

Ocean Policy Seminar: Oceans and Human Health

Syllabus

The role of the oceans in human health and well-being has received considerable attention in recent years. Much of that attention has focused on the need for and the findings of scientific research. The changing relationship of oceans to human health, however, has tremendous implications for public policy and governing. In this interdisciplinary seminar we will look at this relationship from both a physical and social-science perspective. Where possible, we will also explore governance and policy responses to the changing connection between oceans and human health. This exploration will involve readings from the primary and review scientific literature as well as from news coverage, NGO reports, and other popular sources of information. We hope also to have guest lectures from experts on aspects of the ocean-health connection from UH.

Readings: The required texts are: (1) National Research Council. 1999. *From Monsoons to Microbes: Understanding the Ocean's Role in Human Health*, National Academy Press: Wash., D.C. [in syllabus as "FMTM"]; (2) Special Issue on the Oceans & Human Health, *Oceanography*, vol. 19, no. 2 (June 2006) [in syllabus as "OCN"]. **Please note that these texts are shelved in the UH Bookstore under OEST 735.** Readings not in the required texts will be posted on the course web page on the MyUH portal. Students are responsible for checking their e-mail regularly for notice of assignment changes, guest speakers, recommended campus lectures, etc.

Class format: In the 2nd class, we will assign approximately two to four topics to each student depending on enrollment. On the date of the class in which a student's topic is featured, the assigned student(s) will introduce the topic and speaker and then lead the question and answer period after asking the first questions. If there is no guest speaker, the student(s) will present an overview of the assigned readings, raise questions, and run the class discussion on the readings. If you would like to change the readings (i.e., add to or substitute another item) for one or more of your assigned topics, you can do so by advising the class one week in advance and posting on MyUH either a pdf, the full bibliographic citation (if available on UH Library Voyager e-journals), or a URL for the paper(s). Grades will be based on class participation and short response papers. Everyone is expected to fully participate and complete all the assigned readings.

Time and place: Saunders Hall 443B; Wed, 12-1:30 pm (some classes may run until 2 pm).

Instructors: **Prof. Alison Rieser**, Geography, and **Dr. Hank Trepido-Rosenthal**, SOEST

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<i>Date</i>	<i>Topic</i>	<i>Readings</i>
Jan 10	Introduction to seminar topics Recommended lecture: 2 pm Dr. Robert Bidigare, POST Bldg 723 (on cyanobacteria)	L.E. Fleming and E. Laws. 2006. Overview of the Oceans and Human Health Special Issue, in <i>OCN</i> , pp. 18-23. L.E. Fleming et al. 2006. Oceans and human health: Emerging public health risks in the marine environment. <i>Marine Pollution Bulletin</i> 53(10-12):546-560.

	neurotoxin and disease in the Chamorro people of Guam)	
	Part I:	Hazards from the Sea
Jan 17	Oceans and Climate	Climate and Weather, Coastal Hazards and Public Health, in <i>FMTM</i> , pp. 17-42. J.A. Patz et al, Climate Change, Oceans, and Human Health, in <i>OCN</i> , pp. 52-59. J.M. Prospero, Case Study: Saharan Dust Impacts and Climate Change, in <i>OCN</i> , pp. 60-61.
Jan 24	Severe Weather and Climate Variability; Coastal Disasters; Reducing Disaster Vulnerability <i>Invited guest speaker:</i> Cheryl Anderson, UH Social Science Research Institute	NPR transcript, "Is Mild Winter a Sign of Climate Change?", interview with Robert Henson, Jan. 7, 2006 www.npr.org N.D. Walker et al., Hurricane Prediction: A Century of Advances, in <i>OCN</i> , pp. 24-36; J.C. Pine, Hurricane Katrina and oil spills, pp. 37-39. M.E. Keim, Cyclones, Tsunamis, and Human Health: The Key Role of Preparedness, in <i>OCN</i> , pp. 40-49. F. Miller et al., Case Study, Resilient Ecosystems, Healthy Communities: Human Health and Sustainable Ecosystems after the Dec 2004 Tsunami, in <i>OCN</i> , pp. 50-51. W.N. Adger et al. 2005. Social-Ecological Resilience to Coastal Disasters, <i>Science</i> 309:1036-1039. (See also B. Hanson and L. Roberts, Resilience in the face of disaster, <i>Science</i> , 309:1029, 12 Aug 2005.)
Jan 25	<i>Recommended lecture:</i> Dr. Craig Venter, UH Distinguished Lecture: "The Ocean Genome: The Key to Earth's Habitability" Campus Center Ballroom, 7 p.m.	See, e.g., Venter et al. 2004. Environmental shotgun sequencing of the Sargasso Sea. <i>Science</i> 304:66-74.
Jan 31	Climate Change and Human Health	S. Hale et al. 2000. What El Nino can tell us about human health and global climate change. <i>Global Change & Human Health</i> 1(1):66-77. A. McMichael et al. 2006. Climate change and human health: present and future risks. <i>The Lancet</i> 367:859-869.
Feb 7	The Oceans as Vectors for Disease	Infectious Diseases, in <i>FMTM</i> , pp. 43-58. A.P. Dufour et al., Microbes, Monitoring, and Human Health, in <i>OCN</i> , pp. 72-80. E. Laws, Case study: Cholera, in <i>OCN</i> , pp. 81-83.
Feb 14	Seafood Consumption: Case Study of Risk-Benefit Analysis	E. Dewailly and A. Knap, Food from the Oceans and Human Health: Balancing Risks and Benefits, in <i>OCN</i> , pp. 84-93. E. Dewailly, Canadian Inuit and the Arctic Dilemma, in <i>OCN</i> , pp. 88-89. (continued on next page)

