

FORENSIC SCIENTIST (DIGITAL EVIDENCE)
CS-401-12

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.

MAJOR DUTIES

Analyzes digital and electronic evidence, utilizing a variety of techniques and processes; examines, identifies and presents conclusions of testing of electronic and data storage devices and optical media, including cellphones, computers, computer networks, tablet computers, communication devices, etc.

Analyzes digital and computerized evidence, utilizing a variety of methods; identifies, examines, preserves, analyses, interprets, and presents conclusions of electronic, computerized, and digital testing and comparison of evidence and known and documented reference data sets. Advises on the collection of evidence in criminal cases, including those involving deaths, especially when homicide is suspected, sexual assault and other violent crimes; evaluates risks concerning or identifying hazards including electrical and electrostatic discharge in the laboratory.

Performs a variety of advanced and specialized computer forensic and electronic discovery actions from digital media including digital evidence identification, preservation, forensic analysis, data recovery, tape recovery, optical media, electronic communications extraction, and database examination. Digital media includes a wide variety of electronic and optical data storage and transfer devices including computers, networks (including network and internet based storage) mobile devices (such as notebooks, tablets, smart phones etc.), optical media (such as CDs, DVDs and Blu-ray) and the communications documents, images, spreadsheets, other types of files and artifacts stored on these devices.

Works collaboratively with investigators and other members of the justice system to analyze and interpret digital evidence such as communications (including email, chat, SMS, VoIP), documents, images, video, accounting data, various database extracts, and other information stored on electronic devices to develop information necessary to meet the objectives of the forensic investigation; and effectively report findings.

Effectively reports findings and conducts advanced and highly specialized computer forensic analyses using validated tools and techniques; recovers electronic data that has been deleted, erased, fragmented, hidden or encrypted from data storage devices; work effectively under pressure; evaluate and maintain hardware and software necessary for the performance of computer related investigations; and collects digital evidence from crime scenes.

Conducts a wide variety of complex and difficult analyses; provides technology advisory services to other agencies and department staff to enhance forensic investigations.

Operates, troubleshoots and performs minor repairs and preventive maintenance on equipment. Ensures software revisions and updates are implemented in a timely manner.

Performs research to identify new and/or revise methods for performing analyses or to determine the effectiveness of current analytical methods. Performs research to identify new technologies and methods that are or potentially could be, used by criminals in the conduct of nefarious activities.

Follows evidence control procedures to maintain chain-of-evidence integrity and ensure evidence is locked securely in a designate location before and after analysis. Develops examination plans to effectively and efficiently meet the scope of the questions at hand in the investigation addressing inculpatory and exculpatory evidence.

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

Utilizes computer software to analyze results of tests in order to perform calculations and keeps up-to-date on current studies, ICT industry developments, special interest groups, pamphlets, journals and books for use in devising new methods and tests; and devises mathematical charts, graphs, and tables as aids to conducting tests; evaluates laboratory test results in the area of concern; and prepares technical reports on findings and project results in conjunction with team members.

Reviews other examiner's data and reports using technical documentation and/or administrative review protocols.

Prepares evidence for presentation in court; meet with attorneys, investigators or other law enforcement personnel regarding the interpretation of examinations conducted; testify as an expert witness in court. Project a professional image while representing the Department; exemplify the Department values, both on and off duty.

Testifies in court as an expert witness in legal proceedings and in connection with the evidence collected, processed, developed and preserved.

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

Writes detailed reports of final analysis and results including inventory of evidence examined and submits reports to the appropriate investigative agency and/or authority or collaboratively with team members.

Utilizes crime scene processing tools (e.g., cameras, notepads, sketchpads, evidence forms, crime scene tape, markers, etc.).

Performs other related duties as assigned.

KNOWLEDGE REQUIRED BY THE POSITION

Advanced knowledge of and skill in applying a wide range of theories, principles, concepts, methodology and practices of computer science, and information and communications technology sufficient to perform mathematical and analytical laboratory work; and knowledge of and ability to apply Federal, state, and local laws, codes and regulations pertaining to forensic science, and the seizure and retention of data; apply evidence collection and preservation procedures.

Advance knowledge of principles, theories, concepts and practices of computer science or related field; advanced skill in personal, portable, desktop digital devices, etc.; skill and ability to use a personal computer to apply forensic software applications; and prepare, store, and retrieve data and knowledge of software affiliated with crime scene data; and advanced knowledge of intrusion tools and computer forensic methodologies, protocols, and tools. Management or establishment of digital evidence units in other forensic laboratories preferred.

Comprehensive knowledge of quality assurance procedures and accreditation standards; proper procedures and standard laboratory rules and safety precautions regarding electric current and electrostatic discharge; and evidence collection and preservation procedures.

