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I prefer an oral presentation, but would consider a poster presentation.

I would like to make the oral presentation on Wednesday or Thursday.

Combination of a Stressor-Response Model with a Conditional Probability Analysis Approach for Developing Candidate Criteria from MBSS Data

I show that a conditional probability analysis using a stressor-response model based on a logistic regression provides a useful approach for developing candidate water quality criteria from empirical data, such as the Maryland Biological Streams Survey (MBSS) data. The critical step in this approach is transforming the response data into a binary variable using a threshold that is a desirable management goal for the intended water bodies. A logistic regression analysis on the stressor and binary response data is conducted and the result can be viewed as transferring uncertainty in empirical data to an estimate of the probability of missing the management goal. Results from analyses with multiple data sets, including MBSS, demonstrate the robustness of this approach. This approach is also able to incorporate multiple stressors into the analysis, allowing examination of the interaction among stressors that can be observed from the data. The issue of nutrient (N and P) co-limitation in Maryland streams will be used to demonstrate this capability.

John F. Paul is a Research Environmental Scientist at the National Health and Environmental Effects Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. Dr. Paul was involved in the development and implementation of USEPA's Environmental Monitoring and Assessment Program (EMAP). He received the EPA's highest awards (gold medal for exceptional service and silver medal for superior service) for his work in EMAP. He has been involved in writing the Framework for Developing Suspended and Bedded Sediments Water Quality Criteria and Using Stressor-response Relationships to Derive Numeric Nutrient Criteria. His current research interests include the interactions between human and ecological systems. Dr. Paul received a Ph.D. in Engineering from Case Western Reserve University