SPRING 2021 EEOB 8896.14 Graduate Seminar

Harnessing the big data resolution in aquatic ecology: processed based modeling of environmental sensor data.

Course #27928; 1 credit (both sessions)
Instructor: Dr. Jim Hood, EEOB (hood.211@osu.edu)
Time and place: TBD based on participants' schedules. If you plan to enroll in this seminar, contact Jim Hood (hood.211@osu.edu) soon so we can schedule a meeting time.

Over the last decade, there has a been a dramatic increase in the deployment of environmental sensors in streams, rivers, and lakes. Collectively, these sensors have generated massive, publicly available, high-frequency data sets describing biological and physiochemical aspects of aquatic ecosystems. How can ecologists and limnologists harness this data revolution to develop new insight into the structure and function of aquatic systems? One approach is to use these high-frequency data sets to inform process-based models of ecosystem processes such as carbon and nutrient cycling. In this graduate seminar, we will explore various approaches for modeling ecosystem processes using high-frequency data. Approximately two-thirds of the seminar will focus on modeling primary production and ecosystem respiration (components of ecosystem metabolism) due to recent advances in this field. For the remainder of the class, we will focus on other carbon, nitrogen and phosphorus cycling models as well as topics tailored to the interests of the participants. To address these issues, we will combine hands-on tutorials (conducted in R) with discussions of recent peer-reviewed literature.