

**FORENSIC SCIENTIST  
FORENSIC BIOLOGY UNIT (DNA)  
CS-0401-13**

**INTRODUCTION**

This position is located in the Department of Forensic Sciences (DFS). The mission of the DFS is to provide high-quality, timely, accurate, and reliable forensic science services using best practices and best available technology, focusing on unbiased science and transparency, to enhance public safety and health.

DFS is a data-driven agency with multiple data systems that are leveraged for accurate reporting and management processes, which requires responsibilities for all aspects of developing and implementing technology initiatives and promote innovations, improvements and effectiveness of these processes. The position supervises all aspects of technology in positioning DFS as a national leader in technology; and works in conjunction with the laboratory managers, supervisors and technical leader to ensure that technology and unit operations align with departmental goals and services.

The position ensures the technical aspects of the DNA Analysis program(s) are in compliance with ISO 17025 accreditation standards and the Quality Assurance Standards (QAS) for Forensic DNA Testing Laboratories established by the Federal Bureau of Investigation (FBI) and is responsible for ensuring seamless unit operations including all aspects of forensic biology casework from case intake through lab processing and communication with customers.

**MAJOR DUTIES**

Performs laboratory analyses of physical evidence in one or more of the specialty disciplines of the FSL, regularly demonstrates proficiency in assigned forensic specialty; participate in and completes externally administered proficiency test; demonstrates competency and on-going proficiency in laboratory processing, interpretation, comparisons, statistical analysis and technical review as authorized by the technical leader; ensures methodologies and procedures used are compliant with established standards, and is responsible for quality assurance and accreditation compliance activities.

Evaluates existing DNA methods and proposes new analytical procedures for improved operations; and ensures that all associated quality standards pertaining to ISO 17025 and FBI QAS based accreditation status are being performed and met.

Prepares written scientific examination reports and affidavits to correlate with laboratory results; inspects equipment and tools that are utilized for testing and to determine if they are compliant with prescribed operating and safety standards, regulations and guidelines including manufacturer's specifications on computerized scientific equipment; interprets graphs, charts, and mathematical formulas.

Completes an advance research project and/or performs a vital role in the overall operation of the unit by independently performing a high level task such as training and/or overseeing training of scientists, developing and validating new processes and procedures, or resolving common technical concerns relative to forensic biology operations; performs biology/DNA analyses on physical evidence; interprets test results, conducts comparisons, develops conclusions and statistical analyses and prepares final reports/results; completes technical review of peers work.

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Keeps up-to-date of current literature and sources of information in the field of forensics for DNA methods, including but not limited to all forms of microscopy, chemical analysis, etc.

In conjunction with the technical leader may modify processes to resolve novel, obscure, or problems that affect the analysis; assess, select, and apply remedies suited to the assigned problem or situation; and assess the impact of the same.

Prepares evidence for presentation in court; meet with attorneys, investigators or other law enforcement personnel regarding the interpretation of examinations conducted; advises on the recovery of DNA from evidentiary material and recommends methodologies and samples for testing; testify as an expert witness in legal proceedings and in connection with the DNA collected, processed, developed, interpreted, compared and preserved; projects a professional image while representing the Department; exemplify the Department values, both on and off duty.

Performs examinations by reviewing submission reports received from law enforcement agencies and analyzing evidence for possible recovery of DNA.

Writes detailed reports of final analysis and results including inventory of DNA examined and submits reports to the appropriate investigative agency and/or authority or collaboratively with other employees.

Exercises discretion and sound judgment to determine proper courses of action and assesses and evaluates a variety of situations, problems, conditions or questions.

Performs research to determine new and/or revise methods for performing analyses or to determine the effectiveness of current analytical methods.

Works collaboratively with investigators and other members of the justice system to analyze and interpret DNA evidence and information that is necessary to meet the objectives of the investigation.

Assists with developing new standards and with identifying training needs and resource requirements for the organization.

Operate specialized software on multiple computer platforms.

Performs other related duties as assigned.

**KNOWLEDGE REQUIRED BY THE POSITION**

Mastery of forensic DNA processes and experience in applying in a wide range of theories, principles, concepts, methodology, and practices of analytical, chemistry, physical science, or biology or related field; of quality methods and techniques used in the forensic biology laboratory; of forensic laboratory accreditation, standards, and guidelines and of the tools necessary to evaluate forensic quality processes; and the ability to establish new standards and identify training needs and resource requirements for the agency.

