to your office and JAG, and despite the proximity of the deadline, we can expect to make the grade. Please check out with Major Zalonis on the legality of the Obligations of ASA. Please give me a reaction about the invitation to Mr. and Mrs. Rust (we may have to get behind this to keep it from hanging fire). Please discuss with JAG and see to getting a letter addressed to me, for me to pass on to ASA expressing an Army position on the Award so that it will be clear that ASA is doing something for the Army. This will also obviate any future objection to the recipient of an Award being an Army man. It will be official. It may be best to address the letter to ASA directly from the Secretary after the agreement is firmed up.

I thank you very much for the way you have cleared this matter up and hope that you will advise me of any mistakes or pitfalls that seem eminent.

With best personal regards,


Leslie E. Simon
Maj. Gen. USA (Ret)

P.S. See personal enclosed.

U. S. ARMY RESEARCH OFFICE - DURHAM
BOX CM, DUKE STATION
DURHAM, NORTH CAROLINA 27706

IN REPLY REFER TO:
CRD-AA-M

7 October 1964

Mr. Fred Frishman, Chief
Mathematics Branch
Physical Sciences Division
Army Research Office
3045 Columbia Pike
Arlington 4, Virginia

Dear Fred:

We are inclosing a copy of the letter by General Simon to this office. We are also inclosing a copy of his letter to Mr. Donald C. Riley. We thought you might be interested in rules that are being laid down to handle the Sam Wilks Memorial Fund. The undersigned appreciates the fact that you are willing to send a special invitational letter to Mr. and Mrs. Rust.

Please save the addresses of the persons that attend the conference. These will help in the work of this office at the time the Proceedings are issued.

Sincerely yours,

Franis
F. G. DRESSEL
Assistant
Mathematics Division

Incl
as

1761 Pine Tree Road
Winter Park, Florida
October 2, 1964

Dr. F. G. Dressel
U.S. Army Research Office - Durham
Box CM, Duke Station
Durham, North Carolina 27706

Dear Dr. Dressel:

Several days after our last telephone conversation, I had a telephone conversation with the Office of the Assistant Secretary for R&D. Col. Bull had Maj. John Zalonis of JAG on the telephone line with him. Col. Bull said that they had decided that it was best to explore the American Statistical Association as custodian for the endowment of the Wilks' Award. I told him that I had thought of the same thing myself and that it looked good to me. It was concluded that I should undertake the job of getting ASA's reaction; and if favorable, that I should explain matters to ASA in detail, and find out precisely what the whole agreement would be.

Accordingly, I called Mr. Donald C. Riley, Executive Director of ASA, who expressed great enthusiasm for the project and asked me to set forth for him in writing complete information about the proposed Award so that he would have a basis for an emergency solicitation of the Members of the Council to get prompt action for us. He wished specifically to know what the obligations of ASA would be and a tentative set of the rules to govern the Award.

I enclose a copy of my letter of yesterday to Mr. Riley together with an enunciation of the Obligations of ASA (as I saw them) and an enunciation of the Bases of the Wilks' Award. Will you please give me your criticisms and any suggestions or advice (if practicable, do so by 10 o'clock, Tuesday, October 6; otherwise, Thursday, after 10 p.m. or Friday morning).

After talking with Riley, I called Mr. Rust, apologized for our unavoidable delay, and told him the story up to that point. I have followed up this conversation with a letter to Rust in which I estimate the total cost as:

Design of Medal (est)	\$1000.00
Endowment Fund	3500.00
Honorarium to Dr. Grubbs (on presentation of initial Award)	500.00
Total	\$5000.00

Receiving & Recall initially

Friedman

Rust is very enthusiastic and wishes to pay me a visit before our November 3 meeting. In view of the situation, I believe it impracticable to follow the last paragraph of your letter of September 25 in which you say that it has been suggested that we merely announce the memorial fund at the Tenth Conference and that plans call for the first recipient of the Award to be announced next year. Such a delay would not only dissipate present enthusiasm (which reflects much credit on the Army) but be such an anti-climax that Rust might drop the matter altogether because he would feel unappreciated. Furthermore, it is easy to see that Rust, although a very modest man, definitely wants to come to the Conference. Therefore, I urge that a very cordial invitation be issued at once to Mr. and Mrs. Philip G. Rust to come to the Conference as honored guests of the Army and see to it that they incur no registration fees or other expenses incidental to the Conference itself. Of course, they would pay their own traveling expenses. I think this invitation should emanate either from Colonel Bengtson or from Mr. Hawkins. If you or Bengtson so wish, I can see to it that Mr. Hawkins does it. Please let me know if you concur in these views.

