SERIES CONCEPT

Statisticians perform professional statistical work using a variety of standard statistical methods and programming techniques in order to complete assignments; and perform other related duties as required.

Incumbents typically select appropriate test formulas and perform standard computations such as multiple and partial correlation coefficients, t-tests, Chi-square, nonparametric tests, and analysis of variance working from written or verbal instructions; prepare control cards to adopt particular computer programs for selected research problems, which may include such factors as n-way analysis of variance, analysis for unbalanced design, discriminant analysis and step-wise regression; perform complicated computations independently on research problems such as regression analysis, analysis of covariance where the design is not complex and the mathematical model is relatively simple; participate in meetings with departmental representatives for the purpose of modifying codes, designing and changing forms, and making reports during selected long-term projects; and are assigned responsibility for the processing of precoded data and the preparation of related reports.

Incumbents may supervise the work of lower level statisticians and related clerical personnel in the performance of coding and data collecting duties; may be assigned responsibility for recommending specific revisions in statistical codes, requiring library research and consultation with subject-matter specialists; may set up specifications for computer programming problems as required; may develop data screening programs for computer application using FORTRAN, PL/I, ALGOL or other compatible programming languages; may instruct lower level statisticians and related clerical personnel on the techniques of coding, statistical computations and utilization of equipment; may do computations involving new techniques which have been pretested; and may develop cost estimates as required.

The Statistician series consists of four levels with the distinction between levels based on the scope and complexity of statistical functions, the degree of involvement in program planning and the degree of supervision exercised.

CLASS CONCEPTS
Principal Statistician

Under direction incumbents are assigned responsibility for planning and directing the day-to-day activities of a statistical unit employing several professional statisticians and related computer programming personnel or for consultation and analysis requiring advanced knowledge and significant methodological innovation; and perform other related duties as required.

Incumbents may direct the activities of a statistical unit which typically involve performance of functions such as determination of staff and budget needs, making of staff work assignments, and development of effective evaluation procedures, and training and supervision of unit employees; assist principal investigators in planning research designs on complicated problems or large-scale studies which may result in contracts or grants, and make job cost estimates; determine from discussions the purposes and objectives of various studies, the previous research done on problems, the scope, methods of approach to problems, and the restrictions inherent in experiments; make recommendations regarding Possible alternative approaches or modifications of scope or objectives in order to develop effective research plans; meet with investigators to discuss possible statistical analyses of their research data; interpret results to investigators after completion of staff analysis; and meet with principal investigators, consultants, representatives from granting agencies as necessary to establish overall policies and procedures relating to selected projects.

Incumbents may perform statistical consultation and analysis requiring advanced and current knowledge of statistical theory and the ability to develop new methodology to meet novel requirements. Examples of such activity include development of statistical models in new areas of application and derivation of inference procedures using maximum likelihood, Bayesian or other principles; and specification of usage of new statistical methods with appropriate attention to tests of assumptions, numerical accuracy and correct interpretation of results.

Senior Statistician

Under direction, incumbents perform complex professional statistical work and in addition may supervise lower level statisticians and related personnel; and perform other related duties as required.

Incumbents typically spend a majority of time working on one or more of the following tasks, such as adaptation of mathematical statistical models for novel analyses of technical data, independent consultation with department representatives and principal investigators, and planning and implementation of major study projects; advise principal investigators on appropriate experimental designs and statistical tests in order that valid conclusions can be obtained; plan statistical analysis for research projects where designs are made complex by the numbers and kinds of variable number of levels of variables and/or interactions or relationships between variables consult with researchers to derive understanding of the hypotheses and experimental approaches; decide appropriate statistical analyses for balanced and unbalanced designs; develop mathematical models; determine feasibility of using electronic computers for computations; and select or write appropriate computer programs as necessary.

Incumbents may participate in planning meetings with representatives of cooperating institutions for purposes of relating medical and statistical aspects to resolve problems; may make job cost estimates on statistical analyses which require consultation with principal investigators; and may try out new statistical tests which are adaptations of accepted theories and/or principles of inference.
**Statistician**

Under general supervision incumbents perform professional statistical work as outlined in the Series Concept. This is the operational level of the series.

**Assistant Statistician**

Under supervision incumbents perform professional statistical work on a variety of problems typically restricted in difficulty and scope. Incumbents perform the majority of duties described in the Series Concept within established procedural guidelines. As examples of duties assigned to this level, incumbents perform routine statistical computations such as multiple and partial Correlation coefficients, t-tests, Chi-square and one-way analysis of variance; perform complex computations when formulas are set up and when specific instructions are given in their use; code raw data and design simple codes for machine processing; recode data combining and modifying categories; and plot curves from computer output and prepare final graphs for reports. This is the entry level in the professional series, however, positions may be assigned to this level on a continuing basis.

**MINIMUM QUALIFICATIONS**

**Principal Statistician**

Graduation from college with a major in statistics or a related field and six years of professional statistical experience including at least one year of pertinent supervisory experience; or an equivalent combination of education and experience; and knowledges and abilities essential to the successful performance of the duties assigned to the position.

**Senior Statistician**

Graduation from college with a major in statistics or a related field and four years of professional statistical experience; or an equivalent combination of education and experience; and knowledges and abilities essential to the successful performance of the duties assigned to the position.

**Statistician**

Graduation from college with a major in statistics or a related field and two years of professional statistical experience; or an equivalent combination of education and experience; and knowledges and abilities essential to the successful performance of the duties assigned to the position.

**Assistant Statistician**

Graduation from college with a major in statistics or a related field; or an equivalent combination of education and experience; and knowledges and abilities essential to the successful performance of the duties assigned to the position.

**Note:** A Master's degree in statistics or a related field may be substituted for one year of the required experience.