CRIME SCENE SCIENCE

Marshall’s Renowned Forensic Science Center
cover story

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Marshall’s renowned Forensic Science Center offers areas of emphasis in Crime Scene Investigation, Digital Forensics, DNA Analysis and Forensic Chemistry.

Premiering on CBS television in 2000, CSI: Crime Scene Investigation follows crime analysts as they use DNA and other scientific evidence to solve grisly crimes. The show has become the most-watched TV drama in the nation and has inspired two spin-offs and a host of copycats. It should surprise no one that CBS has renewed CSI for a 13th season.

And it’s perhaps not surprising, too, that more and more young people are eyeing forensic science as a career, making it one of the hottest subjects on today’s campuses. According to USA Today, more than 130 of the nation’s college and universities now offer forensic science programs. However, the newspaper notes that only a handful of those programs are accredited.

By James E. Casto
Photos by Rick Lee
Among them are the programs at the Marshall University Forensic Science Center.

Marshall’s programs actually pre-date the debut of CSI. The school accepted its first class of forensic science students in 1995. Since then, the MU Forensic Science Center and its programs have grown dramatically in both size and reputation. The center’s DNA laboratory and training facilities attract eager students and law enforcement personnel from across the country. Digital forensics and analytical chemistry are also important elements of the center’s mission.

In its early years the center made the old Fairfield Stadium football locker room its home, transforming it into a state-of-the-art, human identification DNA laboratory. Later, a modern addition provided additional space, and in 2009 a three-story annex was opened. The unfinished academic section remains a work in progress. The center also utilizes a university-owned old house in the 1500 block of Fifth Avenue. The handsome three-story brick structure provides a setting where students can practice crime scene investigation techniques.
The center has “two major components,” said Dr. Terry W. Fenger, its founding director. “One is our master’s degree program in forensic science, and the other is our working laboratories, which are research and testing laboratories.”

On the academic side, the center itself long has been accredited, but Fenger said the center recently received a second accreditation in digital forensics.

“What makes this newest accreditation really special is that we’re the first academic program in the country to receive it,” he said. “So we’re going to be the model for other campuses.”

The master’s degree program in forensic science includes a five-
semester core curriculum, with students able to select from one or more areas of emphasis: Crime Scene Investigation, Digital Forensics, DNA Analysis and Forensic Chemistry.

“What’s unique is the students can specialize in all four areas and graduate on time,” said Dr. Pamela J. Staton, an associate professor at the center.

Jason Chute, technical leader in the DNA lab, said the center’s students aren’t just given textbook lessons.

“We go beyond the textbook,” he said, “to examine examples of real cases that require the students to develop problem-solving skills.”

Over the years, the center has made major strides and today is on the cutting edge of forensic technology. Training for forensic science professionals is a big part of the center’s mission: more than 1,800 working forensic science professionals from 48 states have received training at the Marshall facility or by Marshall trainers at other locales.

“Our was the first university-affiliated Combined DNA Index System (CODIS) Laboratory in the country,” Fenger said. CODIS is a national database that compiles the DNA profiles of criminal offenders. Samples are taken from West Virginia offenders and sent to the Marshall lab. The lab creates a distinct DNA profile for each and sends it to the State Police, who then review the profile, enter it into the state database and forward it on to the FBI for inclusion in the national database. Thus, when a crime occurs in which DNA is discovered, that sample can be compared to the state and national databases, perhaps identifying the culprit.

The Marshall center’s crime-fighting work extends far beyond West Virginia’s borders. A number of law enforcement agencies nationwide have turned to the center for help. In a project just completed, the center extended a helping hand to the New Orleans Police Department, processing a backlog of more than 800 untested sexual assault kits, many of them damaged by Hurricane Katrina.

Katrina left the department’s evidence room and DNA lab under water. The evidence room already housed a backlog of hundreds of unprocessed rape kits,
some dating back to the 1980s. Many of the kits were damaged by the water that flooded the evidence room, and high water also left the department’s DNA lab unusable.

Mark Nelson, program manager with the National Institute of Justice, said when his agency was contacted about providing New Orleans help, he immediately thought of the Marshall Forensic Science Center because the center had successfully processed untested rape kits for the Los Angeles County Sheriff’s Office.

According to Commander Paul Noel of the New Orleans Police Department, the work done at Marshall has already resulted in two rape convictions with more cases still to go to trial.

The center also does DNA testing for forensic paternity/relationship cases, which can include incest, sexual assault involving pregnancy, molestation of a minor resulting in pregnancy, DNA identification of infants with unknown mothers and the identification of human remains.

One of the center’s true showpieces is its new digital forensics lab. The lab has sophisticated computer hardware and software that enable law enforcement to analyze and preserve digital evidence that may be lurking on suspects’ computers and cell phones. Digital evidence is now part of many criminal

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- Jason Chute

Graduates of Marshall’s cutting-edge forensic science program are in high demand at crime laboratories across the country. The hands-on experience forensic science students gain while at Marshall provides a seamless transition into careers after graduation.
cases but is especially prevalent in child pornography investigations. State Police Cpl. Robert J. Boggs uses the MU computers to determine the Internet addresses of individuals who appear to be trafficking in child porn via computer. Once a suspect is identified, a search warrant is obtained and the computer in question is taken into custody for forensic examination.

Boggs said many other crimes, from murder to embezzlement, can also present a need for the forensic examination of computer hard drives and cell phones.

According to Fenger, Marshall is one of the few schools in the nation training students in digital forensics. Part of the challenge, he said, is that the field is one that’s changing so rapidly, “it’s like the train is pulling out of the station at 100 miles per hour and we’re trying to catch it.”

“When authorities go into a house to check a computer, they don’t know if they’re going to find one that’s several years old or one that’s so new they’ve never seen anything like it before,” he said.

Fenger said he’s especially proud of the fact that the center is “staffed by West Virginians. These are people who did not have to leave West Virginia to find technology-based jobs.”

Meanwhile, Marshall forensic graduates are in high demand at crime laboratories across the country.

“Over the past five years, our graduates have gone to work in crime labs in 24 states and the District of Columbia,” said Staton, who noted that federal law enforcement agencies employing Marshall forensic grads include the FBI, DEA, ATF, Secret Service and others.

Dr. J. Graham Rankin, a veteran professor at the center, said that when he talks to crime lab directors elsewhere, “many comment on how well our graduating students are doing working in their labs and wish they could hire more of our grads.”

James E. Casto was a reporter and editor at The Herald-Dispatch for more than 40 years before he retired in 2004.
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