As a corollary to the above, I think that it would be most gracious for you or Bengtson to ask that either Mr. or Mrs. Rust present the honorarium (not the Medal) to Grubbs. He may refuse; would say very little if he accepts the duty; but I think that he should be asked. Please tell me what you and Colonel Bengtson think about this so that I may be guided in my conversations with Rust.

I will appreciate very much any other guidance you give me in connection with the whole matter.

Sincerely yours,

Leslie E. Simon

Leslie E. Simon
Maj Gen USA(Ret'd)

2 initials

Copy to:
Lt. Colonel Kenneth R. Bull

1761 Pine Tree Road
Winter Park, Florida
October 1, 1964

Mr. Donald C. Riley
Secretary - Treasurer and Executive Director,
American Statistical Association
810 18th Street, N. W.
Washington, D. C. 20006

Dear Mr. Riley:

Pursuant to our telephone conversation of this date, I enclose (1) a draft of what I picture as the obligations of ASA which I have checked by telephone with the Office of the Assistant Secretary of the Army for R&D and with the Office of the Judge Advocate General. This does not mean that my draft is right: it means merely, that heard orally by them, it appeared unobjectionable. I solicit your criticisms, advice and guidance.

I enclose also another brief paper, "Bases of the Wilks Award". It will give you some of the information that you need in presenting this matter to the Members of the Council. It is written in quite impersonal form because I am merely a kind of honest broker in this whole matter and not a contributor of anything fundamental.

Briefly, Mr. Philip G. Rust of Thomasville, Georgia telephoned me about a statistical problem. I believe that he is an ex-Ordnance Officer and had heard of me. He is a small arms enthusiast, and he was disturbed because he was unable to compare measures made of small arms targets. For example, one man reports that he shot a target of five shots with a mean dispersion of 1.4 inches. Another man reports that he shot a target of ten shots with an extreme spread of 3.2 inches. What can Rust judge about the relative precision of fire of the two men? Actually, there are ten different statistics used for measuring small arms fire.

Later, Rust paid me a visit, and even tried to employ me to solve his problems. I declined but did try to help him by references to standard works and by discussion of his problem with statistical friends, among them Dr. Frank E. Grubbs.

About a month ago, I received from Grubbs the draft of a monograph for comment, criticism and advice about publication. Grubbs covers thoroughly just about all of Rust's questions. Incidentally, a part of Grubbs solution was obtained through the cooperation of Wilks who, in turn, had

received cooperation from others.

At this same time, I was working on a paper in commemoration of Wilks that I am to present at the Tenth Conference on Design of Experiments in Army Research, Development and Testing at the Statler-Hilton Hotel, Washington, D. C. on November 4 - 6, 1964. It happens that due to a suggestion from Wilks, I established this series of conferences when I was Assistant Chief of Ordnance for Research and Development, and Wilks chaired all of them up to the time of his death.

It suddenly occurred to me that Rust was getting what he wanted (through the medium of Grubbs' monograph) yet no person was directly responsible. It had been effected by the willing cooperation of men of good will who worked for science sake rather than for any material reward. I thought that if Rust was financially able, he might be willing to establish an award, both to express his appreciation to those who had worked on the problem about which he had asked questions and to do a beneficial act to the scientific community. I discussed this matter with Rust by correspondence and he is delighted to do so. His one stipulation is that he wishes to remain anonymous to which, the Army Research Office, Grubbs and I all object; and will not yield unless he insists very strongly. Would you kindly express your opinion in this matter?

All persons concerned (except Grubbs, who has not been asked) agree that Grubbs should receive the initial award (not the first award but a procedure similar to that of the Shewhart medal) and an honorarium, not a part of the endowment. We propose that the award to Grubbs be made November 4, even though we have to present him with an empty box for lack of a medal.

I deeply appreciate your willingness to be of service and of achieving the end point outlined, even though some variations may be necessary. Please let me know as soon as you have any definitive information because the deadline is extremely close.

