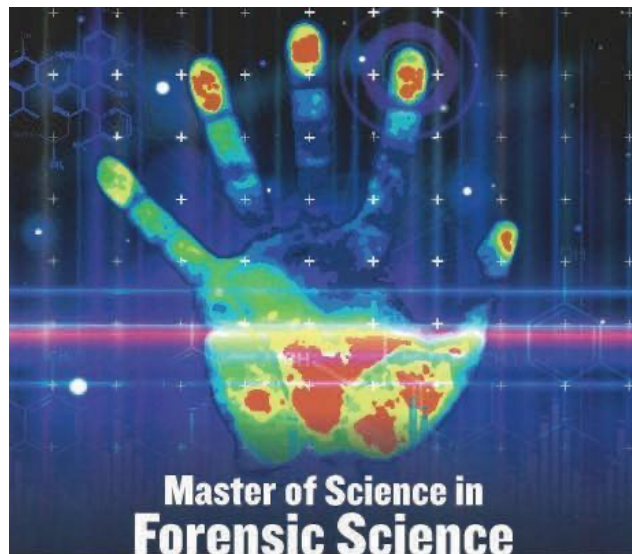


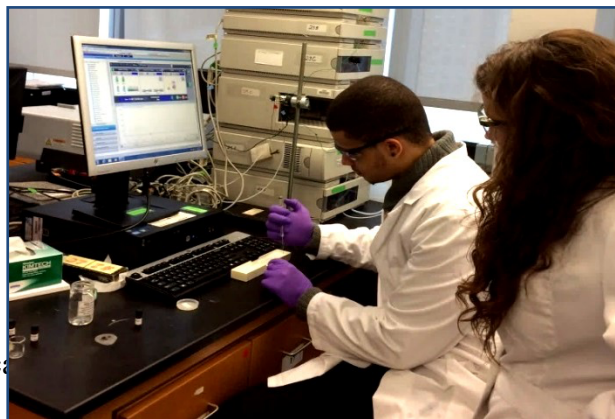
JOHN JAY COLLEGE OF CRIMINAL JUSTICE



Program Information

Why is the John Jay College Master of Science in Forensic Science Program so great?

The Forensic Science Program at John Jay College of Criminal Justice was founded in 1968 and is the longest-running academic forensic program in the country. Our highly respected and internationally recognized faculties have a wide range of expertise in the physical and biological sciences and specific forensic disciplines.



Location:

Situated in New York City, the John Jay College of Criminal Justice is close to several major forensic science laboratories, such as the Office of Chief Medical Examiner and the Northeast Laboratory of the Federal Drug Enforcement Agency (DEA), both located in Manhattan and the NYPD Crime laboratory in Queens, New York. The John Jay College campus is in Manhattan and is easily accessible by public transportation. The surrounding counties on Long Island and Westchester, north of New York City, also have regional all-service public forensic laboratories that offer excellent internship opportunities. New York City is also home to many major research centers, for example, Columbia University and the American Museum of Natural History. Students benefit from research collaborations by John Jay faculty with these and other institutions.

Low Tuition:

As part of a public university system, John Jay College offers very competitive rates, especially for New York State residents; in the fall of 2019, the up to 12 credit full-time tuition amounted to \$5,545. As a result of our affordable tuition, John Jay College has made the “Top Ten list of college graduates with least student debt” (*U.S. News & World Report*), was ranked #4 on the “Best Bang for the Buck” in the Northeast college list published by *Washington Monthly* and in July 2017 *Money Magazine* ranked John Jay in the top quarter of “Best Colleges for Your Money.”

Evening Schedule:

Most MS-FOS classes start in the late afternoon, either at 3:45 pm or 6:00 pm, which allows students to attend even while working full time. Only some laboratory sessions will be during the day. Graduate students are allowed to enroll in a part-time schedule.

On-campus Employment Opportunities:

The MS-FOS graduate program cannot offer scholarships or other financial support. Still, many of our graduate students find on-campus employment as instructors or assistants for undergraduate laboratory courses. The college offers various scholarship opportunities that recognize and support research, academic excellence, leadership qualities, and public service accomplishments.

Facilities:

The John Jay Science Department is located on three floors in a modern building built in 2012. It houses a state-of-the-art laboratory space with the most current and relevant scientific instrumentation. The campus includes a gym, a swimming pool, and a large outdoor space on our elevated terrace, the Jay Walk, which is a welcome respite from its urban surroundings.

