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## OVERVIEW

### What Is Forensic Science?

Forensic science, or forensics, is concerned with gathering and analyzing the evidence from a criminal case with the purpose of revealing the truth. By analyzing fingerprints, footprints, blood spatter, traces and remains, forensic scientists seek to reveal the identities of criminals, as well as the complete facts related to criminal events.

Forensic science degrees rely on other sciences like medicine, physics, engineering, computer science, psychology and many other. Forensics specialists form interdisciplinary teams of experts and go through complex scientific processes to piece together the complete picture of a crime scene.

Forensic science also induces more specialized sub-fields, sometimes offered as stand-alone degree programs in forensic medicine, forensic anthropology, drug analysis, toxicology, entomology, environmental forensics, biological evidence, forensic DNA analysis, and more. Students who want to pursue a Master's degree in forensic science will benefit from practical; classes and lab work, and gain valuable skills that will help them investigate facts such as analytical and critical thinking, computer training and scientific writing.

Forensic science degree allows graduates to investigate and solve crimes. Forensic science – often called forensics is gathering of evidence and details of a crime. A forensic scientist must also research and present found evidence to others involved in criminal cases, such as detectives and lawyers. The responsibilities of a forensic scientists include documenting evidence from a crime scene through photos, videos and notes, studying physical evidence from the crime scene.

There are several career options in the area of forensic science. Some of these positions are only available to sworn police officers, but many others are open to civilians. Many positions are full-time, while others are consultant positions. Forensic science careers exist in several areas including:

1. **The Forensic Lab.** There are several forensic laboratories across Canada which employ civilian scientists to analyze evidence recovered from a crime scene.
2. **Crime Scene Investigation** Crime scenes are analyzed by police officers in Canada, not civilians. These officers are highly trained and specialized Identification officers whose sole duty is to investigate and process crime scenes.
3. **Death Scenes in general.** Death scenes, with few exceptions, are attended by Coroners,

Medical Examiners, or their trained death investigators, depending on province. These people are civilians and work for their individual province, acting as an ombudsperson for the dead. If the death is suspicious, it is also attended and the scene processed by Identification (police) Officers.

4. **Forensic Pathology.** Forensic pathologists are specialized medical doctors who analyze the body, performing autopsies and determining such factors as cause of death.
5. **Other Forensic Specialists.** There are many other forensic specialists including forensic anthropologists, entomologists, odontologists, engineers, botanists, artists, nurses, psychologists, psychiatrists, profilers and wildlife specialists, to name just a few.

### [The Forensics Laboratory](#)

There are several forensic laboratories in Canada. These include Police Labs such as the Royal Canadian Mounted Police (RCMP) National Forensic Laboratory Service (NFLS), and Provincial labs, such as those found in Quebec and Ontario, and some private labs. Scientists who work in these labs and testify as expert witnesses in court, explaining their forensic biology, forensic chemistry, questioned documents and firearms and tool mark examination.

The RCMP NFLS is responsible for conducting analyses and examinations of physical evidence in connection with police investigations anywhere in Canada. Its services are primarily available to police agencies, courts and government agencies in most provinces. NFLS consists of approximately 380 forensic scientists, technologists and administrative personnel. Based on the results of their work, members of the Forensic Laboratory Services issue case reports and provide expert forensic testimony to the courts. In certain cases, the laboratory staff can – on request – provide advice and opinion to interpret evidence in situations where a hypothetical scenario may have been established. The Forensic Laboratory Service complements the work of the National DNA Data Bank which is responsible specifically for the analysis of convicted offender samples and the maintenance of the Convicted Offender

Website: <http://www.rcmp-grc.gc.ca/en/investigators-guide-national-forensic-laboratory-services>

The Forensic Laboratory Services employs civilian staff as specialists and technologists in positions requiring various levels of post-secondary academic training and experience. More information of the RCMP and the Forensic Laboratory Services is available at [www.rcmp-grc.ca](http://www.rcmp-grc.ca). The Provinces of

Ontario and Québec each have their own laboratory systems. In Ontario, the Centre of Forensic Sciences (CFS) is managed by the Ontario Ministry of Community Safety and Correctional Services and supports the administration of justice and public safety programs across the province. The CFS operates in two locations: the central laboratory, located in Toronto, and a smaller regional laboratory in Sault Ste. Marie. The two laboratories conduct scientific investigations in cases involving injury or death in unusual circumstances, and in crimes against persons or property. This service is provided to law enforcement officers, crown attorneys, defense counsel, coroners, pathologists, and other official investigative agencies in criminal cases, and to counsel in some civil cases. More detailed information can be obtained on-line at:

[http://www.mcscs.jus.gov.on.ca/english/centre\\_forensic/CFS\\_intro.html](http://www.mcscs.jus.gov.on.ca/english/centre_forensic/CFS_intro.html)

## **SAMPLE CAREERS IN FORENSICS FIELD**

### **SEARCH TECHNOLOGIST**

#### **At a Glance**

A technologist specialized in Evidence Recovery (such as a Search Technologist) typically will spend most of his/her day at the bench, performing the identification and recovery of specific biological evidence, such as semen, blood, saliva, hair, and trace DNA, as well as non-biological trace evidence, such as fibers, as the case may dictate. As primary examiners in the forensics process, STs hold a great deal of responsibility in that their examinations and decisions in a case will have a great effect in the subsequent analysis and interpretation of the evidence. Search technologists are required to keep an accurate description of their examinations and results, and are also responsible for the continuity of the evidence they examine. They also regularly interact with other members of the laboratory in order to obtain the necessary information to proceed with an examination or to obtain the assistance needed to perform a specialized analysis. Search technologists are primarily “bench scientists”, but on rare occasions are called out to assist in the examination of crime scenes where they mainly act in an advisory role to police investigations.

#### **Work Life**

Search technologists are trained to be able to identify body fluids such as semen and blood for example by performing a series of biochemical and microscopic tests that can either indicate the presence of a body fluid or can positively identify the target body fluid.

A solid foundation in the biological sciences and chemistry are a must for an Evidence Recovery search

technologist. Since the bulk of the forensic examinations involves the use of various specialized microscopes, microscopy is also an essential skill required in evidence recovery. Equally as important to the job is the ability to analyze challenging situations and to make critical decisions, good communication and organizational skills are also key elements of the position.

### Education and Further Training

Prospective understudies must have a minimum of a three-year technical diploma from a recognized institute in one of the following: biology, biochemistry, chemistry and medical laboratory science. A four- year Bachelor of Science degree is strongly encouraged to allow for future career progression aspirations. Search technologists undergo an understudy program upon engagement, consisting of an extensive review of scientific literature dealing in all aspects of evidence search, identification and recovery. They are also required to work under the supervision of qualified senior examiners in the examination of ongoing investigations, where they can acquire all the skills necessary to properly search evidentiary material.

### Career Opportunities as a Search Technologist

In the RCMP NFLS, search technologists can be cross-trained as Biology Analysts, technologists who perform the analysis of a biological samples in order to develop DNA profiles. This would require a minimum of a B.Sc. degree.

They can also aspire to become forensic specialists, such as Biology Reporting Scientists (four year B.Sc. minimum). Specialists receive further training that allows them to be able to interpret forensic evidence and any results gathered from its examination. Biology Reporting Scientists are highly trained individuals whose main role is to evaluate, compare and interpret the DNA profiles obtained after analysis is complete. They are responsible for writing forensic reports that outline both the results of biological evidence, and their significance

### Further Information

For more information on a career in forensic science, and more specifically Evidence Recovery and the RCMP National Forensic Laboratory Services, please visit:

<http://www.rcmp-grc.gc.ca/fsis-ssji/index-eng.htm>

## **FORENSIC BIOLOGIST**

### At a Glance

Forensic Biology involves the examination of exhibit material to recover sources of DNA for subsequent DNA profiling. There is a three-way division of labour in Biology Services in the RCMP:

1. Evidence Recovery (searching of exhibits)

2. Biology Analytical (extraction, quantification, amplification of DNA)
3. Biology reporting (application of DNA profiling software, comparison of generated profiles and statistical interpretation of any matches obtained)

### Work Life

In Biology, assault cases are the majority of cases that are examined. They sub-classify into the various degrees of sexual and aggravated assault and the most ultimate of assaults: homicide. With the introduction of Bill C-13, virtually all types of property crimes will now also be examined. Again, different labs may use different terminology and titles, although the job itself remains the same.

### Education and Further Training

Forensic biologists are usually either technologists or specialists. The basic requirement for entry level technologist positions in Biology (evidence recovery and biology analytical) is a three year diploma from a technical institute such as British Columbia Institute of Technology (BCIT) but the reality is that individuals with Bachelor and Master Degrees are constantly applying. Any sort of experience with molecular biology is an asset.

In addition to any scientific training, ideal candidates must have excellent written and, especially, oral communication skills as a large proportion of our services deal with the education of the Court and Investigators in the analyses that we perform. A forensic scientist must be able to effectively explain complex technical terms and concepts in layman's terms without boring their audience. This cannot be overemphasized for all forensic scientists, and indeed, for most scientists. It is vital to be able to communicate your science to people who are not trained in these fields, such as the jury. Even if a person is a brilliant scientist, if they cannot communicate their information in a clear and understandable fashion, then they cannot be a forensic scientist. Any courses and experiences that increase a person's verbal and written skills.

### Career Opportunities as a Forensic Biologist

In Biology Services, the available careers range from General Duty Technologist to Biology Analyst. Management level positions usually arise as a result of retirement or relocation but once an individual reaches this level, they become more of an administrator than a scientist. The Biology discipline does have a Program Technical Leader to deal with scientific issues and a Program Manager to deal with administrative issues. Field work is extremely rare and usually long after (months and even years) the crime has occurred. Forensic biologists do not 'wax poetic' with a Pathologist over a corpse in the morgue as seen on television, but rather are bench scientists working in laboratories. The hours are typically Monday to Friday, 8 hours per day.

