How one Hamilton County high school course focuses on forensic science

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Staff photo by C.B. Schmelter

Senior Taylon Harris, left, looks through a microscope as fellow senior Richard Jones holds a light at the Harrison Bay Future Ready Center on Thursday, Sept. 24, 2020 in Ooltewah, Tenn. Inspired by the University of Tennessee at Knoxville's Forensic Anthropology Center, Justin Walley teaches a forensic science class where students study the decomposition of bodies by studying entomology.

On a cold, dark and rainy Thursday afternoon, two high schoolers — 16-year-old Ozzy Paulus and 17-year-old Jacob Nation — walked on a path behind the Harrison Bay Future Ready Center.

There, they were greeted with the slight smell of animal remains.

As they continued along their way, they pointed out seven dead caged animals: a pigeon, a squirrel, an armadillo, a cat, a deer and two doves. The area was similar to a body farm.

"It smelled worse when we first came out here. That was about two weeks ago," Paulus said. "You can see the deer's insides are quite liquidated. That's how we found it a few days ago."

The boys then went back to their classroom. Along with their classmates, they examined insects that they took off the carcasses, using a mobile app to help identify the species.

"Just another day in class," one classmate said, as he looked through a microscope.

The group is among dozens of Central High School and Ooltewah High School students enrolled in the future center's biology and scientific research course.

The elective class has a forensic science focus and is based on curriculum from the University of Tennessee at Knoxville's Forensic Anthropology Center.

The deer, armadillo, cat and squirrel were roadkill and retrieved by school Principal Gary Kuehn and his father. The birds were donated from a local dove hunt.

Justin Walley, the class's instructor, has a background in scientific research and worked at Yellowstone National Park as a contractor for the fisheries division.

He previously taught aquatic biology and biology at Ooltewah High for four years. This year is his first at Harrison.

"The students helped construct some of the enclosures and redesigned a few of them to keep other predators from taking the specimens. They did a very good job with it," Walley said. "The students have enjoyed it. We wanted to make it memorable even in the current (COVID-19) circumstances. The online kids were participating as well in one of the groups today on my iPad."

On Thursday the group of 11 in-person learning students broke down into lab partners to do body farm research, examining the bugs to gain a better understanding of the decomposition process of the animals they were extracted from.

Paulus and his partner, 16-year-old Justin Ramirez, studied a brown rove beetle that was taken from the deer. Under the microscope, both students discovered that the bug had an injury and examined what could possibly be the cause. They agreed it wasn't foul play — just a cut from the student's forceps.
Seniors Taylon Harris and Richard Jones were on the other side of the classroom also examining insects — a maggot and a fly— taken from the same deer.
Jones, who said he hated bugs before taking the course, is interested in studying forensic science in the future. "It's pretty cool, and you can learn a lot from the lens of a microscope," he said. Walley said that's what he likes to hear. "I hope in the future, five to 10 years, the students will come back saying they were inspired by this class," Walley said.

Harrison Bay is one of 28 Hamilton County Schools industry-themed institutes in conjunction with the district's high schools. Superintendent Bryan Johnson announced the initiative in March 2018 and it now enrolls more than 2,000 high school students.

Career themes range from health care to information technology to advanced manufacturing and engineering. Seven of the institutes have an official, branded partner with a local business or organization.
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