UCCS Mathematics Colloquium

Tuesday February 15th, 2011

UC 307

12:30 pm – 1:30 pm

(Refreshments at 12:15 pm)

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Jonsson Modules

ABSTRACT: In universal algebra, an algebra is simply a set X along with a collection F of operations on X (no restrictions are placed on the arity of these operations). In case F is countable and all operations have finite arity, the algebra (X,F) is said to be a Jonsson algebra provided every proper subalgebra of X (i.e. subset of X which is closed under the operations in F) has smaller cardinality than X. Such algebras have been extensively studied for many decades by both universal algebraists and set theorists. In the 1980s, this notion was translated to the realm of commutative algebra by Gilmer and Heinzer. They define a (infinite) module M to be a Jonsson module if and only if every poper submodule of M has smaller cardinality than M. In this talk, we present some recent results on Jonsson modules. Time-permitting, we will also present results on a natural generalization and dualization of this concept as well as some applications.