### Second Symposium on Harmful Marine Algae in the U.S.
#### Tentative Program
#### December 8-13, 2003

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<tbody>
<tr>
<td>8:30 – 9:00 (First day only)</td>
<td>Welcome and Introduction</td>
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<tr>
<td>8:30 – 10:00</td>
<td>Northeast</td>
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<tr>
<td>(National Plan discussion)</td>
<td>National Plan discussion</td>
<td>Mid-Atlantic</td>
<td>Southeast/Gulf of Mexico</td>
<td>New Technologies</td>
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<tr>
<td>10:00 – 10:30</td>
<td>Coffee break</td>
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<tr>
<td>10:30 – 12:00</td>
<td>Northeast</td>
<td>National Plan discussion</td>
<td>Mid-Atlantic</td>
<td>Southeast/Gulf of Mexico</td>
<td>New Technologies</td>
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<tr>
<td>12:00 – 1:30</td>
<td>Lunch break, Swope Dining Hall</td>
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<tr>
<td>1:30 – 3:00</td>
<td>Outreach</td>
<td>West Coast</td>
<td>Mid-Atlantic</td>
<td>Southeast/Gulf of Mexico</td>
<td>Ad hoc group meetings</td>
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<tr>
<td>3:00 – 3:30</td>
<td>Break</td>
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<tr>
<td>3:30 – 5:00</td>
<td>Poster session (Northeast &amp; Outreach)</td>
<td>West Coast</td>
<td>Poster session (Mid Atlantic &amp; Mitigation)</td>
<td>Poster session (Southeast/Gulf of Mexico and New Technologies)</td>
<td>Ad hoc group meetings</td>
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<tr>
<td>6:00 – 7:30</td>
<td>Dinner, Swope Dining Hall</td>
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<td>Lobster Dinner, Swope Dining Hall</td>
<td>Dinner, Swope Dining Hall</td>
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<tr>
<td>7:30 -</td>
<td>Poster Session, (West Coast)</td>
<td>Discussion Sessions (TBA)</td>
<td>Free evening</td>
<td>Reception &amp; party</td>
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Second Symposium on Harmful Marine Algae in the U.S.

December 8 – 13, 2003
Marine Biological Laboratory
Woods Hole, Massachusetts

Tentative Program Schedule:

Monday, December 8, 2003

3:00 – 6:00 p.m. Registration, Swope Lobby

6:00 – 7:00 p.m. Dinner, Swope Dining Hall

7:00 – 9:30 p.m. Reception, Swope upstairs lobby

Tuesday, December 9

7:00 – 8:30 BREAKFAST (Swope Dining Hall)

8:30 – 9:00 Welcome and Introduction
Lillie Auditorium Don Anderson, Woods Hole Oceanographic Institution

Session I – Northeast (Dennis McGillicuddy, Session Chair)

9:00 – 9:20 Long-term patterns of Narragansett Bay phytoplankton driven by decadal shifts in phytoplankton habitat
David Borkman and Theodore J. Smayda

9:20 – 9:40 Long-term bloom behavior of Prorocentrum species in Narragansett Bay
Theodore J. Smayda and David Borkman

9:40 – 10:00 Biological and phylogenetic characterization of Amoebophrya sp. ex Alexandrium tamarense
Mario R. Sengco, D. Wayne Coats, Kimberly J. Popendorf, Deana L. Erdner, Kristin E. Gribble, and Donald M. Anderson

10:00 – 10:30 BREAK

Lillie Auditorium Session II – Northeast (Greg Teegarden, Session Chair)

110:30 – 10:50 Evaluating hypotheses for the initiation and development of Alexandrium fundyense blooms in the western Gulf of Maine using a coupled physical-biological model
Charles A. Stock, Dennis J. McGillicuddy, Andrew R. Solow, and Donald M. Anderson
10:50 – 11:10 Mechanisms regulating the large-scale seasonal development of *Alexandrium fundyense* blooms in the Gulf of Maine (U.S.A.)

