FORENSIC SCIENTIST I

DEFINITION OF SERIES:
This is professional work in the field of forensic science that involves analyzing and evaluating physical evidence using different analysis methods and techniques for the Montgomery County Crime Laboratory.

DISTINGUISHING CHARACTERISTICS:
This class is responsible for learning and performing day-to-day entry level work in an assigned unit, which may include Forensic Biology, Forensic Chemistry, Latent Print Examination, Firearms and Toolmark Identification, Crime Scene Investigation, or other assigned forensic function. Responsibilities include a variety of tasks such as performing chemical and/or biological tests; developing, identifying, and preserving latent prints; shot pattern testing; testing firearms for proper function and safety; performing a broad range of crime scene investigation and evidence collection duties; writing reports; and testifying in court related to a variety of evidence. This class is distinguished from the Forensic Scientist II in that the Forensic Scientist I work under closer supervision while learning and developing forensic science knowledge and skills.

MAJOR DUTIES:
An employee in this class is responsible for learning and then performing the various examination procedures within their respective discipline. Some examples of the examinations may be conducting chemical and biological tests, using computerized or digital systems to examine evidence, processing crime scenes for the collection, and preservation of evidence, or analyzing firearms evidence microscopically for comparison purposes. Incumbents are responsible for writing reports and testifying in courts as an expert witness regarding the various examination procedures conducted on evidence such as body fluids, latent prints, firearms, controlled dangerous substances or other evidentiary items.

EXAMPLES OF DUTIES: (Illustrative Only)
- Learns to utilize a variety of techniques and instrumentation to examine, identify and evaluate physical evidence related to law enforcement investigations. Evidence may include biological materials, fluids, human remains, controlled dangerous substances (CDS) and/or other drugs, fire debris, recovered bullets, cartridges, cartridge cases, shotshells, tools and other toolmarks, gunpowder and lead residue, latent prints, and other physical evidence.
- May conduct crime scene investigation, including determining the existence and type of evidence, determining the best method of collecting and preserving the evidence, documenting scenes and evidence using various techniques such as photography, videography, sketches, diagrams, measurements, etc. and performing field tests.
- Learns to safely handle firearms and other weapons, Controlled Dangerous Substances (CDS), drug paraphernalia, chemicals, and other potentially dangerous items.

- May learn to examine and test fire suspect weapons for function, operability, and safety; determines malfunctions and peculiarities, and obtains test bullets and cartridge cases for comparative examination.
- May troubleshoot problematic firearms determined inoperable during function check or test fire; disassembles and reassembles malfunctioning firearms to assess cause; renders inoperable or rusty firearms operable in order to obtain test fires; uses remote firing devices for unsafe or suspected unsafe firearms. Renders loaded or potentially loaded firearms safe.
- Participates in a well-documented quality assurance and proficiency testing program of all analyses utilizing known reference standards for the purpose of standardizing equipment and for use as a control in analyses.
- Performs routine calibrations of instruments to ensure reliability in daily use; cleans and maintains laboratory equipment, instruments, and glassware; troubleshoots instrument issues when necessary.
- Prepares solutions and reagents necessary to conduct analyses; performs quality control checks on solutions and reagents prior to use in casework.
- Confers with and advises the State's Attorney in preparation of testimony concerning analysis of physical evidence, interpretation of data, application of statistics, and the use of specialized software.
- Testifies in court as an expert witness.
- Accounts for receipt, storage, release, preservation and/or destruction of evidence; maintains a strict chain of custody of evidence submitted.
- Attends meetings, internal trainings, symposia, and workshops to keep up with mandatory continuing education and training requirements.
- Maintains and adheres to all required laboratory standards regarding section of assignment and/or laboratory accreditation requirements.
- Learns to use specialized systems such as CODIS (Combined DNA Index System), Automated Fingerprint Identification System (AFIS), Regional Automated Fingerprint System (RAFIS), Maryland Automated Fingerprint Identification System (MAFIS), FBI Biometrics database, National Integrated Ballistic Information Network (NIBIN) or other applicable systems.
- Digitally captures, stores, and/or processes/enhances latent or known impressions using digital processing software; maintains chain of custody and revision history for all digital images.
- Participates in internal and external proficiency testing programs.
- Participates in internal and external audits.
- Performs related duties as required.

SUPERVISORY CONTROLS:
Work is performed under close direction and the employee is responsible for learning to plan and conduct assignments, resolving basic conflicts that arise with direction, and for coordinating work with others, as necessary. The supervisor provides guidance and instructions on work methods and procedures while the employee develops technical knowledge and responsibility for the work. Completed work is reviewed to ensure that results are accurate, and procedures used are correct and meet laboratory objectives and standards.

SUPERVISION EXERCISED:
Employees in this classification do not supervise other positions.

GUIDELINES:
An employee in this class has definitive guidelines to follow (e.g., State and Federal regulations, current methods and practices used in forensic analysis, judicial criteria of admissibility, and Police Department directives); however, judgment is applied in analyzing the evidence and information gathered on a case, determining the number and types of tests to conduct, and interpreting and explaining the results of these tests.

COMPLEXITY:
The complexity of this class of work is marked by the continuous introduction of new and improved analytical techniques, diversity of physical evidence which an employee examines, conduct of numerous types of analyses and tests to produce optimum results for identification or enhancement, and presentation of findings which will stand up in a court of law according to Maryland Rules of Evidence.

SCOPE AND EFFECT:
Forensic analysis conducted by an employee of this classification has an impact on police investigations or arrests; the employee's court testimony often has a major role in determining the results of criminal trials.