Advanced knowledge and hands-on experience with forensic investigations of systems and comprehensive knowledge of equipment and supplies used in a forensic laboratory including specialized scientific equipment, instrumentation and software; recent developments, current literature and sources of information related to the digital evidence specialty and the ability to modify analytical methods, to solve problems or respond to complex technical issues arising in digital evidence casework.

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

Ability to work extensively with electrical and electronic equipment in a safe manner; and perform a variety of digital forensic tests and analyses; recognize anomalies, formulate hypotheses, and take appropriate action; prepare and maintain accurate records/data and prepare clear and concise reports and memoranda.

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

Ability to apply Federal, state and local laws, codes and regulations pertaining to forensic science and data management.

Ability to establish and maintain effective working relationships with those contacted in the course of work including law enforcement personnel and the criminal justice community.

Ability to work safely without presenting a threat to self or others is essential.

SUPERVISORY CONTROLS

Works under the Forensic Scientist Supervisor (Digital Evidence Analysis Unit), who provides administrative direction on new and unusual techniques, desired results, required data to obtain, change in regulatory constraints, or methods and procedures that may apply to specific cases. Also, receives technical guidance and assistance from the Lead Forensic Scientist (Digital Evidence Analyst). The incumbent 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; and consults and keeps the 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; and is held accountable for actions and findings.

GUIDELINES

Guidelines include policies and procedures of DFS; governing laws and regulations of the District and Federal government, Mayor's Orders, instructions, and the Deputy Mayor's policy and priorities. Relevant legislation and standards include documents and resources from International Organization for Standardization (ISO), American Society of Crime Laboratory Directors-Laboratory Accreditation Board

Standards (ASCLD-LAB), Forensic Quality Services (FQS), ASTM International Inc. (ASTM), American Association for Laboratory Accreditation (A2LA), Clinical Laboratory Improvement Amendments (CLIA), Centers for Disease Control (CDC), National Institute of Standards and Technology (NIST), forensic community working groups, international standards relevant to forensic science, and others. Also methods, processes, techniques, procedures, protocols, testing regulations, previous cases, technical references, forensic techniques and literature, catalogs and handbooks, internal protocol and instructions, including international "best practices" among others.

Sound judgment is utilized when interpreting and identifying the best practices/methods to use when adapting the guides; and utilizes initiative and resourcefulness in deviating from traditional methods or researching trends and patterns to develop new methods, criteria, or proposed new policies.

COMPLEXITY

Adaptability and flexibility in order to adhere to protocols is essential; develops and validates criteria for testing parameters with new methods and equipment. Maintains quality control measures and prepares detailed documentation of test results. Assignments also require the application of procedures; and 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.

Exercises discretion and sound judgment in determining proper courses of action from personal experience and must be able to assess and evaluate a variety of situations, problems, conditions, or questions.

SCOPE AND EFFECT

Work involves the technical adequacy, accuracy and effectiveness of submitted evidence. Conducts technological investigations including collecting the appropriate exhibits to prepare for examination/testing; and prepares documentation regarding findings and analysis that is instrumental in preparing the results of the tests; and identifies problems that may alter collected evidence; ensures that all documentation is in the appropriate order for court cases and/or final discovery.

The result of the work affects the department's credibility adequacy, accuracy and effectiveness of the field investigations, laboratory tests, and ensures its relevancy to the case to assist with closure. The results are also binding and affect the judicial proceedings.

PERSONAL CONTACTS

Contacts are with agency officials, laboratory personnel, consultants, regulatory agencies, and the general public law enforcement, and investigators. The incumbent has regular contact with other laboratory sections, law enforcement officials, attorneys, criminal/civil court personnel, and peers in other states.

PURPOSE OF CONTACTS

Contacts are for the purpose of exchanging and gathering information, ensuring the orderly flow of work as it pertains to maintaining the chain-of-custody of collected evidence, storage, and prepare a detailed report.

PHYSICAL DEMANDS

Work is sedentary, however, some work requires periods of walking, standing, bending, stretching etc. Also, some work requires sufficient personal agility to collect and process evidence at a variety of crime scenes. Occasionally carry items weighing up to 50 pounds, such as bags and/or boxes of evidence, 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; 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, a laboratory and in the field. The office setting is when preparing documentation, the laboratory setting is during the testing and analysis phase, and the field is when identifying, preserving and collecting evidence.

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 wrist straps, facial masks, safety glasses, gloves, etc.

OTHER SIGNIFICANT FACTS

Bachelor's degree from an accredited college or university in computer science, information and communications technology, or related field. Higher degree and/or industry certification favorably considered and three (3) years of relevant experience in Digital Evidence at the Forensic Scientist Class I or equivalent. Employees at this level are distinguished from the Forensic Scientist I by their experience in Digital Evidence, and their recognized expertise.

Applicant may be exposed to material containing explicit imagery, audio and text associated with child exploitation and abuse and/or extreme violence in the course of digital evidence analysis.

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.