

University of Delaware  
Discrete Mathematics Seminar

**Self-Extensions of Standard modules for some linear groups over  
integer rings**

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Tuesday, October 11, 2011  
Ewing Hall 336 3.45-4.45pm

In joint work with J. G. Thompson, we constructed a countably infinite-dimensional representation for  $SL(2, Z)$  whose composition factors were all isomorphic to the standard 2-dimensional representation but which, far from being a direct sum of these representations, is uniserial, i.e has a unique composition series. In this talk we consider the question of whether analogous representations exist for the related groups  $SL(n, Z)$ ,  $Sp(2n, Z)$  and describe the proof of the negative answer. I'll end by describing work in progress to construct such representations for groups such as  $SL(2, Z[i])$  and  $SL(2, Z[w])$ , where  $w$  is a cube root of unity, and the relevance of this to our work on group actions on Dirichlet series.