1124-35-169 **Justin T Webster*** (websterj@cofc.edu), 66 GEORGE ST, Charleston, SC 29424, and **Irena Lasiecka**. *Stabilization of a fluttering beam or plate via internal damping.*

When a thin elastic structure is immersed in a fluid flow, certain conditions may bring about excitations in the structure. That is, the "dynamic loading" of the fluid couples to the "natural oscillatory modes" of the structure. In this talk we consider panel and cantilevered configurations for pertinent nonlinear plate or beam models, and investigate the effect of damping on long-time behavior. We discuss recent results on stabilization of the structural dynamics to a smooth set (a global attractor) in the presence of any internal damping (for instance, viscous dissipation due to the fluid flow). Moreover, we describe how imposing large damping in the interior of the structure results in the strong stabilization of fluid-plate trajectories to the equilibria set for subsonic flows; for arbitrary flow velocities, large damping may improve the global attractor to a fractal exponential attractor. Recent numerical simulations will be discussed, including so called modal analyses, which allow for the prediction of instability (flutter) from the given system parameters. (Received September 06, 2016)