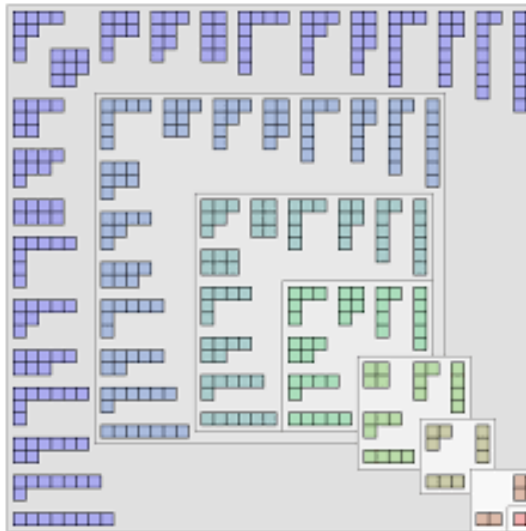Departmental Seminar Series presents:

## Dr. Lisa Schneider '10
Salisbury University
Mathematics and Statistics Department
**November 28, 3:00pm, Knott Hall, 309**

## Understanding a Family of Representations of a Lie Algebra with Partitions, Graphs, and Recursion



**Abstract:** As a way to understand algebraic objects, representation theory is the study of algebraic objects using linear algebra techniques. Since representations of affine and quantum affine Lie algebras are difficult to study, a tractable avenue is the study of related representations of a current algebra. In this talk, we will discuss a specific family of representations of the current algebra for two-by-two trace zero matrices. One approach to studying representations is the use of combinatorial tools and objects. Through this lens, partitions with a prescribed set of rules and allowed moves provide a concrete understanding of one relationship between representations in this family. A deep understanding of this "game" corresponds to knowledge of how different representations in the specified family are related.

*This talk will be accessible to Juniors and Seniors.*

*Refreshments* will be served