CHIEF TOXICOLOGIST

This is professional and technical work involving the development and implementation of a toxicological program designed to support the Chief Medical Examiner's Office through the discovery of primary and secondary causes of unattended, accidental, or homicidal death. Employee functions as Branch Head and supervises a small staff of analytical chemists and chemical analysts in performing an extensive range of chemical and physical analyses to discover, isolate, and identify the presence or extent of toxicity of drugs, environmental toxins, or synthetic toxic substances which may directly or indirectly cause death. The work results in confirming causes of death; detecting trends or recurring patterns of death among population groups; or in alerting public health officials of potential outbreaks of death from environmental toxins, unusual drug interactions, or by other toxic agents which may lead to death or illness.

I. DIFFICULTY OF WORK:

Variety and Scope - Work assignments typically include the development and implementation of Branch policy, administrative procedures, and guidelines that must be integrated into the broad objectives of the Chief Medical Examiner's Office. Employee determines appropriate and acceptable methodologies and techniques which support medicolegal investigations of death and oversees technical as well as administrative aspects of toxicological examinations.

Intricacy - Administrative elements of the work are considered relatively stable with some recurring responsibilities, but the technical requirements in the analysis of biological specimens are highly dynamic based on frequent changes in technology or shifts in methodology. Cases presented for chemical analyses often require significant research where findings and conclusions are not readily discerned or observed. Employee may devise new procedures and techniques to identify unknown toxic agents, drugs, or poisons which may have contributed to the cause and manner of death. Work requires extensive interpretive skill to correlate analytical findings with autopsy results in determining cause of death.

Subject Matter Complexity - In formulating results of chemical analyses and relating to cause and manner of death, employee must exhibit in-depth understanding of biological sciences to include biochemistry, toxicology, anatomy, and physiology as well as fundamental concepts of pharmacy, medicine, and law. Employee must be able to integrate applications of theoretical chemistry into work decisions and must relate toxicological findings to broad field of public health. Employee must understand drug interactions, disease etiology, characteristics and nature of extensive variety of synthetic and naturally occurring toxic substances, methods of medicolegal investigation, and concepts of forensic science.

Guidelines - Work is guided by broad objectives and goals of the Chief Medical Examiner's Office with relatively few procedural guides available for direction. Guidelines consist of established case precedents, internal administrative policies, North Carolina statutes, professional texts, pharmacopoeia, and materials published by drug manufacturers.

II. RESPONSIBILITY:

Nature of Instructions - Employee performs work independently with instructions expressed in terms of goals and objectives determined in concert with the Chief Medical Examiner. Employee plans daily work assignments, determines priorities in analyses of specimens, and resolves technical problems with minimal guidance from the Chief Medical Examiner.
Nature of Review - Technical aspects of the work are usually not subject to review other than on a case-by-case basis where findings may prove controversial or in cases where positive identification of suspected toxic agents proves unusually difficult. Administrative review occurs periodically.

Scope of Decisions - Results of the work are combined with preliminary autopsy findings in rendering final conclusions and thus directly affect families of the deceased, law enforcement officials, and other forensic staff.

Consequence of Decisions - Impact of work results is measured in terms of financial loss to insurance companies or outcome of legal proceedings in cases where individuals are alleged to have caused death by criminal intent. Decisions may directly affect the public's health and safety where communicable disease agents or dangerous toxins are identified as a cause of death.

III. INTERPERSONAL COMMUNICATIONS:

Scope of Contacts - Employee initiates and maintains contact with county medical examiners, law enforcement personnel, drug manufacturers, insurance investigators, attorneys, physicians, forensic pathologists, and professional toxicologists in other state medical examiner systems.

Nature and Purpose - Contacts are developed to gather relevant data necessary to conduct analyses or formulate conclusions; to clarify and explain findings; to provide technical assistance and professional consultation; to offer testimony in legal proceedings; or to conduct research.

IV. OTHER WORK DEMANDS:

Work Conditions - Work is performed in a laboratory setting which occasionally generates noxious fumes, odors, or gases during analysis. Employee may handle decomposed or putrid tissue, fecal samples, or various bodily fluids which could be disagreeable.

Hazards - In preparing and analyzing biological specimens, employee is frequently confronted with potentially harmful chemicals, caustic reagents, or volatile solvents which could result in explosions or chemical fires. Handling specimens exposes employee to disease-causing microorganisms, carcinogens, microbial bacteria, and a range of infectious diseases.

V. RECRUITMENT STANDARDS:

Knowledges, Skills, and Abilities - Thorough knowledge of the theoretical principles of analytical chemistry, pharmacy, biological science, and forensic science; laboratory protocol, procedure, and techniques associated with medicolegal investigative work. Ability to organize, direct, and coordinate administratively and technically a small analytical laboratory; to interpret and relate analytical results on causes and manner of death according to professional standards and ethical practices; and to initiate and maintain professional working relationships with forensic staff, law enforcement authorities, physicians, attorneys, and toxicologists in other state medical examiner systems.

Minimum Education and Experience - Doctorate degree in toxicology, biochemistry, or pharmaceutical chemistry with one year of experience in forensic toxicology, and certification by the American Board of Forensic Toxicology as a desirable qualification; or Master's degree in chemistry with at least two years of experience in forensic toxicology, a medical examiner system, or in a clinical chemistry laboratory; or an equivalent combination of education and experience.