May 29, 1987

Office of Naval Research
800 N. Quincy Street
Arlington, Virginia 22217

Attn: Mathematical Sciences Division
Re: Final Report N00014-76-C-0475

Dear Sirs:

This letter, the attached list of technical reports issued under the captioned contract, some discussion of the technical memoranda developed under the contract, and the listing of the workshops held under the contract constitute the final report for this contract. The list of technical reports issued in the contract period served by this report, May 1, 1976 to March 31, 1987, begins with Technical Report No. 233 dated July 1, 1976 and ends with Technical Report No. 388 dated March 17, 1987.

The titles of the 156 technical reports indicate the eclectic nature of the topics developed in applied statistics and applied probability and issued under the contract. In addition, over 75 technical memoranda were developed in response to technical queries from Defense Department agencies, principally the National Security Agency. A sample of twenty-five topics studied is attached.

Several workshops were undertaken jointly with the Navy Center for International Science and Technology, an Office of Naval Research unit located at the Navy Postgraduate School in Monterey. For each workshop a proceedings volume was prepared. The titles are attached.

The contract was terminated for administrative purposes. Previous reports through Technical Report No. 232 were submitted under prior contracts, and reports under the new contract N-00014-86-K-0156 will begin with No. 389.

We wish to thank the Office of Naval Research and other contributing Defense agencies for their support of this program in “Applied Statistics.”

Sincerely yours,

Herbert Solomon
Principal Investigator
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1. Tail area estimation using moments
2. Non-parametric tail area estimation
3. Tail area estimation using both moments and samples
4. Pearson curve fitting vs. alternative methods
5. Distribution of the ratio of functions of normal random variables
6. Pearson fit to the exceedance statistics
7. Distribution of the sum of non-identical, non-independent two point random variables
8. Clustering vectors with missing components
9. Best algorithm for generating standard normal variables
10. Distribution of censored sums
11. Mixed discrete and continuous discriminant analyses
12. Utility of higher moments
13. Dimensionality reduction
14. Replacing a value by its remainder
15. Moments of the exceedance statistics
16. Approximations of the mean of the largest order statistic in a sample from a normal distribution
17. Approximations to the distributions of normal order statistics
18. Theories of combining evidence
19. Estimation of very small tail area probabilities
20. Distribution of a linear combination of multinomial random variables for small sample sizes
21. Tests for independence between multivariate vectors that are identically distributed

22. Distribution of the largest common subsequence

23. Probability that k out of p dependent normal random variables are all greater than some constant

24. Distribution of the difference between a normal and a log gamma random variable

25. Distribution of the largest eigenvalue
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