



RFF WELCOMES TWO NEW BOARD MEMBERS

KATHRYN S. FULLER



Kathryn S. Fuller is the most recent addition to RFF's board of directors. Fuller is the president and chief executive officer of the World Wildlife Fund (WWF)-US, a position she has held since February 1989. She served previously as executive vice president, general counsel, and director of WWF's public policy and wildlife trade monitoring programs.

Before joining WWF in 1983, Fuller practiced law with the U.S. Department of Justice, first in the Office of Legal Counsel, then in the Land and Natural Resources Division, where she headed the Wildlife and Marine Resources Section.

Fuller received a bachelor of arts degree from Brown University and a juris doctorate from the University of Texas. She pursued graduate studies in marine, estuarine, and environmental science at the University of Maryland. Her field work includes wildebeest behavioral studies in Tanzania and coral reef studies in the Caribbean.

She has received several honorary doctorates and awards, including a place on the U.N. Environment Programme's Global 500. Fuller serves on several nonprofit boards for organizations

that include Brown University and the Ford Foundation. She is a member of the Council on Foreign Relations.

Fuller's work at WWF has emphasized innovative conservation methods such as debt-for-nature swaps and environmental trust funds, and she has advocated for the inclusion of women in grassroots conservation programs and for the design of projects that provide both environmental and economic benefits. During her 13 years as president and chief executive officer, WWF-US has doubled its membership, tripled its revenue, and expanded its presence around the globe.

JOAN Z. (JODIE) BERNSTEIN



Jodie Bernstein recently completed six years as director of consumer protection at the Federal Trade Commission (FTC). During her tenure, the agency targeted fraudulent operators of commercial web sites; initiated a leading coordination program in the government's effort to attack identity theft and reported to Congress on issues of Internet privacy.

Prior to her work with FTC, Bernstein served for several years at

the Environmental Protection Agency (EPA)—first as general counsel and then as assistant administrator for enforcement of EPA's regulatory and permit programs. Following her service as the general counsel of the Department of Health and Human Services, she joined the Washington law firm Wald, Harkrader and Ross's environmental practice representing Pfizer and Merck in several Clean Water Act matters and Westinghouse Electric in a major Superfund case in Indiana. She also represented Waste Management Inc. in connection with several RCRA and Superfund matters at the federal and regional levels.

For the next five years, she was the general counsel of Chemical Waste Management, the country's largest hazardous waste company. She subsequently served as a senior vice president of Waste Management Inc., the parent company, where she developed and supervised the company's environmental compliance and ethics programs.

Bernstein has been recognized as a spokesperson on consumer, environmental, and health and safety issues. As such, she received several awards, including the Good Housekeeping Award, the National Consumer League Trumpeter Award and an Excellence in Government Service Award from the National Association of Women Executives in State Government.



RFF'S ACADEMIC AWARDS, 2002-2003

GILBERT WHITE FELLOWS

Thomas Lyon and Timothy Considine won RFF's 2002-2003 Gilbert White Postdoctoral Fellowships. Awarded annually since 1980 in honor of the retired chairman of the RFF Board, the fellowships support postdoctoral research in the social or policy sciences in areas related to natural resources, energy, or the environment.

Lyon, associate professor and Bank One faculty fellow in the Department of Business Economics and Public Policy at Indiana University, will write a book, *Corporate Environmentalism and Public Policy* (to be published by Cambridge University Press) and study the effect of regulation on investments in the electric power industry, particularly mechanisms for inducing investment in transmission.

Considine, director of the Center for Economic and Environmental Risk Assessment and a professor in the Department of Energy, Environmental, and Mineral Economics at Pennsylvania State University, will complete a book on the industrial ecology of steel (initially funded by the National Science Foundation) and work on two additional topics: the economic value of hurricane forecast information and an empirical paper on spot and forward pricing of sulfur dioxide pollution permits.

JOSEPH FISHER DISSERTATION AWARDS

In honor of the late RFF president, the Joseph L. Fisher Dissertation Awards were given to support the following students in their final year of study:

Zuhre Aksoy, Department of Political Science, University of Massachusetts, for her study of how farmers adapt to changing pest, pathogen, and environmental conditions under different national and international institutional regimes; **Diji Chandrasekharan Behr**, Department of Natural Resources, Cornell University, for her dissertation on the role of commercialization initiatives in promoting cultivation of nonwood forest products in order to advance forest conservation; **Sueng-Rae Kim**, University of Texas-Austin, whose thesis focuses on the development and application of theoretical/empirical general equilibrium modeling to evaluate policy interactions affecting economic growth in a world with other existing policy distortions; and **Fumie Yokata** of Harvard University, whose research develops a value-of-information model to understand and measure the usefulness of various toxicological testing requirements of the U.S. Environmental Protection Agency under the pilot phase of the Voluntary Children's Chemical Evaluation Program.

