

# **The Malaria-DDT Dilemma: Science, Policy, and Law**

A Research Conference Sponsored by Duke University:  
Integrated Toxicology Program and Superfund Basic Research Center  
Center for Environmental Solutions  
Undergraduate Programs in Environmental Sciences and Policy

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## **Speaker and Moderator Biographies**

### **Nick Anstey, Ph.D.**

#### **Menzies School of Health Research, Darwin, Australia**

Nick Anstey is Associate Professor of Medicine and Head of the International Health Program at Menzies School of Health Research, Darwin, Northern Australia. He has previously worked on malaria studies with the British MRC in The Gambia in West Africa, and then with Duke's Clinical Research Unit in Tanzania in East Africa in 1994-95. For the last 6 years he has been working with Indonesian colleagues on studies to improve malaria diagnosis and treatment in Papua. He has undertaken malaria advisory missions to East Timor for WHO and to the Philippines for Australian Agency for International Development. Anstey received his Ph.D at the University of Western Australia and his DTM & H at the Royal College of Physicians.

### **Amir Attaran, Ph.D., LL.B.**

#### **Harvard University**

Amir Attaran is a cell biologist and immunologist (D. Phil, Oxford) and a lawyer (LL.B., Vancouver) working in the fields of public health and international development. He is currently a researcher at Harvard University, Kennedy School of Government. His recent peer-reviewed publications (2001-02) include articles in the *Lancet*, *Journal of the American Medical Association*, *Nature Medicine*, *British Medical Journal*, *Yale Journal of International Law*, and *Fordham IP Law Journal*. He has been a consultant to UNDP, WHO, Medecins Sans Frontieres, and several developing country governments in Africa and South America.

### **Rich DiGiulio, Ph.D.**

#### **Duke University**

Rich DiGiulio serves as Director of Duke University's Integrated Toxicology Program and Superfund Basic Research Center. His research is concerned with basic studies of mechanisms of contaminant metabolism, adaptation and toxicity, and with the development of mechanistically-based indices of exposure and toxicity that can be employed in biomonitoring. The long-term goals of this research are to bridge the gap between mechanistic toxicological research and the development of useful tools for environmental assessment, and to elucidate linkages between human and ecosystem health. The bulk of Dr. DiGiulio's work employs a comparative approach with aquatic animals, particularly fishes, as models. Of particular concern are mechanisms of oxidative metabolism of aromatic hydrocarbons, mechanisms of free radical production and antioxidant defense, and mechanisms of chemical carcinogenesis, developmental perturbations and adaptations to contaminated environments by fishes.

**Vance Fowler, Jr., M.D., M.H.S.**  
**Duke University Medical Center**

Vance Fowler graduated cum laude from Duke University, then attended medical school at the University of North Carolina. After spending a year studying falciparum malaria in the highland rainforests of Tanzania, he returned to Duke University and completed residency in internal medicine, fellowships in infectious diseases and health services research, and certification in clinical tropical medicine. He is currently Assistant Professor of Medicine within the Division of Infectious Disease at the Duke University Medical Center. Dr. Fowler's research interests focus on the question, "What makes some patients with bacteremia do poorly while others do well?" His immediate research objective is to identify important determinants of poor clinical outcome among patients with both gram positive (*S. aureus*) and gram negative (enterobacteriaceae) bacteremia, utilizing a large cohort of well-characterized patients, corresponding bacterial bloodstream isolate, and host DNA and serum.

**Indur Goklany, Ph.D.**  
**U.S. Department of Interior**

Dr. Goklany currently works for the US Department of the Interior's Office of Policy Analysis. He has been writing books, monographs and papers for the past 25 years on natural resource and environmental issues ranging from air pollution, climate change, and biodiversity to sustainable development and the role of economic growth and technological change in creating, as well as solving, environmental problems. His latest book, written as an Independent Scholar, is "The Precautionary Principle: A Critical Appraisal of Environmental Risk Assessment," (Cato Institute, Washington, DC, 2001). This book provides a framework for applying the principle in situations where policies, actions or technologies might increase some risks while reducing others so that use of the PP does not inadvertently increase net risks to the environment or public health. It then employs that framework to evaluate policies related to DDT, genetically modified crops, and global warming. Any comments and views he expresses here are his alone and not necessarily those of the U.S. government or any of its units.

**Louis J. Guillette, Jr., Ph.D.**  
**University of Florida**

Louis Guillette is Distinguished Professor of Zoology and Associate Dean for Research in the College of Liberal Arts and Sciences at the University of Florida. Dr. Guillette received his doctorate in Comparative Reproductive Biology from the University of Colorado at Boulder in 1981. He is internationally recognized for his work in the field of comparative reproductive biology and developmental endocrinology, as well as his research examining environmental contaminants and reproductive/endocrine disruption in various wildlife species, and policy work in human public health. Dr. Guillette's recent work examines the effect of pollutant pharmaceuticals on wildlife.

**Randall A. Kramer, Ph.D.**  
**Duke University**

Randy Kramer is a professor of resource and environmental economics in the Nicholas School of the Environment and Earth Sciences and the Department of Economics at Duke University.