### Further Information

- Association of Forensic DNA Analysts and Administrators: <http://www.afdaa.org/>
- Short Tandem Repeat DNA: <http://www.cstl.nist.gov/biotech/strbase/index.htm>
- The Forensics Library: <http://aboutforensics.co.uk/dna-analysis/>
- A Simplified Guide to DNA Evidence: <http://www.forensicsciencesimplified.org/dna/how.html>
- Investigating Forensics, Simon Fraser University Museum: [http://www.sfu.museum/forensics/eng/pg\\_media-media\\_pg/adn-dna/](http://www.sfu.museum/forensics/eng/pg_media-media_pg/adn-dna/)

## **FORENSIC CHEMIST**

### **At a Glance**

Forensic chemistry in Canada refers to the chemical analysis of materials in support of the Justice System. This includes the analysis of fiber debris for ignitable liquids. Gun Shot Residue (GSR), paint, glass, fibers, explosives and the identification of unknown materials.

Forensic chemists analyze any trace evidence that is not a body fluid. They examine all sorts of materials which are found in our everyday life. These are normal, everyday products which we don't normally think of in relation to crimes. But crimes occur in everyday places such as houses, offices, gardens and sidewalks. So, these everyday materials are frequently of interest at a crime scene due to the potential transfer from offender to victim and victim to offender.

### **Work Life**

Forensic chemists spend much of their time at a lab bench examining case items for materials which are then compared physically and chemically to materials collected from another location to determine whether or not they have originated from the same source. Court testimony is a critical part of the job of a forensic chemist even though a small percentage of the time is spent this way. In an emergency, a scientist may be called upon to assist with a scene or provide advice to an investigator, this is very rare and for the most part the hours are normal working hours.

### **Education and Further Training**

The minimum education requirement is an honors B.Sc. in a natural science though the majority of the scientists have graduate degrees. Most of these will be degrees specializing in chemistry, or having a very strong chemistry component. Once a person is hired by a forensic laboratory, they then undergo in-house training which typically lasts 12 to 18 months. This training is a combination of technical, court, policy and evidence handling training. During this time period the trainee will work on cases under the supervision of an experienced examiner. This allows the trainee to gain experience in all aspects of casework.

### **Further Information**

Openings in the field of forensic chemistry are limited. There are fewer than one hundred positions in all of Canada.

- Centre of Forensic Sciences:  
<https://www.mcscs.jus.gov.on.ca/english/CentreForensicSciences/SectionInformation/Chemistry/CFSCChemistry.html>
- RCMP: <http://www.rcmp-grc.gc.ca/fsis-ssji/trace-te-at-eng.htm>
- Laboratoire de sciences judiciaires et de médecine légale:  
<http://www.securitepublique.gouv.qc.ca/laboratoire/services-expertises/chimiejudiciaire.html>
- Chemistry Explained – Forensic Chemistry: <http://www.chemistryexplained.com/Fe-Ge/Forensic-Chemistry.html>

## **FORENSIC TOXICOLOGIST**

### **At a Glance**

Forensic toxicology is quite different from forensic chemistry. Whereas a forensic chemist performs chemical analysis of a myriad of everyday materials, forensic toxicologists concentrate on the chemicals found in body fluids and tissues, primarily drugs, alcohol and poisons but many also deal with chemicals related to the making and using of drugs. Forensic toxicologists also provide an interpretation of these findings for investigatory and court purposes.

### **Work Life**

A forensic toxicologist can find himself or herself involved in a wide variety of cases from unexplained deaths to impaired driving to homicide. Much of the time, laboratory work deals with postmortem toxicology and helping to unravel a cause of death but forensic toxicologists are often called to do casework that deals with the effects of drugs on living individuals. In fact, some of the most complex and interesting cases and analyses don't involve deaths but deal with a drug ability to incapacitate victims to alter their behavior. Because of the great diversity of work in the area of forensic toxicology there are several different laboratories where a person may find employment.

On any given day, the toxicologist will employ their skills to determine the type of analysis that is required in a case, what samples to use in that analysis and how to interpret the findings in a manner in which both the lay public (police, jurors *etc.*) and professionals (coroners, pathologists *etc.*) can understand. The forensic toxicologist will also be expected to attend court to give evidence on a regular basis. This part of the career is that of the expert witness and as such the toxicologist may often be called to give opinions on evidence that they did not produce. Forensic toxicology labs doing criminal casework offer expert witness will always support the police services in their jurisdiction with expert testimony and reports based on their laboratory findings.

### **Education and Further Training**

Forensic toxicology scientists are minimally required to have a B.Sc. (Hons) in an academic discipline such as toxicology, pharmacology, physiology, chemistry or biochemistry. Many toxicologists, however have training at a graduate level (M.Sc. or Ph.D.) and such training is often an asset since toxicology is a constantly and rapidly changing area that frequently requires research skills that have been acquired during graduate work. Most of the laboratories will have an in-house training program that will vary according to the guidelines of the jurisdiction. It is no unusual to have at-least a two-year training period during which time the trainee will be familiarized with analytical instruments or procedures used to screen for, identify and measure drug concentrations in body tissues and fluids as well as in non-biological material.

### Further Information

- Internal Association of Forensic Toxicologist: <http://www.tiaft.org//>
- American Board of Forensic Toxicology: <http://www.abft.org/>
- Society of Forensic Toxicologists: <http://www.soft-tox.org/>

## FORENSIC DOCUMENT EXAMINER

### At a Glance

Documents from all manners of personal, business, government, academic and other affairs may be disputed or questioned. Attempting to answer such questions from the scientific examination of documents is the work conducted by questioned document examiners.

The work of these document examiners is varied and requires knowledge of many aspects of how documents are made, what materials they are made with, and how documents are made, what materials they are made with, and how documents may be subjected to changes by physical and/or chemical means. Not only must these examiners have knowledge of such matters. Essentially any instrument or material used in the preparation of documents may play a part of an examination at a much later time.

### Work Life

Cases submitted to the document examiner vary in size from a single sheet of paper to large files with upwards of thousands of documents. The questions posed may only involve one type of examination or be a complex web of multi-faceted analysis that requires detailed interpretation.

Report writing and communication of the methods use, observations, conclusion and evidence continuity is very important. This communication extends to explanations to lawyers, investigators, auditors, compliance personnel, judges, court clerks and registers whether in written or spoken form. It is vital that scientific and technical terms be explained in language that may be understood by non-specialist.

Forensic document examiners conduct most work in a laboratory setting. The laboratory will be equipped

with a variety of optical, chemical, and electrical instrumentation depending on the types of examinations conducted. Most working conditions will be in comfortable laboratory conditions except for some submitted documents which may require special handling procedures due to contamination, fragile state, or physical size. For some cases, work is conducted "in the field", this may involve the examination of documents and/or devices that may have produced documents that cannot be sent to the laboratory due to legal or technical reasons. For these instances, some portable laboratory equipment is taken to the site.

The following are examples of some of the common questions which are posed to forensic document examiners.

1. Signature verification, was the signature written by the person who was supposed to have written it?
2. Who wrote the handwritten/hand printed entries on the documents?
3. Did a particular office machine produce a questioned document?
4. Is the date on the questioned document plausible?
5. Is the date on the questioned document plausible?

Many different types of documents may be disputed, listed below are some examples:

- Economic investigations and/or civil matters documents
- Illegal correspondence
- Employment and labour laws
- School documents
- Identity and vital statistics
- Medical documents
- Insurance fraud
- Historical questions
- Accident investigation and reconstruction
- Human rights and international criminal law

### Education and Further Training

The minimum educational requirements for an FDE in government laboratories is an undergraduate degree typically in science. Once hired, further training in document examination is undertaken through an apprenticeship style of program under the guidance of at least one fully trained, senior FDE. It requires a minimum of two years of full time training under such a program to become qualified in government agencies or as a qualified private document examiner. Training programs are increasing in length due to the changes in

technology and further research into the traditional aspects of document examination. Currently there is no recognized program at a university that will provide all of the basic training required to substitute for an apprenticeship.

Forensic document examiners apply the theory and practice of the scientific training received in their undergraduate education, *e.g.* chemistry, mathematics, biology, physics, psychology, computer science, *etc.* to their analyses. Furthermore, the multi-disciplinary nature of document examination necessitates learning about other sciences and consulting with other scientists who have specialized knowledge which may assist in answering some questioned document problems. Document examination is a full-time occupation and requires a willingness to learn and apply such knowledge to cases. It also requires a willingness to consider research when needed to solve problems. As well, excellent visual skills are required, with form differentiation and colour deficiency tests conducted on prospective candidates for training.

### Further Information

- American Society of questioned documents examiners: <http://www.asqde.org/>
- American Board of questioned documents examiners: <http://abfde.org/>
- American Academy of Forensic sciences (questioned document section): <http://www.aafs.org>
- Chartered society of forensic science (CSOFS): <http://www.csofs.org/>

## **FIREARMS AND TOOLMARK EXAMINER**

### At a Glance

A firearms and tool mark examiner's primary work involves using an optical comparison microscope to match striated and/or impressed 'tool marks' found on fired bullets and cartridge cases. This aspect is patterns matching based on established scientific principles. IN the past several years a technique known as Quantitative Consecutive Matching Striations (QCMS) has been developed wherein the examiners 'count' the consecutive lines found. Some examiners use both pattern matching and QCMS as part of their examination.

Some serious criminal cases also involve an estimation of the distance of a firearm from a target based on the discharge residues at the projectile holes and based on the damage created in the target. These examinations can require visual, microscopic and various chemical tests.

Often the target materials are garments and sometimes human skin. Attendance at autopsies or major crime scenes is also a necessary but somewhat infrequent part of the job.

### Work Life

Commonly, firearms and tool mark examiners work a 40-hour work week with weekends off. Exceptions occur occasionally when court, training, conference travel or special projects require additional times which is usually

compensated with overtime pay or reschedules time off. Most of the typical work day will be spend on a specific case that the examiners is completing. Making notes and photos about the exhibits, test firing guns to recover test bullets or cartridge cases and visual or microscopic examinations consumes much of the day. Writing to report, entering statistical and exhibit transfer information into a computer as well as preparing exhibits for return to the investigators and prosecutors about specific exhibits, cases or court dates also consumed some portions of the day.

