

PRE-FORENSIC STUDIES

JMU Pre-professional Health Programs



GENERAL INFORMATION

Forensic science refers to a wide array of disciplines that apply the knowledge and techniques of science to the investigation of crime and the courts of law. Forensic science, sometimes referred to as “criminalistics” includes specialized areas of forensic biology (DNA analysis, forensic biochemistry, botanical analysis), forensic chemistry (toxicology, microscopy, hair and fiber analysis, glass analysis, explosives), fingerprint and footprint analysis, forensic document analysis, and toolmark and firearms identification. There are a number of forensic science careers outside the traditional forensic science crime laboratory. These include forensic anthropology, forensic odontology, forensic psychology, forensic pathology, forensic computer science, forensic entomology, forensic nursing, and forensic engineering.

The National Institute of Justice’s (NIJ) Technical Working Group on Education and Training in Forensic Sciences recommends that students interested in forensic science have a strong background in natural sciences with extensive laboratory coursework. They also emphasize the importance of strong personal attributes, professional skills and professional involvement. The following guide for pre-forensic studies at JMU has been developed using the NIJ report of the Technical Working Group on Education and Training in Forensic Sciences and the curricula of a number of forensic science programs. Because of the diversity of fields included under the rubric of forensic science, this guide cannot be exhaustive. You should design your program of study using the following basic guidelines and then specialize your program for your particular area of interest.

The NIJ report of the Technical Working Group on Education and Training in Forensic Sciences can be found at the following address: <http://www.ncjrs.org/pdffiles1/nij/203099.pdf>

CHOOSING A MAJOR

The major you choose will depend on the particular area of forensic science in which you are interested. If you are interested in the traditional areas of forensic science, you will probably want to take a chemistry, biology, or anthropology major at JMU (students interested in forensic psychology are typically psychology majors). Within each of these majors, we recommend the following coursework for preparation for A) typical forensic science or B) forensic anthropology program:

A) PREPARATION FOR GRADUATE EDUCATION IN FORENSIC SCIENCE (TRADITIONAL FORENSIC SCIENCE LABORATORY)

Biology majors <http://www.jmu.edu/biology/>

In addition to your major requirements we recommend the following:

CHEM 362 Biochemistry
BIO 430 Human Genetics
BIO 442 Immunology
PUAD 215 Introduction to Criminal Justice

Chemistry Majors <http://www.jmu.edu/chemistry/>

In addition to your major requirements we recommend the following:

BIO 114 Organisms
BIO 214 Cell and Molecular Biology
PUAD 215 Introduction to Criminal Justice
CHEM/PHYS/MATS 275 Introduction to Materials Science

Anthropology Majors (http://www.jmu.edu/sociology/index_anth.html)

We recommend a biology or chemistry minor with electives chosen as listed above.

B) PREPARATION FOR GRADUATE EDUCATION IN FORENSIC ANTHROPOLOGY

Anthropology Majors

Choose the biological anthropology concentration.
Earn a biology minor and/or choose the following electives:

BIO 290 Human Anatomy
BIO 270 or 370 Human/Animal Physiology
BIO 410 Advanced Human Anatomy
BIO 325/ANTH 395 Forensic Anatomy

Choose 2 of the following:

MATH 321 ANOVA and Exp. Design
MATH 324 Applied Nonparametric Statistics
MATH 421 Applied Multivariate Statistics

Biology/ Chemistry Majors

Earn an anthropology minor with electives in biological anthropology.

Take the following elective courses:

BIO 290 Human Anatomy
BIO 270 or 370 Human/Animal Physiology
BIO 410 Advanced Human Anatomy
BIO 325/ANTH 395 Forensic Anatomy

Choose 2 of the following:

MATH 321 ANOVA and Exp. Design
MATH 324 Applied Nonparametric Statistics
MATH 421 Applied Multivariate Statistics

* Students in the social sciences interested in a career in forensics should also consider taking a criminal justice minor (<http://www.jmu.edu/justicestudies/cjminor.htm>)

RESOURCES

Dr. Leslie Harlacker (harlacla@jmu.edu, Sheldon 216, 540-568-2628) and **Dr. Donna Amenta** (amentads@jmu.edu, PH/CH 3128, 540-568-7384) serve as **Coordinators of the Pre-forensic Studies Program** at JMU. Several additional faculty members can provide useful advice to students interesting in pursuing careers in forensic science. Each faculty member has a particular area of expertise that may be useful to students pursuing different aspects of forensic science careers.

Department of Biology: Dr. Terrie Rife, Dr. Roshna Wunderlich

Department of Chemistry: Dr. Donna Amenta

Department of Psychology: Dr. JoAnne Brewster

Department of Sociology and Anthropology: Dr. Leslie Harlacker

Liberal and Applied Social Sciences Center: Dr. Peggy Plass

There are a number of sources on the web that provide useful advice or additional sources of information.

American Academy of Forensic Scientists

<http://www.aafs.org>

American Board of Criminalistics

<http://www.criminalistics.com/>

American Board of Forensic Anthropology

<http://www.csuchico.edu/anth/ABFA/>

Forensic Anthropology information

<http://www.forensicanthro.com/>

NIJ Report - Technical Working Group on Education and Training in Forensic Science

<http://www.ncjrs.org/pdffiles1/nij/203099.pdf>

Forensic DNA website with links to careers and education in forensic science

<http://www.forensicdna.com/careers.htm>

Note: Students planning professional health careers should discuss these goals with their pre-professional health program and undergraduate major advisors. It is important to begin this planning process when students' studies are initiated; it is imperative that students plan career options. The admissions requirement information presented above should be used only as a guide when planning students' pre-professional health curriculum. It is important that students do not interpret these guidelines as definitive statements regarding the admission requirements or policies of the individual schools and colleges of professional health. Each institution specifies its own requirements and procedures. It is essential that students become familiar with these requirements and make appropriate course selections in consultation with their pre-professional health and academic advisors. Absolute admission requirements are limited to provide necessary flexibility in the undergraduate program. The course requirements for most professional health programs are similar and usually specify minimum credit in biology, chemistry and physics. Schools of professional health recognize the desirability of students having a variety of interests and diverse backgrounds. Applicants are urged to obtain a broad cultural background in such fields as literature, social science, psychology and the fine arts.

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