

Dear Faculty, Postdocs & Grad Students,

This Friday, November 17<sup>th</sup>, the Department of Chemistry will welcome **Professor Abhishek Chatterjee** from **Boston College** who will give the next Colloquium Series talk.

Please see the details below:

**Date:** Friday, November 17, 2023 at 10:00 am

**Title:** **Genetically Encoded Chemistries to Read and Write Biology**

**Host:** Professor Haissi Cui

**Location (in person):** Davenport East, 3<sup>rd</sup> Floor, (Room 380) [Lash Miller Building](#)

**Location (virtual):** Join Zoom Meeting <https://utoronto.zoom.us/j/86092773171> Meeting ID: 860 9277 3171  
Passcode: 802024

**Abstract:** Controlled incorporation of non-canonical amino acids (ncAAs) into proteins in living cells has emerged as a powerful tool for biological research and biotechnology. Our group focuses on advancing the scope of this technology for both probing complex biological questions, as well as to create opportunities to develop next-generation biotherapeutics. Our research goals include: 1) Creating new platforms to genetically encode ncAAs with diverse chemical structures, 2) Developing new bioorthogonal conjugation reactions with new capabilities, 3) Creating next-generation biotherapeutics, such as precisely modified viral vectors for enhanced gene therapy, 4) Investigating the roles of various post-translational modifications of human proteins, and 5) Developing technology to monitor dynamic changes in the cellular proteome. This presentation will focus on our recent work on a novel strategy for characterizing proteomic changes in pathogenic bacteria during the infection process, as well as the development of a mammalian cell-based directed evolution platform.



**Bio:** Abhishek received his undergraduate education in Chemistry at Calcutta University (B.Sc., 2001), and Indian Institute of Technology, Kharagpur (M.Sc., 2003). He then obtained his Ph.D. in Chemical Biology from Cornell University in 2009 working with Professor Tadhg Begley. His graduate work focused on elucidating the complex molecular mechanism of vitamin B1 biosynthesis in eukaryotes. Then, as a postdoctoral fellow with Professor Peter Schultz at The Scripps Research Institute, he worked on expanding the scope of the noncanonical amino acid mutagenesis technology. Abhishek joined the Department of Chemistry at Boston College in 2013, where he is currently a Professor. The Chatterjee group is broadly interested in engineering biology through an interdisciplinary approach to develop enabling new technologies for probing complex biological questions and to create opportunities for developing next-generation biotherapeutics. The research from the Chatterjee group has been recognized by several awards, including the Camille Dreyfus Teacher-Scholar Award, and Allen Distinguished Investigator Award.

This seminar will be hosted by Prof. Haissi Cui and will be in-person and virtual (hybrid). The talk will also be recorded. If you are a student at UTM and UTSC and would be interested in attending this colloquium in person (travel expenses covered) and meeting Prof. Chatterjee, please send your request to [chem.reception@utoronto.ca](mailto:chem.reception@utoronto.ca).

All are encouraged to attend!