## Lethbridge Number Theory and Combinatorics Seminar

Monday — March 25, 2019 Room: D631 Time: 12:00 to 12:50 p.m.

## Qing Zhang University of Calgary On the holomophy of adjoint L-function for GL(3)

L-functions associated with automorphic forms are vast generalizations of Riemann zeta functions and Dirichlet L-functions. Although the theory of L-functions play a fundamental role in number theory, it is still largely conjectural. If  $\pi$  is an irreducible cuspidal automorphic representation of  $GL_n$  over a number field F and  $\tilde{\pi}$  is its dual representation, it is conjectured that the Dedekind zeta functions  $\zeta_F(s)$  (which is the Riemann zeta function when  $F = \mathbb{Q}$ ) "divides" the Rankin-Selberg L-function  $L(s, \pi \times \tilde{\pi})$ , i.e., the quotient  $L(s, \pi \times \tilde{\pi})/\zeta_F(s)$  (which is called the adjoint L-function of  $\pi$ ) should be entire. For n = 2, this conjecture was proved by Gelbart-Jacquet. In this talk, I will give a sketchy survey of constructions of some L-functions, including the Rankin-Selberg L-function  $L(s, \pi_1 \times \pi_2)$ , and report our recent work on the above conjecture when n = 3. This is a joint work with Joseph Hundley.

## **EVERYONE IS WELCOME!**

Visit the seminar web page at http://www.cs.uleth.ca/~nathanng/ntcoseminar/

