

1056-G1-411      **Murphy Waggoner\*** (murphy.waggoner@simpson.edu), Indianola, IA. *Matrix Multiplication and Applications: A Chicken and Egg Problem.*

Which comes first: teaching matrix multiplication or teaching matrix applications? I will argue that applications come first.

I was teaching a mathematical modeling course without a linear algebra prerequisite, but I didn't want the students to miss out on modeling techniques like Leslie models and Markov chains. So, the students had to learn matrix multiplication, and they did so simultaneously while seeing the flow diagrams. The result was that these students understood the mechanism of matrix multiplication better than my linear algebra students who learned matrix multiplication as an abstract operation first and then studied applications later.

I will describe how matrix multiplication was presented in class, and how the comprehension of the students differed from that in a traditional linear algebra presentation. I will also show a game and some slides the students developed themselves to explain Leslie models and Markov chains and the matrix multiplication to other students. (Received September 04, 2009)