

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.

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. During the fourth year of the program, students are required to undertake an original research project. In the fifth year, they are required to write a paper 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
Forensic Science
Class of 2007

“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 forensics. 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.

FEPAC Accreditation

Duquesne's Forensic Science and Law program is accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC), and is one of only 13 accredited forensic graduate degree programs in the U.S. 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, by meeting the requirements of employers in the laboratory.

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



CURRICULUM

FALL SEMESTER

YEAR 1

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
Ethics Course
Service Learning in Science

YEAR 4

Advanced Forensic Chemistry Lab
American Legal History
Forensic Investigation I
Torts
Forensic Molecular Markers
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, either research or experiential based.

This curriculum is subject to change.

For more information, contact the advisement office at 412.396.1084.

SPRING SEMESTER

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
Law, Science, & Philosophy

Forensic Chemistry Lab
Biochemistry II
Biostatistics II
Wrongful Convictions
Global Diversity Course
Social Justice Course

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

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



"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."

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

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.



MITCH JOHNSON, Ph.D.

There are many ways to make fingerprints visible so that they can be photographed and used as forensic evidence. However, fingerprints do not show up well against certain kinds of backgrounds, such as those with lots of color. To solve this problem, Dr. Mitch Johnson has developed special dyes that enhance the visibility of fingerprints when viewed under a laser that is invisible to the naked eye.



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.



Students from the Forensic Science and Law program recently attended and presented their research at the 62nd Annual Scientific Meeting of the American Academy of Forensic Sciences (AAFS) in Seattle, Washington. Pictured above are students of the 2010 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

**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



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