

CONFÉRENCES DE CHIMIE AUTOMNE 2017



PROFESSEURE JULIANNE GIBBS
UNIVERSITÉ DE L'ALBERTA

“Tuning Molecular Recognition in DNA Materials: Towards Self-Replicating Systems and Smarter Particles”

RÉSUMÉ: Our group is interested in understanding how confinement influences molecular recognition in materials systems and how we can use its unique influence to achieve new material properties. In one example, we have developed a DNA system that can self-replicate isothermally by balancing repulsive and attractive interactions during DNA recognition. This strategy of amplification by destabilization has great potential in DNA diagnostics and infectious disease detection as it utilizes very simple DNA modifications and can be performed at virtually any temperature. In another example, we have shown that using molecular recognition we can control the composition and behavior in DNA nanomaterials that are potential candidates for targeted drug delivery. By exploring the unique molecular recognition properties of these same materials, we have also uncovered a strategy for rapid colorimetric detection of DNA suitable for point-of-care diagnostics. Finally, I will discuss how confinement at planar silica surfaces most relevant to microarray technologies influences DNA recognition using surface specific spectroscopy. We find that confinement at the silica interface greatly reduces the stability of DNA duplexes in comparison with other common substrates like gold, which has direct implications for biodiagnostics using DNA immobilized on glass.

- > Mercredi 20 septembre 2017
- > 11:00
- > Salle **N-615**
Pavillon Roger-Gaudry

> **BIENVENUE À TOUS !**



Faculté des arts et des sciences
Département de chimie

Merci à nos commanditaires

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