WALTER O. SPOFFORD MEMORIAL INTERNSHIP

The Walter O. Spofford Memorial Internship is for graduate students with an interest in Chinese environmental issues. **Chunxiang Li**, from the Department of Public Policy and Administration, University of Massachusetts at Amherst, will work with RFF researchers on issues related to China and the World Trade Organization.

RFF FELLOWSHIPS IN ENVIRONMENTAL REGULATORY IMPLEMENTATION

RFF awarded its new fellowship for the pursuit of scholarly research documenting the implementation and outcomes of environmental regulations to three winners. **Leonard Shabman**, professor, Department of Agricultural and Applied Economics at Virginia Tech University, will research the origins, implementation, and consequences of wetlands provisions in the Clean Water Act. **James T. Hamilton**, associate director of the Sanford Institute of Public Policy and Oscar L. Tang Family Associate Professor of Public Policy, Economics, and Political Science at Duke University, plans to study the origins and impact of the Toxics Release Inventory Program. **Roger A. Sedjo**, senior fellow, RFF, will focus on implementation and outcomes under the Plant Protection Act as related to the commercialization of transgenic trees for the production of timber and industrial wood.



RFF PRESS UPDATE

Through RFF Press, RFF supports the publication of original, high-quality books about a broad range of important issues in environmental and natural resource policy. During the winter and spring, we released four new books.

One of RFF's most notable books of the past decade was *A Shock to the System*. Published in 1996, the book offered a history of electricity policy, with a rigorous analysis of various proposals for restructuring the industry and increasing the role of competition. Not surprisingly, the most anticipated of RFF's recent publications is a follow-up work: *Alternating Currents: Electricity Markets and Public Policy*, by Timothy J. Brennan (RFF), Karen L. Palmer (RFF), and Salvador Martinez (University of Florida). *Alternating Currents* examines the difficulties involved in introducing market competition and builds on experiments, experiences, and lessons in California, Pennsylvania, Chile, and the United Kingdom. The authors consider what makes electricity a unique resource, and present the potential conflict between competition and reliability as the most pressing of long-term concerns about the transformation of the electric power industry.

The environmental challenges of developing countries are becoming a frequent focus of RFF books. *Which Way Forward? People, Forests, and Policymaking in Indonesia*, which includes perspectives

from 26 social and natural scientists who have had extensive experience in Indonesia, is one such book. Indonesia has some of the world's most spectacular and biodiverse forests. But the economic and political turmoil of the past several years have had dramatic consequences for both the health of the nation's forests and the well-being of its human inhabitants. The contributors tell a complex story about the interactions of politics, economics, ethnic conflict, fire, and weather. Edited by Carol J. Pierce Colfer and Ida Aja Pradnja Resosudarmo, the book is RFF's second collaboration with the Center for International Forestry Research, headquartered in Bogor, Indonesia.

In *Pollution Control in East Asia*, Michael Rock, an economist at Hood College, brings his academic experience and his work for Winrock International and the World Bank to a study of the economic and political factors associated with efforts to reduce industrial pollution in China (including Taiwan), Indonesia, Malaysia, Singapore, and Thailand. In evaluating the results of pollution control policies, Rock looks at the relevant historical and political context for each economy, the pressures placed on its political system from domestic and international sources, and the influence of ongoing trends in East Asia for democratization and economic liberalization.

The publication of books about

developing countries brings an obligation to disseminate their content where it can be most directly applied. *Which Way Forward?* and *Pollution Control in East Asia* mark RFF's first copublications with the Singapore-based Institute of Southeast Asian Studies, which will distribute the books throughout East and South Asia. In addition, an Indonesian-language edition of *Which Way Forward?* will be published in the summer of 2002 by Yayasan Obor, a Jakarta institute that promotes cultural growth, democratic values, and human rights through scholarly publishing.

RFF's fourth new book looks at the participants and process involved in making environmental decisions. Increased public participation in the policymaking process sounds virtuous, but does it have a practical, positive consequence for environmental management? Focusing on the United States, *Democracy in Practice: Public Participation in Environmental Decisions* considers 239 cases from 30 years of public involvement in the policymaking process. Thomas Beierle (RFF) and Jerry Cayford (RFF) provide a concrete assessment of the achievements of public participation, demonstrating the value it has in education and in reducing the conflict and mistrust that often plague environmental issues.





EMERGING PUBLIC HEALTH AND ENVIRONMENTAL CONCERNS CALL FOR NEW WAYS OF THINKING

Two public health and environmental problems once thought to be intractable—antibiotic resistance and fine particulate matter in the air—are emerging as serious public health and environmental concerns. Solutions will not be easy to find without rigorous, formal analysis and the cooperation of stakeholders from scientific disciplines, government, and industry, according to the economists and policy experts who spoke at two panel sessions during RFF’s Spring Council meeting held in April.