Laboratory Training:

The curriculum emphasizes laboratory skills in three major areas: Criminalistics, Forensic Molecular Biology, and Toxicology, and builds on a two-part, hands-on instrumental analysis course. Students will spend many hours working independently and acquire relevant laboratory and troubleshooting skills.

Fulltime Faculty:

Many full-time forensic specialists teach in the MS-FOS program at John Jay. These professors are engaged in on-campus research and can serve as thesis advisors. MS-FOS faculty members have academic and professional expertise in various forensic topics. They share their scientific knowledge and educate students on professional issues, such as expert-witness testimony or report writing. Our Forensic Science faculty is widely respected and its members are active in multiple professional forensic science societies and serve on advisory panels and commissions.

Faculty research covers a wide array of topics. For example, criminalistics research employs polarized light microscopy, micro-spectroscopy, atomic absorption spectrometry, and Raman spectroscopy to improve the value of analyzing trace evidence and identify, for example, counterfeit bills and cigarettes. One research team captures bullet striations and tool-mark patterns by using confocal microscopy and applying sophisticated methods for statistical analysis. Ballistics research deals with new types of polymer-coated ammunition and studies bullet trajectories and shear patterns. Forensic toxicologists at John Jay are studying a wide array of topics, e.g. alternative biological matrices in forensic and clinical toxicology, work, better strategies for hair testing, new endogenous biomarkers to detect drug abuse, and drug use epidemiology by wastewater testing.

In forensic genetics, faculty members are working toward optimizing DNA extraction from various substrates specifically for DNA typing on contact traces or non-human DNA applications. John Jay graduate faculty also includes a forensic entomologist working on carrion colonization in an urban environment, and a forensic anthropologist, whose specialty is the historical ecology of infectious diseases but who also works on forensic projects involving perimortem and postmortem bone trauma. These are just a few of the applied research areas that our accomplished faculty are pursuing right now.

Forensic Science Core Graduate Faculty with Specialities

- Marta Concheiro-Guisan, Ph.D., Forensic Toxicology
- Gail Cooper Ph.D., Forensic Toxicology (adjunct)
- Angelique Corthals Ph.D., Anthropology
- Lissette Delgado-Cruzata Ph.D., Epidemiology and Genetics
- Peter Diaczuk, Ph.D., Criminalistics
- Jack Hietpas, Ph.D., Forensic Chemistry/Criminalistics
- Thomas Kubic Ph.D., Forensic Chemistry
- Richard Li Ph.D., Forensic Biology
- Ana Pego, PhD., Forensic Toxicology
- Nicholas Petraco, Ph.D., Criminalistics
- Mechthild Prinz, Ph.D., Forensic Biology
- Gloria Proni Ph.D., Forensic Chemistry
- Jennifer Rosati, Ph.D., Forensic Entomology
- Linda Rourke, MS., Criminalistics
- Michelle Gordon, MS., Forensic Biology (adjunct)
- Suzanne Sherman, MS., Forensic Biology (adjunct)
- Richard Stripp, Ph. D., Forensic Toxicology

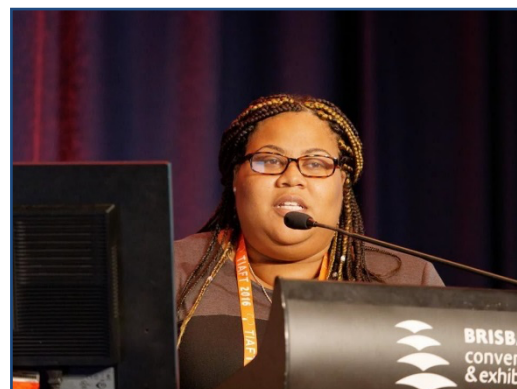


Student Research

Master's thesis topics in the Forensic Science program complement faculty research interests. Here are some examples of thesis projects from the last five years:

Criminalistics:

- Spectral measurements of fluorescence and the influence of fluorescence on microspectral analysis
- Determination of the Critical Angle of a 9mm Luger Bullet on Windshield Glass
- Bayesian Approach to Toolmark Analysis
- Environmental Factors Affecting Rapid Shear in Fibers from the Passage of a Bullet



Anthropology and Entomology:

- Histomorphology of trauma in charred and decomposed remains
- Effects of resource quality and species interactions on the colonization behavior of the black blow fly, *phormia regina* (Meigen)

Toxicology:

