1125-92-156 **Michael Malisoff*** (`malisoff@lsu.edu`), 301 Lockett Hall, Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803-4918. *Stabilization in a Chemostat with Sampled and Delayed Measurements.*

We study chemostat models with constant substrate input concentrations. We allow growth functions that are not necessarily monotone. The measurement is the substrate concentration, which is piecewise constant with a nonconstant delay, so only sampled observations are available. Under new conditions on the size of the delay and on the largest sampling interval, we solve the problem of asymptotically stabilizing a componentwise positive equilibrium point with the dilution rate as the control. We use a new Lyapunov approach. This talk is based on the speaker's joint research with Jerome Harmand and Frederic Mazenc, and was sponsored in part by the speaker's NSF Directorate for Engineering Grant 1408295. (Received August 05, 2016)