Sincerely yours,

Leslie E. Simon
Maj Gen USA(Ret'd)

OBLIGATIONS OF THE ASA
(relative to the proposed Samuel S. Wilks Award)

Except for matters pertaining to the initial award, the following responsibilities or obligations are ASA's: (The Wilks' Award will consist of a medal and an honorarium of the order of \$100.00):

- a To accept the sum of money donated to ASA for the Wilks' Award, and be custodian of the endowment.
- b See to the investment of the endowment so as to bring an annual yield sufficient to support the Award (both the medals and the honorarium).
- c See to the design of the medal and the striking of an appropriate number of medals, e.g. 4, 8, or 10, but not so many as to unduly deplete the endowment, whereas it could otherwise earn more yield.
- d After satisfying the preceding paragraph, all expenses of the continuing Award should be paid, if practicable, out of income.
- e To annually determine the amount of honorarium that can be paid prudently for that specific year. This should be of the order of \$100.00.
- f Annually, see to it that an appropriate existing committee is selected (or appointed) to select the awardee, based on the criterion that he is a person whom the committee regards as deserving of the Award, based primarily on his contributions (either recent or past) to the welfare of the Army through new scientific or technical knowledge, ingenious applications of existing knowledge, or successful activity in the fostering of cooperative scientific efforts that proved useful to the Army. The person selected may, but need not be, in the military service or a Government employee.
- g Annually, see to it that an appropriate person is selected to present the Award.
- h Require that the Award be made in connection with the Army's Annual Conference on Design of Experiments which Wilks chaired for nine years, provided that the Conferences continue to be held and seem appropriate.
- i The ASA may, if the Army's Conferences on Design of Experiments are discontinued or lapse for

more than two years, at its discretion, select some other occasion for the Award and, if necessary, some other criteria that are consistent with the bases of the Wilks Award. If occasion should arise, wherein the AG4 could find no effective way for the Award to continue to commemorate Wilks and to comply with the Bases of the Award, it may terminate the Award and absorb the endowment for other philanthropic enterprises, preferably with emphasis on benefits to the Army.

BASES OR BACKGROUND OF THE WILKS' AWARD

a. The Wilks' Award was made possible through the generosity of Mr. Philip G. Rust, of Winnstead Plantation, Route 3, Thomasville, Georgia.

b. Mr. Philip G. Rust was interested in simplified statistical measures of central tendency and dispersion (having to do with small arms targets); and, accordingly made inquiries to various statisticians and persons interested in Statistics, primarily those associated with the Army.

c. As a consequence of Mr. Rust's inquiries, a number of persons (among them was Dr. Samuel S. Wilks) cooperated in getting solutions of his problems, which appeared to be an illustration of cooperation among scientists in seeking new knowledge.

d. None of the persons who received inquiries emanating from Rust, worked specifically for Rust; hence Rust concluded that he could best show his appreciation of marked cooperation among scientists by setting up an award that would stimulate future efforts in evolving new knowledge with particular emphasis on knowledge that would further ends associated with the Army.

e. Wilks was noted for his generous work for Government, his cooperation efforts, and leadership. Hence, it was very desirable to have the award honor Wilks.



AMERICAN STATISTICAL ASSOCIATION

Room 703 • 810 - 18th Street, N.W. • Washington, D.C., 20006

EXECUTIVE DIRECTOR
DONALD C. RILEY

October 8, 1964

To: Members of the Board of Directors of the
American Statistical Association

From: Donald C. Riley

Subject: Special Medal in Honor of Samuel S. Wilks

I received a rather unusual telephone call during the last week from Major General Leslie E. Simon (retired), who headed the Aberdeen Proving Ground Statistical Organization during the War and who is a Fellow of ASA. Many of you know him. He had tried to reach Al Bowker and Allen Wallis, and when he called me, I promised to check with the Board of Directors at once.

He has given the American Statistical Association a firm offer that we act as administrators of a small fund and the choosers of a committee to arrange for the selection each year of a person to receive a medal in memory of Sam Wilks for outstanding contributions, especially in the area of design of experiments. It is a rather unusual proposal but I have checked so far with two members of the Board of Directors, namely, Seymour Geisser and Frederick Mosteller, and both of them feel that it is high time that there be more medals in our field and that this sounds very appropriate.

