# Algebra Seminar

**Serkan Sutlu, University of New Brunswick**
**Wednesday, November 21**
**1 p.m.**
**HH-3017**

## Hopf-cyclic cohomology of Lie-Hopf algebras

**Abstract:**

A Lie-Hopf algebra is a bicrossed product Hopf algebra obtained from a Lie algebra via semidualization. Illustrating this procedure, we discuss stable-anti-Yetter-Drinfeld (SAYD) modules over Lie-Hopf algebras and Lie algebras. We introduce the notion of coaction of a Lie algebra, and we show that SAYD modules over Lie-Hopf algebras correspond to SAYD modules over the associated Lie algebras. Finally, introducing the cyclic cohomology of a Lie algebra with SAYD coefficients, we discuss a similar correspondence in the level of cohomologies. Explicitly, we show that the Hopf-cyclic cohomology of a Lie - Hopf algebra is the same as the cyclic cohomology of the associated Lie algebra.