1041-11-227 **Nathan Ng*** (nathan.ng@uleth.ca), University of Lethbridge, Department of, Mathematics and Computer Science, 4401 University Drive, Lethbridge, AB T1K 3M4, Canada, and **Michael Bennett** and **Jordan Ellenberg**. *Non-vanishing of L-functions and an application to Fermat equations.*

In recent years, a popular research topic in analytic number theory has been the non-vanishing of L-functions. Many of the central ideas for proving the non-vanishing of an L-function date back to Selberg's proof that a positive proportion of the zeros of the Riemann zeta function lie on the half-line. In this talk I will discuss some non-vanishing results which imply that the Fermat equation $A^4 + B^2 = C^p$ for p a prime larger than 5 has no non-trivial integral solutions. (Received August 11, 2008)