

1154-92-1247 **Najat Ziyadi*** (najat.ziyadi@morgan.edu), Morgan State University, 1700 East Cold Spring Lane, Baltimore, MD 21251, and **Abdul-Aziz Yakubu**. *Persistence or Extinction in a Discrete-Time Nutrients-Phytoplankton-Oysters (NPO) Model of a bay ecosystem.*

In this talk, we introduce a discrete-time NPO model that describes the interactions of nutrients (N), phytoplankton (P) and oysters (O) in a bay ecosystem. Using stability analysis, we derive verifiable conditions for the persistence and extinction of phytoplankton and oysters in a bay ecosystem. Furthermore, we use examples to illustrate how human activities such as increased nutrients inflow can generate phytoplankton bloom via Neimark-Sacker bifurcation oscillations in the oyster biomass and nutrients level in the bay ecosystem. (Received September 14, 2019)