

**FORENSIC SCIENTIST
FORENSIC BIOLOGY UNIT (DNA)
CS-0401-11**

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.

Employees are assigned to one of the specialty disciplines in forensic science (e.g., forensic biology, firearms and toolmark analysis, etc.). The position is primarily responsible for forensic biology laboratory work and interpretation of DNA evidence, which includes aspects of casework, accreditation, quality assurance and control programs within the Forensic Science Laboratory (FSL).

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 and statistical analysis steps as authorized by the technical leader.

Collects, preserves, and maintains evidence in the forensic laboratory to prevent contamination; and properly maintains and documents chain-of custody.

Prepares written scientific examination reports and affidavits to correlate with laboratory results. Maintains detailed records in accordance with laboratory, accreditation and statutory requirements; assists with audit preparation and administration; demonstrates continuous efforts to improve operations; works cooperatively and jointly to provide seamless customer service; assist with routine functions for the forensic biology unit to include, but not limited to maintenance and evaluation of data sets, case/evidence tracking, monitoring of laboratory inventory, professional communication with customer agencies and monitoring of testing requests.

Ensures accuracy of information received; prepares detailed notes to properly document analytical results and support conclusions; interprets and analyzes test results; and maintains appropriate case file documentation.

Applies specialized and challenging procedures as instructed, and takes corrective action; accepts and resolves referrals of abnormal or unusual specimens; follows and monitors quality control procedures and under guidance, assists with the overall quality control program of the laboratory.

Determines which tests, procedures and methods to use; and is required to conduct quantitative and qualitative procedures by using specific techniques, including but not limited to physical testing, visual analysis, identification and classification, comparisons, and microscopy.

Researches technical journals, textbooks, and forensic science manuals to determine best methods/practices for performing analytical tests; and may participate in the development and validation of new methods and/or instrumentation.

**FORENSIC SCIENTIST
FORENSIC BIOLOGY UNIT (DNA)
CS-0401-11**

Operates, troubleshoots, and performs minor repairs and preventive maintenance on laboratory equipment and analytical instruments and coordinates work activities with other sections in the laboratory.

Processes evidence in the laboratory and prepares evidence for presentation in court; and meets with attorneys, investigators or other law enforcement personnel regarding the interpretation of examinations conducted.

Operates and maintains complex equipment used for a variety of test and evaluation procedures; operates specialized software on multiple computer platforms.

Utilizes computer software to analyze results of quality and performance checks in order to perform quality control measures and keeps up-to-date on current studies, pamphlets, journals, and books for use in assisting in devising new methods and tests.

Projects a professional image while representing the FSL and DFS; and exemplifies Department values, both on and off duty.

Testifies in court as an expert witness in legal proceedings.

Performs other related duties as assigned.

KNOWLEDGE REQUIRED BY THE POSITION

Comprehensive knowledge of and skill in applying theories and principles, concepts, methodologies and practices of analytical chemistry, physical science, or biology or related field; of quality methods and techniques used in the forensic biology laboratory and mathematical and statistical analysis as it relates to forensic biology laboratory work and interpretation.

Knowledge of quality assurance and control procedures and accreditation standards; proper procedures and standard laboratory rules and safety precautions regarding chemicals, toxins and biohazards; evidence handling and preservation procedures including chain-of-custody; forensic biology casework laboratory processing to include, but not limited to, DNA extraction, quantitation, PCR amplification and capillary electrophoresis; DNA interpretation procedures and statistical analysis.

Knowledge of, and ability to apply D.C. and Federal laws, codes and regulations pertaining to forensic science; and the ability to follow training on how to apply ISO 17025 accreditation standards and FBI Quality Assurance Standards.

Knowledge of equipment and supplies used in a forensic laboratory including specialized scientific equipment, instrumentation and software; recent developments, current literature and other sources of information related to the assigned forensic specialty.

Ability to apply theoretical and analytical principles of natural and physical sciences, including molecular biology, genetics, biochemistry, chemistry, and other applicable fields, apply operational methods and techniques of the forensic laboratory, including laboratory testing procedures.

**FORENSIC SCIENTIST
FORENSIC BIOLOGY UNIT (DNA)
CS-0401-11**

Skill in modifying analytical methods, to solve problems or respond to technical issues on materials subject to analysis in a specialty area.

Ability and skill to work extensively with chemicals and biohazards in a safe manner; and the ability to perform a variety of scientific tests and analyses; recognize anomalies, formulate hypotheses, and take appropriate action; and prepare and maintain accurate records/data and clear and concise reports and memoranda.

Ability to keep up to date with recent developments, current literature and sources of information related to forensic sciences associated with DNA and the ability to learn how to modify analytical methods, to solve problems or respond to technical issues.