### Education and Further Training

Candidates for this discipline are required to have a four-year science degree with university level courses in Chemistry and Physics. Some candidates also have engineering backgrounds. Certain skills (as listed below) are necessary for this profession. The candidate is likely to be asked about them in a hiring interview and may be required to demonstrate some of them in practical exercises during a technical assessment for hiring. The science degree only provides the basis for the specialized training. The training provided by the employer is apprentice-like and under the tutelage of experienced examiners. It involves writing a series of researched papers on topics related to the job, practical exercises, written and/or oral exams and mock trials. This training is usually given in modules with some being prerequisites for others. The training period can be up to two years in length depending on the student and his or her previous knowledge of firearms.

### Further Information

The primary professional association which connects Firearm and Tool mark Examiners around the world is 'The Association of Firearm and Tool Mark Examiners' (AFTE). AFTE is a professional scientific association with a website at [www.afte.org](http://www.afte.org). AFTE publishes an indexed and peer-reviewed journal quarterly and has a yearly training seminar style conference either in the United States or Canada. Much of the AFTE site is available only to members.

Firearms ID at [www.firearmsid.com](http://www.firearmsid.com) has a high quality virtual comparison microscope with exercises in matching of bullets and cartridge cases that can be completed by anyone, although some portions of the site are only available to law enforcement personnel. This site also provides a wealth of information concerning firearms examinations as well as 3D images of firearms.

## FORENSIC PATHOLOGIST

### At a Glance

Forensic pathology is a challenging and rewarding career involving the application of medical science to legal problems. Forensic pathologists are physicians with particular expertise in injury interpretation and death investigation, including determination of cause and manner of death. They are trained to investigate sudden unexpected deaths and frequently perform autopsy examinations which make up the majority of their workload.

They are also called upon to give expert testimony in court. Less commonly, they may be consulted in evaluation of living patients to assist in interpretation of injury patterns, e.g. motor vehicle collisions, or suspected child abuse.

Finally, FPs make valuable contributions to public safety, e.g. identifying unsuspected life threatening communicable diseases, and providing information regarding motor vehicle safety and electrical or choking hazards. This field uniquely combines medical expertise and direct anatomical observation in the diagnosis of disease with documentation and interpretation of intoxication and injury arising from a broad range of human activity and behaviour.

### Work Life

Within the field of pathology, there are several subspecialty areas, including:

- Anatomical pathology
- Medical biochemistry
- Medical microbiology
- Hematopathology

Many pathologists practice in more than one of these areas (i.e. general pathologists). Forensic pathology is generally considered to be a subspecialty in anatomical pathology (involving the direct visual examination of body fluids, tissues and organs). However, FPs frequently draw from expertise in more than one of these specialty areas in the investigation of a particular case.

### Education and Further Training

All FPs will have completed medical school (usually four years) and an additional postgraduate training program in Laboratory Medicine (five more years). After this, specific expertise in forensic pathology is obtained through a (usually) one-year fellowship, during which the pathologist participates directly in death investigation, performing forensic autopsies and testifying in court about his or her findings. In addition to medical training, FPs are required to become familiar with other areas, such as wound ballistics and trace evidence.

Because Canada previously lacked a formally recognized training program in forensic pathology, many Canadian FPs currently in practice have obtained fellowship training at a medical examiner's office in the United States. This training (and subsequent examination) allows for qualification in forensic pathology by the American Board of Pathology and is recognized by Canadian institutions. In 2003, the Royal College of Physicians and Surgeons of Canada officially recognized forensic pathology as a subspecialty of anatomical pathology or general pathology; training requirements and a specialty examination have since been developed, and allow formal training and certification as a forensic pathologist to be completed in Canada.

## Further Information

More information about forensic pathology may be found at the following websites: Royal College of Physicians and Surgeons of Canada -- [www.royalcollege.ca](http://www.royalcollege.ca)

## FORENSIC ODONTOLOGIST

### At a Glance

Forensic dentists or odontologists are professionals whose added forensic training helps identify victims of crime or accident and in some cases can aid in other aspects of the investigation. There are many ways dentistry can help in a forensic investigation. The public's first exposure to forensic dentistry is usually via the media when we hear or read that some victims will be identified by dental records.

The unique knowledge and manual skills of a forensic dentist bring an important resource to the multi-disciplinary investigative team. Forensic dentists are involved in several areas of investigation: victim identification, bite mark investigation, abuse recognition and so on.

### Work Life

The scope of forensic dentistry requires the forensic dental professional to have many primary qualifications, starting with a broad background in general dentistry, which includes; head and neck anatomy; radiographic (x-ray) anatomy, oral pathology; and basic dental restorative procedures such as amalgam (silver) and resin (white) filling materials and procedures.

It also requires an understanding of the basic role of the forensic pathologist (and coroner/medical examiner) plus the legal aspects of keeping exact and detailed notes and records. Working within the adversarial courtroom atmosphere of the justice system as either a defense or prosecution expert witness requires knowing courtroom protocol.

### Education and Further Training

Forensic odontologists are first and foremost dentists. To become a dentist you will require either a basic Bachelor of Arts or a Bachelor of Sciences undergraduate degree to qualify for entrance into a Faculty of Dentistry. A manual dexterity entrance exam will then determine your manual skills for the profession. Passing this will then have the Admissions committee place attention on your BA or BSc marks overall.

Once a dental degree is completed, experience in the vocation is your next priority and many forensic agencies will require a minimum of 5 years of experience in the regular workplace. During this time, it is important to take extra courses in the forensic areas. One of the primary and best introductory programs can be found with the Armed Forces Institute of Pathology in Washington, D.C. Their website contains all the information: [www.afip.org](http://www.afip.org)

## Further Information

Excellent information can be received by getting a copy of the 'Manual of Forensic Odontology' from the American Society of Forensic Odontology.

- Canadian Society of Forensic Science: <https://www.csfs.ca/what-we-do/disciplines-sections/odontology/>
- American Society of Forensic Odontology: <http://www.asfo.org/>
- American Board of Forensic Odontology: <http://www.abfo.org/>
- British Association for Forensic Dentistry: <http://www.bafo.org.uk/>
- Australia Society of Forensic Dentistry: <http://www.ausfo.com.au/>

## FORENSIC ANTHROPOLOGIST

### At a Glance

Forensic anthropologists are consultants who provide scientific expertise in legal contexts on an irregular basis. The majority have full-time jobs as university professors or museum curators in the broader discipline of physical anthropology. Their scientific expertise lies in knowledge of human anatomy, specifically the skeleton and of individual bones and teeth. To many researchers in the field of physical anthropology the discipline is now known as "biological anthropology" to show consideration for the study of genetics within anthropology and emphasize the relationship between biology and anthropology.

### Work Life

Physical anthropologists are experienced in the study of skeletal remains excavated from archaeological sites, which is knowledge that is useful when applied to the modern crime scene. Due to today's spotlight on forensic science, there is a greater emphasis for anthropologists to be trained in aspects which directly apply to the criminal investigation of death. The casework of a forensic anthropologist is varied. Most of the time, they are called upon to identify unknown skeletal remains.

Besides creating a biological profile of an individual, the forensic anthropologist attempts to create an "osteobiography". An osteobiography is a reconstruction of the antemortem (before death) biological profile which includes attempting a reconstruction of a victim's way of life up to the time of death. The more comprehensive the information gained from the remains, the better is the chance of matching them to a list of missing persons or confirming their identity when other records become available.

Anthropologists are trained to recognize human skeletal variation, especially in cases where the body is unrecognizable; for example, in cases of trauma (body dismemberment), cases of burning (house fires), and cases of extreme body fragmentation (bombings or airplane crashes).

## Education and Further Training

Due to today's spotlight on forensic science, there is a greater emphasis for anthropologists to be trained in aspects which directly apply to the criminal investigation of death. In addition to graduate degree programs in biological anthropology which may offer specialization in forensic anthropology, several Canadian universities offer forensic science degree programs which include training in anthropology. Forensic anthropologists will usually hold a Ph.D. in physical or biological anthropology, conduct research involving modern forensic data, and attend national and international conferences to maintain their qualifications.

Local and regional seminars and workshops, as well as short refresher courses at accredited institutions further help to hone the anthropologist's skills. Although no equivalent program yet exists in Canada, certification through the American Board of Forensic Anthropology is an important consideration for being an expert witness in a court of law.

## Further Information

Currently there are approximately 20 forensic anthropologists on call in Canada. Job openings are limited and most often entail university academic positions. More information may be obtained from the following websites:

- American Board of Forensic Anthropology (ABFA): <http://www.theabfa.org>
- Canadian Association of Physical Anthropology: <http://www.capa-acap.net/>
- Investigating Forensics - Anthropology: [http://www.sfu.museum/forensics/eng/pg\\_media-media\\_pg/anthropologieanthropology/](http://www.sfu.museum/forensics/eng/pg_media-media_pg/anthropologieanthropology/)

## **FORENSIC PSYCHOLOGIST**

### At a Glance

There are several specialties involved under the heading of forensic psychology, or more correctly, psychology and law. It is a broad area involving the application of scientific and professional aspects of psychology to issues and questions relating to law and the criminal justice system. The following information is derived from [www.ap-ls.org](http://www.ap-ls.org) and an excellent paper entitled Careers in Psychology and the Law: A Guide for Prospective Students - (<http://www.apadivisions.org/division-41/education/students/career-guide.pdf>)

Much more detailed information can be found at that site, including extensive interviews with forensic psychologists.

The main subspecialties of forensic psychology include Clinical-Forensic Psychology, Developmental Psychology, Social Psychology and Cognitive Psychology.

## Work Life

### Clinical Psychology

Clinical Psychologists are concerned with the assessment and treatment of persons with mental disorders who are in conflict with the law. They practice mostly in prisons, secure forensic units, and court services units or in private practices. They may also be involved in research in areas such as violent risk assessments and treatment needs and responses. Clinical psychologists do provide assessments of individuals for the courts and criminal responsible by reason of mental illness or whether if paroled a person is not criminally responsible by reason of mental illness or whether if paroled a person would be risk to society.

