CHEM 343 FORENSIC SCIENCE

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Background

CHEM 343 Forensic Science is one of two course offered to Oxnard College students who participated in the 2010 Summer Institute. A total of 20 students were enrolled in Forensic Science and 42 students were enrolled in BIOL 335 The Biosphere. CHEM 343 lecture and lab provided students with an exposure to the various chemical and biological techniques used in obtaining and evaluating criminal evidence. In the laboratory component, students gained experience in thin-layer and gas chromatography, high performance liquid chromatography (HPLC), mass spectrometry (GC-MS), infrared spectroscopy, fiber comparisons, drug analysis, arson residue analysis, DNA analysis; population genetics, and fingerprint analysis.

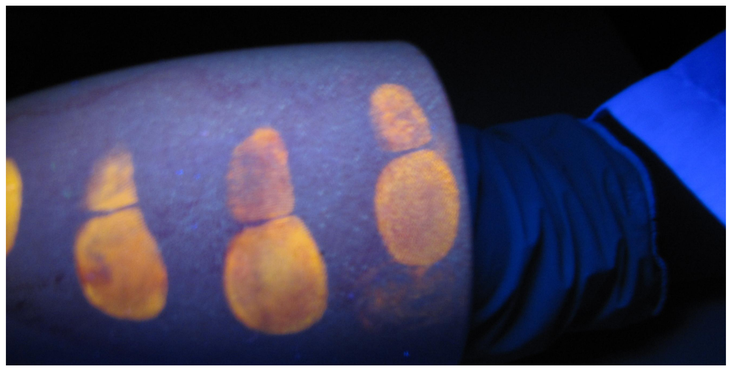
Mock Crime Scenes:

A total of three mock crime scenes were created for CHEM 343:

- Murder on Peanut Hill
- Arson at the Airport
- Shooting at the Science Building

Each crime scene presented the students with the opportunity to collect evidence which would subsequently be analyzed in the laboratory. Experimental results were then discussed to try to determine what had happened at the crime scene and who was responsible for the crime.

In the Murder on Peanut Hill, arrogant Professor Hightower was stabbed with a broken bottle. Fingerprints were collected from several whiskey bottles and compared with those of suspects. When the medical examiner indicated that Hightower must have been poisoned with an anticoagulant, the students performed HPLC analysis of whiskey and water found at the crime scene.



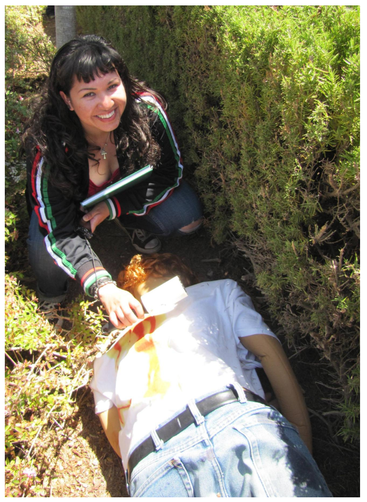
The Arson at the Airport involved the discovery of a burning vehicle at the Camarillo Airport. Ventura County Fire Department arson investigators assisted the students in collecting evidence from the crime scene. Soon after the arson, an individual was pulled-over by the police with the suspicion of driving while intoxicated (DWI) who had a can of accelerant in his vehicle. Back in the lab, the students compared the accelerant from the crime scene with that in the can and determined them to be identical. The suspect's blood alcohol level was also measured and presumptive tests on a white powder in the suspect's car were performed to determine whether it was cocaine.

The final mock crime scene required the students to reconstruct a crime scene where a shooting occurred. Professor Lowtower, a popular humanities faculty member, was found with a gunshot wound to his back outside of the science building. Using luminol to detect blood residue, the students were able to identify the crime scene. DNA and fiber evidence were analyzed to determine whether a colleague was responsible for Lowtower's death.

Captain Quirarte describes to CHEM 343 students what he observed when he arrived with Station 50 to put out the car fire

John Slagboom collects samples for the detection of an accelerant at the burned van

Vanessa May, Javier Mercado, and Dr. Hampton prepare a plaster cast of tire marks discovered at the mock arson crime scene



Nena Sanchez collects fiber evidence from the "victim" of a mock shooting crime scene.

Acknowledgements:

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