This grows out of the work of Sam Wilks and more recently Frank Grubbs. Before Sam's death, a Georgia planter at Thomasville, Georgia, who has long had a hobby in the small arms field, got rather detailed help from Sam Wilks and later from Frank Grubbs in applying statistical analysis to the pattern of small arms fire. Colonel Kenneth Bull, Executive Secretary, Army Scientific Advisory Panel, Office of the Chief for Research and Development, Department of the Army, became very much interested in it. As you may know, the Department of the Army has, for the last nine years, had an annual Conference on Design of Experiments and for those nine years Sam Wilks was its chairman. The Georgia planter, Mr. Philip G. Rust, would like to turn over, in the form of a foundation, \$3,500 to \$5,000 for investment by ASA. From this an annual medal would be struck and an honorarium to the medalist provided. The next Conference is to be about November 3 in Washington at the Statler Hotel and approval by ASA of this arrangement before then is urgently requested. It would be too late this year to have the medal ready by that time but the award would be made during that Conference and, I presume, annually at that Conference or at the Annual Meetings of the American Statistical Association. At any rate, it is understood that ASA would appoint an administrative and selecting committee and, if you approve, I would suggest that this committee be appointed by the President of the American Statistical Association in consultation with General Simon. The medal would not be confined to analysis of small arms fire but to

Members of the Board of Directors of ASA

October 8, 1964

scientific problems in many areas not confined solely to those of primary interest to the military.

As I pointed out above, both Mr. Geisser and Mr. Mosteller believe the idea to be an excellent one and I can see no special bugs in it. In fact, I believe it is not inappropriate to quote Mosteller that he is enthusiastic and believes more of this sort of thing should be done.

A card is enclosed in which you can express your positive or negative reaction. You may also wish to write me or President Bowker further. Because of the pressure of time, I am suggesting a deadline for replies of October 20.

Encl.

cc: Leslie E. Simon
Kenneth Bull
F. Frishman

P. S. If this proposition is accepted by a majority of the Board of ASA, I am sure President Bowker will appreciate receiving suggestions from Board members for persons to serve on the selection committee.

JAGA 1964/4740
SUBJECT: Wilks' Award Endowment

1. There is no legal objection to the establishment of the Samuel S. Wilks award as proposed by Maj Gen Simon, USA Ret, in his letter of 3 October 1964 addressed to the Executive Secretary, Army Scientific Advisory Panel.

2. A legal question could arise in the event the Samuel S. Wilks Medal and honorarium were awarded to an Army member or civilian employee for meritorious work performed in the course of his official duties. Title 18, United States Code, section 209, generally prohibits an officer or employee of the Executive branch of the United States Government from receiving any salary or any contribution to or supplementation of salary from any source other than the Government of the United States as compensation for his services rendered to the Government. Thus, should the sole criterion used in making the award to such an individual be the recognition of the tangible or intangible value to the Army of the work he has performed in the course of his employment, the officer or employee would probably be precluded from accepting the award. However, if the criterion used is the recognition of an individual's personal, intellectual contribution to the advancement of scientific knowledge, which contribution might only coincidentally have benefited the Army, and if the award were made and accepted, not with the intent of supplementing salary but rather with the intent of recognizing intellectual accomplishment, there would probably be no violation of the criminal statute. In this regard, it is suggested that paragraph f of the inclosed paper "Obligations of the ASA" be changed to read:

"f. Annually, see to it that an appropriate existing committee is selected (or appointed) to select the awardee, based on the criterion that he is a person whom the committee regards as deserving of the award, based primarily on his contribution (either recent or past) to the advancement of scientific or technical knowledge, ingenious application of existing knowledge, or successful activity in the fostering of cooperative scientific efforts which has only coincidentally benefited the Army. The award shall be made with the intent of recognizing the personal, intellectual accomplishments of the individual and shall not be given with the intent of supplementing

JAGA 1964/4740

the individual's salary, providing him with compensation, or advancing the interests of the donor or trustee of the endowment."

3. If the problem discussed in paragraph 2, above, arises in a specific case, the matter should be referred to this office for a legal opinion.

FOR THE JUDGE ADVOCATE GENERAL:

[SIGNED]

l Incl
nc

WILLIAM M. NICHOLS
Lieutenant Colonel, JAGC
Chief, General Law Branch
Military Affairs Division



AMERICAN STATISTICAL ASSOCIATION

Room 703 • 810 · 18th Street, N.W. • Washington 6, D.C.

