# Career Spotlight

### Forensic Analyst

Forensic analysts use scientific techniques to solve criminal cases. They may use traditional methods such as fingerprinting, assisted by computers. In addition, they use blood analysis, forensic dentristy, voice and speech spectrograms, and genetic fingerprinting. Forensic analysts use chromatography and ESDA (electrostatic document analysis), a technique used for revealing indentations on paper, which helps determine whether documents have been tampered with.





#### EDUCATION

A career as a forensic analyst requires an undergraduate degree in mathematics, chemistry, biology, or a related natural science field. If the coursework is well planned, it is possible to immediately apply to some crime lab positions. Another option is pursuing an MSFS (Master's of Science in Forensic Science) degree in graduate school, which takes two years. An MSFS will increase the likelihood of gaining an entry level job and and future promotions to supervisory positions.

#### WHEN MATH IS USED

A forensic analyst uses bloodstain pattern analysis in order to tell the story of a crime. It turns out that the location where the blood lands and the shape of the blood on the landing surface reveal both the direction in which the blood was moving and how much force was used to wound the victim. Analysts use mathematical principles to figure out the location of the victim when the blood was shed and even the type of weapon or impact that caused the victim's injury. Sometimes, blood from a weapon can even reveal a criminal's mentality.

#### POTENTIAL EMPLOYERS

About 30 percent of forensic analysts are self-employed, and around 34 percent of detective and investigator jobs are in investigation and security services, including private detective agencies. Another 9 percent are in department or other general merchandise stores. The rest work mostly in state and local government, legal service firms, employment services, companies, insurance agencies, and credit mediation establishments, including banks and other depository institutions.

#### MATH REQUIRED

- College Algebra
- Trigonometry
- Geometry
- Calculus I and II
- Statistics

Low-end Salary: \$34,000/yr Median Salary: \$56,320/yr High-end Salary: \$94,410/yr

It is impossible to analyze forensic evidence scientifically without math. One of the main things crime scene investigators do is collect, measure, and document evidence. Their data help forensic scientists perform calculations and determine the facts of a crime. Math makes it possible to show proof of what occurred during a crime in data and numbers. The first recorded reference to forensics comes from a book written in China in 1248. The book, called "Hsi Duan Yu" (which means "The Washing Away of Wrongs") explained how to tell the difference between a person who has drowned and a person who has been strangled.

#### CITATIONS

http://encyclopedia.thefreedictionary.com/forensic+analyst http://www.bls.gov/oes/current/oes194092.htm http://www.myforensicsciencedegree.com/bloodstain-analysis/ http://www.ehow.com/about\_5516045\_math-involved-forensic-science.html

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