**Dennis J. McGillicuddy, Jr.**, Donald M. Anderson, Daniel R. Lynch, and David W. Townsend

11:10 – 11:30 Cross-frontal entrainment of plankton into a buoyant plume: the frog tongue mechanism

**Robert D. Hetland**, Dennis J. McGillicuddy, and Richard P. Signell

11:30 – 11:50 Impact of zooplankton grazing on *Alexandrium* spp. blooms in the offshore Gulf of Maine

**Jefferson T. Turner** and David G. Borkman

12:00 – 1:30 LUNCH (Swope Dining Hall)

**Lillie Auditorium**

**Session III - Outreach** (Pat Tester, Session Chair)

1:30 – 1:50 Collaborative, international programs on HABs

**Patricia M. Glibert** (representing the GEOHAB and EU-NSF Steering Committees)

1:50 – 2:10 Public outreach materials regarding harmful algal blooms and their possible effects on human health

Lora E. Fleming, **Barbara Kirkpatrick**, Wendy B. Stephan, Lorraine Backer, Richard Clark, Dana Dalpra, Richard Weisman, and Gayl Van De Bogart

2:10 – 2:30 Harmful algal bloom science and standards: One perspective

**Karen A. Steidinger**

2:30 – 2:50 HAB impacts along the Washington coast – stakeholder outreach

**Daniel L. Ayres**

3:00 – 3:30 BREAK (Swope upstairs lobby)

3:30 – 5:00 Poster session – Northeast and Outreach

**Swope upstairs**

5:00 – 6:00 Informal social hour, Swope upstairs lobby

6:00 – 7:30 DINNER (Swope Dining Hall)

7:30 – 9:00 Poster session – West Coast (with refreshments)

**Swope upstairs**
Wednesday, December 10

7:00 – 8:30  BREAKFAST (Swope Dining Hall)

Lillie Auditorium
8:30 – 10:00  Plenary session, Revisions to *National Plan for Algal Toxins and Harmful Algal Blooms*

10:00 – 10:30  BREAK

Lillie Auditorium
10:30 – 12:00  Plenary session, Revisions to *National Plan for Algal Toxins and Harmful Algal Blooms*

12:00 – 1:30  LUNCH (Swope Dining Hall)

Lillie Auditorium  Session IV - West Coast (Rita Horner, Session Chair)
1:30 – 1:50  Patterns and variability of water properties in 2003 in the ECOHAB PNW region
  *Barbara M. Hickey*, William Cochlan, Vera L. Trainer, Nancy Kachel, Susan Geier, Amy MacFadyen, and Nicolaus Adams

1:50 – 2:10  Domoic acid and *Pseudo-nitzschia* off the Washington coast: The first season of ECOHAB Pacific Northwest cruises

2:10 – 2:30  Iron limitation of natural phytoplankton assemblages associated with the Pacific Northwest ECOHAB *Pseudo-nitzschia* blooms
  *Mark L. Wells*, William P. Cochlan, and Charles G. Trick

2:30 – 2:50  Numerical modeling of the Juan de Fuca eddy
  *Amy MacFadyen*, Michael G. G. Foreman, and Barbara M. Hickey

2:50 – 3:10  Increased magnitude and geographical spread of harmful algal blooms in Puget Sound, Washington State, USA
  *John C. Wekell*, Vera L. Trainer, Bich-Thuy L. Eberhart, Nicolaus G. Adams, Linda Hanson, Frank Cox, and Judy Dowell

