

Statistician—Nature of the Work

[taken from MAA publication “Mathematical Scientists At Work”, 2nd Ed.]

Statistics is the collection, analysis, and presentation of numerical data. Statisticians design, implement, and interpret the numerical results of surveys and experiments. In doing so, they often apply their knowledge of statistical methods to a particular subject area, such as biology, economics, engineering, medicine, or psychology. They may use statistical techniques to predict population growth or economic conditions, develop quality control tests for manufactured products, assess the nature of environmental problems, analyze legal and social problems, or help business managers and government officials make decisions and evaluate the results of new programs.

Often statisticians are able to obtain information about a group of people or things by surveying a small portion, called a sample, of the group. For example, to determine the size of the total audience for particular programs, television rating services ask only a few thousand families, rather than all viewers, what programs they watch. Statisticians decide where and how to gather the data, determine the type and size of the sample group, and develop the survey questionnaire or reporting form. They also prepare instructions for workers who will collect and tabulate the data. Statisticians use computers extensively to process large amounts of data for statistical modeling and graphical analysis.

Since statistics are used in so many areas, it sometimes is difficult to distinguish statisticians from specialists in other fields who use statistics. For example a statistician working with data on economic conditions may have the title of economist.