- Extraction process efficiency study of cathinones by solid phase extraction
- Zolpidem Facilitated Sexual Assaults: A Hair Method Validation
- Δ -9-THC Effect on the Dopamine Transporter
- Quantitative analysis of opioids and cannabinoids in wastewater samples
- Detection of in-utero ethanol exposure via EtG and EtS analysis in umbilical cord and placenta

Forensic Molecular Biology:

- Exploration of DNA Transfer in the NYC Subway System
- Evaluation of a direct PCR method and the Qiagen Investigator 24plex GO! Kit for typing blood, saliva and touch DNA on multiple substrates
- Identification of Animal Species by Utilization of Processed Remains
- Optimizing a method for simultaneous recovery of proteins and DNA from fingerprints

Ongoing student projects cover soil analysis focusing on nuclear magnetic resonance (NMR) testing for organic matter and scanning electron microscopy (SEM) for inorganic matter. Other examples of topics are the characteristics of tattoo ink, DNA recovery from paper evidence, and testing trace evidence using ramen spectroscopy.

Master of Science in Forensic Science Program Curriculum

The program requires 41-43 course credits and a research thesis. After a set of core classes, students complete one of the three available specializations and two electives.

CORE REQUIREMENTS

Physical and Biological Evidence: 3-credit lecture course that covers crime-scene processing and introduces all categories of analysis of physical evidence and their scientific basis.

Principles of Forensic Toxicology: 3-credit lecture course that gives an overview of forensic toxicology.

Thesis Prospectus I, II, & III: 3-credit series of courses spread over three semesters in which students learn about scientific writing, research methods, and professional issues in forensic science. The first two classes will help students find a thesis mentor. The third class is reserved for students to work directly with their mentors in an independent study format.

Instrumental Analysis I: 5-credit lecture/laboratory course that introduces students to chemical instrumentation and spectrophotometric techniques.

Instrumental Analysis II: 5-credit lecture/laboratory course to continue training on instrumentation with an emphasis on chromatography and other separation techniques.

Advanced Criminalistics I: 5-credit lecture/laboratory course that teaches students forensic photography, microscopy, and examination of physical evidence. This course culminates in a mock case-work and moot court experience.

CONCENTRATION REQUIREMENTS

Criminalistics

Advanced Criminalistics II: 5-credit lecture/laboratory course that provides hands-on experience in examining physical and biological evidence.

Forensic DNA Technology: 3-credit lecture course that covers forensic DNA typing for students who do not choose the molecular biology specialization

Additional Lecture: Students must choose one out of three specialized electives. These include Organic Compound Structure Determination, Advanced Topics in Physical Science, and Forensic Examination of Firearms and Toolmarks. (For description, see next page).



Molecular Biology

Advanced Genetics: 3-credit lecture course that covers human genetics; it fulfills one of the FBI Quality Assurance Standard educational requirements for DNA analysts.

Advanced Molecular Biology I: 5-credit lecture/laboratory course that covers general molecular biology and fulfills one of the FBI Quality Assurance Standard educational requirements for DNA analysts.

Advanced Molecular Biology II: 5-credit lecture/laboratory course that provides hands-on experience with current forensic DNA-typing techniques, including DNA sequencing.

Forensic Toxicology

Forensic Toxicology I: 5-credit lecture/laboratory course that trains students in the science and instrumentation behind screening and confirmation of drugs and their metabolites.

Forensic Toxicology II: 5-credit lecture/laboratory course that continues the hands-on experience in current toxicology techniques and cover quality assurance.



Forensic DNA Technology: 3-credit lecture course that covers forensic DNA typing for students who do not choose the molecular biology specialization

ELECTIVES

Organic Compound Structure Determination: 3-credit lecture course that offers advanced instruction on the analysis of spectroscopic data for organic compounds. (Counts in the Criminalistics track)

Advanced Topics in Physical Science: 3-credit lecture course that covers advanced instrumental techniques for physical evidence, such as glass, paints, and other inorganic materials. (Counts in the Criminalistics track)



Forensic Examination of Firearms and Toolmarks: 3-credit lecture course on firearms evidence and the concepts and theoretical basis of comparison microscopy. (Counts in the Criminalistics track)

Statistics for Forensic Scientists: 3-credit lecture course intended to provide a solid understanding of probability and statistical techniques.

Scientific Evidence, Expert Testimony, and Ethics for Research and Forensic Scientists: 3-credit lecture course that covers the interrelationship between science and the law and discusses the topic of ethics.

Forensic Anthropology: Osteological & Genetic Identification: 3-credit lecture course that introduces students to osteological and excavation techniques for human and nonhuman remains.

