

Cool Jobs: Crime Scene Investigators

This is one in [a series](#) [1] on careers in science, technology, engineering and mathematics made possible by support from the Northrop Grumman Foundation

Technology and crime solving go hand-in-hand. These days, every major network has a crime show that is highly dependent on technology. In these shows, the investigators find evidence hidden in the nook of a drawer or items left behind by the perpetrator. After several suspenseful minutes of watching the lab technician use tweezers, acids and centrifuges, the crime is solved in days and the team is ready for the next mission. At the Tennessee Bureau of Investigation's (TBI) crime lab, analyst Kendall Stoner is able to solve crimes with just a basic computer.

In "[Cool Jobs: Crime Scene Investigators](#) [2]" on [sciencenewsforkids.org](#) [3], [Sid Perkins](#) [4] profiles the scientist at TBI's crime lab. The team at the crime lab consists of three individuals, Stoner and two forensic experts. Using their wide range of expertise, the team "deciphers crime scenes, identifies evidence and helps bring criminals to justice." They use the same evidence to "ensure no innocent people are punished for crimes they didn't commit." Before criminals are locked up, the story starts at the scene of the crime.

At the Crime Scene

Reanna Day, an agent with the FBI in Knoxville, TN, leads one of the response teams that investigate crime scenes. At the FBI Academy in Quantico, Day learned the science of collecting evidence. As quickly and as meticulously as possible, her team photographs the crime scene and collects evidence. As they work, they take into consideration the freshness and size of the scene making sure to label every piece of evidence because the evidence found is then studied by the crime scene analysts; the results from the analysts are used by law enforcement to identify suspects; and attorneys use both the evidence and data to prove someone's guilt or innocence. Before any convictions or acquittals, it's back to the lab.

In the Crime Lab

After Days' team collects the clues at a crime scene, crime analyst study the evidence. Stoner and her team are able to compare evidence found at the crime scene to databases that "contain everything from the treads of thousands of different sneakers, boots and other footwear to millions of fingerprints."

They are also able to compare DNA found at the crime scene to a DNA database. This database is one of their strongest tools as every person has a unique “genetic fingerprint” (except for identical twins).

Stoner analyzes DNA from evidence collected from the crime scene. This evidence ranges from swabs from bloody clothing to skin found underneath a victim’s fingernail. She uses a solution that extracts DNA from cells and if there is enough DNA present to produce a genetic profile, she uses a process called polymerase chain reaction (PCR) to copy the DNA to create thousands or millions of copies of that DNA. After multiplying the DNA, she is able to compare it to the DNA database. Unlike the fast results seen on television, these results take time. Once the results are ready, the information gathered at the crime lab goes to law enforcement and lawyers and is the key to solving crimes.

For the original article, please click [here](#) [2].

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Links:

[1] <http://www.sciencenewsforkids.org/tag/cool-jobs/>

[2] <http://www.sciencenewsforkids.org/2012/12/cool-jobs-crime-scene-investigators/>

[3] <http://sciencenewsforkids.org>

[4] http://www.sciencenewsforkids.org/author/sid_perkins/