President’s Message – April 2009

Dear SRA-NE Members:

Our final event of the year is approaching. It is on the topic of climate change and risk assessment, and will be held on April 28, 2009 at 3:30 pm, at Harvard School of Public Health in the Kresge Building, Room G-2. The speakers at this event will be Jim Neumann of Industrial Economics, who will be giving a talk titled “Using a Risk Management Approach to Guide the Response to Climate Change: A Review of Key Concepts and New Applications”; and Mort Webster of MIT, who will be presenting on “Long-Term Greenhouse Gas Stabilization and the Risks of Dangerous Impacts”. The bios and abstracts for the presenters, along with directions to the event, are on the following pages.

As we reach the end of the year, we are also heading toward elections for President, Secretary, and Treasurer. If you are interested in running for any of these positions, or wish to nominate someone for one of these positions, please e-mail me at jilevy@hsph.harvard.edu by April 28, 2009 (or, come talk to me at the April event). Once we receive all nominations, we will prepare the roster of candidates and hold the election, with voting occurring until May 15, 2009. If you have not previously been involved in the leadership of SRA-NE, but are generally curious about what it involves, please feel free to contact me or the other officers to learn more about roles and responsibilities.

Jon Levy
Climate Change in a Risk Assessment/Risk Management Framework

Presentations

Using a Risk Management Approach to Guide the Response to Climate Change: A Review of Key Concepts and New Applications

James Neumann, Industrial Economics

Long-term Greenhouse Gas Stabilization and the Risks of Dangerous Impacts

Mort Webster, Massachusetts Institute of Technology

Location

Harvard School of Public Health
Kresge Building Room G-2
677 Huntington Ave.
Boston, MA 02115

Please RSVP by Monday, April 20th to Jon Levy (jilevy@hsph.harvard.edu). We need to know the number of attendees to order refreshments and to give your information to the guard’s desk.

Quoting the IPCC AR4 Summary for Policymakers of the Synthesis Report, "Responding to climate change involves an iterative risk management process that includes both adaptation and mitigation and takes into account climate change damages, co-benefits, sustainability, equity, and attitudes to risk." Focusing on risk broadens the perspective beyond “high confidence” vulnerabilities and can incorporate the truth that timing is important. When we know a lot about both probability and consequence, “expected value” of risky outcomes can be used to communicate information to decision-makers – this is the approach used in most benefit-cost analyses. Risk management approaches, on the other hand, are useful when we need to look at probabilities and consequences in greater detail – especially when consequences are non-linear with respect to exposure and/or exposure is non-linear with respect to the driving forces. In this talk, based on work jointly pursued with Gary Yohe of Wesleyan University, I will review some fundamental concepts of a risk management approach as applied to risks of climate change, and present results of a few applications of the approach in the US, Europe, and Southeast Asia.

Mort Webster. *Long-Term Greenhouse Gas Stabilization and the Risks of Dangerous Impacts*

A critical issue in considering a response to global climate change is the long-term stabilization target for greenhouse gas concentrations. Consensus on a long-term goal would guide negotiations and decisions about near-term actions. However, analysis to date on the costs and impacts of various stabilization levels have neglected the uncertainties in the economic and physical earth systems. This study presents a formal uncertainty analysis from a Monte Carlo simulation of an integrated economic and earth system model of intermediate complexity. We present the uncertainty in projected climate impacts under five scenarios, one with no policy and four that stabilize greenhouse gas concentrations at different levels. We show that although the effect of more stringent long term targets is nearly linear in its effect on median projections, the effect on the probability of extreme outcomes is highly nonlinear. By framing the uncertainty as odds of exceeding a selected threshold, we show for example that the odds of exceeding a global mean surface temperature increase over the next century of 4°C are 17 in 20 under No Policy, and fall to 1 in 4, 7 in 100, 1 in 400, and less than 1 in 400 under global emissions constraints that stabilize CO₂ concentrations at approximately 750, 650, 550, and 450 ppm, respectively. We present similar odds for other global temperature thresholds, as well as for thresholds for total sea level rise.
Biographical Sketches of Presenters

