

1077-F1-1437      **Tim Chartier\*** ([tichartier@davidson.edu](mailto:tichartier@davidson.edu)), Department of Mathematics, Davidson College,  
P.O. Box 6908, Davidson, NC 28035. *Muggle Magic with Matrix Arithmetic.*

Matrix arithmetic is a powerful tool in part due to its speed of computation. This talk will illustrate the usefulness of these tools by casting spells as if linear algebra were our wand. Matrix addition will enable Harry Potter to disappear in the halls of Hogwarts. Multiplication with permutation matrices will cast a levicorpus spell, flipping a person on the spot. We will also pull a spell from outside arithmetic and visit the diagonal as we transition down Diagon Alley. (Received September 19, 2011)