

UNIVERSITY OF RHODE ISLAND
Department of Chemistry
SEMINAR

Room 105 Beupre Center
2:00 p.m., Friday, November 8, 2019

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URI

***“Trends in the Identification and
Classification of Organic Gunshot Residue
(OGSR)”***

HOST

Jason Dwyer
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Title: Trends in the Identification and Classification of Organic Gunshot Residue (OGSR)

CHM642 Seminar - Anna Haynes

The analysis of gunshot residue (GSR), defined as organic and inorganic residue particles deposited in the environment following the discharge of a gun, is extremely important when investigating the happenings of a firearm-related crime. Recently, due to findings showing the increased levels of lead found in the bloodstream of frequent shooters, more non-toxic ammunition has been introduced into the market. Because of the decrease or complete absence of characteristic elements previously used to identify and classify the inorganic components of GSR, mainly using SEM-EDS, research has shifted toward using other techniques to identify the presence of GSR and classify the organic components of the residue. This presentation investigates different techniques and novel methods used to detect and classify organic GSR including the introduction of luminescent particles as markers in ammunition, utilizing Raman spectroscopy to classify residue from different calibers of ammunition and the ammunition itself, and using multivariate statistical analysis, specifically principal component analysis (PCA), as a classification tool for Raman spectroscopy techniques.