James Neumann is a Principal at Industrial Economics (IEc) in Cambridge, MA. He has over 20 years of consulting experience, mainly for government clients, and specializes in applied environmental economics and policy analysis. A large part of his practice is dedicated to analyzing the impacts of climate change in the United States. For EPRI, Mr. Neumann managed a multi-faceted research effort to assess the economic impact of climate change on agriculture and forestry, coastal resources, recreation, water resources, energy, and commercial fishing. He co-edited a book on the research, *The Impact of Climate Change on the US Economy*, published by Cambridge University Press in 1999. More recently, he is a contributing author to EPA Climate Change Science Program, Synthesis and Assessment Products 4.6, *Effects of Climate Change on Human Welfare*, and 4.1, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region*. He is a recognized expert in the economic impacts of sea-level rise and has co-authored, with Gary Yohe of Wesleyan, a number of works on US SLR impacts including the Pew Center on Global Climate Change’s report *Sea-level Rise & Global Climate Change* and numerous articles for such journals as *Climatic Change*. His recent and current work includes assessment of the threats and needs that multi-dimensional climate change imposes for public infrastructure and presenting options for enhancing adaptive capacity through public sector investments in physical, planning, and human resources (for RFF); conducting a US national assessment of the impact of climate change on water resources and drought risk, using an innovative spatial risk management approach to characterize the benefits of greenhouse gas control programs; and developing improved tools for USEPA to estimate economic effects of sea-level rise and storm surge risks associated with climate change.

Mort Webster is an Assistant Professor of Engineering Systems at MIT, with a focus on energy and environmental systems. Prof. Webster specializes in risk analysis, uncertainty analysis, and decision-making under uncertainty. He has published numerous peer-reviewed articles in energy and environmental science, economics, and policy, and has served on several national and international panels, including the U.S. Climate Change Science Program. Current research projects include risk tradeoffs in long-term climate targets, modeling technological change as a stochastic process, evaluation of cost-containment provisions for climate policy under uncertainty, integrated economic/energy/chemistry modeling for regional air quality policy design, and stochastic dynamic modeling of the electric power system focusing on the integration of intermittent renewable generation. Prof. Webster is active in several research centers at MIT, including the Center for Energy and Environmental Policy Research (CEEPR), the Joint Program on the Science and Policy of Global Change, and the MIT Energy Initiative. Prior to returning to MIT, Prof. Webster was an assistant professor of public policy in the Department of Public Policy at the University of North Carolina at Chapel Hill. He received a Ph.D. (2000) in Engineering Systems and a M.S. (1996) in Technology and Policy from MIT, and a B.S.E. (1988) in Computer Science and Engineering from the University of Pennsylvania.
GETTING TO THE EVENT

Directions to Harvard School of Public Health: http://www.hsph.harvard.edu/about/location-and-directions/longwood-campus-directions/index.html

- **From the MBTA Subway (on foot)** – The school is directly across from the Brigham Circle Green Line (E) stop

- **Driving directions**
  
  *From North or South of Boston:* Take I-93 North/South to Exit 26 (Storrow Drive). Follow Storrow Drive approximately 2.5 miles to Kenmore Square/Fenway exit (on left). The exit ramp forks, stay to your right. Take right at first light into Kenmore Square. Take leftmost fork at second light onto Brookline Avenue. Follow Brookline Avenue approximately 1 mile and through a major intersection (Beth Israel Hospital will be on the left). Watch for blue and white Longwood Medical area signs. Take left on Longwood Avenue and a right onto Huntington Avenue.

  *From West of Boston:* Take I-90 to exit 18. Follow Storrow Drive eastbound to Kenmore Square/Fenway exit. Follow directions above.

- **Once you arrive at HSPH**
  
  *Parking:* There are a limited number of metered parking spaces available on Huntington Avenue in front of the HSPH, as well as on adjacent streets. There is also limited visitor parking, and/or parking lots.

  *Room location:* Enter through the entrance to the Kresge Building at 677 Huntington Ave. After going past the guard’s desk, turn right and take the stairs down one floor. Turn left, and Room G-2 will be on the right-hand side.