

# SEMINAR NOTICE

Department of Electrical and Systems Engineering

## LECTURE 3

### Current Research and Open Problems

*Alberto Isidori*  
*Professor of Automatic Control*  
*Department of Information and Systems*  
*University of Rome, "La Sapienza"*  
*Rome, Italy*

Wednesday October 8, 2008

9:30 - 11:00 a.m.

Bryan Hall, Room 305

**Abstract:** The synthesis of nonlinear internal models is a powerful tool to overcome certain roadblocks, such as – notably – the need that certain subsystems possess an (at least locally) exponentially stable attractor. The major open problem remains, though, of systematically dealing with systems with a possibly unstable zero dynamics.

#### *Outline*

1. Dealing with Systems Having a Stable but Non-Hyperbolic Zero Dynamics
2. Dealing with Systems Having an Unstable Zero Dynamics
3. Performance Limitations

The Annual Zaborszky Lecture Series was created in 1990 to honor the founder and first chairman of the Department of Systems Science and Mathematics Professor John Zaborszky. Each year a distinguished scholar is invited to present a series of three lectures in his field of expertise.