**Scientific, Technical Assessment and Reporting (STAR) Team "Business" Meeting**
January 22, 2015
10:00AM – 1:30PM
Joe Macknis Memorial Conference Room (Fish Shack)

Conference Line: 1-866-299-3188 code 4102675731
Adobe Connect: https://epa.connectsolutions.com/star/
Event webpage: http://www.chesapeakebay.net/S=0/calendar/event/21555/

**AGENDA**

**10:00 AM** **Welcome, Introduction, and Announcements** *(Bill Dennsion – STAR Co-Chair, UMCES)*

**10:15 AM** **STAR Workgroups 2015 Workplans**
Leadership of the workgroups/teams under STAR will present and discuss their 2015 workplans and/or the five major priorities of the workgroup for the year.

- **Integrated Monitoring Networks Workgroup** *(Peter Tango)*
- **Data Integrity Workgroup** *(Bruce Michael and Mary Ellen Lay)*
- **Status and Trends Team (formerly Indicators)** *(Jennifer Gundersen)*
- **Climate Change Workgroup** *(Zoe Johnson and Mark Bennett)*
- **Explain Ecosystem Condition and Change: Water Quality Trends Team** *(Jeni Keisman, Joel Blomquist and Jeremy Testa)*
- **Modeling Workgroup** *(Lee Currey, Dave Montali, and Lew Linker)*
- **Information Management & GIS Support** *(John Wolf)*

**11:45 AM** **General Questions and Concerns for STAR Leadership**

**12:00 PM** **Lunch** (provided by UMCES)

**12:30 PM** **IAN Seminar Presentation and Q&A**

**Global, National, and Local Trends of Nitrogen Use Efficiency in Agriculture**
Eric A. Davidson, University of Maryland Center for Environmental Science, Appalachian Laboratory

**Abstract:**
More than half of the people in the world are nourished by crops grown with synthetic nitrogen (N) fertilizers. However, more than a billion people are still undernourished, and global population will increase by 2-3 billion by 2050, which means that demand for N fertilizers is likely to grow. Unfortunately, unintended adverse environmental and human health consequences of reactive N escaping agricultural fields are occurring as groundwater contamination, eutrophication of freshwater and estuarine ecosystems, atmospheric pollutants related to nitrogen oxides and ammonia gas emissions, and accumulation of the potent greenhouse gas and stratospheric ozone depleting

substance, nitrous oxide. An alternative to increasing fertilizer-N use proportionately to the increase in food demand is to improve nitrogen use efficiency (NUE) in agriculture. I will present preliminary results from an analysis of trends in NUE from 1961 to 2011 for 129 countries, demonstrating the importance of both crop mix and policy. In the USA, NUE is gradually increasing while harvest yield also increases, although considerable room for improvement remains, such as better coordination among conservation and retail communities. Retailers and crop advisors are usually farmers' most trusted sources of information, so their engagement is crucial for NUE improvement efforts. An example of a partial success story in Nebraska illustrates the importance of tailoring regulatory and outreach approaches to local conditions, administered by local units. A relatively simple benchmarking system for tracking NUE progress is proposed.

**Biography:**

Dr. Eric Davidson joined the University of Maryland Center for Environmental Science's Appalachian Laboratory as its new director in the new year. An ecologist, soil scientist, and biogeochemist, Davidson was formerly Executive Director of the Woods Hole Research Center in Massachusetts, where he had worked as a scientist since 1991. The Appalachian Laboratory, one of four University of Maryland Center for Environmental Science laboratories located across the state, is dedicated to the study of terrestrial and freshwater ecosystems. Dr. Davidson will lead a cadre of more than 30 faculty, research associates, staff, and post-doctoral fellows working to better understand the environment. Davidson's research career has focused on how human changes to the land affect carbon and nitrogen in soil, water, and air. He is also interested in the interfaces of science, policy, and education, and has published on ecological economics and human alteration of global cycles of essential nutrients for all lifeforms, including humans. His research has taken him to the Brazilian Amazon Basin and to forests and farms across North America.

He is President-elect of the American Geophysical Union, a 62,000-member scientific society. He has served as the North American Center Director of the International Nitrogen Initiative and as a senior editor of the scientific journal, *Global Biogeochemical Cycles*. He is a fellow of the American Association for the Advancement of Science and has been named as a Highly Cited Researcher by the Institute for Scientific Information.

Davidson has held positions as senior scientist at Woods Hole Research Center, as National Research Council Associate at the NASA Ames Research Center, and as Post-Doctoral Research Associate in Soil Microbiology at the University of California, Berkeley. He earned his doctorate in forestry at North Carolina State University.

**1:30 PM** **Adjourn**

**1:30 PM** **Amigos Planning Meeting**

- BASIN Report and Intelligent Monitoring Tri-fold update & next steps
- Meet Mindy
- Discuss a possible "User Council"
- Presenters list for New Technologies Webinar Series
- Questionnaire for New Technologies Webinar Series