

Forensic Chemistry Research at Western Carolina University

Biography

Native of North Carolina

BS: UNCW

MS: UNCW

Ph.D.: University of Rhode Island

PostDoc: National Institutes of Health, Bethesda, MD

Brief Abstract

Forensic Chemistry Research at Western Carolina University focuses on two areas: the development of nondestructive measurement techniques, and the development of sensors for the detection of forensically relevant molecules. In the examination of trace amounts of evidence, traditionally the sample is destroyed. There is a trend in modern forensic science to utilize methods of analysis that allow for the reuse of a sample. Raman and infrared spectroscopy are good candidates for these nondestructive measurements. These methods can provide fast, chemically specific data on materials without the requirement of physically sampling or damaging the sample. Unfortunately, forensic samples can be complex mixtures. To analyze these mixtures, we must also rely on sophisticated numerical analysis methods often called chemometrics to "extract" chemical information from these samples. Examples of and progress toward these research goals will be presented.