

THE MASTER OF SCIENCE DEGREE IN  
**FORENSIC  
SCIENCE & LAW**



**DUQUESNE  
UNIVERSITY**

BAYER SCHOOL OF NATURAL AND  
ENVIRONMENTAL SCIENCES



## About Duquesne University

Duquesne University boasts a proud legacy of providing an exceptional education with an emphasis on moral values, dedication to quality teaching and commitment to service. The University's urban setting places its students in close proximity to a wealth of science-based internship opportunities at corporations and agencies throughout the region. Although it is located at the heart of downtown Pittsburgh, Duquesne still preserves the feel of a small college town because of its safe, attractive, self-contained campus.

## The Wecht Institute of Forensic Science and Law

The Master's in Forensic Science and Law is offered in partnership with the Cyril H. Wecht Institute of Forensic Science and Law. Dr. Wecht, one of the world's leading medical-legal consultants, chairs the Institute's advisory board, which includes such internationally renowned experts as Dr. Henry Lee, Dr. Michael Welner, and Professor James Starrs. Students participate and attend special and annual conferences sponsored by the Wecht Institute.

## Degree Options

Students earn a Master of Science degree at the end of the five-year curriculum. Additionally, students must select course work leading to a bachelor's degree in biochemistry or biology. Students in the program who wish to earn a law degree may be eligible for an early admission to Duquesne's Law School, by achieving and maintaining required academic standards.

## Access to World-Class Technology and Labs

To remain at the forefront of innovative scientific research, Duquesne continually invests in its laboratory facilities and technology. As a result, Duquesne's laboratory equipment is comparable to, and in some cases more advanced than, what is available at other large universities or industrial research facilities.

## Professional Activities

Phi Sigma Lambda is a professional Forensic Science Fraternity established for students in the Master's degree program in Forensic Science and Law. The fraternity unites students in the program, instills the aspiration to achieve high academic standings, encourages students to become involved in community affairs, strives to uphold values of honesty and integrity and creates lasting friendships and loyalty. Each July, Phi Sigma Lambda hosts 20 high school students at on-campus workshops where they get to experience a variety of hands-on laboratory sessions on topics such as fingerprints, hair and fiber analysis, arson investigation, and gunpowder/drug analysis. For more details, interested high school juniors and seniors can visit [www.duq.edu/forensic-science](http://www.duq.edu/forensic-science).

## Research Plays a Critical Role in Our Program

Students are encouraged to start research as early as their freshman year, in order to gain as much professional experience as possible and facilitate hands-on learning. Research provides students with the opportunity to learn experiment development, problem solving and instrumental methods. Beginning in the third year of the program, students are required to undertake an original research project. In the fifth year, they prepare a manuscript and present their research. Students may enhance their research projects in the Advanced Forensic Chemistry Lab, DNA Methods/Population Genetics, and Forensic Investigation courses. In addition, some students continue undergraduate research projects in either chemistry or biology.

*"I had an internship at the Brooke Army Medical Center's Institute of Surgical Research where I studied the use of blood transfusions in severely burned patients. The forensic science program has given me a strong background in many different areas of science, allowing me to do research in a variety of fields."*

-Jennifer Stipanovic  
2007 Forensic Science Graduate

*"The adjunct faculty teaching in the program actually work in the field, making the experience they bring to the classroom invaluable."*

-Sara Nedley  
2006 Forensic Science Graduate  
Forensic Scientist  
ChemImage Corporation, a Pittsburgh-based firm with experience in the use of hyperspectral imaging applications, including forensic science





# Why Study *Forensic Science* at Duquesne University?

A critical need exists for skilled professionals in the exciting, yet challenging field of forensic science. Recent developments in scientific research and technology have revolutionized the pursuit of justice. The role of the forensic scientist is to uncover the facts that lead to the truth. He or she must be highly trained to apply scientific principles and techniques to the analysis of evidence. At the same time, this individual must understand the legal framework in which the science is utilized.

Duquesne University educates future forensic professionals in a manner that stands apart from programmatic approaches offered by colleges and universities throughout the nation.

