

# Joint Progress Review for U.S. EPA STAR Grants: Regional - Scale Stressor-Response Models and Consequences of Global Change for Aquatic Ecosystems

Sheraton National Hotel  
900 S. Orme Street  
Arlington, VA 22204

November 3 – 4, 2005

## AGENDA

This is a Joint Workshop and Progress Review for U.S. EPA STAR Grants on the topics:

- (1) *Regional-Scale Stressor-Response Models for Aquatic Ecosystems*
- (2) *Effects of Climate, Land Use and UV Radiation on Aquatic Ecosystems*

**\*Posters of PI research will be on display both Thursday and Friday**

**Thursday, November 3, 2005**

**7:30 – 8:30 a.m. Registration and Poster Set-Up**

**8:30 – 9:00 a.m. Welcome and Introduction**  
Becki Clark, Director Environmental Science Division, U.S. EPA, NCER  
Joel Scheraga, National Program Director, EPA Global Change Research Program, U.S. EPA, NCEA  
Iris Goodman, Ecological Research Program Manager, U.S. EPA, NCER

**Session I Theme: Regional-Scale Physical Models for Environmental Decision-Making**

**9:00 – 9:40 a.m.** *Development of Coupled Physical and Ecological Models for Stress-Response Simulations of the Apalachicola Bay*  
Mark Harwell, Florida A&M University

**9:40 – 10:20 a.m.** *Developing Regional-Scale Stressor Response Models for Managing Eutrophication in Coastal Marine Ecosystem*  
Robert Howarth, Cornell University

**10:20 – 10:35 a.m. Break** (PIs are available to discuss their poster)

**10:35 – 11:15 a.m.** *A Shallow-Water Coastal Habitat Model for Regional-Scale Evaluation of Management Decisions in the Virginia Province*  
Charles Gallegos, Smithsonian Institute

**11:15 – 11:55 a.m.** *Development of a Regional-Scale Model for the Management of Multiple-Stressors in the Lake Erie Ecosystem*

Joseph Koonce, Case Western Reserve University

**12:00 noon – 1:15 p.m. Lunch**

**Session II Theme: Regional-Scale Statistical Models for Environmental Decision-Making**

- 1:15 – 1:55 p.m.**      *Adaptive Implementation Modeling and Monitoring for TMDL Refinement*  
Kenneth Reckhow, Duke University
- 1:55 – 2:40 p.m.**      *Bayesian Methods for Regional-Scale Stressor Response Models*  
Conrad Lamon, Duke University
- 2:40 – 2:55 p.m.**      **Break** (PIs are available to discuss their poster)
- 2:55 – 3:35 p.m.**      *Developing a Risk Propagation Model for Estimating Ecological Responses of Streams to Anthropogenic Watershed Stressors and Stream Modification*  
Vladimir Novotny, Northeastern University
- 3:35 – 4:15 p.m.**      *Developing Relations Among Human Activities, Stressors, and Stream Ecosystem Responses and Linkage in Integrated Regional, Multi-Stressor Models*  
Jan Stevenson, Michigan State University

**Friday, November 4, 2005**

- 8:30 a.m.**              **Introduction**  
Bernice Smith, Global Change (Ecosystems Research) Program Manager,  
U.S. EPA, NCER

**Session III Theme: Regional-Scale Population Models for Environmental Decision-Making**

- 8:30 – 9:10 a.m.**      *Effects of Multiple Stressors on Aquatic Communities in the Prairie Pothole Region*  
Patrick Schoff, University of Minnesota–Duluth
- 9:10 – 9:50 a.m.**      *Application of Individual-Based Fish Models to Regional Decision-Making*  
Roland Lamberson, Humboldt State University
- 9:50 – 10:20 a.m.**      *Stressor-Response Modeling of the Interactive Effects of Climate Change and Land Use Patterns on the Alteration of Coastal Marine Systems by Invasive Species*  
Robert Whitlatch, University of Connecticut
- 10:20 – 10:35 a.m.**      **Break** (PIs are available to discuss their poster)

**Session IV Theme: Climate, Land Use, and UV Radiation on Aquatic Ecosystems**

- 10:35 – 11:05 a.m.**      *Interactive Effects of Climate Change, Wetlands, and Dissolved Organic Matter on UV Damage to Aquatic Foodwebs*

Scott Bridgham, University of Oregon

**11:05 – 11:45 a.m.**     *The Influence of Climate-Induced Alterations in Dissolved Organic Matter on Metal Toxicity and UV Radiation in Rocky Mountain Streams*  
William Clements, Colorado State University

**11:45 a.m. – 1:00 p.m.**     **Lunch**

**1:00 – 1:40 p.m.**     *Interactions Among Climate, Humans, and Playa Wetlands on the Southern High Plain*  
Scott McMurry, Texas Technical University

**1:40 – 2:20 p.m.**     *Assessing the Interactive Effects of Land Use, Climate, and UV Radiation on River Ecosystems: Modeling Transparency and the Response of Biota to UVR.*  
Bruce Hargreaves, Lehigh University.

**2:20 – 2:30 p.m.**     **Break** (PIs are available to discuss their poster)

**2:30 – 4:00 p.m.**     **Session V: Breakout Groups on: (1) Sharing data, ideas, and potential applications, and (2) Synthesis and communication of research results**

These sessions provide an opportunity for STAR grantees and staff of EPA Program Offices and scientists at ORD Labs and Centers to explore opportunities to further advance the research topics presented at this workshop. Breakout groups will be convened to discuss how we might: (1) share data, ideas, or apply the research models and methods, and (2) synthesize and communicate research results.

**4:00 – 4:10 p.m.**     **Closing Remarks**  
Bernice Smith, Global Change (Ecosystems Research) Program Manager,  
U.S. EPA, NCER