John Graham, administrator of the Office of Management and Budget’s Office of Information and Regulatory Affairs, said, “We face an enormous challenge in gauging the severity of an emerging health threat.” Sometimes there may be widespread public concern but little historical basis for determining the magnitude of the threat—examples include antibiotic resistance, bioterrorism, and mad cow disease, he said. In order to perform good risk assessment of these emerging threats, “we need much better information about the most susceptible groups in society.”

A LOOMING THREAT

A challenging dimension to solving the problem of antibiotic resistance centers on the question of incentives. In the field of resource economics, antibiotic resistance would be considered

a fundamental common property problem, said Ramanan Laxminarayan, an RFF fellow. Even though the available pool of antibiotics is dwindling, consumers, cattle and chicken producers (which use the drugs for promoting growth), and drug manufacturers have no formal incentive to change their own current behavior, he said.

There are many reasons why antibiotic resistance is increasing, Laxminarayan said. Antibiotics are overused and often inappropriately used. A small number of drugs are widely marketed, with few alternatives under development, and bacteria quickly evolve and become resistant to them. The result is a looming public health threat from increasing strains of drug-resistant pneumonia and tuberculosis.

According to Mark Goldberger, acting director of the Food and Drug Administration’s Office of Drug Evaluation, there are existing tools to help foster the development of new drugs in the form of formal and informal FDA guidance, early assessments of a drug’s efficacy (done for certain AIDS drugs), and exclusivity for “orphan” drugs developed for small patient populations.

“But there’s more that we can do,” Goldberger said. “We can reduce the size of drug trials, address the tradeoffs between a drug’s effectiveness and the enormous resources required to perform a trial, and evaluate trial data on qualitative and not just quantitative aspects.”

In funding new drug research, antibiotics compete unfairly against drugs used to treat chronic diseases,



Raymond Kopp, RFF; Daniel Greenbaum, Health Effects Institute; Alan Krupnick, RFF; and Jeffrey Holmstead, U.S. Environmental Protection Agency



where there's an ongoing revenue stream, said Bert Spilker, senior vice president for scientific and regulatory affairs at PhRMA, an industry trade association. To tip the balance, he said, manufacturers need incentives, including accelerated FDA approval, patent extensions to allow companies more time to develop new drugs, and more fundamental research into the problem of resistance.

LEARNING LESSONS

The government tends to treat all fine particulates in the air as equally toxic, regardless of their precise diameter or chemical composition “because it’s analytically simple even though it’s not biologically plausible,”

said Graham. The growing body of scientific evidence about particulate matter (PM) “could play an important role in helping us set good priorities and do effective cost-benefit analyses,” he said.

Since the PM_{2.5} standard was established in 1997 by the U.S. Environmental Protection Agency, a substantive body of field data has been developed that compares morbidity and mortality rates against air pollution levels. (PM_{2.5} refers to particle size.) The lessons to be learned from those data point toward curbing sulfur dioxide (SO₂) emissions as the most effective means for cutting particulate matter levels, but there are still many other unanswered questions, the experts said.

The president’s proposed “Clear Skies Initiative”—which will cut power plant emissions of nitrogen oxides (NO_x), SO₂, and mercury, using a market-based approach—should yield substantive cuts, they agreed.

Dan Greenbaum, president of the Health Effects Institute, said poorer people (as defined by educational level, a marker for income) tend to suffer greater health impacts because they often work outdoors and get more exposure. But confounding issues, such as diet and access to health care and air conditioning, do have to be considered, he said.

When everything else is controlled for, there’s roughly a 4 to 7% increase



John Graham, Office of Management and Budget (Right): Amy Schaffer, American Forest and Paper Association



All photos: Michael Carpenter



in mortality for a 10% increase in micrograms per cubic meter in ambient concentration of fine particles, Greenbaum said. But in the long run, there are questions that still need to be answered, like is there a dose response? when do effects occur? and are all particles equal? “We’re still learning, about mechanism and effect,” he said. “It’s unlikely that we’ll find one magic bullet—there are too many factors to account for.”

Alan Krupnick, an RFF senior fellow, explained that “an enormously complicated interaction” occurs when SO₂ and NO_x emissions enter the atmosphere, generating sulfates (from SO₂), nitrates (from NO_x), plus other compounds such as ozone (which derives from the interaction of NO_x and hydrocarbons).

The challenge is to sort out where the most efficient and cost-effective PM_{2.5} reductions can be found, Krupnick said. The emerging evidence shows that cutting SO₂ is about 10 times more effective per ton than cutting NO_x. Reducing NO_x in certain cases “could actually increase sulfates, which are pretty potent to human health,” he said.



Victoria J. Tschinkel, a member of the RFF Board of Directors



Gwen Ifill, moderator of “Washington Week in Review” and guest speaker at the RFF Council Dinner



Ichiro Sakai and David Raney, both from American Honda Motor Co.