## As a student in Duquesne's Forensic Science and Law program, you will:

- Earn both your bachelor's and master's degrees in five years, thereby accelerating your career advancement
- Learn from highly regarded, leading forensic science and law experts
- Gain in-depth knowledge in the sciences as well as the law
- Take advantage of the many benefits and resources that are directly accessible to you via Duquesne University's ideal location in Pittsburgh, Pennsylvania
- Enjoy learning in an atmosphere marked by personal attention, hands-on instruction and participation in innovative research, allowing you to grow to your fullest potential

## FEPAC Accreditation

Duquesne's Master of Science in Forensic Science and Law Program is accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC). FEPAC-accredited programs have been rigorously reviewed and found to meet the standards for quality forensic science education. By choosing an accredited program, you will have the added assurance that your education will assist you in establishing a career in forensic sciences. The curriculum provides graduates of the program with credentials sought by employers and laboratories in the field.



Above: A student works to recover DNA from a spent shell casing.

Left: Graduates preparing for the Expeditionary Forces at USACIL.

# CURRICULUM

## FALL SEMESTER

### YEAR 1

Advanced General Chemistry I & Lab  
Calculus I  
Biology I  
Thinking & Writing  
Research & Information Skills

### YEAR 2

Organic Chemistry I & Lab  
Physics for Life Science I  
Basic Philosophical Questions  
Cellular & Molecular Biology

### YEAR 3 *(3.0 cum GPA & 2.5 GPA math/science required to enter third year)\*\*\**

Analytical Chemistry  
Biochemistry I  
Physical Chemistry for Life Sciences  
Introduction to Biostatistics  
Forensic Investigation I  
Social Justice Course

### YEAR 4

Advanced Forensic Chemistry Lab  
American Legal History  
Service Learning in Science  
Torts  
Forensic Molecular Biology  
Human Genetics  
Faith & Reason Course  
Chemistry Seminar\*

### YEAR 5

Trace Evidence & Environmental  
Forensic Serology/DNA  
Evidence/Case Management  
Constitutional Criminal Procedure  
Latent Fingerprint Analysis  
Seminar/Journal Club  
Trace Evidence Application Lab  
Serology/DNA Application Lab  
Internship

\*B.A. Biochemistry

\*\*B.S. Biology

\*\*\*A student must maintain a 3.0 cumulative average to remain in good standing.

In addition to the curricular requirements, the program requires a student to perform an internship, and completing a thesis research project.

This curriculum is subject to change.

**For more information, contact the advisement office at (412) 396-1084.**

## SPRING SEMESTER

Advanced General Chemistry II & Lab  
Calculus II  
Biology II  
Imaginative Literature & Critical Writing  
Forensic Science & Criminal Law

Organic Chemistry II & Lab  
Physics for Life Science II  
Research Lab Techniques  
Creative Arts Course  
Science Writing  
Philosophical Ethics of Law & Science

Forensic Chemistry Lab  
Biochemistry II  
Biostatistics II  
Wrongful Convictions  
Forensic Investigation II  
Professional Development I & II

DNA Methods/Population Genetics  
Ethics in Forensic Sci & Prof Resp  
QA and Lab Admin Management  
Environmental Law  
Global Diversity Course  
Theology Elective  
Seminar  
Biology Elective\*\*

Forensic Drug Analysis  
Firearms and Toolmarks  
Forensic Toxicology  
Explosives & Arson Investigation  
Expert Qualification  
Independent Research  
Chemistry/Toxicology/Arson Application Lab





## OUR FACULTY

At Duquesne, you'll find many enthusiastic, accomplished scientists who have a passion for teaching and conducting innovative research. Through these profiles, we would like to introduce you to a few of the professors who will help ensure your success in the Forensic Science and Law program, as well as in your future career.



### FREDERICK FOCHTMAN, Ph.D.

Dr. Frederick Fochtman, director of the Forensic Science and Law program and the Cyril H. Wecht Institute of Forensic Science and Law, has more than 35 years of experience as a forensic professional. Fochtman previously served as the director and chief toxicologist of the Allegheny County Medical Examiner's Office Forensic Laboratory Division. His position with the county kept him up to date on new technologies and forensic techniques, which he has incorporated in Duquesne's curriculum.



