

# Applied Dynamical Systems Seminar

**Dr. Noel Cadigan  
Marine Institute, Memorial University**

**Wednesday, October, 12, 2016  
2:00p.m., HH-3017**

## ***Local Sensitivity of Fisheries Management Reference Points***

### **Abstract:**

Reference points (RPs) are important for sustainable and successful fisheries management as part of a pre-defined fishery harvest control rule where prescribed actions should occur when the population size or harvest rates exceed the RPs. They are often derived from an equilibrium analysis of a population dynamics model that accounts for fishing effects. RPs can have substantial economic and social implications for fishing industries and communities, especially via eco-labeling of the sustain ability of fisheries. Reliable and useful RPs should be reasonably stable over several years and robust to uncertainty. To help evaluate this it is first useful to understand which of the reproduction, growth and mortality processes that are involved in the calculation of the RPs are more influential. We derive equations that describe how per-recruit and maximum sustainable yield RPs are influenced by changes to productivity inputs. Our results provide a theoretical basis to better understand the reliability and robustness of these RPs.