

IEH Undergraduate Intern Mentoring Opportunity

Deadline: **February 22, 2013**

Selections Announced: **mid-March, 2013**

Name/Title/Institution(s) of senior mentor(s): Paul G. Tratnyek, Professor, OHSU

Name/Title/Institution(s) of frontline mentor(s): Alexandra Salter-Blanc, Ph.D. Student, OHSU

Project Title: Environmental Fate of Munitions Compounds

Context for Project:

This project will support efforts to develop models for predicting the environmental fate of munitions compounds in the environment. Contamination of surface and groundwater with munitions compounds, especially due to release from manufacturing and testing/training operations, is an ongoing threat to human and environmental health. This threat can be minimized through the selection of novel munitions materials with favorable environmental fate properties. Data collected in the proposed project will be used to calibrate and/or validate models designed to predict these properties.

Brief Description:

In surface water and groundwater, contaminants undergo transformations that transform them into more or less harmful products. Understanding these processes is one of the major challenges in environmental science and engineering. The intern will participate in research on the fate, effects, and/or remediation of contaminants in the environment. They will participate in laboratory studies of these processes, and possibly computer modeling. Methods that will be used may include spectroscopy, chromatography, and microscopy.

Proposed Outcomes/Broader Impact:

Eventually, the results should contribute to the scientific basis for minimizing and remediating problematic environmental contamination by munitions compounds.

Proposed timeline (within a 10 week span):

<i>Week</i>	<i>Activities</i>	<i>Deliverables</i>
1	Basic training on safety, lab protocols, analytical methods.	
2	Develop and validate analytical methods.	
3	Preliminary application of methods to contaminant degradation.	
4	Refine methods based on preliminary results.	
5	Synthesize and present interim results.	Presentation
6-9	Further application and refinement of the methodology.	
10	Synthesize and present final results.	Report

Intern academic experience and skill set should include:

Applicants should be majoring in chemistry, chemical engineering, environmental engineering, or a closely related field. Strong math and computer skills are also required.