Demonstrates the ability to communicate effectively, both orally and in writing; and maintain effective working relationships.

Skill and ability to use a personal computer to apply various forensic software applications; and skill and ability to use a personal computer to prepare, store, and retrieve data and knowledge of software affiliated with the assignment.

Exercises discretion and sound judgment to determine proper courses of action and assesses and evaluates a variety of situations, problems, conditions or questions; and ability to work safely without presenting a threat to self or others is essential.

SUPERVISORY CONTROLS

Works under the supervision of the manager, supervisor, technical leader, lead scientist, team leader or designated authority, who initially provides direction on the objectives, priorities and/or deadline related to work previously performed and therefore covered by precedent. New or unusual assignments are performed by utilizing background and precedence information, including advice on the location of reference material to use or receive technical guidance and assistance from the manager, supervisor, technical leader, lead scientist, team leader or higher level scientists.

Independently plans and carries out individual assignments; and 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; and consults and keeps the manager, team leader, technical leader and supervisor apprised of unusual technical problems, best practices and controversial issues.

The work is reviewed for conformance to guidelines, feasibility, soundness of overall approach and the effectiveness of meeting objectives, deadlines, and expected results and adherence to requirements.

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

**FORENSIC SCIENTIST
FORENSIC BIOLOGY UNIT (DNA)
CS-0401-11**

available standards and guidelines to specific issues or subject. Many situations are not covered by the guidelines, and therefore, require interpretation and adaptation.

The guidelines are usually applicable, however, the incumbent may be required to seek guidance/direction when applying them to specific work situations/cases that may or may not be directly related to the core problems of the assignments, have gaps in specificity or not completely applicable.

Limited judgment is exercised independently when interpreting or adapting available standards and guidelines, such as agency policies, regulations, precedents, and work directions for application. The incumbent is encouraged to analyze results and recommend changes. Utilizes guidelines from supervisory staff as the basis for making procedural deviations from established administrative and/or technical methods.

COMPLEXITY

The work involves performing case related examinations on samples submitted for forensic biology analysis. Maintains quality control measures and prepares detailed documentation of test results to include laboratory processing, interpretation of DNA profiles, comparisons and statistical analysis. Assignments require the application of procedures; and require identifying problems and anticipating discrepancies in the results. The work requires modification and adaptation of 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

Conducts processes and assists team members when required; prepares documentation regarding casework, materials, equipment, and instruments; identifies problems that may alter analytical results; and ensures that all documentation is in the appropriate order for laboratory and accreditation requirements. Performs work that is closely involved in almost all phases of the scientists study and has limited responsibility for selected phases or test applications of scientific and technical theories when the methods, techniques, and procedures are clearly outlined.

Work products directly affect the design and execution of experiments; the operation of systems, programs, or equipment systems; or the adequacy of such activities as long range work plans, field investigations, testing operations, or research conclusions. The results of the work may also affect other experts and/or the department's credibility, adequacy, accuracy and effectiveness of laboratory tests. The results are also binding and affect judicial proceedings.

PERSONAL CONTACTS

Contacts are with DFS employees, laboratory personnel, equipment maintenance representatives, consultants, Federal, District and accreditation regulatory agencies, and members of the criminal justice community (law enforcement personnel, attorneys, etc); and contacts are usually established on a routine basis.

**FORENSIC SCIENTIST
FORENSIC BIOLOGY UNIT (DNA)
CS-0401-11**

PURPOSE OF CONTACTS

Purpose of contacts is for exchanging, coordinating or resolving operational problems. Persons contacted are usually working toward a common goal and generally are reasonably cooperative. At this level, supervision may be required to deliver information, such as how data was obtained and their opinion as to the accuracy of the data.

PHYSICAL DEMANDS

Work is sedentary, however, some work requires periods of walking, standing, bending, stretching etc. The incumbent occasionally carries items weighing up to fifty (50) pounds, such as bags and/or boxes of chemicals, portable computers, peripherals, and other similar materials. Incumbent 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 environment includes office setting, laboratory conditions, training facility, and courtrooms.

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

OTHER SIGNIFICANT FACTS

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:

Incumbents are required to successfully complete competency testing prior to beginning casework in a specialty discipline or sub-discipline; and successfully complete annual 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.

The nature of the work in the Forensic Science Laboratory requires safe handling and processing of chemicals and reagents within the laboratory, and standard health and safety processes must be constantly demonstrated and reinforced.

**FORENSIC SCIENTIST
FORENSIC BIOLOGY UNIT (DNA)
CS-0401-11**

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.

Industry certification and two (2) to three (3) years of forensic biology work experience are favorably considered.

Shall have a minimum of two (2) years of experience with reporting the interpretation of mixture DNA profiles in casework prior to advancement to a CS-12 level.

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. 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.