### Developmental Psychology

Developmental psychologists concentrate on psychological matters involved in human development from birth to death. They are often involved in consultation and research that relates to children and adolescents involved in legal issues such as child testimony, needs of children in many family disputes and decision making abilities when in conflict with the law as well as policy development regarding children and adolescents. They may be asked to give expert evidence in such issues as whether a child or elderly person is competent to make decisions about their lives.

### Cognitive or Social Psychology

Cognitive or social psychologists are primarily researchers and lecturers in human perception and memory. They focus on how humans think and reason and the way they remember, and impacts on memory. Their legal work relates to such issues as eyewitness testimony, accuracy of memory and detecting deception. They are often involved in research relating to how juries think and make decisions. Most are academics.

## Education and Further Training

Practicing forensic psychologists will have a minimum of a BA in Psychology, followed by graduate work in their specialty. In almost all cases, a Ph.D. is required, although some positions in advocacy and in assisting practicing psychologists exist for those with MAs.

There are now several universities which offer Ph.D. programs in Psychology and Law including Simon Fraser University. In 1978, the American Board of Forensic Psychology was established.

Clinical Psychologists require a doctoral degree (Ph.D. or Psy.D) in clinical psychology and licensure as a psychologist. Developmental psychologists require graduate training, usually to the Ph.D. level, in developmental psychology and may also have some formal legal training. No internship or licensure is required. Cognitive and social psychologists have graduate training in traditional social or cognitive psychology which may also include a focus on law. Those trained only in social or cognitive psychology

may receive training in the law at the post-doctoral level, although this is not necessary. Community Psychologists receive their graduate training in community psychology programs with emphasis on law or policy.

Some forensic psychologists may go beyond their Ph.D. in Psychology and Law and obtain a Juris Doctorate (JD) or Masters of Legal Studies (MLS). Psychologists who are primarily researchers, educators or court consultants, do not require certification although it would still be valuable.

### Further Information

- American Psychology and Law Society: [www.ap-ls.org](http://www.ap-ls.org)  
<http://www.apadivisions.org/division-41/about/jobs/index.aspx>
- American Academy of Forensic Psychology and American Board of Forensic Psychology:  
<http://www.abfp.com/>  
<http://www.apadivisions.org/division-41/education/students/career-guide.pdf>

## FORENSIC BOTANIST

### At a Glance

Forensic botany is the application of plant science to legal cases. Botany is one of the biological sciences, and a forensic botanist must be a trained scientist with a solid grounding in the methods of scientific inquiry. Some forensic laboratories carry out certain botanical analyses in house, such as the identification or genetic analysis of *Cannabis* samples.

However, the vast majority of police investigations involving the identification and interpretation of botanical evidence rely on a botanical consultant to conduct the analyses and provide a report to the investigating authority.

Forensic botany is an underutilized forensic tool, considering that plant parts such as leaves, seeds, wood and microscopic pollen and spores are found virtually everywhere, and can be collected and used to assist investigators. Much plant evidence falls into the category of trace evidence, and can be used to link a suspect, a victim, or an object like a car to the scene of a crime. Such associative evidence has been used to help identify a murder location, to determine if a body has been moved or not, or to challenge a suspect's alibi. A murder case in the USA involved testing a suspect's claim that he had not been near a farm where the farmer was killed and his truck stolen. Examination of the hair and clothes of the suspect revealed large quantities of corn pollen that linked him to a flowering cornfield and assisted in gaining a conviction. Every case has its own unique aspects, and the botanist must be broadly trained to understand and interpret different aspects of plant anatomy, chemistry, taxonomy, and ecology.

## Work Life

Some botanists with training in plant anatomy are able to identify plant residues from the last meal of a homicide victim, leading to possible associations with certain restaurants or residences where particular fruits, seeds, or vegetables were consumed. Specialized knowledge of microscopic plant tissues is of course needed to make such identifications. Many different variations of such themes occur in reality, and broad training in plant science is necessary to appreciate the potential of various analytical methods.

There are a few independent forensic botanical consultants in North America and elsewhere, but most cases are done “on the side” by academics at universities or colleges, or experts from institutional herbaria (dried plant collections). In Canada, a forensic botanist may receive 1-2 cases a year on average, with a high of 5 cases. There are many people with the qualifications to identify plants and interpret their possible meaning in an investigation, but many individuals do not want to be involved in criminalistics (criminal investigation), and especially not in court proceedings.

## Education and Further Training

In order to become a forensic botanist, an advanced degree in plant science is highly desirable. A Master’s degree, or ideally a Ph.D. will provide the credibility that is needed when one is called upon to testify in open court, and defend your report, its methods, and its conclusions. This can be a daunting experience, and the more training and experience you can gain, the better.

## Further Information

- Botanical Society of America: <http://botany.org/PlantTalkingPoints/Crime.php>

[http://www.sfu.museum/forensics/eng/pg\\_media-media\\_pg/botanique-botany/](http://www.sfu.museum/forensics/eng/pg_media-media_pg/botanique-botany/)

## **BLOOD SPATTER ANALYST**

### At a Glance

Blood spatter analysts investigate patterns of blood or blood spatter in violent crimes like murders to find the killer and determine what happened. These forensic scientists can determine the type of weapon, number of blows, placement of both victims and suspects during and after an attack, and the window of time in which the crime probably took place.

The main duty of the job entails collecting and analyzing blood samples, stains and spatter found at the scene. The amount of blood could vary from a trace amount or a large volume, so different techniques are used to process the scene and collect evidence. Blood spatter analysts also write detailed reports on the findings to help

detectives hunt down the criminal. The report may also be used in court cases, and analysts are often called on to testify in criminal hearings.

### Work Life

Blood spatter analysts play a huge role by testifying in court to deliver criminal justice. However, the job also entails working long, irregular hours and spending a lot of time around potentially hazardous materials, such as body fluids carrying disease. Sometimes, bloodstain experts go on to work in the private sector as contractors or experts for private attorneys to mitigate these risks and potentially earn more money.

Forensic science is all about studying the mess of a crime scene and analyzing the details to identify criminals and convict them in a court of law.

### Education and Further Training

Blood spatter analyst jobs typically take place in the lab, and you may be required to know how to use and maintain crime scene lab equipment. You should have a strong background in forensic science and an understanding of the properties of blood and human anatomy to be able to find work in the field. Some regions may also require certification to practice.

The typical education required for entry-level careers in forensic science is a bachelor's degree in a natural science like chemistry, biology, or forensic science. Candidates who do not have a bachelor's degree may be able to qualify for open positions with an associate's degree plus job-related experience. All blood splatter analysts should expect to receive additional on-the-job training before beginning to work cases independently.

### Further Information

- Basic Bloodstain Pattern Recognition Course: <https://www.cpc-ccp.gc.ca/programmes-programmes/forensic-ident-judiciaire/bbprc-imts-eng.htm>

## ARSON ANALYST

### At a Glance

Arson analysts collect and examine evidence to determine the causes of fires and explosions. They figure out if a fire was accidental, or something more sinister. They collect and analyze evidence from fire scenes, photograph and document the scene, interview witnesses; some question and arrest arson suspects, maintain records and prepare reports, may testify in court about the findings.

Once a fire is out and it's safe to enter the site, analysts examine the scene by going through the debris for evidence and documenting what they find. They take measurements, make notes, and draw diagrams. They take photos and videos of the damage as well. Analysts use the physical evidence to try and reconstruct the

scene of the fire. They first try to find where the fire started. Then, they attempt to figure out what caused the fire.

Investigators collect the evidence they find. This may mean cutting out pieces of the floor or other surfaces. Once they have collected all their evidence, they package and document it. They may need to transport the evidence to a lab for testing and analysis. Investigators consider all the evidence and eliminate other causes to come to a conclusion. Fires can be classified as natural, accidental, or deliberate.

While on the case, investigators keep records of their progress. Using these records, they prepare reports that explain the cause and origin of the fire. These reports might include suggestions on future building and fire code regulations. They may also recommend recalling a product that poses a fire hazard. Some investigators have the authority to question and arrest arson suspects. They are allowed to carry out search warrants. In these cases, analysts usually have to testify in court about their findings.

### Work Life

Some people in this career work in shifts. Others work on call. They can be called in to work at any time of day or night. Investigators work both indoors and outdoors. While outside, they may have to work in all kinds of weather. They also travel quite a bit, going to and from fire scenes and meeting witnesses. At times, they travel to testify in court or to attend conferences and workshops.

Examining fire scenes can be dangerous. Investigators may be exposed to smoke, fumes, and harmful chemicals. Some of these can have long-term effects on their health. They also risk injury from falling debris, broken glass, exposed wires, and other hazards. Following safety rules helps to reduce these risks. They may wear hard hats, steel-toed boots, and even respirators while at a fire scene. It can be stressful to work at a fire site. Investigators may witness unpleasant or disturbing scenes. They may have to investigate a fire in which people have lost their lives. In the case of arson, investigators are under a lot of pressure to find evidence. Their work can identify and prosecute the suspects.

Investigators work with many professionals. They may interact with police officers and firefighters at the scene of the fire. Afterward, they may discuss evidence with medical examiners, forensic scientists, and engineers. In some cases, they must speak with insurance agents about the damages.

### Education and Further Training

There are a few paths you can take to become an arson analyst. Most people begin as firefighters and work their way up through the ranks. To become a firefighter, you need at least a high school diploma. However, it's a good idea to get a degree or college diploma. This will improve your chances of becoming an analyst.

Firefighting programs are offered at some colleges and technical schools. When you join a fire department, you will need to complete its training program. You must pass written and physical exams, too. You may also begin

your career as a police officer. You usually need a diploma or degree to join a law enforcement agency. Programs in police studies or criminology are the most useful options.

Much of what you need to know to investigate fires can be learned on the job, as a firefighter. However, extra training is usually still required.

To work in the private sector, you need a degree or diploma. You can study firefighting or police studies. Or, you can study a similar field like engineering or forensics. You'll also need to know about fire codes and building construction. Many analysts move into the private sector after years of firefighting or police work.

