

CLASS SPECIFICATION
Statistician

FLSA Status: Exempt
Union Representation: Nonrepresented

GENERAL PURPOSE

Under direction, performs statistical analysis, activities and projects; designs statistical studies, and communicates and evaluates results; provides consultation to bureau management regarding the application of statistics and statistical methods; and performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS

A Statistician is responsible for the design of complex statistical studies, and analysis and explanation of statistical data. Incumbents in this classification oversee project tasks having to do with statistical analysis and methods, and are expected to certify and/or prepare the results/outcomes related to a particular study. Incumbents contribute to overall bureau statistical practices and tools to systematically ensure the statistical designs and methods used by the bureau are appropriate, cost effective, representative, and involve the best available methodologies for assessment and reaching verified conclusions.

The Statistician does not have a principal role in overall project management, but is involved with high level and complex decision making and oversees any project tasks related to statistical analysis and methods. The design and analysis of statistical studies and their outcomes can have significant funding and regulatory compliance implications for the bureau and City.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Any one position in this class may not perform all the duties listed below, nor do the listed examples of duties include all similar and related duties that may be assigned to this class.

1. Designs and conducts studies requiring the collection, assembly and compilation of social, economic, environmental, scientific or engineering data; determines sampling methods to be used; uses statistical programming languages to complete analysis; applies standard statistical methods (including measures of dispersion, central tendency, reliability, index numbers, moving averages and correlations) in determining significant factors present in resulting data.
2. Evaluates overall bureau statistical practices and tools to ensure statistical designs and methods used are appropriate, cost effective, representative and use the best available methodologies to reach verified conclusions.
3. Provides analyses of tables, charts and graphs; assists in the interpretation and evaluation of results of research projects; prepares charts, tables and graphs; checks computations and maintains accurate records; assists in developing equations for specific types of data; prepares articles and reports.

4. Determines, in conjunction with policy experts and other subject matter experts, how to store and manage data in order to maintain the integrity of data over the lifetime of a project; ensures validity and credibility of the information in data system.
5. Plans, organizes, assigns and directs the work of professional and technical staff and interns involved in statistical sampling and analysis; develops and implements standards, policies and procedures; plans, prioritizes and schedules projects and processes and checks work; and manages work flow.
6. Studies methods of analyses for various surveys; researches the statistical methods and tools developing as the state of the profession for use in bureau applications; tests methods and evaluates them for their readiness and applicability; presents findings to bureau management for approval; advocates for the validity of approaches selected with regulators.
7. Provides technical expertise to other bureau staff, City staff, City Council and the public; presents results of complex statistical models to City staff in a way that is understandable to a wide variety of audiences; interprets rules, regulations, laws and policies to assist in providing direction and comment; drafts interpretive memos and letters; contributes to technical reports and other city documents that present findings of monitoring and research to stakeholders; serves as staff on special advisory committees.

MINIMUM QUALIFICATIONS

Knowledge of:

1. Sampling designs for assessing status and change in both space and time.
2. Survey sampling and the analysis of survey designs including designing survey sampling studies, generating sampling weights, and using survey analysis tools such as the Horvitz-Thompson estimator, ratio estimation, and calibration estimators.
3. Experimental designs and the analysis of experimental designs including ideas such as blocking, replication, and the use of linear models to analyze experimental designs.
4. Linear and mixed effects models and their use in environmental applications.
5. Developing and fitting Bayesian models using Markov-Chain Monte Carlo; software such as OpenBUGS and R.
6. The R language for statistical programming, including developing and maintaining specialized R packages for the analysis and reporting of data.
7. Graphic programming libraries such as ggplot and lattice
8. Scientific writing and the structure of scientific arguments.

Ability to:

1. Review, organize and direct the work of other staff and interns doing statistical work; motivate assigned staff and provide for their training and professional development.
2. Create graphics that illustrate raw data and the results of statistical analysis.
3. Express ideas effectively orally and in writing, particularly in the presentation of technical materials and reports to audiences with little experience in statistical concepts.
4. Independently perform advanced assignments with initiative and creativity.
5. Perform difficult technical analysis and analyze complex problems, evaluate alternatives and recommend or adopt effective courses of action.
6. Clearly present technical information in oral, written, graphic or other forms; conduct effective public presentations; give expert testimony in administrative hearings or court proceedings.
7. Establish and maintain effective working relationships with subordinates and management, representatives of outside agencies, members of the public and others encountered in the course of work.

Training and Experience:

A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from college with a bachelor's degree in mathematics or statistics and at least two years of professional experience in the systematic collection, compilation and interpretation of numerical data or equivalent (or master's degree in statistics). Depending on the particular job, a Statistician may need a major and/or equivalent experience in some other subject, such as biology, ecology or economics.

Licenses; Certificates; Special Requirements:

A valid state driver's license may be required for certain assignments. Depending on assignment, may require specialized training in particular field.

PHYSICAL AND MENTAL DEMANDS

Some positions require the ability to hike uneven terrain and conduct field research in various weather conditions, including the gathering of water, scat and other samples. Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable accommodation will be evaluated on an individual basis and depends, in part, on the specific requirements for the job, the limitations related to disability and the ability of the hiring bureau to accommodate the limitation.

Class History:

Adopted: 10/17/2012