Project Title: Susquehanna River Metabolism Study  
Primary Investigators: Dr. Matthew McTammany, Associate Professor of Biology, and Dr. Benjamin Hayes, Director of the Watershed Sciences and Engineering Program  
Funding Agency: Degenstein Foundation  
Award Amount: $7,602  
Award Period: 2015 - 2016

The goal of this study is to compute metabolic activity in the middle reaches of the Susquehanna River using water quality measurements the professors have been collecting every 15 minutes for the past seven years using YSI sondes installed in the river on the West Branch at Milton and the North Branch at Danville. They will also incorporate additional hydrologic and atmospheric data from United States Geological Survey (USGS) gage stations, our own hydraulic and atmospheric measurements, and NOAA weather stations.

Bucknell’s real-time continuous measurement of river temperature and oxygen concentration has proven very useful for the SRBC, USGS, and other water managers, as these are important variables for both river ecosystems and water users. This study may enable Dr. McTammany and Dr. Hayes to begin providing continuous measurements of metabolism, which can be used to gain insight about river health in the same way as a pulse-meter can give clues about human health. River metabolism has been much less studied than invertebrates, fish, or other aspects of river ecology, and thus, managers face uncertainties when trying to use metabolism data to classify a river as paired or impaired. The results of this study will be presented at the 2016 Susquehanna River Symposium and presented at an international conference as well.

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