1135-93-343 **Michael Malisoff***, Department of Mathematics, Louisiana State University, 303 Lockett Hall, Baton Rouge, LA 70803-4918. *Sequential Predictors for Input Delay Compensation in Control Systems.*

Control systems arise in a plethora of engineering applications in which measurements of the current state of the system may not be available. This has given rise to a large literature on the design of feedback controls that achieve uniform global asymptotic stabilization using only time lagged observations of the state, which produces control systems with input delays. One approach to addressing this challenge is to solve the feedback stabilization problem for the system with the input delay set equal to zero, and then to compute upper bounds on the allowable delays that ensure that the feedback control continues to ensure uniform global asymptotic stabilization when input delays are present. Other approaches include prediction, which can compensate for arbitrarily long input delays, but which often produces feedback controls with distributed terms that can be difficult to compute. This talk will present the speaker's alternative approach to delay compensation based on sequential predictors, which can compensate for arbitrarily long input delays, including in nonlinear control systems, or systems with time-varying delays, without using distributed terms. No prerequisite background in control theory will be needed to understand this talk. The work is joint with Frederic Mazenc. (Received August 26, 2017)