EXECUTIVE DIRECTOR
DONALD C. RILEY

October 23, 1964

Mr. Philip G. Rust
Winnstead Plantation
Thomasville, Georgia

Dear Mr. Rust:

This will acknowledge, with great appreciation, your check in the amount of \$5,000.00 to establish the Wilks Memorial Award, to be administered by the American Statistical Association in accordance with the instructions and limitations listed by General Simon in his correspondence with us.

I understand that you will be at the presentation ceremony on the first day of the Design of Experiments Conference, to be held here in Washington in the Statler Hilton Hotel on November 4. I shall also be there and shall look forward to meeting you and expressing in person our appreciation. Your action has been in the best scientific tradition.

And now to more immediate things. It occurs to me to remind you that your remittance is deductible on your income tax return, as a contribution to the American Statistical Association, which is a nonprofit, professional, scientific society and exempt under the Internal Revenue Code 501 (c) (3).

We would like to consult with you from time to time as this project gets under way. I am sure that the President of the Association will want to appoint a committee that has full representation in the field in which you, General Simon and Wilks have expressed such great interest. As you may know, we have already had a number of suggestions for the committee from General Simon and other members of the American Statistical Association with whom we have consulted.

I shall look forward to seeing you on November 4.

Sincerely yours,

Donald C. Riley
Executive Director

cc: Leslie E. Simon
Albert H. Bowker
W. Allen Wallis
I. R. Herschner, Jr.

xxxx RDRE-12

7 February 1972

US Army Aberdeen Research &
Development Center
ATTN: Dr. Frank Grubbs (AMXRD-XRA)
Chief, Operations Research Analyst
Aberdeen Proving Ground, Maryland 21005.

Dear Frank,

I have just received your letter of 27 January 1972 and am taking this opportunity to respond to it and to respond also to what was written in your 4 November letter.

I inclose an edited copy of my letter of 10 May 1971 to you, in which I attempted cumbersomely to give some history regarding the establishment of the Samuel J. Wilks Memorial Medal. As I stated therein, I was the Action Officer who was tasked at the Department of the Army level with taking appropriate action on Mr Rust's proposal to establish such an award. Thus, most (if not all) of the correspondence emanating from the Pentagon on the award were my creations.

To get to the point, if memory serves me correctly (i.e. the files are in my office in Washington), the criteria of "only coincidentally benefited the Army" was introduced by Army legal personnel in order to permit Army employees to receive the Medal. As a result, we were able to select you for the initial award.

The above is history. We have also as history the fact that Mr Rust requested that the Army give the award - the implication here is that Award winners would be those who have performed a service to the Army.

If the two comments in the preceding paragraphs are partially contradictory, it is because circumstances forced the contradiction in order to permit awards to be made to Army employees. However, the basic thought was to give due recognition to those

7 February 1972

leaders in the statistics profession who also assisted the Army. One can, of course, broaden this to include service to the Federal Government. In this latter connection, the December 1964 article on Professor Wilks just touched on some of the Federal agencies that he assisted.

Now, we have that the Wilks Award is to be given to someone who has done or is doing at least one of the requirements specified:-

- a. Contributing to the advancement of knowledge.
- b. Ingenious application.
- c. Fostering co-operative efforts.

Interestingly enough, Professor Wilks possessed all these qualities. In addition, he gave of himself in an unstinting manner to assist many Federal agencies. This latter quality of assisting others was to have been specified as a criterion but was deleted for the reasons given in my second paragraph.

When I look at previous Award winners, I find that many of the winners have satisfied all four criteria. However, some have had little contact with the Army or with the Federal Government. For my part, I shall continue to look for and to vote for those who satisfy all four criteria, since I feel that only then would I be fulfilling both Mr Rust's basic desires and giving due homage to the memory of Professor Wilks. I find myself unable to vote for outstanding statisticians, say, who do not satisfy the other three criteria.