Data Analysis for Forensic Scientists: 3-credit lecture/computer lab course designed to acquaint forensic science students with statistical methods applicable to evidence analysis.

Law, Evidence, and Ethics: 3-credit lecture that examines the rules of evidence followed in criminal investigations, criminal trials, and administrative proceedings. Pays special attention to the methods and ethical obligations of government agents assigned to gather evidence.

Current Trends in Forensic Pathology and Entomology: 3-credit lecture course that will provide students with an in-depth introduction to the historical and current methodologies and practices in the fields of forensic pathology and entomology.

Forensic Electron Microscopy: this 3- credit lecture, demonstration, and laboratory introduces students to the theory and applications of electron microscopy as well as that of x-ray spectrometry to forensic and chemical analysis.

Case Analysis in Forensic Toxicology: this 3-credit experimental lecture course educates students in forensic toxicology interpretation and expert testimony in court in criminal and civil cases.

Crime Scene Investigation for Forensic Scientists: this 3-credit experimental lecture explores the techniques and procedures used by crime scene investigators in gathering probative forensic evidence.

Undergraduate Course Prerequisites: Admitted students typically have a grade point average (GPA) of 3.0 or higher, and a calculated Math/Science GPA of 3.0 or higher. International students should contact us about these prerequisites.

In addition, applicants should have successfully completed the following undergraduate STEM coursework: (Students who are deficient in three courses or less may qualify for conditional acceptance).

- two semesters of biology, (two courses, typically General Biology I and General Biology II)
- two semesters of general chemistry, (two courses, typically General Chemistry I and General Chemistry II)
- two semesters of organic chemistry, (two courses, typically Organic Chemistry I and Organic Chemistry II)
- two semesters of calculus, (two courses, Calculus I and Calculus I. Pre-calculus **does not** count)
- two semesters of physics, (two courses, Physics I and Physics II)
- one semester of biochemistry, (one course concentrating on Biochemistry, combined courses do not count)
- one semester of statistics (mathematically based statistics course)

Because forensic science is part of the criminal justice system, personal honesty, integrity, and scientific objectivity are paramount. Those seeking careers in this field should be aware that background checks similar to those required for law enforcement officers are likely to be a condition of employment. The following may be conducted and/or reviewed before an employment offer is made and may remain as ongoing conditions of employment (this list is not all-inclusive): Drug tests, History of drug use, Criminal history, Personal association, Polygraph examination, Driving record, Past work performance, Credit history, and Medical or physical examination.

Graduate Tuition and Fees: New York State Resident

Students enrolled in 1-11 credits pay \$470.00 per credit. Those enrolled in 12 or more credits pay \$5,545.00 per semester.

Graduate Tuition and Fees: Out-of-State Resident

Students pay \$855.00 per credit hour.

The City University of New York (CUNY) Board of Trustees determines all tuition and fees are subject to change without notice. Please note that the college charges additional fees per semester, such as a Technology Fee, Contact Hours Fee, etc. For a complete list of fees, visit the webpage below.

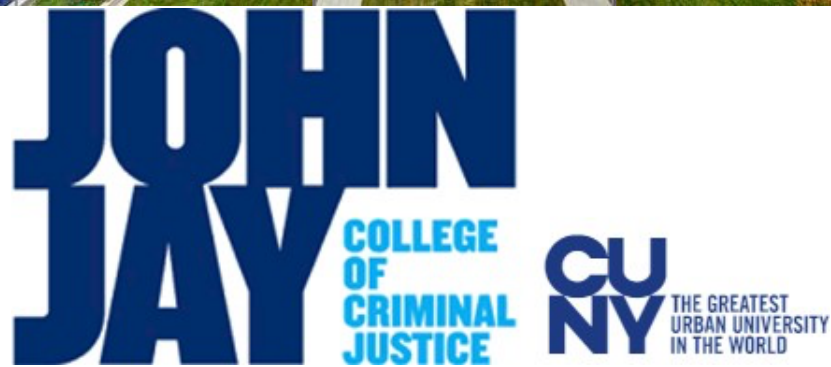
For additional information: <http://www.jjay.cuny.edu/sites/default/files/contentgroups/bursars/graduate.pdf>

Application Deadlines:

The Master of Science in Forensic Science Program only accepts applicants for the Fall semester.

Priority Deadline: April 1, 2024

Final Deadline: May 1, 2024 <http://www.jjay.cuny.edu/application-deadlines>



John Jay College of Criminal Justice

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Master of Science in Forensic Science Program

FEPAC Accredited

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