

Controlled Substance Method development

The U. S. Customs and Border Protection (CBP) Laboratories and Scientific Service Directorate (LSSD) Springfield Laboratory is seeking to host one or more National Science Foundation (NSF) student scientists with backgrounds in chemistry or a related discipline to collaborate with lab analysts and scientists. As one of the labs in LSSD, Springfield lab is involved in the research of methods in the qualitative and quantitative analysis of controlled substances and their pseudo products, as well as other substances of forensic interest.

- **Project Duration:** TBD
- **Start Date:** Summer or Fall 2018
- **Location:** LSSD, Springfield, Virginia

Project overview

LSSD is the forensic and scientific arm of CBP, providing forensic and scientific testing in the area of trade enforcement, weapons of mass destruction, intellectual property rights, and narcotics enforcement. LSSD coordinates technical and scientific support to all CBP trade and border protection activities. Selected students will be using advanced chromatographic and spectrometric techniques to develop such analytical methods. This project seeks student scientists to work on the following tasks:

- Operate GC-MS, GC-QToF, FT-IR and Raman instrumentation to analyze targeted controlled substances and their related pseudo products house training.
- Create test plans and conduct tests independently.
- Optimize test parameters on each instrument to find the best condition(s) for analysis that is applicable to a wide variety of controlled substances.
- Develop simultaneous qualitative and quantitative analysis methods on GC-MS or the GC-QToF.
- Generate a customized library on the GC-QToF for common controlled substances.
- Discuss test results and periodically report on research progress with mentor and management
- Write a comprehensive research report and present findings to lab scientists and guests

Qualifications

Candidates must be currently enrolled in a post-high school study; candidates pursuing a master or doctoral degree preferred.

Eligibility Requirements: Citizenship: U.S. Citizen Only

- Degree: Pursuing BS or higher degree
- Discipline(s): Chemistry and related disciplines

Contact

[Dr. Nian Du](#) / 703-921-7142

[Dr. Eugene J. Bondoc](#) / 703-921-7144