3:10 – 3:40  BREAK
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<tr>
<th>Time</th>
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| 3:40 – 4:00| Patterns of marine mammal strandings and toxic *Pseudo-nitzschia*: A multi-year perspective from central California  
*Mary W. Silver* and *Frances M. Gulland* |
| 4:00 – 4:20| An individual-based model of the toxic algae species *Pseudo-nitzschia multiserises*  
*Maria Siopsis* |
| 4:20 – 4:40| Effectiveness of clay flocculation for *Heterosigma akashiwo* bloom removal and benthic effect studies in Puget Sound, Washington  
*J. E. Jack Rensel*, *Jeffrey Campbell*, and *Donald M. Anderson* |
| 4:40 – 5:00| Nitrogen uptake by the raphidophyte *Heterosigma akashiwo*: A laboratory and field study  
*Julian Herndon* and *William P. Cochlan* |
| 5:00 – 6:00| Informal social hour, Swope upstairs lobby |
| 6:00 – 7:30| DINNER (Swope Dining Hall) |
| 7:30 -     | Discussion Sessions – TBA. (Tentative topics – Cell and Toxin Detection; Centers of Excellence; HAB management, including prevention, control & management; Food Webs) |

**Thursday, December 11**

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<th>Time</th>
<th>Session</th>
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<td>7:00 – 8:30</td>
<td>BREAKFAST (Swope Dining Hall)</td>
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| 8:30 – 8:50| Microzooplankton grazing and the population dynamics of HABs  
*Diane K. Stoecker* |
| 8:50 – 9:10| Mesozooplankton grazing of microzooplankton: The affect of food web dynamics on the potential for harmful algal bloom formation  
*Matthew L. Reaugh*, *Michael R. Roman*, and *Diane K. Stoecker* |

**Mary Downes Gastrich**, O. R. Anderson, Christopher J. Gobler, Steven W. Wilhelm, Justine Leigh-Bell, Casey A. Rentz, Richard Lathrop, Scott Haag, Michael P. Weinstein, Michael Danko, David A. Caron, and Rebecca Schaffner

Impacts of viruses isolated from New York waters on growth of the brown tide alga, *Aureococcus anophagefferens*: A field and laboratory assessment

**Christopher J. Gobler**, Glynis Pererya, Jeffery Krause, Kristen Mauer, Mary Downes Gastrich, O. R. Anderson, and Steven W. Wilhelm

Mediation of benthic-pelagic coupling by microphytobenthos: An energy- and material-based model for initiation of blooms of *Aureococcus anophagefferens*

**Hugh L. MacIntyre**, Michael W. Lomas, Jeff Cornwell, David J. Suggett, Christopher J. Gobler, Eva W. Koch, and Todd M. Kana

10:10 – 10:40

**BREAK**

**Lillie Auditorium**  
**Session VII - Mid-Atlantic (Rob Magnien, Session Chair)**

Ecology of *Pfiesteria* spp. and raphidophyte blooms in South Carolina


Direct uptake of inorganic and organic nitrogen by *Pfiesteria piscicida* and *P. shumwayae*

**Patricia M. Glibert**, Howard Glasgow, and JoAnn Burkholder

Cultivation and characterization of amoeboid protists implicated in the putative life cycle of *Pfiesteria piscicida* and related dinoflagellates

**Patrick M. Gillevet**, Michael T. Peglar, Thomas A. Nerad, and O. Roger Anderson

Observations on the sexual life cycles of *Pfiesteria piscicida* and cryptoperidiniopsoids (Dinophyceae)