Certification is not always required, but it's a good idea. Employers tend to prefer if you are certified. You can do so through an investigators' association. One option is the International Association of Arson Investigators (IAAI). The National Association of Fire Investigators (NAFI) also certifies people in this field.

### Further Information

- Canadian Association of Fire Investigators: <https://www.cafi.ca/>
- International Association of Arson Investigators: <https://www.firearson.com/>

## CYBER ANALYST

### At a Glance

Cyber analysts are computer specialists who protect valuable data on computers. They make sure the data stored in an organization's computers is secure. Some people in this field are called systems security analysts. Others are called computer security specialists.

Analysts' first task is to assess the risks to computer systems. Then, they develop plans and policies to address those risks. Their goal is to safeguard the company's files and technology. They also respond to security breaches. They do vulnerability assessments to identify where the system is weak. They want to find out what the attackers will target.

Analysts make sure that unauthorized people can't access the data. They also don't want users to corrupt or delete sensitive data. Analysts track network traffic flow and look for strange activity. They also control employee access levels and passwords. Analysts set up firewalls to protect against outside access. Another way to protect the data is to encrypt it, or hide it. Analysts hide private data that travels to and from company servers.

Analysts also protect computer systems from technical threats like viruses or Trojans. Other threats include malware, which is malicious software. Analysts study the current threats that might put a system at risk. They update or install anti-virus programs. A company's IT security needs can change fast. Analysts predict the changes and make sure that they continue to meet those needs. They research IT trends and test new security

programs and install new software and hardware. Company policies must follow the most current laws and regulations.

When a security breach occurs, analysts look into the problem and try to fix it. They try to figure out how the attack happened. Some analysts develop and run training programs. They teach systems users about new data security products. They also teach users about usage rules and policies.

### Work Life

Information security analysts work for any company that has a website or intranet site. They work in industries that need to protect sensitive data. This includes retail businesses, health care and educational institutions, banks, government agencies, tech companies, and the military.

Some analysts work for IT security consulting firms. Others are self-employed. They work on a freelance basis. People in this field spend most of the day sitting. They work at computers for long periods of time. They may experience eye, neck, and back strain.

### Education and Further Training

To get into this career, you should get a bachelor's degree. You can study computer science or computer programming. Information technology (IT) or a related subject are also good choices. You may also want to get a master's degree. You can study a computer-related field or business administration. This degree may help you move up in a company.

Some employers prefer you to be certified. This shows your level of skill and knowledge. You can get certified by IT training and credentialing groups. One example is the International Information Systems Security Certification Consortium. They offer the Certified Information Systems Security Professional (CISSP) award. They offer other designations as well. Some IT vendors will certify you in their products. Microsoft is one example.

If you want a career in this field, you need to stay up to date on technology. Follow the latest trends, security threats, and best practices. You need to keep updating your skills and knowledge of the IT field.

### Further Information

- Cyber Security Career Guide: <https://cyber.gc.ca/sites/default/files/2020-09/2021-0089-student-guide-e-sept25-2.pdf>

## **POLICE OFFICER**

### At a Glance

Police officers enforce the law. Officers spend most of their time on patrol or on traffic duty. They patrol areas on foot, motorcycle, or bicycle, or in a police car. They aim to deter crime by being seen in the neighbourhood. They often speak with the public to learn about any problems. Officers become familiar with the area and learn about any issues they should keep an eye on.

Police officers are always ready to help citizens. They are called if people are hurt or someone has committed a crime. Officers may deal with assaults, domestic disputes, and noisy parties. They may respond to calls about robberies, car accidents, and fires. When they arrive at the scene of a crime or an accident, police officers must take control and restore order. They give injured people first aid, and call for backup if it is needed. They may also calm a crowd, block off the scene, or restrain any violent people. Officers investigate crime scenes to find out exactly what happened. They talk to witnesses and look for evidence.

Some police officers become experts in a certain area. They might study chemical and microscopic analysis, handwriting, or fingerprints. Others work with special units such as the harbour patrol or police dogs. In some cases, officers may be asked to form task forces to combat specific types of crime.

### Work Life

Police officers work for local or provincial police forces, or for the RCMP. Police departments range from just one or two officers to thousands. Officers work in many settings. They may work in busy urban areas or remote rural ones. Officers learn the best skills to deal with each region's unique challenges. They also spend time in police stations, writing reports and keeping records. These files may be used to press charges and convict criminals in court.

Police officers carry firearms and may wear safety gear like bulletproof vests. The job can be mentally, physically, and emotionally stressful. They may have to deal with hurt victims and upset witnesses. They may have to chase criminals on foot or in a police car. Officers may have to arrest aggressive people once they catch them.

Most police officers work 40 hours a week, but their schedules can differ. Some officers work 8 hours a day, for 5 days each week. Others work 10 hours a day, for 4 days each week. Police work must be done 24 hours a day, 7 days a week. So, officers may work weekends and night shifts part of the time. In some police forces, officers rotate from days to swing shift to night shift. These shift and schedule changes can be hard on family life. It can be tough for the body to adjust to these changes, too. Officers may work overtime when they are needed. For example, they may have to work more during large public events. Extra shifts may be required after a series of serious crimes is committed.

### Education and Further Training

If you want a career as a police officer, you'll need a lot of training. Most police forces have similar standards, but exact criteria vary across the country.

In general, you must be a Canadian citizen or a permanent resident, and be at least the minimum age. You need to be physically and mentally able to do the duties of the position. You must have a valid driver's licence, too. Some police forces ask that you be certified in first aid and CPR.

You need to have a high school diploma to apply. Since there are so many applicants, it helps to get further education. Entrants now usually have a college diploma or university degree. Some police forces require you to have a diploma or degree. Police work is a diverse field, and many college or university programs can help you prepare. These programs include criminal justice, public safety, sociology, criminology, psychology, law, social science. Some schools offer programs in police studies.

As a new recruit, you must complete a police training program. Recruits are taught federal, provincial, and local laws. You will learn about policing methods, self-defence, and weapons handling. Conflict management and accident investigation are also areas of study. You'll need to keep up with physical fitness standards, too.

### **Further Information**

- Ontario Association of Chiefs of Police: <https://oacpcertificate.ca/becoming-a-police-officer/>
- Ontario Provincial Police: <https://www.opp.ca/index.php?id=128>
- RCMP Qualifications: <https://www.rcmp-grc.gc.ca/en/qualifications-and-requirements>
- Canadian Police Association: <http://www.cpa-acp.ca/>

## **IDENT Officer**

### **At a Glance**

When a crime is committed, it often takes a team to solve the case. This includes law enforcement and forensics experts. Ident, or identification officers, are an important part of this team. Ident officers are experienced police officers. They are highly trained in crime scene analysis and evidence recovery.

Ident officers are trained in all aspects of crime scene analysis from photography, fingerprinting and DNA collection to blood spatter pattern analysis (only a select few). The Ident team handles the crime scenes and is not responsible for other aspects of the investigation. Ident officers investigate many types of crime. These range from murder and assault, to break and enter. It is their job to check out the crime scene and collect as much evidence and data as they can. These officers don't chase down or interview suspects, but the clues they find at the scene help to solve the crime.

One of Ident officers' jobs at crime scenes is to record and document what they see. They pay careful attention to detail and document the scene as a whole. They also document each piece of evidence. Their other major job at crime scenes is to look for and package physical evidence. They may need to collect fingerprints, footprints, tire tracks, or tool marks. They might pick up fibres, blood, hairs, and paint chips as well. Quality control is

extremely important in Ident so NO mistakes are allowed. If an Ident officer makes an incorrect individualization of a fingerprint and wrongly identifies a person, then they are immediately removed from the Ident section. This can occur from their first training exercise to the last print they individualize before they retire. If they make a mistake, they are out of the section. Therefore, every Ident specialist can state in court, that they have NEVER mis-identified anyone.

The role of Ident officers in a case ends when they finish investigating the crime scene. It is then up to other officers and detectives to identify and catch the suspect. They use the Ident officers' evidence and their own investigations to do this. But when a case goes to trial, Ident officers often need to testify in court.

### Work Life

Ident officers work for police forces across the country. They may work for municipal or provincial forces; some work for the RCMP. Officers divide their time between police stations and the crime scenes they visit. This means they do a lot of local travel.

Crime scene work takes them to all kinds of locations, both indoors and out. If crime scenes are outdoors, officers must be ready to work in any type of weather. The length of time they spend at each crime scene varies. They can spend hours, days, or even weeks at one spot. Depending on the type of crime scene, Ident officers' work can be very overwhelming. It's hard to focus while examining unpleasant or even horrific crime scenes. During busy times, officers work long hours. During slower times, they work around 40 hours a week. Officers may be on call 24 hours a day, and must be able to work whenever needed. This can include nights, weekends, or holidays.

The type of clothing they wear depends on the police force they work for. In some areas, Ident officers wear police uniforms. In others, they wear business suits. They may have to wear full-length crime scene suits as well.

### Education and Further Training

If you want to work as an Ident officer, you must first become a police officer. Requirements for police officers depend on where you want to work. You usually need to be of a certain age and have a high school diploma. Recruitment is competitive. Because of this, it is better to have a college diploma or university degree. In some cases, this education is required. Relevant programs include police studies, criminal justice, or sociology. You can study criminology, psychology, and law as well. If you want to be an Ident officer, you should take courses in biology, chemistry, and forensics.

New police recruits go through basic training. After this, you will probably get a patrol or traffic division assignment. It depends on the force, but you may have to work at least 3 to 5 years before you can apply to be an Ident officer. The application process for new Ident officers is highly competitive. Any prior training in forensics is helpful. Once selected, you do about 2 to 4 years of intensive training in crime scene analysis. For

example, in the RCMP, you enter a 4-year apprenticeship program. This training includes classroom coursework and on-the-job instruction under experienced Ident officers. Trainees must also pass oral and written exams.

Fully qualified Ident officers usually need to take continuing education courses throughout their careers.

