

DEPARTMENT OF CHEMISTRY  
COLLEGE OF ARTS AND SCIENCE

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: 03/01/2021

PROJECT TITLE: How bright can nanostars shine?Pietro Strobbia  
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phone: 513-556-5883**Project Description**

The research in our group is largely directed towards bridging the gap between current state-of-the-art sensing technologies and the actual requirements for their application in clinical settings or in the field. To this end, we leverage expertise in plasmonics, surface-enhanced Raman scattering (SERS) and sensing. Our long-term goal is to benefit the developing and developed world through the dissemination of new cost-effective and practical analytical tools.

The plasmonic sensors that are used in our lab are based on a specific type of branched nanoparticles, called nanostars. These particles can be synthesised with varying branch density, coating, size, etc... In this project, undergraduate students will synthesise different type of nanostars and characterise them with the goal of finding the ideal stars for our SERS sensors.

Through this project, the student will familiarise with several research tasks, including:

- nanoparticles and nanostars synthesis
- UV-Vis characterisation of nanoparticles
- Raman spectroscopy measurements
- transmission electron microscopy (if available for student training)