1125-G1-1400 **Celil Ekici*** (celil.ekici@uvi.edu), RR01 Box 10,000, University of the Virgin Islands, Department of Mathematical Sciences, Kingshill, VI 00850, and **Christopher Plyley**. *Inquiry based Calculus with Difference: Continuous and Discrete Modeling of Mathematics in Population Growth.*

Building towards the Common Vision for Mathematical Sciences in 2025, this work contributes to the reform of college math teaching by developing inquiry based learning activities which allow undergraduate students to experience deeper connections between continuous and discrete approaches to mathematical modeling. We use population growth involving locally relevant data (fly and lionfish) as a context to develop both calculus and discrete mathematical concepts, such as recurrence and rates of change. We will share the lessons learned from three cycles of implementation of these novel inquiry based learning activities across Calculus I and II and Discrete Mathematics courses. These novel activities provide a thread across these courses which develop connections between difference and differential equations in the context of population dynamics. The developed activities engage students to use descriptive, numerical, algebraic, and graphical representations while incorporating relevant instructional technologies to facilitate student inquiry and discussion. We will share student learning outcomes as well as their engagement and assessments. (Received September 16, 2016)