

## Undergraduate Summer Student Opportunity

A full-time summer undergraduate 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 for glycan-mediated delivery of gold nanoclusters for cancer therapy. The project is highly multidisciplinary, involving chemoenzymatic synthesis of N-glycans, surface modification of gold nanoclusters, and *in vitro* gold cluster uptake studies with cancer cell lines.

The project would provide various learning opportunities in diverse fields including:

- learning the basics of carbohydrate chemistry and be able to synthesize Neu5Ac analogs and functionalized N-glycans.
- expressing bacterial enzymes and set up enzymatic reactions.
- gaining experience working with gold nanoclusters performing surface modifications.
- learning how to work with mammalian cells and gain knowledge related to flow cytometry and confocal microscopy.

This position is available under the supervision of Dr. Chantelle Capicciotti, at Queen's University.

**Anticipated Start Date and Duration of Appointment:** May 1, 2024. Duration for 4 months (16 weeks).

**Remuneration:** \$11,000 stipend

**Required Qualifications:** This position is open to those in their 3<sup>rd</sup> or 4<sup>th</sup> year of undergraduate studies in Queen's University, or related equivalent who have a strong interest in organic synthesis and biochemistry. Domestic and International candidates are welcome to apply.

**Application Instructions:** Interested applicants should send address contact Youjin Kim, PhD candidate in the Capicciotti Lab ([15yk15@queensu.ca](mailto:15yk15@queensu.ca)) who will address questions related to the position and project.

The application deadline is **March 25, 2024**. Inquiries about the project and position can be requested from Youjin Kim ([15yk15@queensu.ca](mailto:15yk15@queensu.ca)). However, applications are welcome at any time.



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

**Employment Equity:** 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, Aboriginal peoples, persons with disabilities, and 2SLGBTQI+ 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 C2MCI at [c2mci@queensu.ca](mailto:c2mci@queensu.ca).