THE TEACHING OF STATISTICS

A report of the Institute of Mathematical Statistics Committee on the Teaching of Statistics[1]

PREFATORY NOTE

This report on the teaching of statistics contains two parts. Part I is a summary of the conclusions reached by the committee concerning the appropriate content and organization of teaching in statistics. It is oriented towards the future, and is intended as a program for action. Part II, mainly the work of the chairman of the committee, is a more intensive discussion of the general problem. It surveys the present state of the teaching of statistics, probes some of the reasons for existing weaknesses in this teaching, and states more fully the basis for the conclusions summarized in Part I.

Additional material, with special reference to applied statistics, is contained in a report of The Committee on Applied Mathematical Statistics of the National Research Council, entitled *Personnel and Training Problems Created by the Recent Growth of Applied Statistics in the United States.*[2]

PART I

SUMMARY OF CONCLUSIONS

1. Who are the prospective students of statistics? A complete teaching program in statistics must be designed to meet the needs of four principal categories of students, listed here according to the amount of training in statistics that is needed to meet their requirements.

a. *All college students.* Statistical method is a vital branch of scientific method. It is widely used in most sciences, business, government, and ordinary life. Some understanding of the nature of inductive inference from quantitative data on the basis of the theory of probability as portrayed in statistical method is an indispensable part of a liberal education.

b. *Future consumers of statistics.* Some students will specialize in administration, business, or other subject-matter that will require them to understand the results of statistical analyses of special problems, although they themselves do not make these analyses. For example, business executives and government administrators must frequently base action on statistical studies. Research workers and teachers in many fields may not themselves use statistical methods, yet in order to keep abreast of their own or cognate fields they must read and understand studies using statistical methods.

c. *Future users of statistical methods.* A still smaller group of students of

[1] The Committee consists of Harold Hotelling, Chairman; Walter Bartky, W. Edwards Deming, Milton Friedman, and Paul Hoel.

[2] Copies may be obtained from the National Research Council, 2101 Constitution Ave., Washington 25.