Mastery of forensic biology casework laboratory processing, interpretation, mathematical/statistical analysis and technical review as it relates to forensic biology laboratory work and interpretation.

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Mastery of and skill in applying DNA analysis principles and evaluative methods, techniques, theories, to conduct in-depth research of operational/program issues; prepare clear in-depth reports of studies and recommendations; the ability to apply Federal, state and local laws, codes and regulations pertaining to

forensic science and DNA; and the ability to apply ISO 17025 accreditation standards and FBI Quality Assurance Standards to current work.

Ability to implement new analytical developments, and ability to modify processes to resolve novel, obscure, or problems that affect the analysis.

Mastery research skills, interpretation, and application of a broad range of qualitative and quantitative data using a variety of diverse methods.

Expert knowledge of quality assurance and quality improvement methods and techniques; and knowledge of and experience with accreditation standards and quality processing methods that are crucial as well as beneficial to the quality assurance program.

Expert knowledge of DNA evidence, preservation and chain of custody laws, rules, policies and procedures to ensure evidence integrity, and expertise of safety practices and procedures as they apply to analyses in the laboratory; and knowledge of the rules of evidence and methods used in presenting evidence in court.

Ability to work well both independently and as part of a professional management team in a multi-cultural workplace and interpersonal skills is required to work effectively with a diverse staff, external agencies, and the public; and the ability to work safely without presenting a threat to self and others is essential.

Excellent oral and written communications skills sufficient to prepare and present pertinent information and research involving complex policies and initiatives, and to effectively represent the agency at conferences, meetings and consultations with agency managers, employee groups, and special interest groups concerning program objectives and issues and public relations; and ability research complex forensic examinations.

Demonstrated skill and ability to use a PC and software packages (e.g., Microsoft Word, Excel, Access and Power Point, etc.) and software applicable to various reporting systems.

Ability to testify effectively in court as an expert witness in legal proceedings.

**SUPERVISORY CONTROLS**

Works under the manager or supervisor, who provides administrative direction in terms of techniques, desired results, changes in regulatory constraints and, or methods and procedures that may apply to complex situations. Determines the validity of test methods and results and recommends acceptance or rejection of evidence items; exercises independent responsibility and is held accountable for actions and findings; coordinates work efforts with others when necessary; consults with manager, technical leader or lead scientist on unusual technical problems, best practices, and keeps the manager, technical leader and lead scientist apprised of any controversial issues.

Completed assignments are reviewed for conformance to guidelines, deadlines, and expected results and adherence to requirements.

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**GUIDELINES**

Guidelines include policies and procedures of DFS, governing laws, regulations and protocol of the District and Federal government, Mayor's Orders, instructions, and the Deputy Mayor's policy and

priorities. Incumbent exercises sound judgment in choosing, interpreting, or adapting available standards and guidelines to specific issues or subject. Many situations are not covered by the guidelines, and therefore, require interpretation and adaptation.

Sound judgment is exercised when selecting, interpreting, or adapting available standards and guidelines to specific work situations and/or cases, however, many situations are not covered by the guidelines, and therefore, requires extensive interpretation and adaptation or research.

**COMPLEXITY**

Adaptability and flexibility is required in order to adhere to protocol is essential; some work involves performing case related examinations on samples submitted for forensic biology analysis; develops and validates criteria for testing parameters with new methods and equipment as well as assisting with training team members to perform the same; may be responsible for development and/or implementation of new or novel policies or procedures. Maintains quality control measures and prepares detailed documentation of test results. Provides appropriate knowledge in the application of procedures; and identifies problems and anticipates discrepancies in the results. The work requires assessing, evaluating, modifying and adapting various methods to satisfy requirements and to arrive at sound conclusions.

Decisions regarding what needs to be done include major areas of uncertainty in approach, methodology, or interpretation and evaluation processes that result from such elements as continuing changes in program, technological developments, unknown phenomena, or conflicting requirements.

