FORENSIC SCIENTIST (DIGITAL EVIDENCE)
CS-401-09

INTRODUCTION

This position is located in the Office of the Deputy Mayor for Public Safety and Justice (ODMPSJ) 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, tablet computers, communication devices, etc.

Analyzes digital and computerized evidence, and is taught how to utilize a variety of methods and identify, examine, interpret, and prepare conclusions of electronic, computerized, and digital testing and comparison of evidence and known reference data sets. Taught on the collection of evidence in criminal cases, including those involving deaths, especially when homicide is suspected, sexual assault and other violent crimes; evaluation of risks concerning or identifying hazards including electrical and electrostatic discharge in the laboratory.

Provided training, assistance and guidance on performing a variety of computer forensic and electronic discovery services from digital media including digital evidence identification, preservation, forensic analysis, data recovery, tape recovery, optical media, electronic communications extraction, and database examination such as electronic and optical data storage and transfer devices, computers, laptops, mobile phones, PDAs, and images, spreadsheets and other types of files stored on these devices.

Taught to analyze and interpret computer-based evidence such as e-mail, 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.

As instructed reports findings and conducts computer forensic analyses using established tools and techniques. May be required to recover electronic data that has been deleted, erased, fragmented, hidden or encrypted from data storage devices; learn to work within stringent timelines and to work effectively under pressure; evaluates and maintains hardware and software necessary for the performance of computer related investigations.

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

Follows specific evidence control procedures to maintain chain-of-evidence integrity and ensure evidence is locked securely in a designate location before and after analysis.

The incumbent is taught how to utilize discretion and sound judgment to determine proper courses of action and to assess and evaluate a variety of situations, problems, conditions or questions and to follow protocol.

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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 methods and tests; and devises mathematical charts, graphs, and tables as aids to conducting tests; evaluates laboratory test results in the area of concern; prepares technical reports on findings and project results in conjunction with team members.

May be required to testify in court as a witness in legal proceedings.

Performs other related duties as assigned.

**KNOWLEDGE REQUIRED BY THE POSITION**

Knowledge of and skill in applying 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.

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.

Demonstrated hands-on experience with forensic investigations of systems and knowledge of equipment and supplies used in a forensic laboratory including specialized scientific equipment, instrumentation and software is required.

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

General knowledge of evidence collection, preservation and chain of custody rules/laws and knowledge of safety practices and procedures as they apply to analyses in a laboratory and policies and procedures for maintaining and handling evidence and the chain-of-evidence integrity.

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, prepare and maintain accurate records/data and prepare clear and concise reports and memoranda.

Ability to learn how 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 understand the principles, theories, concepts and practices of computer science or related field; 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 knowledge of intrusion tools and computer forensic methodologies, protocols, and tools.
Ability to work safely without presenting a threat to self or others is essential.

**SUPERVISORY CONTROLS**

The supervisor or team leader outlines or discusses possible problem areas and defines objectives, plans, priorities, and deadlines. Assignments have clear precedents requiring successive steps in planning and execution.

Independently plans and carries out the assignments in conformance with accepted policies, practices and instructions. Resolves commonly encountered work problems and deviations; and informs the supervisor or team leader of controversial information or findings to their attention for further instructions/direction.

The supervisor or the team leader provides assistance or special instructions on controversial or unusual situations that do not have clear precedents.

Completed assignments are reviewed for conformity with policy, the effectiveness of the approach taken to resolve the problem, technical soundness, adherence to deadlines, accomplishment of objectives; and performs a limited review of the methods used to complete the assignment. The work may also be reviewed while in progress.

**GUIDELINES**

Guidelines include policies and procedures of DFS; governing laws, regulations and protocols 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 manuals, quality assurance and accreditation standards, scientific literature, etc. Also, computer processes, digital date and equipment, precedent cases, technical references, forensic techniques and literature, catalogs and handbooks, internal protocols and instructions, including international “best practices” among others.

Sound judgment is utilized when interpreting and identifying the best practices/methods to use when adapting guidelines and precedents for application to specific cases or problems in accordance with established policies and accepted theories; and interjects changes to improve the reliability of data, enhance services, etc.

**COMPLEXITY**

Determines what needs to be done by analyzing, evaluating, and selecting an appropriate course of action from several known alternatives that concern or impact the assignment. Also, identifies, interprets, analyzes, and applies a range of established approaches and solutions to tests, problems or issues or the criteria for testing parameters with new methods and equipment.

**SCOPE AND EFFECT**
Work efforts affect the scientific 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.

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 employees in the immediate organization, team members and other laboratory personnel/scientists.

PURPOSE OF CONTACTS

The purpose of contacts is to obtain, clarify, or exchange information or facts needed to complete an assignment and to maintain 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 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.

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.