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## TECHNOLOGY CHANGING CRIME SOLVING \ MORE SCIENCE MEANS MORE TRAINING

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To find the person who killed Julie Johnson, police went to a computer for help.

They found a suspect by using the computer to identify a fingerprint found in Johnson's home. Then they turned to science again -- to analyze a blood-soaked shirt found in the suspect's apartment. Sophisticated DNA test results show the blood on Jason Byram's shirt belonged to Johnson, prosecution witnesses testified Sunday.

DNA, or deoxyribonucleic acid, is a genetic fingerprint unique to each individual. Because of the precision of such tests, police are now able to examine bloodstains at a crime scene with scientific acumen. And as technology improves, reliance on high-tech evidence will only increase in the future, police and prosecutors say.

As technology develops, it is changing the nature of investigative work. Ultimately, it also is changing how juries reach their decisions.

"I think crime investigation has really advanced, and investigators have to be very cognizant of different techniques and judicial rulings," said 5th Circuit Solicitor Barney Giese, who is expected to rest his case against Byram today in Byram's death-penalty trial.

While new techniques may make finding or convicting a criminal easier, lawyers and police say it hasn't simplified an investigator's job.

Police "have to be educated and trained to a higher level," defense lawyer **Jack Swerling** said. "It used to not require a college degree."

Columbia Police Chief Charles P. Austin said technology has added to traditional police work, not substituted for it.

"I don't care how hi-tech police work gets, you can't replace good old-fashioned legwork," he said.

For instance, he said, when the computer used by the State Law Enforcement Division matches a crime-scene fingerprint to one of the thousands stored in its memory, the job doesn't end there. First, the computer only spits out possibilities; a fingerprint expert must still physically compare prints.

Second, "you can't assume a fingerprint is automatically linked to a crime," Austin said. Police must investigate to determine how and when a fingerprint was left somewhere.

Nor have the procedures for investigating and securing a crime scene changed much, Austin said. There are a few handy new toys, such as ultraviolet fingerprint detectors, but most of the high-tech work is done afterward, in the lab.

At this point, labs haven't changed much either for most police departments. Most scientific work is done by SLED. But Austin said that while SLED does a "magnificent job," eventually that will have to change, at least for the state's larger departments.

"The reality is that as we move into the 21st century, hi-tech equipment will be needed," he said.

In the courtroom, technology has definitely made its presence felt. Lawyers must show off not only their gift for gab but also their scientific knowledge. Jurors have to get a science lesson as well. That's something that worries many defense lawyers, who say jurors usually don't have the experience to weigh the strengths and weaknesses of scientific testimony.

Bill Nettles, one of Byram's defense lawyers, said that jurors are left with little choice but to blindly accept an expert's testimony -- in effect letting the expert make a decision that once was the jury's.

"They bring in this testimony that is very, very complicated," he said. "And when you hear it coming from the government, it's powerful stuff."

Byram's defense team argues that the DNA evidence in Byram's case is flawed. They say prosecution experts overestimate the likelihood that the DNA from the blood on Byram's shirt could come from no one other than Johnson.

Giese disagrees.

"I give jurors a lot of credit," he said. "They've got a lot of common sense. They can sift evidence and take it for what it's worth."

Prosecutors face another burden in presenting scientific evidence. The jury also must evaluate the police who collected the evidence - an area where O.J. Simpson's lawyers have focused their attacks.

"I think it's pretty easy to knock the Los Angeles Police Department," **Swerling** said. "The Mayberry Police could have done a better job investigating."

Still, both **Swerling** and Austin think police in South Carolina rarely face such scrutiny.

"I'm confident that our guys do a thorough job," Austin said. "We've not encountered that problem."

"People here have a lot more respect for police officers," **Swerling** said. "In this area, if you attack a police officer, and you don't have a clear case to do it, it will backfire on the lawyer."