### Further Information

- International Crime Scene Investigators Association: <http://www.icsia.org/>
- All you ever wanted to know about forensic science in Canada but didn't know who to ask: <https://www.csfs.ca/wp-content/uploads/2016/05/booklet2007.pdf>

## STATISTICIAN

### At a Glance

Statistics is the science of numbers. Statisticians use those numbers to help scientists, economists, and other experts solve problems. For example, before opening a new car dealership, the owner might hire statisticians. They can figure out the best place to put the business. Statisticians might use government databases for this project. They research the types of new cars that people are buying. They also find the income levels of these people and where they live. After they compile this data, they can give a report to the car maker. The results help the owner decide which location will make the most money.

Their first job is to decide where and how to gather the numbers, or data. They also need to know the type and size of the sample group they will survey. Once they collect this data, they study, sum up, and explain the results. They do this with statistical computer software.

Statisticians' main task is to make sure their work will give accurate results. This data is often used to make big decisions. So, they must be confident that their work is fair and reliable. The way they sample, collect, and study data must always be precise and correct.

### Work Life

Statisticians work in many places, such as government agencies, drug companies, colleges and universities, insurance firms, and companies that do scientific research and development

Some statisticians have fairly repetitive tasks or tests to do. Others spend more time coming up with new polling techniques. Those who only have a bachelor's degree spend a lot of their time doing routine work. They are often supervised by experienced statisticians. Those with a master's degree or PhD enjoy more independence in their work. They can take part in research or develop statistical methods.

Statisticians may specialize in one area, such as sampling. They may work as consultants to large organizations. Others work in a particular industry, such as engineering. In this role, they may use a variety of

statistical methods. They may work closely with other professionals. They need to discuss exactly what data they need and the best way to get it. They also spend a lot of time working at computers. If they are working on research projects, they may need to travel to gather the data.

### Education and Further Training

To be a statistician, you will need at least a bachelor's degree. You can study statistics or math. Economics programs that focus on data analysis and quantitative methods are also an option. Some training in computer science is useful as well.

Many statisticians work for the federal government. You might be able to work for them with only a bachelor's degree. Your degree doesn't have to be in stats. But, you will need to take many courses in math and statistics. You will need at least a master's degree in statistics for most other jobs. You usually need a PhD for research and academic jobs in universities. You need a master's degree and experience for most entry-level jobs in industrial research.

You should also go to school or train in the area in which you want to work. To work for a drug company, you might need a background in biology or chemistry. Other areas you can specialize in include engineering, business, and agriculture.

### Further Information

- Statistical Society of Canada: <https://ssc.ca/en>
- Statistics Canada: <https://www-statcan-gc-ca.myaccess.library.utoronto.ca/eng/start>

## SEROLOGIST

### At a Glance

Forensic serologists assist in criminal investigations by analyzing blood, urine, saliva, semen, and other bodily fluids found at crime scenes. Their work can identify possible suspects, determine cause of death and help detectives unravel the sequence of events surrounding a crime.

Forensic serologists may test samples brought to them by crime scene investigators, detectives, or the medical examiner, or they may examine evidence in search of bodily fluids. Before they can analyze a sample, they must first determine if it is viable.

Serologists examine samples under a microscope or use other equipment to test for drugs or to determine if bodily fluids found at a scene belong to a suspect. They then summarize their findings in a written report, which is reviewed by another forensic specialist and added to the case file. Forensic serologists may also be asked to testify in court regarding their findings.

## Work Life

Most forensic serologists work for law enforcement agencies. They usually work a standard 40-hour work week but may work overtime if the lab has an exceptionally high case load. Most spend their entire day in the crime lab, though some may occasionally visit crime scenes to collect evidence.

Serologists who work in the field may encounter environment hazards such as extreme weather and unsanitary conditions. They must also watch for broken glass, weapons, potentially dangerous substances, and other risks related to the crime scene. Serologists based at the crime lab benefit from generally safe, comfortable working conditions, though they must follow safety protocols when examining and testing bodily fluids.

## Education and Further Training

Forensic serologists need at least an undergraduate degree in biology, preferably with additional coursework in math and criminal investigation. Some law enforcement agencies may require advanced degrees as well, either in biology or in forensic science or criminal justice. Some employers also require continuing education courses. In addition, forensic serologists can earn certification in forensic investigation or biology.

## Further Information

- The Centre of Forensic Sciences: <https://www.csfs.ca/resources/government-labs-in-canada/centre-of-forensic-sciences/>

# FINGERPRINT ANALYST

## At a Glance

A fingerprint analyst is someone who works in the field of forensics who analyzes fingerprints collected at crime scenes. A fingerprint analyst can also be called “latent print examiner.” Analysts collect evidence at the crime scene and then scan it in databases, such as the Toronto Police Service’s Automated Fingerprint Identification System (AFIS), to which different divisions across Toronto submit any fingerprints that they need identified.

A fingerprint analyst has to not only be familiar with scientific procedure and crime scene procedure – since the analyst is one of the first people on the scene after the first responders – but also must be able to understand the computer systems that are involved with the job. It is a unique combination of the two disciplines.

Some of the fingerprint analyst’s duties include:

- Sweep crime scenes carefully to find fingerprints
- Process different types of fingerprint samples
- Label and identify different prints
- Use various computer and photographic equipment to enhance visible prints

- Use chemicals to identify fingerprint evidence
- Compare the identity of latent prints to known impressions
- Preserve print specimens for laboratory analysis
- Prepare detailed reports on the test results
- Submit fingerprint images into state and national fingerprint databases
- Examine physical evidence like hair, skin, wood, fiber or soil residue
- Testify as expert witnesses in civil or criminal trials

### Work Life

Fingerprint analysts can work in the field, in the lab, or in a combination of the two. Usually, most of the work performed by fingerprint analysts is done in a laboratory. If a fingerprint analyst doesn't do it, a crime scene investigator, police officer, or detective will sometimes locate, identify, and "lift" fingerprints from the surfaces of crime scenes in the field, preserve them, and send them to the lab for comparison. The fingerprint analyst then takes the necessary steps to analyze the prints in a lab.

Fingerprint analysts in a laboratory can usually count on a standard full-time, Monday-through-Friday workweek year-round. However, they may need to be on call during other hours if they're working on urgent cases or be available to collect prints in the field.

### Education and Further Training

The job of fingerprint analyst generally requires at least a bachelor's degree. It is recommended that this degree come in the science fields – chemistry or biology, preferably with a focus on forensics, if offered. To become a certified fingerprint analyst, there is a test from the International Association for Identification (IAI) known as the Tenprint Certification test. The more advanced test is known as the IAI Certified Latent Print Examiner certification. Certified fingerprint analysts can testify in trials and be seen as a valid witness.

Requirements to work as a fingerprint analyst vary by employer. Some employers may require a master's degree in criminal justice. Some may also require advanced fingerprint courses.

### Career Opportunities as a Fingerprint Analyst

- Latent Fingerprint Examiner in Canada:  
<https://www.jobbank.gc.ca/marketreport/jobs/27338/ca;jsessionid=9A1AD719BD1C91E4EEC851945DE9F126.jobsearch74>

### Further Information

- Canadian Identification Society of Canada: <https://www.cis-sci.ca/>

## **MEDICAL PHOTOGRAPHER**

### **At a Glance**

Medical photographers are responsible for using photography techniques and equipment to produce high quality images for healthcare and scientific purposes. Most often taken on-site, images can reflect surgical or clinical procedures and circumstances, and can help healthcare professionals to diagnose and treat injury, illness and disease. Medical Photographers take pictures of surgeries, treatments or other procedures to assist with medical research and teaching. Because you are working in the medical field in a scientific capacity, you must be knowledgeable about medical procedures and terminology, anatomy and sterilization techniques.

A career in medical photography involves the daily creation of technically sound images that are regularly used for patient documentation, medical education, publications, legal documentation and insurance purposes. Medical Photographers work directly with physicians, medical staff and patients to create a standardized visual record of a patient's condition over time. They are also the first line of defense in protecting this sensitive information.

A medical photographer uses their photography knowledge, along with medical content knowledge, to perform on-site photography services required for surgical and clinical procedures. Often, this includes using photography for reproducing radiography images, creating photographs for reconstructive surgeries, producing educational slides and documenting operating room procedures. Medical photographers rely on digital cameras and computer software programs to edit their images. They may be required to edit client images taken from pre-operative and post-operative evaluations. Therefore, staying abreast of recent software editing trends is important.

### **Work Life**

Your day as a Medical Photographer might include taking pictures of one or more different procedures. Or you may be asked to photograph conditions or illnesses of patients who have consented to be photographed. After taking these photos, you develop the film so that the photos properly display the surgery, illness or procedure in the medium they are intended to be used. You may need to use a computer or graphic design software to enlarge or clarify a microscopic image.

Medical Photographers are employed by publication companies, hospitals, research facilities and medical schools, and their pictures appear in textbooks, pamphlets, exhibits, and brochures. You could find yourself side-by-side with surgeons, nurses and other medical professionals in a treatment or surgical room, and remain in with the team for several hours to obtain all the photos you need. So if you get queasy at the sight of blood be careful-you may just find yourself as close to surgery as you may ever get without wielding a scalpel.

## Education and Further Training

To become a Medical Photographer, a learner should apply to post-secondary education programs in pursuit of a Bachelor's Degree in photography or an industry-related field. During these programs, learners will receive instruction on ways to best utilize photography equipment and software. To prepare for a career as a Medical Photographer, learners should also take courses in medical terminology, biology, chemistry, and especially, anatomy.

## Further Information

- Professional Photographers of Canada: <https://www.ppoc.ca/>
- BioCommunications Association – an international association of photographers, videographers, and graphic designers who create visual media for medicine and science: <https://www.bca.org/>

## EVIDENCE TECHNICIAN

### At a Glance

Evidence technicians, also known as forensic science technicians, assist police detectives in collecting, processing, and analyzing evidence from a criminal investigation. This role is not the same as a crime scene investigator, who is typically a sworn police officer. An evidence technician is usually a scientist who has expertise in the collection and processing of criminal evidence and is a civilian, and not an officer.

