

## Undergraduate Summer Student Opportunity

An undergraduate summer research position is available within the newly formed Carbon to Metal Coatings Institute (C2MCI). The C2MCI includes a diverse team of Canadian and international scientists, clinicians, and engineers, working to develop fundamentally innovative approaches for the protection of metal surfaces. This will include developing and testing next generation coatings for bulk metal surfaces, the application of novel organic materials in atomic layer deposition and semiconductor manufacturing, and the development and testing of novel metallic nanomedicines for cancer treatment and enhanced chemotherapy.

The successful candidate will work on a strategy to develop nano-medical tools for cancer treatment using enzyme catalysis.

The project will involve primarily synthetic and materials chemistry, with additional collaborations providing further experience in photophysical and glycoengineering research. The student will gain skills in organic and inorganic synthesis as well as various characterization tools including HPLC-MS, NMR, and excitation-emission fluorescence spectroscopy.

In brief, the student will synthesize a new nanocluster, modify the cluster using an enzyme tyrosinase and conjugate the cluster to antibodies (Capicciotti lab). The conjugated cluster will be characterized for its luminescent properties (Stamplecoskie lab) and sent to collaborators at the Princess Margaret Cancer Centre in Toronto for *in vivo* testing to determine its viability as a tumour-targeting agent.

This position is available under the supervision of Dr. Cathleen Crudden, at Queen's University and involves extensive collaborations with Dr. Kevin Stamplecoskie and Dr. Chantelle Capicciotti.

**Anticipated Start Date and Duration of Appointment:** May 1<sup>st</sup>, 2023. Duration of 16 weeks.

\*The position is in the Department of Chemistry in at Queen's University (Kingston ON).

**Remuneration:** \$10,250 CAD

**Required Qualifications:** This position is open to undergraduate students in their 3<sup>rd</sup> or 4<sup>th</sup> year of studies in Chemistry, or a related field who have a strong interest in organic, inorganic and/or materials chemistry with applications in cancer research. Domestic and International candidates are welcome to apply.

\*Preference is given to students in 3<sup>rd</sup> and 4<sup>th</sup> year applications from students in 2<sup>nd</sup> year are welcome

**Application Instructions:** Interested applicants should contact Viveka Kulkarni at [19vkk@queensu.ca](mailto:19vkk@queensu.ca) with the subject heading "C2MCI undergraduate position." Please include a cover letter and CV, as well as unofficial transcripts.

The application deadline is **March 15.**



**CARBON TO METAL  
COATING INSTITUTE**  
at Queen's University

**Employment Equity:** The C2MCI invites applications from all qualified individuals. We are committed to employment equity and diversity in the workplace and welcome applications from women, visible minorities, Indigenous and First Nations peoples, persons with disabilities, and LGBTQ2+ persons. We have a record of supporting all our employees, including providing accommodation in the workplace place. We provide support in recruitment processes for applicants with accessibility needs. If you require accommodation during the application process, please contact Emily Albright (17ela1@queensu.ca).