**Matthew W. Parrow** and JoAnn M. Burkholder

12:00 – 1:30  
**LUNCH (Swope Dining Hall)**
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<tr>
<td>1:30 – 1:50</td>
<td>Micropredatory behavior and pathogenicity in <em>Pfiesteria</em>-like dinoflagellates</td>
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<td><em>Vincent J. Lovko</em>, Wolfgang K. Vogelbein, Leonard W. Haas, Jeffrey D. Shields, Kimberly S. Reece</td>
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<td>1:50 – 2:10</td>
<td>Pathogenicity of <em>Pfiesteria piscicida</em> and <em>P. shumwayae</em> to fish: Dose response studies</td>
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<td>2:10 – 2:30</td>
<td>Relative contribution of toxin and micropredation to ichthyotoxicity of two strains of <em>Pfiesteria shumwayae</em></td>
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<td><em>Andrew S. Gordon</em> and Brian J. Dyer</td>
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<td>2:30 – 2:50</td>
<td>Toxic mode of action of KmTx 2, a new fish-killing toxin from <em>Karolodinium micrum</em> (Dinophyceae)</td>
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<td><em>Jonathan R. Deeds</em>, Joseph P. Y. Kao, Robert E. Hoesch, and Allen R. Place</td>
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<td>2:50 – 3:10</td>
<td>Harmful algal toxins and sterols: Not so strange bedfellows?</td>
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<td><em>Allen R. Place</em> and Jonathan Deeds</td>
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<td>3:10 – 3:40</td>
<td>BREAK (Swope upstairs lobby)</td>
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<tr>
<td>3:40 – 5:00</td>
<td>Poster session – Mid-Atlantic and Mitigation</td>
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<td>Swope upstairs</td>
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<tr>
<td>5:00 – 6:00</td>
<td>Informal social hour, Swope upstairs lobby</td>
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<td>6:00 – 7:30</td>
<td>DINNER (Swope Dining Hall)</td>
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<td>7:30 -</td>
<td>Free evening (beer and wine provided in Swope upstairs lobby)</td>
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**Friday, December 12**

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<td>7:00 – 8:30</td>
<td>BREAKFAST (Swope Dining Hall)</td>
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**Lillie Auditorium**  
**Session IX - SE/Gulf of Mexico (Tracy Villareal, Session Chair)**

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<tr>
<td>8:30 - 8:50</td>
<td>Characteristics of the <em>Karenia brevis</em> diel vertical migration based on laboratory observations</td>
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<td><em>Daniel Kamykowski</em>, Thomas G. Wolcott, Gerald S. Janowitz, Edward J. Milligan, Blake Schaeffer, Laurie McKay, Geoffrey Sinclair, and Jessica Ramsey</td>
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</table>
Does nitrogen regeneration from the N₂ fixing cyanobacteria *Trichodesmium* spp. fuel *Karenia brevis* blooms in the Gulf of Mexico? 
*Margaret R. Mulholland*, Cynthia A. Heil, Deborah A. Bronk, Judith M. O’Neil, and Peter Bernhardt

Assessing the bioavailability and uptake of dissolved humic substances by the HAB species *Karenia brevis* using radioisotopic techniques 
*Cynthia A. Heil*

Primary productivity by the toxic Florida red-tide dinoflagellate, *Karenia brevis*: Evaluation of a bio-optical model with laboratory and field data 
*Terence J. Evens*, Robert E. Reed, Donald G. Redalje, Steven E. Lohrenz, David F. Millie, Oscar Schofield, and Gary J. Kirkpatrick

An initial assessment of gyroxanthin-radiolabeling as a tool for determination of *Karenia brevis* carbon-specific growth rates *in situ* 
*Tammi L. Richardson* and James L. Pinckney

**Lillie Auditorium**  
Session X - SE/Gulf of Mexico (Lisa Campbell, Session Chair)

Cell-concentration dependence in net growth of *Alexandrium monilatum* 
*Andrew R. Juhl* and Peter J. S. Franks

Harmful algal blooms in Florida’s marine waters: The new millennium 

Ciguatera fish poisoning associated with oil production platforms along the Texas coast 
*Tracy A. Villareal*, Shari Hanson, Jessica A. Tiedeken, Marie-Yasmine Bottein, and Steve L. Morton

Physiology and ecology of macroalgal blooms (green tides) on coral reefs off northern Palm Beach County, Florida (USA) 
*Brian E. Lapointe*, Peter J. Barile, Kelly L. Rankin, and Charles S. Yentsch

**LUNCH (Swope Dining Hall)**
**Lillie Auditorium**  
**Session XI - SE/Gulf of Mexico (Fran Van Dolah, Session Chair)**

1:30 – 1:50 Effects of inhaled Florida red tide brevetoxins: An interdisciplinary study in oceans and human health  

1:50 – 2:10 Toxicity of the chain forming dinoflagellate, *Alexandrium monilatum* isolated from the Gulf of Mexico with preliminary structural determination of a novel non-polar toxin  
**Steve L. Morton**, Michelle H. Hsia, Tracy Schock, Laurinda Smith, Steven Eaker, Kevin Beauchesne, Christina Mikulski, and Peter D. R. Moeller

