Economic Analysis, Science, and Policy
A Symposium hosted by the Social Science Affinity Group
on behalf of the AAAS S&T Policy Fellowship Program

Friday, April 25
AAAS Headquarters

Summary
A one-day event on what economic analysis is, how it relates to physical and natural sciences, and how it informs federal policy. The event is jointly organized and sponsored by US EPA and AAAS Social Science Affinity group and is open to current and former AAAS fellows.

Description
Economic analysis, particularly benefit-cost analysis (BCA), is one of the dominant paradigms for evaluating regulatory decisions. Benefit-cost analysis, however, depends heavily on scientific information from a wide variety of disciplines in order to assess effects on health, well-being, and the natural environment. Scientists across the federal government are likely to encounter benefit-cost analysis and to find economists drawing upon their scientific findings as potential regulations are evaluated.

This one day event provides an introduction to economic analysis for policy decisions, including how benefit-cost analysis is performed and applied to policies, and how economics informs policy design. While methods introduced will be widely applicable, many of the case studies will be drawn from environmental policy.

The sessions will emphasize the linkages between economics and physical and natural sciences. The presentations will draw upon real examples to highlight these issues, providing AAAS fellows with a more complete understanding of how their work relates to economic evaluation of regulatory alternatives.

In break-out sessions attendees will participate in and discuss economic simulations that highlight key concepts. Attendees should bring their own computer to participate in the economic simulations.
Speakers

**Chris Dockins, National Center for Environmental Economics, US EPA**

Chris Dockins is a Senior Economist with the National Center for Environmental Economics at the U.S. Environmental Protection Agency. He is a contributing author for EPA’s Guidelines for Preparing Economic Analyses and his work focuses on benefits analysis, particularly for human health risks. From 2006 to 2010 he was the Director of NCEE’s Science Policy and Analysis Division. Chris also teaches benefit-cost analysis and environmental economics at Johns Hopkins University. He received his PhD in Economics from Duke University in 1996.

**Charles Griffiths, National Center for Environmental Economics, US EPA**

Charles Griffiths is a Senior Economist in the U.S. Environmental Protection Agency’s National Center for Environmental Economics. He earned his PhD in Economics from the University of Maryland and a Masters in Economics from the University of Zimbabwe. His current areas of research include work on climate change and the social cost of carbon, valuing health impacts from formaldehyde emissions, benefits from water quality improvements in the Chesapeake Bay, and the economics of non-compliance. He has also worked on the evaluation of voluntary programs, health risks and benefits assessment, and valuation of water quality improvements. He has worked on a number of regulatory actions, including the proposed and final rule for Concentrated Animal Feeding Operations, the final Clean Air Mercury Rule, and the proposed Formaldehyde Standards for Composite Wood Products. Prior to joining the EPA, Dr. Griffiths worked at a macroeconomic forecasting group at the University of Maryland, for the World Bank’s Development Economic Research Group, and taught at Gettysburg College. He served as a Senior Economist at the Council of Economic Advisers and currently teaches evening and summer classes at Johns Hopkins University and the University of Maryland.

**Nathanial Higgins, U.S. Social and Behavioral Sciences Team, General Services Administration**

Nathaniel Higgins is a fellow with the U.S. Social and Behavioral Sciences Team. He also teaches econometrics at the Johns Hopkins School of Advanced International Studies and Market Design at the University of Maryland. In his research, Nathaniel uses experimental and computational economics to study problems in market design, especially problems related to the design of conservation programs. He has published articles on the design of auctions, behavioral economics, and
commodities prices, and consulted in the design of auctions for spectrum and airport landing slots. His research has appeared in outlets such as the American Journal of Agricultural Economics, the Canadian Journal of Agricultural Economics, the European Journal of Agricultural Economics, and Environmental Science and Technology.

Robin Jenkins, National Center for Environmental Economics, US EPA

Robin R. Jenkins is a Senior Economist in the U.S. Environmental Protection Agency’s National Center for Environmental Economics. Her work focuses on the economics of solid and hazardous waste and contaminated site cleanup. Recent projects include a property value analysis of cleanup activities at high profile leaking underground storage tanks; planning a workshop to advance the theory and methods to better understand the employment effects of environmental regulation; and developing EPA’s *Handbook on the Benefits, Costs, and Impacts of Land Cleanup and Reuse*. Dr. Jenkins provides advice and support regarding economic analysis to the Office of Solid Waste and Emergency Response at EPA. Currently she is participating in an effort to examine the costs, benefits, and impacts of several proposed and final OSWER regulations. Her research has appeared in peer-reviewed academic journals. Dr. Jenkins received her PhD in Economics from the University of Maryland.

Kelly Maguire, National Center for Environmental Economics, US EPA

Kelly Maguire is an Economist in EPA’s National Center for Environmental Economics. She joined EPA in 1999 after completing her Ph.D. in Economics at Georgia State University. Her areas of expertise include environmental justice and incorporating distributional effects into regulatory analysis, as well as valuing health risk reductions from environmental policy.
Agenda

8:30-9:00 Registration (Continental Breakfast)

9:00 - 9:15 Welcome and Introductions

9:15 – 10:00 Core Principles of Economic Analysis (Charles Griffiths)
This session provides an overview of the economic approaches to policy analysis, including benefit-cost analysis.

10:00 – 10:45 Benefits Analysis Tools and Methods (Chris Dockins)
Prices are an indicator of value, but policies often provide things that are not priced directly in markets, such as health, safety, or environmental quality. This session provides insights into the tools and methods economists have developed to estimate values, or “shadow prices,” that can then be used in benefit-cost analyses.

10:45-11:00 Break

11:00-11:40 Breakout Session: Economic Simulation 1
Attendees should bring their own computer to participate in the economic simulations.
Participants are divided into groups. The groups will participate in economic simulations that feature key economics concepts discussed in the morning sessions. The groups will then be brought back together to describe and discuss the simulation outcomes.

11:40-12:00 Pick up lunch and return to breakout session room to participate in the second simulation.

12:00 – 12:30 Breakout Session: Economic Simulation 2

12:30- 1:00 Discussion of Economic Simulation Results

1:00 - 1:45 Analysis of Costs, Economic Impacts, and Employment (Robin Jenkins)
Key concerns for policy making are the total costs, who bears these costs, and, particularly in today’s economic environment, how policies affect employment. This session describes the framework and tools used to characterize these effects in both quantitative and qualitative terms.

1:45 – 2:30 Distributional Analyses (Kelly Maguire)
Benefit-cost analysis is generally aimed at assessing the aggregate impacts of policy, but economic tools can separately identify and assess how different groups are affected. This session examines these tools and how the distribution of policy impacts can be described economically.

2:30 – 2:45  Break

2:45 – 3:30  Behavioral and Experimental Economics (Nathaniel Higgins)
Behavioral economics couples research on decision making with economic theory to improve our understanding of what motivates people to make particular choices. Experimental methodologies are frequently used in behavioral economics, and are increasingly being used in the policy process. This session describes the current state of the science, how experimentally-validated behavioral findings can be used in policy making, and introduces participants to a recent federal initiative on applying these findings in field tests.

3:30 – 4:00  Final Thoughts and Concluding Discussion
This final session is for an open discussion, including remaining questions for any of the speakers.