



Dr. Chan's research interests include mathematical image processing and computer vision, VLSI physical design and computational brain mapping. He is a Fellow of the American Association for the Advancement of Science. Dr. Chan has published over 200 refereed papers and has mentored over 25 PhD students and 15 postdoctoral fellows. He is a co-founder of the Institute for Pure and Applied Mathematics at UCLA, established to promote collaborations between the mathematical sciences and the general scientific and engineering disciplines. Dr. Chan currently serves as Assistant Director of the Directorate for Mathematical and Physical Sciences at the National Science Foundation. The MPS is the largest Directorate at NSF with an annual budget of just over \$1B.

The University of Pittsburgh Department of Mathematics

Presents

The Edmund R. Michalik
Distinguished Lecture in the
Mathematical Sciences

Tony F. Chan

Professor of Mathematics, UCLA
Assistant Director,
Directorate for Mathematical & Physical Sciences
National Science Foundation

Images, PDEs and Wavelets

ABSTRACT: Wavelets and PDEs have had profound impacts on imaging sciences. Their successes rely on their remarkable mathematical properties, many of which are complementary to each other. In this talk, I will present an overview of our work along the direction of merging them to further improve the performance, as well as to model new applications in image processing. A main goal is to handle sharp discontinuities stably and robustly. The main approach combines regularity control using PDEs while manipulating coefficients in wavelet space. Applications include image compression, denoising, and wavelet inpainting. Connections with compressed sensing will be made.

Reception Immediately Following the Lecture

This public lecture is part of an annual series in honor of Professor Edmund R. Michalik, established through a gift from the Michalik family.

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or visit <http://www.mathematics.pitt.edu>

**4:00-5:00 P.M.
Friday,
March 20, 2009**

**Auditorium 5
Scaife Hall**

**Free and Open
to the Public**