This job generally requires the ability to collect, preserve, and analyze evidence from a crime scene, including fingerprints and bodily fluids; record observations of the crime scene with photographs and sketches; catalog and preserve evidence for transfer to crime labs; perform chemical, biological, and microscopic lab tests and analyses on evidence taken from crime scenes; examine links between suspects and criminal activity, using the results of DNA or other scientific analyses; consult with experts in specialized forensic science fields as needed; prepare and explain detailed reports that explain findings and investigation methods; and testify about findings and methods in court as needed.

Evidence technicians must exercise extreme caution to ensure the integrity of the evidence and the methods of collection. They help ensure that evidence is not thrown out by a judge because of shoddy collection or preservation work.

Once evidence technicians transport the evidence back to the lab, they use forensic science to help tell the story of what transpired at the crime scene. Detectives use the test results and expert reports from evidence technicians to build their cases against alleged perpetrators.

### Work Life

Evidence technicians spend much of their time in a laboratory, and some may only work in the labs. Others may also work at indoor and outdoor crime scenes to document, collect, and preserve evidence. In some cases, they may be called to crime scenes by detectives investigating major crimes like murders, burglaries, robberies, and rapes.

Technicians working in labs often work a standard full-time work week, but they may be called to work outside of normal business hours to work on urgent cases. Evidence technicians who also collect evidence at the scene of a crime can also have more sporadic work hours.

### Education and Further Training

Evidence technician jobs most often require at least a bachelor's degree related to the work to be performed, such as chemistry, biology, or forensic science. Getting a master's degree in forensic science or further certification in a specific area of study, such as pathology or toxicology, can give job candidates an advantage.

Prior job experience is not required for evidence technician positions, as long as the job candidate has the appropriate education. Once starting a job, the candidate will usually train under a senior evidence technician to hone the necessary skills to succeed.

### Further Information

- International Association for Property & Evidence Inc.: <https://home.iape.org/>

## **BALLISTICS ANALYST**

### At a Glance

A ballistics analyst is a forensic specialist who is responsible for collecting and analyzing ballistics-related evidence, which includes firearms and ammunition.

Ballistics is a science that is rooted in physics, as ballistics analysts are called upon to determine everything from trajectory to probable distance and angle when studying firearms and ammunition. A ballistics analyst may study shell casings, bullet fragments, clips, and firearms at the scene of a crime and in a laboratory setting.

Ballistics evidence studied by ballistics experts may include firearms, spent cartridges, spent shell casings/bullets, shot shell wadding, live ammunition, and clothing.

When analyzing ammunition found at a crime scene, ballistics analysts are said to be engaged in *ballistics fingerprinting*, which involves studying the marks left on ammunition to determine which firearm was used to fire the bullet. (Just like fingerprints, no two firearms will produce the same marks, even those of the same make and model.) Ballistic fingerprinting and firearm identification is in the same forensic group as toolmark identification, as a firearm acts as a tool to leave marks or imprints on a spent shell casing or bullet.

Ballistics analysts are called upon to identify the characteristics of firearms, from the bullets fired to calibers and rifling patterns. They also analyze cartridges and cases to search for signs of firing pin impression, ejector marks, extractor marks, and other toolmarks. These professionals often use a *comparison microscope* to compare toolmarks, side by side, to identify a potential match.

### Work Life

The majority of a ballistic analyst's work is performed in the laboratory, although these professionals are also called to crime scenes to preserve and collect evidence. Ballistics analysts are often involved in crime scene mapping, which involves using computer design programs, photogrammetry, and laser measuring tools. Crime scene mapping is also used to create diagrams for police reports and for courtroom presentations. It is also not uncommon for ballistics analysts to lift fingerprints from spent shell casings or to collect DNA samples from spent rounds.

Upon completing ballistics testing, ballistics analysts must write detailed reports, which may be used by law enforcement officials and in courtroom hearings and trials. They may also be required to serve as expert witnesses during criminal trials and hearings.

Most ballistics experts work for government crime labs; however, these professionals may also work as private consultants or contractors.

### Education and Further Training

A common degree program for ballistics experts is a bachelor's degree in forensic science, which provides individuals with a solid framework in the biological sciences, physics, and chemistry, and introduces study in criminal justice and the law. Forensic science degrees are ideal for preparing students for work in the forensic laboratory. Individuals interested in pursuing careers in ballistics may also seek undergraduate degree in mechanical engineering or metallurgy, as well as chemistry, biology, or a similar life science.

It is quite common for ballistics experts to spend two or more years in initial training under the guidance of a forensic science expert. Continuing education is commonplace in this profession. Training in the field of ballistics is a must for individuals seeking ballistics analyst positions. Training often includes work in ammunition, expert witness testimony, evidence handling, crime scene searches, firearms identification, microscopy, gunpowder and primer residue, wound ballistics.

### Further Information

- The Association of Firearm and Tool Mark Examiners: <https://afte.org/>
- International Ballistics Society: <https://ballistics.org/>

## **BIOMEDICAL ILLUSTRATOR**

## At a Glance

Biomedical illustrators are professional artists who make illustrations for the health and medical fields. This means they need an understanding of science, as well as artistic ability. You can find their work in many places, including medical ads, textbooks, and magazines. The images are in brochures, charts, and exhibits. These artists may also do drawings for court cases. Biomedical illustrators work with other types of media as well. They may work on videos, computer animations, and websites. Some also make 3-D teaching models and prosthetic parts. Medical workers, students, patients, and the general public all benefit from this work. These illustrations can show a doctor how to do medical procedures. They can also teach the public about diseases and how the body works.

There are a few types of medical illustration. Some images are extremely realistic. Others are abstract and interpretive. Complicated medical procedure drawings must be very detailed and exact. Other drawings can be more basic, or even funny.

No matter what they draw, illustrators start by gathering data. They need to know about their audience and the subject matter. They can create images by hand or with computer programs. They may add labels or captions to highlight the key parts of the illustrations.

Some people choose to specialize in just one area of the field. For example, an illustrator may only do drawings that deal with the eyes and eye surgery.

## Work Life

Biomedical illustrators work for many employers. These can include hospitals, universities, medical schools, clinics, drug companies, publishers, ad agencies, and medical professionals. Lawyers also hire them to do drawings for court cases. Some illustrators work full time for one employer, but most work on a freelance basis.

Illustrators usually work in well-lit and clean settings. They may work in small studios, production departments, or home offices. People in this career often sit for long periods of time. They need to take a lot of breaks to avoid neck, back, wrist, and eye strain. They must also be able to deal with deadline pressures.

These artists usually work 40 to 60 hours a week. Freelancers may need to work nights and weekends. It depends on their deadlines and workload.

## Education and Further Training

Biomedical illustrators usually have formal training in art and biomedicine. Most people in the field have a master's degree in medical illustration. There are only a few colleges in North America that offer these programs.

The program includes courses in the medical field, like anatomy, pathology, and embryology. You will learn about visualization and illustration as well. Computer animation is also covered. Programs usually take 2 years to finish.

Voluntary certification is available for this career. It's for graduates of programs accredited by the Association of Medical Illustrators (AMI). You can also get it if you have 5 years of experience. You need to complete a dissection course in gross human anatomy, too.

To get certified, you need to pass a test. You must also turn in your portfolio for review. You then become a Certified Medical Illustrator (CMI). You need continuing education to keep this title.

### Further Information

- Association of Medical Illustrators: <https://www.ami.org/>

## SCENE RECONSTRUCTIONIST

### At a Glance

Crime scene reconstruction is the use of scientific methods, physical evidence, deductive and inductive reasoning to understand the series of events that led to the occurrence of a crime.

Crime scene reconstruction is a process that helps investigators interpret and explore evidence and may ultimately be used to arrest suspects and prosecute them in a court of law. Crime scene reconstruction blends observation, experience, collected data, and scientific methods to produce a probable explanation for the crime event.

Crime scene reconstruction is different from a re-enactment of a crime, as it involves a more comprehensive approach that focuses on final resolutions than criminal investigative analyses. Specifically, crime scene analysis takes place during the initial phases of the investigation, throughout the investigation, and even during the adjudication process.

Crime scene reconstruction may involve everything from observations and conversations between investigators to the use of advanced computer models. In other words, it is a fluid and continuous process that doesn't end until a final analysis and conclusion has been made about the crime.

### Education and Further Training

Senior crime scene investigators with significant experience in crime scene investigations are typically the ones who undertake the complex job of crime scene reconstruction. The most logical path to securing crime scene reconstruction jobs involves first achieving an associate's or bachelor's degree in forensic science, criminal

science, or a similar program and then working as part of a crime scene investigation team to gain the experience needed for attaining a job in crime scene reconstruction.

### Further Information

- Association for Crime Scene Reconstruction: <https://www.acsr.org/>
- Crime Scene Reconstruction Certification by the International Association for Identification: [https://theiai.org/crime\\_scene\\_reconstruction.php](https://theiai.org/crime_scene_reconstruction.php)

## **CORONER/MEDICAL EXAMINER**

### At a Glance

Coroners are death investigators. It is their job to uncover the truth about untimely deaths. Some deaths are the result of natural causes, while others are accidental or criminal.

Death investigations in Canada are handled at the provincial level. In each province, a coroner's job varies somewhat. They are usually trained as medical doctors, but this is not required in all areas. In some regions, death investigators are called medical examiners or forensic pathologists. People with these titles do have to be medical doctors.

Despite these differences, coroners across the country have the same goal. For each death they investigate, they have to be able to answer five key questions. They ask: Who is the deceased? When did the person die? How did he or she die? What are the circumstances surrounding the death? Where did the death occur? The first step is a thorough medical examination of the dead body.

The examiner's goal is to get a full understanding of the cause of death. A pathologist may do this exam on behalf of the coroner. The pathologist then creates a detailed report. In some areas, coroners do the autopsy themselves. Coroners check the results of the autopsy against other relevant findings. They look at the dead person's health records and the police report. Sometimes coroners need even more information. In this case, they can interview people who were present at the time of death. They may request more tests to be done on the body. They may also order the police to investigate further.

Once all the facts are in place, coroners produce and file a final report. This presents the official cause of death. It answers as many of the five key questions as possible. Coroners may also have to testify about these findings in court.

