

**Dr. Marian R. Barry**

***Title: An Introduction to Information Retrieval (IR) and an Application from Linear Algebra***

***Abstract:*** Information Retrieval (IR) deals with the retrieval of unstructured data, especially textual documents, in response to a query or topic statement. This query may itself be unstructured, e.g., a sentence or even another document, or may be structured, e.g., a Boolean expression. The need for effective methods of automated IR has grown in importance due to the tremendous explosion in the amount of unstructured data, both internal, corporate document collections, and the immense and growing number of document sources on the Internet.

The talk will describe some of the basic concepts in IR, in particular an introduction to the vector space method for document retrieval. An application of the singular value decomposition (SVD) of a matrix to IR, known as Latent Semantic Indexing, will also be described.

***Biography:*** Dr. Marian R. Barry has been a mathematician at the National Security Agency (NSA) for about 11 years, spending most of that time working with statistical techniques for automatic document processing. Just prior to coming to NSA, she taught for 12 years in the Mathematics Department of Aquinas College, a small liberal arts college in Grand Rapids, MI. Dr. Barry has a BA in Mathematics from the University of Minnesota - Twin Cities and a Ph.D. in Applied Mathematics from Rensselaer Polytechnic Institute in Troy, NY. Before going to graduate school, she worked in industry for several years as a computer programmer and math analyst.