

The George Washington University
Institute for Biomedical Engineering

Colloquium
April 16th, 2008 at 12:00pm
Room 736 Academic Center

**Information Visualization for Multidimensional
Biomedical Data Analysis**

Jinwook Seo, PhD
Assistant Professor
Research Center for Genetic Medicine
Children's National Medical Center and
George Washington University School of Medicine

Multidimensional datasets are common in many fields including natural science research and biomedical research. Making insight out of such datasets requires a certain level of understanding of data analysis methods and techniques in addition to the expert knowledge in the problem domain. It has been shown that interactive visual interfaces and tools can facilitate researchers' journey to gaining insights into the multidimensional datasets. We designed and developed several interactive exploration strategies and systems for multidimensional data exploration. In this talk, I will present the hierarchical clustering explorer (HCE) and the rank-by-feature framework (RFF) for interactive and orderly exploration of large multidimensional datasets. HCE has been downloaded more than 7000 times from about 60 different counties since 2002, many of them for microarray data analysis. I will share some success stories and case studies using visualizations and live demonstrations. This talk will focus on the orderly exploration strategy and several interactive query methods for time-series data implemented in HCE. If time permits, I will also show a series of recent works in our center toward the development of innovative analysis tools for biomedical research. More information on our bioinformatics work is available at <http://bioinformatics.cnmcresearch.org/>.

BIO Dr. Seo holds a BS and MS degrees in Computer Science from the Seoul National University in Korea. He earned his Ph.D. degree at the Human-Computer Interaction Laboratory in the University of Maryland, College Park in 2005. He has been working at the Research Center for Genetic Medicine in the Children's National Medical Center as a faculty member. He developed an interactive visualization system called "Hierarchical Clustering Explorer," which has been used for microarray data analyses. His major research interest is in designing and developing information visualization techniques for biomedical problem solving.

A pizza lunch will be provided.