1035-M1-1270 **Elyn Rykken*** (elrykken@muhlenberg.edu), Dept. of Mathematics and Comp. Sci., 2400 W. Chew St., Allentown, PA 18104, and **Linda McGuire** (lmcguire@muhlenberg.edu), Dept. of Mathematics and Comp. Sci., 2400 W. Chew St., Allentown, PA 18104. *A Remote Sensing Demo Using ENVI.*

Through a NASA grant, Muhlenberg College obtained the program ENVI (Environment for Visualizing Images), an image processing system designed for those who use remote sensing. Over a summer, the mathematics, physics, and biology departments all supervised independent studies using ENVI. We jointly supervised one on the uses of linear algebra in interpreting data obtained from remote sensing. We concentrated on two linear algebra concepts: singular value decomposition and principal component analysis. Both of these require knowledge of symmetric matrices, eigenvalues and eigenvectors, and hence are appropriate topics for an undergraduate linear algebra course. Our student presented her results at both local and national conferences and the paper she wrote on this project received an award at our local MAA meeting. This experience convinced us that the work done could be adapted to create a useful demonstration for our sophomore level one-semester course in Linear Algebra. In our talk we will share portions of the demo with the audience and describe how it is used in our classroom environment. We will also detail how this real-world application helped motivate some of the deeper, abstract concepts that were concurrently being discussed in class. (Received September 19, 2007)