The Society for Risk Analysis Presents Research Solidifying the Need for Reformed Climate Policies

MCLEAN, Va. (Nov. 28, 2017) - Scientists expect climate change will lead to increasingly negative consequences for society, from rising sea levels to more frequent heatwaves. Data shows there has been an increase in weather-related disasters around the world in recent years. These disasters cause devastating physical damage to communities, but these aren’t the only risks climate change poses.

Four studies presented at the 2017 Society for Risk Analysis (SRA) Annual Meeting will conduct a critical review of approaches scientists are using to characterize the impacts of climate change and assess the resulting economic damages. Ultimately, these researchers conclude that the current state of climate policy needs to be revaluated based on most recent research. The presentations will take place during the Modeling the Economic Aspects of Climate Change: A Critical Review of the State of the Science symposium on Monday, Dec. 11, from 1:30-3 p.m. at the Crystal Gateway Marriott in Arlington, Virginia.

Articles about each of the climate change presentations being held at the 2017 Annual Meeting are featured in Risk Analysis: The International Journal, in hopes they will help influence federal regulations and climate policy. Estimating what economic losses will result from climate change is important for those making decisions about policies and climate risk management. This process shows how the benefits of reducing greenhouse gas emissions stack up against costs, as well as the value of using resources on climate mitigation relative to other social investments.

One of the studies focuses on evaluating ways to improve the estimation of economic damages from greenhouse gas emissions. Currently the main form of estimating damages from climate change is through the Social Cost of Carbon (SCC). Put simply, the social cost of carbon is a dollar estimate of the future damages from droughts, sea level rise, heat waves and other climate impacts brought by each ton of carbon dioxide released to the atmosphere. This estimate should include a comprehensive set of damages, such as risks to human health, changes in labor productivity and flooding impacts, as well as measures of social stability such as crime, social unrest and violent conflict.

The SCC is increasingly being used to explore trade-offs between the costs and benefits of climate change mitigation. Scientists estimate the SCC by using models that represent our society, the world’s climate and the ways they interact — ultimately combining physics and economics.

The SCC also allows countries with high carbon emissions to purchase the right to release more carbon dioxide into the atmosphere from countries that have lower carbon emissions. By calculating a cost in today's dollars for these impacts, nations can put cleaner energy sources on a more level playing field with fossil fuels. Wind and solar farms, nuclear power and energy conservation efforts are often less expensive than harmful alternatives when the damage potential of fossil fuels is considered.

Estimates of the SCC vary because researchers assume different things about future emissions, how the climate will respond and the way we value damages. This means that the SCC could be lower if emissions are tightly controlled, whereas it will be higher if they are not. The SCC is meant to summarize in a single number a vast array of information from scientific and economic research and modeling. It is admittedly an oversimplification of a complex underlying reality, researchers say.
The study will provide a comprehensive update of the SCC estimation process. This broad effort will incorporate advances, such as socioeconomic projections, climate system modeling and climate damage estimation to generate an updated SCC estimate.

Current modeling approaches factor in the relationships between climate variables, such as temperature change and economic welfare. This study will describe the opportunities and challenges associated with integrating research advances into decision-support integrated assessment models.

In their presentation, researchers will outline the existing set of model damage components. In addition, the presentation will provide focus specifically on three areas: energy usage, human health and agriculture.

With revised estimates in hand, agencies can determine if the benefits from efforts to curb carbon pollution, such as standards calling for more efficient appliances or vehicles are worth the investment. Policymakers and regulators in several states, including New York, Minnesota, Illinois and Colorado are using the SCC to measure and reduce carbon dioxide impacts from their power grids. Some are using it to compensate rooftop solar panel owners who feed low-carbon power in the grid, while others use it to incentivize nuclear power and renewable energy, with all efforts aimed at reducing planet-warming greenhouse gas emissions.

If agencies stop using the SCC, it would prevent the government from using the best available science to inform their decisions and from holding polluters accountable for damages caused by carbon dioxide emissions. Since any damage that greenhouse gas emissions may inflict on global climate systems is independent of the source of the emissions, it makes sense to adopt a unified SCC across government programs.

These studies will be presented during a symposium at the 2017 SRA Annual Meeting at the Crystal Gateway Marriott in Arlington, Virginia.

- Monday, Dec. 11, 2017, 1:30 p.m.: An Assessment of Opportunities to Improve the Climate Damage Functions in the DICE, FUND, and PAGE Integrated Assessment Models
- Monday, Dec. 11, 2017, 1:50 p.m.: Quantifying Economic Risks from Climate Change: Research Opportunities and Challenges
- Monday, Dec. 11, 2017, 2:10 p.m.: Current Approaches to Assessing Risks of Sea-level Rise
- Monday, Dec. 11, 2017, 2:30 p.m.: Projecting Violence and Unrest Under Climate Change

*Elisabeth Gilmore from Clark University, Kevin J. Rennert, Ph.D., from Resources for the Future and Robert Kopp from Rutgers University will be available for media interviews at the 2017 SRA Annual Meeting. Please contact Britania Weinstein at britania@bigvoicecomm.com for all interview requests.

###

About SRA

The Society for Risk Analysis is a multidisciplinary, interdisciplinary, scholarly, international society that provides an open forum for all those interested in risk analysis. SRA was established in 1980 and has published Risk Analysis: An International Journal, the leading scholarly journal in the field, continuously since 1981. For more information, visit www.sra.org.