KENT STATE UNIVERSITY

COLLOQUIUM

DEPARTMENT OF MATHEMATICAL SCIENCES

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"Algebra Candidate"

Title: **Bose-Mesner algebras**

Abstract: We survey some of the algebraic combinatorics of Bose-Mesner algebras. A Bose-Mesner algebra is a commutative complex matrix subalgebra which, in addition to ordinary matrix product, is closed under entry-wise product and transposition and which contains the identity and all-ones matrices.

After recalling the origins of Bose-Mesner algebras in group theory and design theory and some classical applications, such as to error correcting codes. We discuss how they have influenced work in orthogonal polynomials, and mention our work in this area. Next we recall spin models for link invariants and how they are contained in Bose-Mesner algebras. We recall some of our work on spin models. These two themes of our work meet in the finite dimensional representation theory of certain quantum groups. We shall elaborate on this in an example.

PLACE: MSB 228
DATE: Thursday, February 9, 2006.
TIME: 4:15 PM

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REFRESHMENTS: MATH & CS LOUNGE (3rd Floor MSB) 3:45 PM

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