### RON FREEMAN, B.A.

Ron Freeman has nearly 40 years of law enforcement experience, including two decades as a homicide detective. As commander of the Major Crimes unit for the Pittsburgh Police, he managed squads investigating homicides, robberies, burglaries and arson. Currently, he teaches the Forensic Investigations I and II courses to fourth-year forensic science students.



### JOHN T. RAGO, J.D.

Law School Professor John Rago teaches criminal law and procedure to first-year law students. He is the founding director of the Post-Conviction DNA Project and a member of the Innocence Project's Northeast Public Policy Committee, and the founding director of the Cyril H. Wecht Institute of Forensic Science and Law. Professor Rago also holds a joint faculty appointment with the Bayer School for Natural and Environmental Sciences, where he teaches courses on constitutional criminal procedure, wrongful convictions, and philosophical ethics of law and science.



### LISA LUDVICO, Ph.D.

Dr. Lisa Ludvico is jointly appointed as a faculty member of biology and forensic science. Her outstanding teaching abilities were recently recognized by a national student leadership honor society, which named her "Teacher of the Year." She has expertise in DNA research and teaches the forensic program's DNA Methods Population Genetics course, and Forensic Molecular Markers. Dr. Ludvico has been instrumental in guiding students with research presentations at the American Academy of Forensic Sciences Annual Meeting.



### CHRISTINE TOMSEY, M.S.

Christine Tomsey has 37 years of forensic experience with the Pennsylvania State Police Laboratory System. Ms. Tomsey was responsible for establishing the DNA laboratory for the Pennsylvania State Police, served as the Forensic DNA Manager and Technical Leader for over eighteen years, and was the state CODIS administrator. She was a member of a national committee to set standards for DNA analysis in the United States and served as a national and international lecturer on forensic DNA analysis. Ms. Tomsey currently consults with many forensic laboratories assisting in laboratory audits, writing and reviewing grants, consulting on new technologies, and evaluating laboratory policies and procedures.



### STEPHANIE WETZEL, Ph.D.

Dr. Stephanie Wetzel is an analytical chemist specializing in forensics and mass spectrometry. Her current research includes new analytical methods for the analysis of hairs, fibers and soil. Students in the major are required to take the Forensic Chemistry Lab and Advanced Forensic Chemistry Lab taught by Dr. Wetzel where they will learn microscopy, spectroscopy, chromatography, and mass spectrometry. In addition they have the opportunity to perform undergraduate and graduate research in her laboratory. She also teaches Analytical Chemistry and Research Lab Techniques.

*"Along with being a fingerprint examiner, I also deal with other biometrics, including face, palm and iris recognition. Duquesne prepared me for this job by giving me a wide range of knowledge within the science field as well as a well-rounded education from the Honors College."*

-Laramie Dille  
2007 Forensic Science Graduate  
Fingerprint examiner, Ideal Innovations, Inc., a Department of Defense contractor in West Virginia



*Students from the Forensic Science and Law Program recently attended and presented their research at the 63<sup>rd</sup> Annual Scientific Meeting of the American Academy of Forensic Sciences (AAFS) in Chicago, Illinois. Pictured above are students of the 2011 graduating class.*

## FOR ADDITIONAL PROGRAM INFORMATION, OR TO ARRANGE A VISIT TO DUQUESNE, CONTACT:

### Duquesne University Office of Admissions

600 Forbes Avenue  
Pittsburgh, PA 15282

**Phone:** (412) 396-6222  
(800) 456-0590

**Fax:** (412) 396-5644

[www.duq.edu/admissions](http://www.duq.edu/admissions)

OR

### Duquesne University Forensic Science and Law Office Master of Science Program

341 Fisher Hall  
Pittsburgh, PA 15282

**Phone:** (412) 396-1084  
(412) 396-1514

**Fax:** (412) 396-1402

[www.duq.edu/forensic-science](http://www.duq.edu/forensic-science)



**DUQUESNE  
UNIVERSITY**

BAYER SCHOOL OF NATURAL AND  
ENVIRONMENTAL SCIENCES