# What do brain scans, Mars rovers, online shopping, and text mining have in common?

With the availability of cheap memory and advances in instrumentation and technology, it is now possible to collect and store more data for science, medical, and engineering applications than ever before. A common thread when working with large data is the need to compress, sort, and/or otherwise manipulate the data by taking advantage of its multidimensional structure. As such, mathematics is becoming increasingly interdisciplinary and reaching across fields such as chemistry, psychology, biology, computer vision, neuroscience, signal processing, and more.

In this talk, we show how mathematics, with an emphasis on linear algebra, is used in many industry applications. This includes how to deblur images, compress images, make online shopping recommendations, and find similarities in a set of text documents.

Dr. Martin has worked in industry as a statistical consultant, was an Associate Professor of Mathematics at James Madison University, and is now a mathematician at the National Security Agency (NSA). This talk will also cover information on careers in STEM, possible career paths, and useful skills for STEM majors.


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**FRIDAY**

**OCT 2, 2015**

**3:00pm**
**Room 305**
**Gilbreath Hall**


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College of Arts & Sciences
EAST TENNESSEE STATE UNIVERSITY



Funding provided by the National Science Foundation
Grant # DUE-1356397
Preparation of Data Driven Mathematical Scientists for the Workforce