		<p>POLICY CASE STUDY on fish consumption advisories: NOAA's press release & conference, "Studies Confirm Seafood to be a Healthy Choice," 17 Oct 2006, Nat'l Press Club www.noaanews.noaa.gov/stories2006/s2721.htm (discussing National Academy of Sciences, Seafood Choices: Balancing Benefits and Risks, http://fermat.nap.edu/execsumm_pdf/11762.pdf and D. Mozaffarian et al. Fish intake, contaminants, and human health. Evaluating the risks and benefits. <i>JAMA</i> (Journal of the Amer. Med Assoc) 2006, 296:1885-1899.)</p> <p>M. Burros, "One study calls fish a lifesaver, another is more cautious," <i>New York Times</i>, 18 Oct 2006, Dining Out section. http://www.nytimes.com</p> <p>E. Groth. Dec. 2005. Risks and Benefits of Fish Consumption: Yes, Mercury is a Problem, a report prepared for Oceana and Mercury Policy Project (discussing FDA/EPA 2004 advisory on fish consumption recommending limiting consumption of canned tuna and S.M. Teutsch and J.T. Cohen. 2005. Health tradeoffs from Policies to Alter Fish Consumption. <i>Am. J. Prev Med</i> 29(4):335-346.)</p>
Feb 21	Harmful Algal Blooms	<p>Harmful Algal Blooms, in <i>FMTM</i>, pp. 59-70.</p> <p>L.C. Backer and D.J. McGillicuddy, Jr. Harmful Algal Blooms: At the Interface between Coastal Oceanography and Human Health, in <i>OCN</i>, pp. 94-106.</p>
Feb 28	HAB II: Case Study of <i>Pfiesteria</i>	<p>J. Burkholder & H. Glasgow. 2001. History of Toxic <i>Pfiesteria</i> in No. Carolina Estuaries from 1991 to the Present, <i>BioScience</i> 51(10): 827-841.</p> <p>R.E. Magnien. 2001. The Dynamics of Science, Perception, and Policy During the Outbreak of <i>Pfiesteria</i> in the Chesapeake Bay, <i>BioScience</i> 51(10):843-52.</p> <p>D. Boesch. 2001. Editorial. <i>Pfiesteria</i> and the Chesapeake Bay. <i>BioScience</i> 51(10): 803.</p> <p>W. Kempton & J. Falk. 2000. Cultural Models of <i>Pfiesteria</i>: Toward Cultivating More Appropriate Risk Perceptions. <i>Coastal Mgt.</i> 28:273-285.</p> <p>M. Paolisso & E. Chambers. 2001. Culture, politics, and toxic dinoflagellate blooms: The anthropology of <i>pfiesteria</i>. <i>Human Organization</i> 60(1):1-12.</p>
Mar 7	Ciguatera poisoning and coral reefs	<p>Readings to be announced.</p> <p><i>Invited guest speaker:</i> Dr. Paul Bienfang, Oceanography Dept.</p>
Mar 14	Risks of Recreational Contact with Seawater; Coastal Water Quality Criteria; Beach Closures	<p>Readings to be announced.</p> <p><i>Invited guest speaker:</i> Dr. Roger Fujioka, UH Water Resources Research Center</p>

Mar 21	Integrated Coastal Management	Readings to be announced. <i>Invited guest speaker:</i> Prof. Kem Lowry, Dept. of Urban and Regional Planning, UHM
SPRING BREAK		
Part II:		Benefits from the Oceans
Apr 4	Drugs from the Sea: Oceans as a Source of Bioactive Molecules	C. Battershill et al. 2005, Marine biodiscovery: new drugs from the ocean depths. <i>Biologist</i> 52(2):107-114. W. Fenical. 2006. Marine Pharmaceuticals: Past, Present and Future, in <i>OCN</i> , pp. 110-119; and Toledo et al. 2006. Case Study: High Throughput Cultivation for Isolation of Novel Marine Microorganisms, in <i>OCN</i> , pp. 120-125.
Apr 11	Governing access to marine genetic resources; benefit-sharing & intellectual property rights	P.G. Pan. 2006. Bioprospecting: Issues and Policy Considerations, Hawaii Legislative Reference Bureau. http://state.hi.us/lrb/rpts06/biocon.pdf Other readings to be announced.
Apr 18	Marine Biodiversity and Human Health: oceans as source of model organisms for biomedical research	Marine Organisms as Models for Biomedical Research, in <i>FMTM</i> , pp. 83-95. M. Grosell & P.J. Walsh. 2006. Benefits from the Sea: Sentinel Species and Animal Models of Human Health, in <i>OCN</i> , pp. 126-133; and G.D. Bossart. 2006. Case Study: Marine Mammals as Sentinel Species for Oceans and Human Health, in <i>OCN</i> , pp. 134-37. Wells et al. 2004. Bottlenose dolphins as marine ecosystem sentinels: Developing a health monitoring system. <i>Ecohealth</i> 1:246-254.
Apr 25	Marine Biodiversity and Human Health	Readings to be announced. <i>Invited guest speaker:</i> Dr. Bruce Wilcox, Div. of Ecology and Health, UH Burns Medical School
May 2	Wrap-up: Institutional Responses to the OHH Linkage	US Comm'n on Ocean Policy 2004. "Connecting the Oceans and Human Health," in <i>An Ocean Blueprint for the 21st Century</i> , pp. 338-351. Other readings to be announced.