2:10 – 2:30 Seagrass as a route of brevetoxin exposure in the 2002 red tide-related manatee mortality  

2:30 – 2:50 Cellular stress responses of *Karenia brevis* to heat and oxidative stresses: Identification and response characterization of stress proteins and antioxidant enzymes  
**Jeanine S. Miller** and Frances M. Van Dolah

2:50 – 3:10 An algicidal bacterium active against *Karenia brevis*: Involvement of a dissolved compound  
**Michael J. Twiner**, Christina M. Mikulski, and Gregory J. Doucette

3:10 – 3:40 BREAK

3:40 – 5:00 **Poster session – Southeast/Gulf of Mexico and New Technologies**

Swope upstairs

5:00 – 6:00 Informal social hour, Swope upstairs lobby

6:00 – 7:30 **LOBSTER DINNER** (Swope Dining Hall)

7:30 – 11:00 Reception and party, Meigs Room and Swope upstairs lobby
Saturday, December 13

7:00 – 8:30  BREAKFAST (Swope Dining Hall)

Lillie Auditorium  Session XII - New Technologies (Chris Scholin, Session Chair)

8:30 – 8:50  Use of ITS-specific polymerase chain reaction (PCR) assays to identify phytoplankton species in complex natural assemblages  
R. Wayne Litaker, Mark W. Vandersea, Steve R. Kibler, Kimberly S. Reece, Nancy A. Stokes, Karen A. Steidinger, Dave F. Milie, Brian J. Bendis, Ryan J. Pigg, and Patricia A. Tester

8:50 – 9:10  The cyst transcriptome: Comprehensive analysis of gene expression patterns in *Pfiesteria piscicida* long-term resting cysts  
Kathryn J. Coyne, David Hutchins, and S. Craig Cary

9:10 – 9:30  The development and application of a quantitative PCR assay for *Alexandrium fundyense* from the Gulf of Maine  
Sonya T. Dyhrman, Deana Erdner, Jane La Du, Madeline Galac, and Donald M. Anderson

9:30 – 9:50  Mapping *Karenia brevis* blooms utilizing automated optical discrimination  
Gary Kirkpatrick, David Millie, Mark Moline, Steve Lohrenz, and Oscar Schofield

9:50 – 10:10  Detection and monitoring of harmful algal blooms with satellite  
Richard P. Stumpf, Michelle Tomlinson, Timothy Wynne, Jennifer Cannizzaro, and Kendall Carder

10:10 – 10:40  BREAK

Lillie Auditorium  Session XIII - New Technologies (Greg Boyer, Session Chair)

10:40 – 11:00  Gene expression profiling in mouse brain after domoic acid exposure  
James Ryan, John Ramsdell, and Frances Van Dolah

11:00 – 11:20  Application of cultured neuronal networks for identification of toxic algae  
Nadezhda V. Kulagina, Laurinda Smith, Tina Mikulski, Gregory J. Doucette, John S. Ramsdell, and Joseph J. Pancrazio

11:20 – 11:40  Radiolabelled saxitoxin for receptor assays: Development of improved labeling strategies  
Sherwood Hall
11:40 – 12:00  Use of the rapid lateral flow immunochromatographic tests for PSP and ASP in phytoplankton applications
   **Joanne F. Jellett**, Maurice V. Laycock, Cheryl Rafuse, Allan D. Cembella, Stephen Bates, Vera Trainer, and M. Angelica

12:00  Closing

12:30 – 1:30  LUNCH (Swope Dining Hall)

1:30 – 3:00  Ad hoc group meetings – small rooms may be arranged – contact Judy Kleindinst <jkleindinst@whoi.edu>

3:00 – 3:30  BREAK

3:30 – 5:00  Ad hoc group meetings

5:00 – 6:00  Informal social hour, Swope upstairs lobby

6:00 – 7:30  DINNER (Swope Dining Hall)