1035-11-5 **Wen-Ching Winnie Li*** (wli@math.psu.edu), Department of Mathematics, The Pennsylvania State University, University Park, PA. *Combinatorics and Number Theory.*

Zeta functions have played an essential role in number theory. They have nice analytic properties, and their zeros have important applications.

The zeta functions attached to graphs and complexes count cycles in the underlying combinatorial objects. They enjoy a similar analytical behavior. In this talk, I shall discuss their connections to group theory and number theory. In particular, graphs and complexes with extremal spectral properties are distinguished by their zeta functions satisfying the Riemann Hypothesis. (Received September 11, 2007)