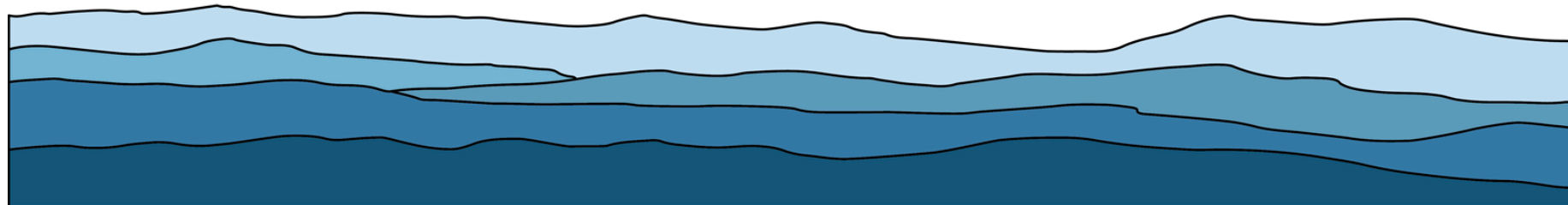


HIGHLANDS IN CHEMISTRY SEMINAR SERIES



Prof. Elizabeth Gillies

The University of Western Ontario
“Self-immolative Polymers: Chemical
Designs and Applications”

Degradable polymers are of growing interest for many areas, including biomedical applications, smart materials and devices, and to address the challenges associated with plastics pollution. Significant progress has been made using backbones such as polysaccharides, polyesters, and a growing number of bio-based polymers. However, in some cases it is desirable to be able to control precisely when and where polymers degrade and to access their degradation under a diverse range of conditions. Self-immolative polymers are a growing class of degradable polymers that undergo controlled end-to-end depolymerization following a stimulus-mediated backbone or end-cap cleavage. This presentation will describe the chemical foundations of self-immolative polymers including elimination-based spacers and low ceiling temperature polymers, followed by the rational design of different backbones and end-caps. Their incorporation into block copolymers and hydrogel networks will also be explored. Finally, the presentation will then cover examples of how these polymers can be applied.

February 28, 2025

2:30 PM ET

Hahn Hall North 140