CONTACTS:
Personal contacts include co-workers, a wide range of persons at various levels in the criminal justice system, nurses, doctors, and others to establish a fact-pattern, to analyze and report on evidence, to advise others on crucial basics so they can preserve evidence, and to make informed analytical requests, etc. Exchanges information with and provides unbiased technical advice to police, prosecutors and defense attorneys, and testimony in court that involves interpretation of evidence in trace amounts can be controversial and highly important to the prosecution and/or defense.

PUBLIC SERVICE /ASSISTANCE:
While this class of work involves an employee talking with citizens groups, teachers, and students about the field of forensic science, such presentations occur occasionally and are incidental to the primary purpose of the job.

HAZARDS:
The employee works with regular exposure to toxic substances, carcinogens, biohazards (including human blood and needles used by drug users), corrosives and sharp instruments. May have occasional exposure to elevated noise levels. Goggles, gloves, face masks, protective clothing/lab coats, special ventilation and safety procedures are used.

MINIMUM QUALIFICATIONS:
Education: Graduation from an accredited college or university with a Bachelor's Degree in a natural, physical, or forensic science. Candidates for forensic biology (DNA) must have coursework in biochemistry, genetics, molecular biology and statistics or population genetics. Candidates for forensic chemistry may also have a degree in medical technology, pharmacy, or pharmacology and must have coursework in organic chemistry and instrumental analysis.

Experience: None.

Other specific Federal- or State-mandated experience shall apply as required.

Substitution:

Equivalency: An equivalent combination of scientific education and forensic science experience may be substituted as permitted by applicable Federal and/or State mandates and certifying bodies.

Knowledge, Skills, and Abilities:
Basic Knowledge of:
- Basic knowledge of the principles, methods, and techniques of biological, chemical or forensic sciences, consistent with the position of assignment, as applied to the collection, identification and comparison of evidence.
- Knowledge of the Maryland State Rules of Evidence as they apply to providing expert testimony about the analysis of physical evidence in the employee's area of forensic expertise.
- Knowledge of specialized analysis and methodologies for area of assignment, such as binary and probabilistic mixture analysis, or Analysis, Comparison, Evaluation and Verification (ACE-V Methodology).
- Current knowledge related to area of assignment, such as conventional and synthetic/designer drugs, different firearms and ammunition, friction ridge analysis, and/or evidence collection.
- Knowledge of State/Federal regulations and laws regarding the storage and destruction of physical evidence.
- Knowledge of and skill in preserving items of possible evidentiary value.
- Knowledge of the laboratory hazards and skill in working safely, as appropriate to the position of assignment. This includes skill in handling and disposing of hazardous substances and waste.
- Knowledge of quality assurance and quality control.
- Knowledge of standard operating procedures on chain of custody and how it relates to the integrity of the evidence.
- Knowledge of the principles, practices, techniques, procedures, and developments in the assigned forensic functional area.

Skill In:
- Skill in learning quantitative analysis and statistics to collect and analyze statistical information and prepare technical reports, graphs, and charts to reflect test results.
- Skill in verbal communication to exchange technical and non-technical information with co-workers, a wide range of people at various levels in the criminal justice system, nurses, doctors and others to establish a fact-pattern, analyze and report on evidence, advise others on crucial basics so they can preserve evidence and make informed analytical requests, and to persuasively testify in court as an expert witness concerning same.
- Skill in learning the use and care of laboratory equipment and instruments.
- Skill in safely handling physical evidence.
- Skill in learning to identify, preserve, collect, and process evidence using a variety of techniques.

Ability to:
- Ability to learn to operate the tools, equipment and programs used in the collection, evaluation, and analysis of physical evidence.

- Ability to learn to identify, select and apply appropriate guidelines, techniques, and procedures for the work.
- Ability to learn to examine and analyze data and evidence, and to reach accurate conclusions.
- Ability to learn to prepare clear and concise reports of findings.
- Ability to learn to provide expert testimony in sensitive court cases with the expectation of extensive and intensive cross-examination; and to prepare charts and exhibits in support of testimony.
- Ability to pass a police background investigation.

Licenses, Registrations, Certifications, or Special Requirements:
Possession and maintenance at all times of a valid Class "C" (or equivalent) driver's license from the applicant's state of residence when required for job-related duties.

Certification by the Maryland Department of Health and Mental Hygiene to analyze CDS, as required by the position of assignment.

Must maintain compliance with any certification and training requirements mandated by law and/or certifying organization.

Note: There will be no substitutions for this section.

Work Environment:
Work is performed in an office setting, crime laboratory, crime scene and/or indoor shooting space. Occasionally testifies in a courtroom setting.

Physical Demands:
Daily work involves prolonged periods of standing and bending while performing analyses, as well as lifting and carrying objects weighing twenty (20) to fifty (50) pounds. Sufficient hand dexterity to collect, examine, and process physical evidence.

PROBATIONARY PERIOD:
Individuals appointed or promoted to this class will be required to serve a probationary period of six (6) months, during which time performance will be carefully evaluated. Continuation in this class will be contingent upon successful completion of the probationary period.

BARGAINING STATUS: Positions assigned to this class are normally in the Office, Professional, and Technical (OPT) bargaining unit.

MEDICAL PROTOCOL: Core II Exam with a Drug/Alcohol Screen.

PROMOTION POTENTIAL: Employees may be non-competitively promoted into a Forensic Scientist II position provided that the employee meets the minimum qualifications of that class, per proficiency advancement and recommendation of the hiring authority.

CLASS SPECIFICATION HISTORY:

Class Established: May 1976
Revised: March 1987
Classification Study: December 1994 (M)
March 2004 (M)
August 2013
October 2014
December 2023(M)

Former Forensic Specialty Classes
(Class Codes: 003518, 003519, 003521, 03520, 003505, 003507)
Condensed into Forensic Scientist I, II, III*, & Senior Forensic Scientist Series