**SCOPE AND EFFECT**

The work involves performing on special assignment by isolating and defining unknown conditions, resolving critical problems, or developing new theories, technical adequacy of DNA analysis. Conducts and assists other staff members when required to perform analysis including collecting appropriate exhibits to prepare for examination/testing; and prepares documentation regarding findings and analysis that are instrumental in preparing results of the tests; and identifying problems that may alter the findings; and ensures that all documentation is in the appropriate order for court cases and/or final discovery.

The results of the work may affect other experts and/or the department's credibility adequacy, accuracy and effectiveness of the field investigations, and laboratory tests, and ensures its relevancy to each to assist with appropriate closure. The results are also binding and affect judicial proceedings.

**PERSONAL CONTACTS**

Contacts are with DFS officials, employees, laboratory personnel, consultants, Federal and District regulatory agencies, the general public, law enforcement, and investigators, and other stakeholders.

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**PURPOSE OF CONTACTS**

Purpose of contacts is for exchanging, coordinating or resolving operational problems and may be for influencing and motivating persons or groups in order to obtain the desired effect, such as gaining compliance with established policies and regulations by persuasion or exchanging and gathering information, ensuring the orderly flow of work as it pertains to maintaining the chain-of-custody of collected evidence, and storage, and to prepare detailed reports. At this level, information is autonomously communicated with contacts with minimal supervision.

**PHYSICAL DEMANDS**

Work is sedentary, however, some work requires periods of walking, standing, bending, stretching etc. Also, some work requires sufficient personal agility to possibly collect and process evidence at a variety of crime scenes. The incumbent may occasionally carry items weighing up to 50 pounds, such as bags and/or boxes of evidence, portable computers, peripherals, and other similar materials and must possess sufficient manual dexterity to manipulate and operate laboratory equipment; must be able to visually distinguish color, shape, size, number and picture resolution quality; and must be able to withstand exposure to disagreeable elements such as malodorous and/or decomposing samples/bodies, blood, bodily fluids, etc., that may pose a health risk.

**WORK ENVIRONMENT**

The work is performed in an office and laboratory. The office setting is when preparing documentation, and the laboratory setting is during the testing and analysis phase.

The incumbent may be exposed to hazardous materials, toxic substances, blood borne pathogens, and electric current and electrostatic discharge and is required to follow safe laboratory practices and wear protective clothing, including facial masks, safety glasses, gloves, ear protection, etc.

**OTHER SIGNIFICANT FACTS**

Shall have a minimum of five (5) years of experience reporting the interpretation of mixture DNA profiles in casework, demonstrate a mastery of processing, interpreting and reporting highly complex DNA casework, ability to perform technical review of peers' work and perform a significant additional unit specific duty required to support casework operations.

Bachelor's or an advanced degree in a biology, chemistry or forensic science-related area is required; documented training in statistics or population genetics is required; shall have successfully completed coursework (graduate or undergraduate level) covering the following subject areas with a minimum of nine cumulative semester hours where the following topics were an integral component of the coursework: biochemistry, genetics and molecular biology. Any analyst appointed on or after June 2019 must have successfully completed coursework covering statistics and/or population genetics.

Competency/Proficiency Testing:

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Incumbents are required to successfully complete competency testing prior to beginning casework in a specialty discipline or sub-discipline; and successfully complete routine proficiency testing as required by accreditation standards.

May be required to attend training at an out-of-state facility for an extended period of time, up to six consecutive months with the year.

In addition to the above listed education requirement, individuals assigned to the Forensic Biology Unit are required to meet educational standards for an analyst detailed in the current revision of the Quality Assurance Standards for the Forensic DNA Testing Laboratories/Convicted Offender DNA Databasing Laboratories issued by the FBI Laboratory Director (current revision).

Industry certification is favorably considered.

**SPECIAL REQUIREMENTS**

This position's duty station will be housed within the Consolidated Forensic Laboratory (CFL) which is a protection-sensitive facility. As such, incumbents of this position shall be subject to criminal background checks, background investigations, and mandatory drug and alcohol testing, as applicable. Due to the handling of primary evidence, the applicant will be required to submit a buccal swab for the purposes of the DNA Quality Control database for the DFS.

The nature of the DFS mission necessarily involves the potential risks associated with biological or chemical hazards, including morgue functions. Although contact with these functions is intended to be minimal, the risks are nevertheless possible; training to recognize, address, and mitigate these risks is required as is dealing with potentially personally difficult topics, such as crime, death, and disease.