Since I must vote my conscience and not that of previous (and well-respected) members of the Committee, I must object to your plan to "keep the two in Column A and to select two from Column B". My feelings are that the Award is "up for grabs" each year. I feel that a descriptive vita should be made available for each of the leading 10, 12 etc. candidates. I can, however, accept the notion that these 10 or more were selected from previous committee deliberations; but to the list should be added candidates proposed by new members of the Committee. I think that a sub-set should be selected after an initial vote but only after the initial vote of the members of the Committee.

Further, I do not think that I should be required to rank any individual/s if I choose not to. Alternatively, if I must rank him/them, I would prefer to rank them all as "10" or whatever the last ranking is.

RDRE-12

7 February 1972

In closing, if it is felt that I am, or will be, a disruptive influence, I will accept ~~the~~ hint and resign. But, please make awards to those who in some sense resemble Professor Wilks.

Most sincerely,

FRED FRISHMAN

cc: Members of Wilks Committee
Past President Eisenhart,

JAN 31 1973

Dr. Clifford G. Hildreth
President
American Statistical Association
806 15th Street, NW
Washington, D. C. 20005

Dear President Hildreth:

I have received a copy of your letter to Stu Hunter which shows the membership of the Samuel S. Wilks Memorial Medal Committee.

Before all others who have an institutional memory about the creation of the Wilks Medal fade from view, I think it appropriate to bring to your attention some of the underlying circumstances and desires regarding the Medal.

In the Fall of 1964, Mr. Philip Rust discussed with Leslie Simon the creation of an Award to honor Sam Wilks. Said Award was "to be presented annually to a meritorious person who has made significant contributions to statistical methods used by the Army, and whom the Committee judges to be deserving of the Award." It was suggested that the Army select the winner.

When the above proposal was forwarded to my office, it was checked with our personnel officials who said that we could "play no role in handling the funds or creating the Medal." However, we stated that we would be willing to assist in establishing a Committee for the Award.

Subsequently, contact was made with Mr. Donald C. Riley of the ASA by Simon and in a letter contact, Gen Simon wrote, as he saw them, the obligations of the ASA. I quote some pertinent paragraphs:

"Annually, see to it that an appropriate existing committee is selected (or appointed) to select the awardee, based on the criterion that he is a person whom the committee regards as deserving of the Award, based primarily on his contributions (either recent or past) to the welfare of the Army through new scientific or technical knowledge, ingenious applications of existing knowledge, or successful activity in the fostering of cooperative scientific efforts that proved useful to the Army. The person selected may, but need not be, in the military service or a Government employee."

"Annually, see to it that an appropriate person is selected to present the Award."

"Require that the Award be made in connection with the Army's Annual Conference on Design of Experiments which Wilks chaired for nine years, provided that the Conferences continue to be held and seem appropriate."

"The ASA may, if the Army's Conferences on Design of Experiments are discontinued or lapse for more than two years, at its discretion, select some other occasion for the Award and, if necessary, some other criteria that are consistent with the bases of the Wilks Award. If occasion should arise, wherein the ASA could find no effective way for the Award to continue to commemorate Wilks and to comply with the Bases of the Award, it may terminate the Award and absorb the endowment for other philanthropic enterprises, preferably with emphasis on benefits to the Army."

Shortly afterwards, the Army's legal personnel suggested a change under the impression that the Award would be solely for Army personnel. Their recommended wording was as follows:

"Annually, see to it that an appropriate existing committee is selected (or appointed) to select the awardee, based on the criterion that he is a person whom the committee regards as deserving of the award, based primarily on his contribution (either recent or past) to the advancement of scientific or technical knowledge, ingenious application of existing knowledge, or successful activity in the fostering of cooperative scientific efforts which has only coincidentally benefited the Army. The award shall be made with the intent of recognizing the personal, intellectual accomplishments of the individual and shall not be given with the intent of supplementing the individual's salary, providing him with compensation, or advancing the interests of the donor or trustee of the endowment."

Finally, the following was taken from the December 1964 American Statistician, which printed Mr. Riley's remarks at the Army Design of Experiments Conference at which the first Wilks Medal was awarded:

"As mentioned in General Simon's address, the ASA has recently had the opportunity to be of further services. By joint agreement between representatives of the Army, Mr. Philip G. Rust and the ASA, the Samuel S. Wilks Award has been established. The Award will consist of a medal and an honorarium. The ASA has accepted the obligation of administering the Award in accordance with guidance and criteria which are consonant with law and with the wishes of Army representatives, Mr. Rust and the ASA."

