

# **SOUTHERN CALIFORNIA FUNCTIONAL ANALYSIS SEMINAR**

**Saturday, November 15, 2008  
2:00 – 4:30 PM**

**Claremont McKenna College  
Davidson Lecture Hall, Adams Hall, Lower Level  
(See reverse for map and directions to campus)**

**2:00 – 3:00 PM, Lecture #1:**

## **DISTINGUISHED VARIETIES: DETERMINANTAL REPRESENTATIONS AND BOUNDED EXTENSIONS**

**GREG KNESE  
UNIVERSITY OF CALIFORNIA, IRVINE**

Distinguished varieties are algebraic curves in  $\mathbb{C}^2$  that exit the unit bidisk through the distinguished boundary. We will discuss how these curves appear naturally in operator theory and function theory, and we will outline a connection between distinguished varieties and polynomials with no zeros on the bidisk (on the surface, two antithetical objects) that allows us to prove a determinantal representation and a "bounded analytic extension theorem" for distinguished varieties.

**3:30 – 4:30 PM, Lecture #2:**

## **HYPERGROUPS AND PROBABILITY THEORY**

**HERBERT HEYER  
TUEBINGEN, GERMANY**

Hypergroups are locally compact spaces with a group-like structure for which the bounded measures convolve in a similar way to that of a locally compact group. Important examples of hypergroups are orbit spaces arising from groups.

There are fundamental constructions providing hypergroup structures on the nonnegative reals (Sturm - Liouville functions) and on the nonnegative integers (Jacobi polynomials).

In probability theory hypergroup convolutions admit for example the study of invariant Markov chains and Levy processes, prominent results being (local) central limit theorems and martingale characterizations respectively.

The method of carrying out the analysis of hypergroups and their applications is a generalization of the Fourier transform of measures defined on a dual object attached to the given hypergroup.

*Dinner at a local restaurant will follow the concluding lecture.*  
**For more information, please contact Professor Asuman Aksoy at (909) 607-2769,  
or via email at [asuman.aksoy@cmc.edu](mailto:asuman.aksoy@cmc.edu).**

# MAP & DIRECTIONS TO CAMPUS

## I-10 WESTBOUND (from San Bernardino)

Stay on I-10 West (toward Los Angeles) until you reach the **Indian Hill/Claremont** exit. Turn right (north) off the exit. You will be on Indian Hill; continue north on Indian Hill for about 1.5 miles until you reach **10th Street**. Turn right on 10th Street and follow it until it ends on **Columbia**. Turn right (south) on Columbia, then left (east) on **9th Street**. Park anywhere on 9th Street. Adams Hall is on the south side of the street, and Davidson Lecture Hall is on the southwest side of the building, on the lower level.

## I-10 EASTBOUND (from Los Angeles)

Stay on the I-10 East (toward San Bernardino) until you reach the **Indian Hill/Claremont** exit. Turn left (north) off the exit. You will be on Indian Hill; continue north on Indian Hill for about 1.5 miles until you reach **10th Street**. Turn right on 10th Street and follow it until it ends on **Columbia**. Turn right (south) on Columbia, then left (east) on **9th Street**. Park anywhere on 9th Street. Adams Hall is on the south side of the street, and Davidson Lecture Hall is on the southwest side of the building, on the lower level.

## I-210 WESTBOUND (from San Bernardino)

Stay on I-210 West (towards Pasadena) until you reach the **Towne Avenue** exit. Turn left off the exit. You will be on Towne; continue south for about one mile until you reach **Foothill Boulevard**. Turn left on **Foothill Boulevard**. Continue east on Foothill for about one mile and turn right onto **Dartmouth Avenue**. Continue south on Dartmouth for three blocks to **10th Street** and turn left. Follow 10th Street to **Columbia** and turn right. Then turn left (east) on **9th Street** and park anywhere on 9th Street. Adams Hall is on the south side of the street, and Davidson Lecture Hall is on the southwest side of the building, on the lower level.

## I-210 EASTBOUND (from Pasadena)

Stay on the I-210 East (towards San Bernardino) until you reach the **Towne Avenue** exit. Turn right off the exit. You will be on Towne; continue south for about one mile until you reach **Foothill Boulevard**. Turn left on **Foothill Boulevard**. Continue east on Foothill for about one mile and turn right onto **Dartmouth Avenue**. Continue south on Dartmouth for three blocks to **10th Street** and turn left. Follow 10th Street to **Columbia** and turn right. Then turn left (east) on **9th Street** and park anywhere on 9th Street. Adams Hall is on the south side of the street, and Davidson Lecture Hall is on the southwest side of the building, on the lower level.



Adams Hall is #5 on map below