### Work Life

Coroners work for provincial governments. They are either hired or appointed by the province. They usually work full time. In some smaller communities, they may work only when they are needed. In these cases, they combine their coroner duties with other medical practices.

They usually work in offices but may also spend time in hospitals or labs. They spend some time travelling to local scenes of deaths. They may also travel to interview witnesses or meet other law officials. They work with all kinds of other professionals, like doctors and other hospital staff. They also work with the police and politicians.

Although this job is not hard on the body, it can be stressful. Coroners must be comfortable working around death on a regular basis. This can include examining dead bodies. They often have to review violent crime scene photos and details. They have to talk to the grieving families of the deceased. The job is also stressful because it is important. The public relies on coroners to answer important questions. Any mistakes they make can have serious results. An error may even lead to the conviction of the wrong person in a murder case.

Potential risks on the job include exposure to contaminants during lab work. There is a chance of exposure to disease or infection from a dead body. Following safety rules, such as wearing latex gloves, can cut down on these dangers. Coroners who do their own autopsies must have strong stomachs.

Generally, coroners work regular business hours. They work 8 hours a day, and 40 hours a week. However, they are often on call when they are not at work. They may get a call at any time of the day or night to examine a body or crime scene.

### **Education and Further Training**

Educational requirements to become a coroner depend on where you live. In many areas, people from different professional backgrounds can become coroners. They are not required to complete medical training. Experience in the law enforcement or legal fields can get you into this career. But even in these regions, having medical training gives you a strong advantage.

The surest way to enter this field is to first become a medical doctor (MD). After this, you can get training as a forensic pathologist. Courses in law will be helpful to a future coroner, as well.

Medical school takes 3 to 4 years to finish. You will receive a general medical education, and graduate as a medical doctor (MD). Next, you must apply to a residency program. This is a period of practical, on-the-job training in a hospital or medical setting. You receive training in a specific medical field. To qualify as a forensic pathologist, you must finish a 5-year residency. This residency is in general or anatomical pathology. You then do a 1-year program in forensic pathology.

Next, you will get some experience working in a hospital as a pathologist. After this, you can become more involved with the coroner's office. You can work your way towards becoming a coroner. In large or busy areas, you may start out as a deputy coroner and work your way up the career ladder.

### **Further Information**

- Canadian Society of Forensic Science: <https://www.csfs.ca/what-we-do/disciplines-sections/medical/>

## WHO EMPLOYS FORENSICS GRADUATES?

- Federal, provincial/territorial, and municipal government
- Forensics laboratories
- Medical examiners officers
- Hospitals
- Universities
- Toxicology laboratories
- Police departments
- Medical examiner/coroner offices
- Independent forensic science consultants
- Insurance companies

## PROGRAM RELATED SKILLS

Academic courses in this program provide opportunities to develop the following types of skills. Make a career counselling or an employment strategy appointment to discuss how you can demonstrate these skills to employers.

- **Technical:** make and record accurate measurements; make observations, draw diagrams and take photographs; investigate crime scenes; and use statistical tests.
- **Communication:** report writing; verbal testimony; understanding of cultural diversity; translate scientific evidence; and analyze and present data.
- **Organizational:** casework; teamwork; and understanding legal issues related to evidence.
- **Problem-solving:** identify alternative solutions; and interpret lab findings.
- **Research:** draw conclusions based on the evidence obtained and communicate results of investigative work through proper channels based on the conclusions drawn.

## POSSIBLE CAREER PATHS

Note: This is not an exhaustive list. Detailed career profiles are available in the Career Centre. Some occupations require further education and experience.

- Computer Network Specialist\*

- Criminologist\*
- Coroner\*
- Forensics Scientist\*
- Home Economist\*
- Scientist\*
- Food Scientist\*
- Operations Research Analyst\*
- Detective\*
- Forensics Engineer
- Administrative Assistant\*
- Accountant
- Archaeologist\*
- Artist/Sculptor\* (including facial reconstruction)
- Aviation Accident Investigator
- Ballistics Analyst (ammunition performance and wound interpretation)
- Chemist\*
- Computer-Related Crime Investigator
- Nurse\*

- Forensic Consultant
- Crime Scene Investigator\*
- Medico-Legal Investigator
- Educator (potentially all forensic areas)
- Image Enhancement Specialist
- Marine Biologist\*
- Nurse Examiner
- Photographer\*
- Polygraph Examiner
- Radiologist\*
- Researcher
- Rehabilitation Counsellor\*
- Social Worker\*
- Technical Writer\*
- Speech Scientist (voice identification, enhancement of recordings, validation and authentication of transcripts and/or recordings)
- Forensic Accountant\*

\*view these titles at Career Cruising, available on [CLN](#) under the *Resources* tab.

## **SAMPLE JOB LISTINGS FOR GRADUATING/RECENT GRADUATES**

Below is a sample of delisted positions that have been posted on UofT's Career Learning Network (CLN). To access current listings, login to [CLN](#) and click on *Jobs*.

- Forensic Technologist, Toxicology, Day Communications
- Forensic Accountant, KPMG
- Forensic Psychologist, St. Joseph's Healthcare Hamilton

- Consultant, Forensics, MNP LLP
- Data Entry Clerk, Centre for Addiction and Mental Health
- Laboratory Assistant, Department of Chemical & Physical Sciences, UTM
- Protective Services Officer, CN Tower
- Summer Student, Compliance, Toronto-Dominion Bank
- Forensic Chemistry Student Technologist, Centre of Forensic Sciences
- Transmissions Electron Microscopy Technician, Department of Cell & Systems Biology, UofT
- Junior Lab Technician, University Health Network
- Recycling Coordinator, Department of Facilities Management and Planning, UTM
- Patent Assistant, Craig Wilson and Company Inc.
- Forensic Collision Reconstruction, MEA Forensic Engineers & Scientists
- Loss Prevention Investigator, Delta Security and Safety Services

## HOW CAN THE CAREER CENTRE HELP?

### Library Resources

The Career Resources Library contains information about a wide range of occupations in all industries, resume and cover letter resources, effective work search methods, graduate/professional school preparation guides and more. Below listed are some sample of Career Centre Library Resources:

You can also visit our online library collection by going to the Career Centre website: <https://www.utm.utoronto.ca/careers/> and click on the Career Planning icon and then scroll down to Library Resources. Once you register, you can download a book for up to 14 days.

### Appointments

- Attend a one-on-one appointment with a [career counsellor or an employment strategist](#) to discuss what career options might work for you and determine a job search plan.
- Meet with an [academic or departmental advisor](#), who can guide you in achieving academic success. Contact the Office of Registrar or your department for more information

### Career Planning by Year

Visit our Career Planning by Year page for ideas of important career related activities for each

year. You can visit us in the Career Centre to find out more about careers that interest you. The UTM program plans are also a good resource to learn more about how you can use your degree and to find out how to map out your academic career path for each year while at UTM: [www.utoronto.ca/program-plans](http://www.utoronto.ca/program-plans).

### **The National Occupational Binder**

The National Occupational Code Binders in the Career Resources Library provide very detailed, specific and extensive information relating to hundreds of careers. From general overviews of the job, to working conditions, to sample job postings related to the field and related articles, the binders are sure to provide you with in-depth answers to many of your job-specific questions.

### **Tip Sheets**

Do you like information in an easy-to-read, easy-to-digest, take home format? Take a look at our tip sheets on subjects like Effective Interviewing, Networking and Preparing for Graduate School.

### **Events**

Would you like a chance to interact with prospective employers and expand your networking circle? The Career Centre offers a number of events that help you brush shoulders with professional and experts from all fields. Attend the Get Experience Fair, Get Hired Fair, Professional School Fair and Summer Job Fair. Practice putting those networking skills to use and land yourself a job! Check out the events and workshops section of the Career Learning Network to find out what is happening on Campus.

### **Extern Job Shadowing Program**

Are you still curious about what career path is best for you? Would you like a chance to experience working in an industry to find out if it's really the path for you? The Extern Job Shadowing Program can help. This job-shadowing program grants you a one-to-five day placement in a career of your choice. Go to the Career Learning Network to register for the workshops that will help you to prepare for your placement. To register go to: [www.clnx.utoronto.ca](http://www.clnx.utoronto.ca) and then go to [workshops and events to see when the next workshop is happening](#).

### **Talk to Professors**

Connecting with our professors can be a great way to explore the different paths a major can lead you to, as well as learn about possible opportunities for research, volunteer, or becoming a TA. Drop by during their office hours or request an appointment.

## Career Counselling

Are you feeling lost, unsure and overwhelmed with finding out what career path you would like to choose? Or you've decided on a career or the type of job you want, but what are the next steps? Our career counsellors are here to help. Book an appointment with one of our professionals who can help you determine what paths you can take after graduation or how your area of study can relate to a career post-grad.

## Job Postings

Are you graduating soon or a recent graduate? Sign up for the Graduating Students Employment Service (GES) or the Recent Graduate Employment Service (RGES). These services allow you to gain access to full-time job postings while your final year of study or access full-time job postings for up to two years after you graduate. To learn more, check out our Career Centre website.

Please feel free to come and visit us in Room 3094, South Building. You can also reach us by phone, 905- 828-5451 or email at [careers@utm.utoronto.ca](mailto:careers@utm.utoronto.ca).

## **ADDITIONAL RESOURCES**

- RCMP Forensic Lab Services: <http://www.rcmp-grc.gc.ca/fsis-ssji/index-eng.htm>
- Centre of Forensics Sciences:
- [https://www.mcscs.jus.gov.on.ca/english/centre\\_forensic/CFS\\_intro.html](https://www.mcscs.jus.gov.on.ca/english/centre_forensic/CFS_intro.html)
- FBI Laboratory Division (USA): <https://www.fbi.gov/services/laboratory>
- Canadian Society of Forensic Sciences: [www.csfs.ca](http://www.csfs.ca)
- National Centre for Forensic Sciences: <https://ncfs.ucf.edu/>  
<http://www.forensics.ca/phpcode/web/ljp.php?country=Canada>

## **References:**

<https://www.csfs.ca/>