# **Forensic Science**

- The forensic science field is a collection of careers which combine science and service in the interest of society, justice, and public safety. This includes criminalistics, odontology, entomology, pathology, forensic anthropology, psychiatry, document analysis, toxicology, photography, ballistics, reconstructive arts, engineering science, wildlife forensics, computer crime investigation, and several other fields.
- Professional responsibilities depend on the field.
- Some scientists work on an "on-call" basis. This is true, for example, of many forensic anthropologists who teach at universities but who also consult with crime labs.
- Regardless of the chosen field, the general responsibilities will include following a strict chain of custody for evidence and keeping accurate records of everything done with evidence.
- Testifying in court cases and having the ability to make complex scientific analysis understandable to non-scientists is another important element of the field.

#### Education

- The pathway to becoming a forensic scientist depends on the specific field of analysis you wish to pursue.
- Unlike on television where everyone knows how to analyze everything, the field is actually made up of highly trained and specialized researchers.
- A bachelor's degree is required, generally in science. Some forensic fields also require advanced degrees.
- Most of all, these fields require good writing and communication skills, intellectual curiosity, and integrity.
- Some areas do have required board examinations.

## **Preparation**

- The educational pathway required is dependent on the chosen field. Here are some examples of specialty areas within forensic science.
  - Forensic Anthropology focuses on bones. Students take courses in biological anthropology, osteology, comparative anatomy and other upper level biology, chemistry, and forensic anthropology courses. Requirements for certification may be found at the <u>American Board of Forensic Anthropology (ABFA)</u> https://www.theabfa.org/
  - <u>Criminalistics</u> is the field that analyzes, compares, identifies, and interprets physical evidence, then reports results for use in the justice system. Criminalists work to identify evidence and link individuals, objects, and locations through physical evidence. The main role of the criminalist is to apply scientific principles to physical evidence. The minimum educational requirement for a criminalist is a bachelor's degree in chemistry, biology, physics, molecular biology, forensic science, or a related physical science. For some positions, a master's degree is required. When choosing a forensic science program, it is important to determine whether the program is accredited by the <u>Forensic Science Education Programs Accreditation Commission</u> (<u>FEPAC</u>) https://www.aafs.org/FEPAC. Accredited programs offer the necessary amount of science and math required to be a criminalist. After successfully completing an examination, the criminalist may become certified by the <u>American Board of Criminalistics</u> https://www.criminalistics.com/certification.html
  - o <u>Forensic Psychiatry and Profiling</u> are areas within medicine, psychology and criminology. Recommended courses include psychology, developmental psychology, cognitive psychology, abnormal psychology, and criminology courses. Forensic psychiatrists are physicians who have completed a psychiatric residency followed by an additional 1-2 years of post-residency training in psychiatry-and-the-law/forensic psychiatry. Others pursue a career of independent study and on-the-job training. The American Board of Psychiatry and Neurology certifies competence in psychiatrists who have completed an accredited fellowship and passed an examination. Forensic psychologists generally major in behavioral science during their four years of college and then complete a PhD in psychology. Some psychologists complete post-doctoral fellowship training in forensic psychology. Other psychologists study independently and obtain on-the-job-training in forensic psychology.
  - <u>Forensic Toxicology</u> applies our knowledge of the adverse effects of drugs and chemicals on biological systems to medicolegal contexts. The field of forensic toxicology involves three main sub-disciplines: postmortem forensic toxicology, human performance toxicology, and forensic drug testing. A bachelor's degree in the life or physical sciences is the first step towards pursuing a career in forensic toxicology. A solid background in chemistry and coursework in pharmacology and toxicology are needed. Many forensic toxicologists have masters or doctoral degrees. The <u>American Board of Forensic Toxicology</u> https://www.abft.org/ offers professional certification to scientists working in the area of forensic toxicology.
  - o <u>Forensic Pathology</u> is a medical field and a subspecialty of pathology. An MD or DO is required then a 3 year residency followed by a 1-year forensic pathology fellowship. Students interested in this field should take all the required premedical coursework.
  - o <u>Forensic Odontology</u> is a specialization of dentistry. Students must complete dental school before training in the forensic odontology area, thus, students interested in this path should follow pre-dental coursework.
- Research your chosen field and arrange shadowing or an internship with a professional in the field.
- You also need to be aware of your own behavior. Some agencies may not hire you if you cannot pass their background
  check. For example, criminal charges for illegal drug possession might prevent you from entering your chosen career.

## Student Organization: Purdue Forensic Science Club, Pre-Law Society

# **Program Information**

- American Academy of Forensic Science https://www.aafs.org/careers-forensic-science
- What is Forensic Science? https://www.aafs.org/careers-forensic-science/what-forensic-science

## **Applying**

- Application is made directly with the schools you would like to attend.
- Early application is recommended as many programs accept only a small number of students.
- For graduate programs, the Graduate Record Exam (GRE) is often required.

#### **Fee Assistance**

- Visit specific school websites to learn if fess assistance is available.
- GRE Fee Reduction Program: https://www.ets.org/gre/score-users/reducing-barriers/fee-reductions.html

# **Employment Outlook**

- Forensic scientists work in laboratories, at crime scenes, in offices and in morgues. They may work for private labs; federal, state, or local governments; medical examiners; hospitals; universities; police departments; the U.S. Postal Service; the Secret Service; the Drug Enforcement Agency (DEA); or the Federal Bureau of Investigation (FBI).
- The Federal Emergency Management Association (FEMA) also employs Disaster Mortuary Operations Response Teams (DMORT) at mass disasters.
- Salary will depend on employment and credentials. For example, a forensic odontologist with a dental degree will make more than a state police criminalist.

### **Programs in the Region**

- <u>Indiana University Forensic Science</u> Indianapolis | https://science.indianapolis.iu.edu/academics/degrees-and-programs/\_degrees/forensic-science-msfs-iupui-forscintms.html
- Bowling Green State University Bowling Green, OH | https://www.bgsu.edu/forensic-science
- Michigan State University Lansing, MI | https://cj.msu.edu/graduates/forensic-science/forensic-home.html
- Forensic Science minor at Purdue University https://catalog.purdue.edu/preview\_program.php?catoid=18&poid=33775

#### **More Information**

- American Academy of Forensic Sciences https://www.aafs.org/
- The Forensic Sciences Foundation https://fsf.aafs.org/
- Links to Forensic Organizations https://www.aafs.org/resources/forensic-organizations

#### Other Careers to Consider

Pathologists' Assistant · Mortuary Science · Law