



# Announcing

A COS 740 Seminar

Friday, November 16, 2007 at 2:00 pm

SH 303

at The University of Southern Mississippi

## Speaker: Seongjai Kim

Department of Mathematics and Statistics  
Mississippi State University

## Title: PDE-based Approaches in Image Restoration and Resolution Enhancement

### Abstract:

As the field of image processing requires higher levels of efficiency and reliability, mathematical imaging techniques have become an important component. For the last decade or so, mathematical frameworks employing powerful tools of partial differential equations (PDEs) and functional analysis have emerged and successfully applied for various image processing tasks, particularly for image enhancement, restoration, and segmentation. However, most of those PDE-based models may lose fine structures or miss interesting features, due to an undesired dissipation or a tendency of converging to local minima. In this talk, we will discuss various new techniques which can significantly improve performance of the conventional PDE-based models, particularly in the areas of image restoration and image zooming. Examples will be shown along with challenging geospatial and medical imagery. The talk will end with some open issues in mathematical image processing.

### Further Information

Further details and information about this and other departmental activities is available online at [http://www.math.usm.edu/bulletin\\_board/](http://www.math.usm.edu/bulletin_board/).