"Annually, ASA has agreed that an appropriate existing committee be appointed to select the awardee, based primarily on his contributions (either recent or past) to the advancement of scientific or technical knowledge, ingenious application of existing knowledge, or successful activity in the fostering of cooperative scientific efforts which have only coincidentally benefited the Army. The Award shall be made with the intent of recognizing the personal, intellectual accomplishments of the individual and shall not be given with the intent of supplementing the individual's salary, providing him with compensation, or advancing the interests of the donor or trustee of the endowment."

Unfortunately, Mr. Riley's remarks included the verbiage recommended by the Army's legal staff. As we know, few Army personnel have received the Award and it does not appear likely that any others will win in the near future. Accordingly, the admonition "which has only coincidentally benefited the Army" should now be replaced by "which has benefited the Army." This wording is more realistic and, also, recognizes that Wilks spent a significant portion of his time in assisting the Army.

In recent history and on reviewing the candidates, I feel that the Wilks Committee has tended to include candidates who are distinguished statisticians but whose contributions to and connections with the Army's program are, at best, tangential. There is no doubt that these individuals should receive recognition from the ASA, but the Wilks Medal is not appropriate. I feel that the members of the Wilks Memorial Medal Committee should be instructed, in detail, as to the guidelines and purposes of the Award. This would minimize embarrassment and, more important, keep alive the spirit of Wilks direct contribution to Army statistics.

In consonance with the above, and with Mr. Rust's wishes, a certificate would be most appropriate to accompany each Medal, whereby the certificate should specify that the award was given for significant contributions to the Army.

Rumor has it that there is a desire on the part of some individuals to mask the relationship of the Award and the Army and to utilize different criteria than those mentioned above for determining a winner. As with the establishment of the Wilks Medal, I would be most pleased to assist in the establishment of any other award with associated criteria in determining the award winner. I feel that the Wilks Memorial Medal and an accompanying certificate be awarded to one who can emulate Sam Wilks to some extent - that is, a scholar, an applier of statistical methodology, and an assistance giver to the Army.

FRED FRISHMAN, Ph.D
Chief, Mathematics Branch

7 May 1973

Dr. J. Stuart Hunter
School of Engineering
Princeton University
Princeton, New Jersey 08540

Dear Stu:

I have your letter of 11 April and this, of course, is my response. I have one detail to bring to your attention regarding the historical record of the creation of the Wilks Medal. Specifically, the Army's legal personnel deleted mention of "contributions to the Army" based on the erroneous notion that the Medal was to be awarded to Army personnel only. Since the Medal is not for Army personnel, it is somewhat pointless for the Medal Committee to operate under erroneous assumption. If desired, I can easily obtain a corrected version of the Army's desires on this point.

In any event, I am pleased to nominate Herbert Solomon for the Samuel S. Wilks Award. In many ways, he exemplifies the best scientific qualities of Wilks - contributor to the advancement of knowledge, ingenious applier of statistical knowledge, fosterer of cooperative efforts, and assistant to many government agencies.

In line with my nomination, I have inclosed copies of background material on Solomon. I would appreciate your distributing this material to the members of the Committee.

By the way, I have a new position and my address is given below.

Congratulations on your new assignment.

Most sincerely,

FRED FRISHMAN

Mathematics Division
Army Research Office
Box CM, Duke Station
Durham, North Carolina 27706



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National Bureau of Standards
Physics Bldg., Room A345
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July 25, 1975

Dr. Nancy R. Mann
Rockwell International
Science Center
1049 Camino Dos Rios
P.O. Box 1085
Thousand Oaks, California 91360

Dear Nancy:

Enclosed is my version of the charge to the S. S. Wilks Award Nominating Committee. The confusion that has occasionally beset the committee stems from the fact that the originator, Mr. Rust, wanted the award to be an Army award with ASA just being a judge of the best from a list of candidates which the Army submitted.

In the process, it somehow became an ASA award with the requirements set down by Mr. Rust for an Army award being used to judge an ASA award. The current list of criteria still reflects this, although they have been enlarged to include the public interest as well as activities for the military.

A proper policy on awards (had there been one in 1964) would probably have stated that ASA should not give awards for work for individual organizations (e.g., the Army, oil companies, etc.) I would recommend that the award be broadened to be a public service award. If this is done, ASA should offer to return the residue of Mr. Rust's endowment to him if he disapproves of such a change.

