



PCE₃ Seminar Series

Thurs, July 21st

1 p.m. EST/10 a.m. PST

More information & registration:

prebioticchem.info/seminar-series/index.html



@PCE3_Sci



Derek O'Flaherty

Assistant Professor
University of Guelph

"Nonenzymatic genome replication
inside model protocells"



Claudia Bonfio

Junior Group Leader
*Institute of Supramolecular Science &
Engineering, Strasbourg*

"Towards the emergence of modern
cells"

Topical introduction by Irene Chen, Associate Professor at the
University of California, Los Angeles

Derek O'Flaherty

Derek O'Flaherty is from Montreal (Canada), where he completed an Honours B.Sc. in Chemistry at Concordia University (Montreal, Canada) with a Minor in Multidisciplinary Sciences, and being a member of the Co-Operative Education program. He performed undergraduate research on the synthesis of cross-linked DNA oligonucleotides under the supervision of Professor Christopher Wilds. He then pursued a PhD in the Wilds lab at Concordia University, conducting research on the preparation DNA containing novel site-specific chemical modifications as mimics of biologically relevant DNA damage. These adducts were then investigated as substrates for the direct repair pathway and the polymerase lesion bypass mechanism. After completing the PhD in 2016, Derek joined Professor Jack Szostak's research group at Massachusetts General Hospital - Harvard University as an FRQNT (and later CIHR) Postdoctoral Fellow. There he developed strategies to improve the nonenzymatic replication of genetic polymers as it pertains to the origins of life and the assembly of a synthetic cell. In 2019, Derek joined Alnylam Pharmaceuticals Inc. working in the high-throughput synthesis group as a Scientist. In 2020, he became an Assistant Professor at the University of Guelph (Guelph, Canada) in the Department of Chemistry, where he is focusing on developing nucleic acid biotechnology and assembling a synthetic cell.

Claudia Bonfio

Claudia Bonfio is a Junior Group Leader at the Institut de Science et d'Ingénierie Supramoléculaires in Strasbourg (FR). She obtained her PhD in Biomolecular Sciences at the University of Trento, IT. As a PhD student, she focused on the synthesis and activity of primitive catalysts on early Earth. During her PhD, she spent research periods abroad as visiting PhD student at Harvard University (Cambridge, MA, US) working on the astrochemistry taking place on the early Earth and the emergence of primordial cells. After her PhD, she moved to the MRC Laboratory of Molecular Biology in Cambridge (UK) as an MSCA Fellow and then to the Department of Chemistry at the University of Cambridge as an 1851 Research Fellow, where she tackled fundamental questions related to the emergence of functional primitive cells. Currently, her group focuses on prebiotic supramolecular chemistry, in particular on interactions between supramolecular structures and biomolecules. Her main scientific goal is to uncover the chemical principles that lead to primitive cells with essential life-like behaviours, by probing the interplay between primitive membranes and functional biomolecules.

Irene Chen

Irene A. Chen is an associate professor at the University of California, Los Angeles, Department of Chemical and Biomolecular Engineering and Department of Chemistry and Biochemistry. She received a B.A. in chemistry and an M.D.-Ph.D. in biophysics from Harvard, advised by Jack Szostak. She was then a postdoctoral Bauer Fellow in systems biology at Harvard. She has been named a Searle Scholar, Simons Investigator in the origins of life, Camille Dreyfus Teacher-Scholar, and NIH New Innovator. Her research group studies life-like biochemical systems to understand their fundamental properties and address emerging challenges in biotechnology. A major focus is studying the biophysics and evolution of protocells.

