

SPOTLIGHT

State of Forensic Science and Medicine Education in Virginia

By Linda P. Carne and Ramona H. Thiss

Virginia Institute of Forensic Science and Medicine, Richmond, Virginia

INTRODUCTION

Interest in forensic science and medicine has increased dramatically in the past five years. With the explosion of television programs such as *CSI: Crime Scene Investigation*, *Cold Case Files*, *Crossing Jordan* and *Forensic Files*, coupled with extensive media coverage of high-profile criminal cases, the public has become fascinated with anything forensic. This is especially true of high school and college students who contact the Virginia Institute of Forensic Science and Medicine (VIFSM) with questions about how to enter the field of forensics. According to an article in the *Wall Street Journal* on February 19, 2002, "The National Science Teachers Association says forensics is growing in popularity and is a good way to motivate students in math and science weaned on crime shows such as CSI." Mary Fran Ernst, past president of the American Academy of Forensic Science wrote, "Middle and high school teachers are now clamoring for information and pleading for resources and assistance to help them incorporate forensic science into their math and science curriculums." This unprecedented interest comes at a time when the demand for highly trained, certified forensic science and medicine personnel is at a peak. The use of sophisticated technology to investigate crime and crime scenes expands to meet an exponentially increasing criminal justice caseload. According to Dr. Paul Ferrara, Director of the Virginia Division of Forensic Science, "Nationally there is an estimated need for 5,000 to 10,000 trained forensic scientists, the competition is keen and there is a limited pool of qualified examiners to draw upon."

With the explosion of television programs such as CSI: Crime Scene Investigation, Cold Case Files, Crossing Jordan and Forensic Files, coupled with extensive media coverage of high-profile criminal cases, the public has become fascinated with anything forensic.

OVERVIEW

VIFSM is one of the first organizations to address the national need for highly trained forensic personnel and has become the prototype for training programs throughout the country. In 2000, VIFSM was the first to offer forensic science and medicine curriculum integration for high school science and math teachers. The institute is a result of a collaborative effort of the Commonwealth of Virginia's Department of Health, Office of the Chief Medical Examiner, Department of Criminal Justice Services and the Division of Forensic Science. VIFSM was founded in 1999 with the mission to further forensic science and medicine education and training.

Forensic evidence has played a crucial role in investigating and resolving thousands of violent crimes over the past several decades, and its value as an investigative tool is likely to increase in the coming years. Forensic science and medicine must apply the latest available technology through established scientific techniques to identify, collect and examine criminal evidence. Scientists then interpret information gained in the laboratories and autopsy rooms and present reports at judicial proceedings. There is a constant need to provide the highest level of training on technology advances in the forensic science environment for those who need forensic science and medicine information on a daily basis. The mission of VIFSM is to further forensic science and medicine education with the goal of bridging the gap between the advances in forensic science and medicine and their applications in the real world of crime scene and death investigations. VIFSM fulfills this mission through federally and privately funded post-graduate fellowships, forensic training of professionals, forensic curriculum design for state and national partners, research and public education.

FELLOWSHIP PROGRAMS

A key component of the Virginia Institute of Forensic Science and Medicine's work for justice is its post-graduate fellowship program. To date, the institute has trained over three dozen individuals through its one-year and two-year fellowship programs, thereby helping to fill the national need for qualified forensic personnel. VIFSM's current fellowship program, a model for the country, consists of 17 post-graduate forensic fellows in the disciplines of DNA, firearms and toolmarks, controlled substances and latent prints.

Laboratory instruction of fellows is under the direct supervision of certified forensic scientists, with literature reviews, research projects and moot court testimony designed to train fellows to proficiency. The fellowship program relieves state and local forensic laboratories from the burdensome task of providing on-the-job training. The program allows qualified examiners to focus on case analysis without having to shift priorities to train newly hired, inexperienced examiners. After completing the year-long fellowship program, many of the qualified graduates will find employment in Virginia's Division of Forensic Science.

SEMINARS IN FORENSIC SCIENCE AND MEDICINE

To meet the growing demand for fully trained experts, VIFSM provides intensive, multi-disciplinary training in a real-world investigatory environment. Courses provide a systematic approach to violent crime and death investigation using applied theory as well as a hands-on learning methodology. VIFSM provides both basic and advanced courses for all levels of healthcare professionals, legal and law enforcement personnel, emergency

and first responders as well as tangential forensic professionals such as firemen, game wardens and state police. Many jurisdictions send teams of professionals to achieve a coordinated, efficient and complete death inquiry.

Since VIFSM's founding in 1999, over 800 professionals, including science teachers, public defenders, prosecuting attorneys, judges, police detectives and investigators, medical examiners, physicians, emergency medical technicians and forensic nurses, have completed the institute's forensic science and medicine seminars. Over 200 world-renowned faculty, many of whom are staff members of the Division of Forensic Science and Office of the Chief Medical Examiner, lend their expertise in all disciplines of forensic science and medicine. Through its training seminars, VIFSM enhances the knowledge and performance of those engaged in forensic investigation.

NATIONAL CURRICULUM TEMPLATE

Through an initiative funded by the Department of Justice under the 2003 President's mandate "Advancing Justice Through Forensic DNA Technology", VIFSM was called upon to produce a national training curriculum in partnership with the Community Oriented Policing Services office in Washington, D.C., through their Virginia affiliate, Virginia Community Policing Institute. This curriculum will be the template for law enforcement officer DNA training throughout the country.

Additionally, VIFSM has provided guidance for universities and the private sector in establishing forensic training programs for the U.S. Army and in California, Illinois, South Carolina, New Jersey, West Virginia, Australia, the United Kingdom and Switzerland.

PUBLIC EDUCATION

In response to the public's heightened interest in forensics, VIFSM has developed a program entitled *Forensic U*, which presents an accurate and fascinating glimpse into the world of forensic science and medicine for the average citizen. Participants delve beneath the entertainment surface of popular television shows and explore the pros and cons of emerging forensic science and medicine applications. The program further helps to educate the public about the Commonwealth's criminal justice system and expertise in forensic science and medicine.

RESEARCH

Research and development in areas of forensic science and medicine are critical to the future of medicolegal investigation efforts and to advance the criminal justice system. VIFSM is currently conducting the first such research project in partnership with the federal government and will continue to work with federal, state and academic research entities to explore and validate new programs and technologies.

FUTURE

Well-qualified forensic scientists and pathologists contribute to restoring faith in judicial processes by using science and technology in the search for truth in civil, criminal and regulatory matters. Society and the criminal justice system will not be able to derive maximal benefit from advances in science and technology if those who use or need the technology are not trained. The Virginia Institute of Forensic Science and Medicine exists to fill the need for sophisticated educational opportunities and ensure an adequate pool of trained forensic personnel.