Sincerely,

Joe

J. M. CAMERON, Chairman
S. S. Wilks Medal Committee

Enclosure

S. S. WILKS AWARD NOMINATING COMMITTEE

Background

The Wilks Award was made possible through the generosity of Mr. Philip G. Rust of Thomasville, Georgia, who donated to the ASA the funds necessary for an annual medal and honorarium. The details governing the Award and its administration were arranged through the good offices of Major General Leslie E. Simon (Ret'd), Fellow of the ASA and designee of the Army for that purpose, together with the ASA and Mr. Rust.

The initial Award was announced by Mr. Donald C. Riley, Executive Director of ASA, at the Army's Tenth Conference on Design of Experiments, in Washington, D.C., November 4, 1964.

The winners have been:

1964	Grubbs	1970	Snedecor
1965	Tukey	1971	Dodge
1966	Simon	1972	Box
1967	Cochran	1973	Hartley
1968	Neyman	1974	Daniel
1969	Youden		

Responsibility of ASA

- (1) Appoint an appropriate committee to select the awardee.
- (2) See to the investment of the endowment so as to bring an annual yield sufficient to support the Award (both the medals and the honorarium).
- (3) Annually, see to it that an appropriate person is selected to present the Award in connection with the Army's Annual Conference on Design of Experiments which Wilks chaired for nine years, provided that the Conferences continue to be held and seem appropriate.
- (4) The ASA may, if the Army's Conferences on Design of Experiments are discontinued or lapse for more than two years, at its discretion, select some other occasion for the Award and, if necessary, some other criteria that are consistent with the bases of the Wilks Award. If occasion should arise, wherein the ASA could find no effective way for the Award

to continue to commemorate Wilks and to comply with the Bases of the Award, it may terminate the Award and absorb the endowment for other philanthropic enterprises, preferably with emphasis on benefits to the Army.

Charge to the Committee

The Committee will select an awardee based primarily on his contributions (either recent or past) to the advancement of scientific or technical knowledge, ingenious application of existing knowledge, or successful activity in the fostering of cooperative scientific efforts which have been directly involved in matters of national defense or public interest. The award shall be made with the intent of recognizing the personal and intellectual accomplishments of the individual and shall not be given with the intent of supplementing the individual's salary, providing him with compensation, or advancing the interest of the donor or trustee of the endowment.

The selection criteria are as follows:

- (1) Contributions to the advancement of knowledge. Publications in theory and methodology, educational activities, awards.
- (2) Ingenious applications of existing knowledge, consultation, (especially DOD, U.S. Government), applical papers, impact on subject matter fields.
- (3) Cooperative scientific efforts, advisory committees, (involving national defense or public interest), professional society activities.



DEPARTMENT OF THE ARMY
U. S. ARMY BALLISTIC RESEARCH LABORATORIES
ABERDEEN PROVING GROUND, MARYLAND 21005

22 March 1976

Dr. Fred C. Leone
Executive Director
American Statistical Association
806 - 15th Street, N.W.
Washington, DC 20005

Dear Fred,

I am herewith recommending that in connection with any future published accounts of the Wilks Memorial Medal we do not speak of Phil Rust (who donated the funds) as a "retired industrialist." This is because his statistical interests actually run much deeper. Thus, we should indicate that the funds for the Wilks Memorial Medal were donated by Philip G. Rust, who studied the frequency distribution of the extreme spread from both the impacts of actual rifle firings on targets and also from sampling (Monte Carlo) studies back in the late 1930's. In addition, Mr. Rust discussed the theoretical statistical problem back then with Sam Wilks of Princeton. Hence, his interest in donating funds for the Wilks Memorial Medal is therefore quite evident.

From the above, you can see that Phil Rust played a role which is rather significantly different from that of a "retired industrialist." What has happened is not the fault of ASA, but rather something we have perpetuated without actually describing Phil Rust's proper role, and the above description would give readers a clear account of the statistical connections.

With best personal regards, I am

Cordially yours,

Frank

Frank E. Grubbs

cc: ✓ Dr. Douglas Tang
Dr. Francis Dressel
Gen. Leslie E. Simon
Prof. Herbert Solomon

