**UMD Biology Seminar**

**Title:** Employing Weight-of-Evidence to Identify Priority Chemicals across the Great Lakes Estuaries

**Speaker:** Erin Maloney, Ph.D.

**Abstract:**

Historic and ongoing anthropogenic activities (e.g., agriculture, industry, urbanization) have resulted in the introduction of contaminants into Great Lakes watersheds. As such, environmental monitoring studies have increasingly expanded the list of individual chemicals and chemical classes requiring ecotoxicological assessment to determine likelihood of environmental risk. However, environmental managers often have limited resources, impeding their abilities to comprehensively investigate each individual chemical contaminant or each potential chemical mixture. As such, there is often a need to prioritize chemicals and chemical mixtures to determine which should be the target(s) of further investigation. To date, there exists a multitude of prioritization frameworks and techniques, that primarily rely on traditional methods for ecotoxicological risk assessment. However, there also exist an array of novel tools and techniques (new approach methodologies; NAMs) harnessing computational power and non-animal based ecotoxicological techniques, which are not currently incorporated in many prioritization strategies. This presentation will focus on describing research that is being carried out to derive and apply prioritization frameworks that incorporate both traditional and new approach methodologies. We will describe how publicly accessible data and open-source software can be incorporated into weight-of-evidence prioritization frameworks and demonstrate how those prioritization frameworks can be applied to large chemical datasets using results from regional and national studies carried out in Milwaukee, WI (2017 – 2018) and across the US Great Lakes Estuaries (2008 – 2018), respectively. Overall, this presentation will demonstrate multiple strategies that can be employed to prioritize chemicals/mixtures based on their ecotoxicity, and will highlight the utility of integrating chemical, biological, and computational techniques for chemical prioritization.