

◊ **ALGEBRA SEMINAR TALK** ◊

FRIDAY, DECEMBER 5, 2008

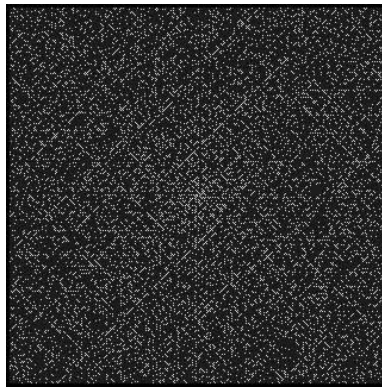
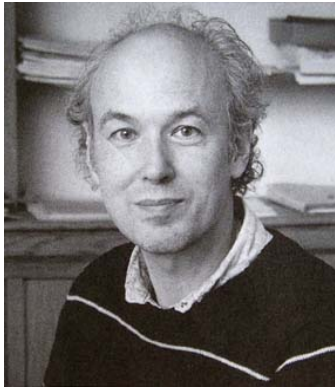
SHELDON JOYNER
(The University of Western Ontario)

2:30 P.M. – Middlesex College Room 107

“Hopf Algebras of Polylogarithms”

ABSTRACT:

The appearance of multiple zeta values in Theoretical Physics as well as in computations of Drinfel'd and Deligne stimulated great interest. One strategy leading to a better understanding of these numbers has been to study the polylogarithm functions (which go back to Euler). Since these functions admit expressions as both sums and iterated integrals, they give rise to two distinct Hopf algebra structures. It is believed that all polynomial relations satisfied by such numbers are known, and arise from these structures. In this talk, we outline this theory, and introduce the use of complex iterated integrals to define a Hopf algebra structure on polylogarithm functions at non-integer values.



Ever since Leibniz, Bernoulli, and especially Euler; the surprising beauty of the first-known values of L-functions and the remaining mystery of the others has haunted and challenged humankind.

We are fortunate to have Sheldon Joyner at UWO; a true expert on these fascinating, emerging connections of Hopf algebras, algebraic geometry and topology, and the values of the polylogarithm function. This Friday afternoon will be an exciting one because of Sheldon's talk. ☺ ALL ARE WELCOME!