Before coming to Duke in 1988, he taught in the Department of Agricultural Economics at Virginia Polytechnic Institute and State University. He has also held visiting positions at IUCN-The World Conservation Union, the Economic Growth Center at Yale University, and the Indonesian Ministry of Forestry. He has served as a consultant to the World Bank and many international organizations. Dr. Kramer's research has focused on ecosystem valuation, water resource economics, and the economics of biodiversity and natural resource management in developing countries.

**Edward D. Levin, Ph.D.**  
**Duke University**

Ed Levin is an Associate Professor in the Department of Psychiatry and Behavioral Sciences at the Duke University Medical Center. He earned his M.S. in Psychology in 1982 and Ph.D. in Environmental Toxicology in 1984 at the University of Wisconsin. He has appointments in the Department of Pharmacology and Cancer Biology, Department of Psychological and Brain Sciences, the Nicholas School of the Environment and Earth Sciences and the Duke University Integrated Toxicology Program. Dr. Levin is President of the Behavioral Toxicology Society.

Dr. Levin's research interests concern behavioral toxicology and behavioral pharmacology. He is particularly concerned with drug and toxin effects on cognitive function. He has characterized the cognitive deficits from exposure to lead, PCB's, the pesticide chlorpyrifos and Pfiesteria piscicida. He and his collaborators have been working with a rat model of Pfiesteria-induced neurocognitive deficits.

**Matthew P. Longnecker, M.D.**  
**National Institute of Environmental Health Sciences**

Dr. Longnecker received a B.S. in biochemistry from Antioch College and an M.D. from Dartmouth Medical School. He completed a residency in internal medicine at Temple University Hospital in Philadelphia. After receiving a Sc.D. in epidemiology from Harvard School of Public Health, he was an Assistant Professor in the Department of Epidemiology at the University of California, Los Angeles, School of Public Health. Dr. Longnecker joined the NIEHS Epidemiology Branch in 1995 as a tenure-track investigator. He also serves as Adjunct Associate Professor in the Department of Epidemiology, School of Public Health, University of North Carolina at Chapel Hill. His research program is focused on the health effects of persistent organic pollutants, with particular interest in the effects of intrauterine exposure to persistent organic pollutants in relation to intrauterine growth, preterm birth, birth defects, neurological findings at birth, growth, neurodevelopment, intelligence, and hearing.

**Fumio Matsumura, Ph.D.**  
**University of California, Davis**

Dr. Matsumura received a Ph.D. in pesticides and related chemicals from the University of Western Ontario, London. He is currently Professor of Environmental Toxicology and Entomology at the University of California, Davis and editor of the Journal of Pesticide Biochemistry and Physiology.

The aim of Dr. Matsumura's research activities is to elucidate biochemical mechanisms of action of halogenated organic chemicals and to relate the results to their toxic expressions in various biological systems. The chemicals he works with are: polychlorinated dioxins, benzofurans,

biphenyls, chlorinated pesticides such as DDT, toxaphene, chlordane and hexachloro-cyclohexane isomers, benzoylureas, and some pyrethroids.

**Marie Lynn Miranda, Ph.D.**  
**Duke University**

Marie Lynn Miranda received her MA and Ph.D. in economics from Harvard University. She is the Gabel Associate Professor of the Practice in Environmental Ethics and Sustainable Environmental Management at Duke University's Nicholas School of the Environment and Earth Sciences.

Dr. Miranda's primary research is in resource and environmental economics. She has an extensive background in the biological functioning of lead, allergens, endocrine disrupting chemicals, and other human toxicants, as well as associated policy implications. Her work combines social science theory with environmental chemistry, toxicology, and ecology to develop better methods for policy application.

**Robert K. Musil, Ph.D., M.P.H.**  
**Physicians for Social Responsibility**

Robert Musil is Executive Director and CEO of Physicians for Social Responsibility, and Adjunct Professor in the School of International Service of American University. He holds degrees from Yale, Northwestern, and the Johns Hopkins School of Hygiene and Public Health. Dr. Musil helped launch PSR's environmental program in the early 1990's and has led PSR campaigns for: safe and affordable drinking water, clean air, and to prevent toxic pollution and global climate change. He also initiated PSR's U.S. Mexico Border Project in El Paso and Juarez, Mexico. He has represented PSR at international environment negotiations in Montreal, Kyoto, and Geneva and sits on the National Advisory Panel of the Center for Children and Environmental Health of Mt. Sinai Medical Center. He was recently made an Honorary Senior Fellow at the London School of Hygiene and Tropical Medicine and at Pembroke College, Cambridge. Dr. Musil is also a former award winning journalist who has produced, among many public radio and television documentaries, *One Blue Sky: Health and the Human Environment*.

**Kathryn Saterson, Ph.D**  
**Duke University**

Kathryn Saterson is the Executive Director of the Center for Environmental Solutions at Duke University. She also has an appointment as a Research Scientist in the Nicholas School for the Environment and Earth Sciences at Duke. Prior to joining Duke in 2001, she was the Director of the Environmental Management Center at the Brandywine Conservancy in Pennsylvania. From 1991-1999, Saterson was the Executive Director of the Biodiversity Support Program (BSP), a consortium of World Wildlife Fund, The Nature Conservancy, and the World Resources Institute. BSP used funds from the US Agency for International Development (USAID) to support biodiversity conservation programs in developing countries. She received her Ph.D. in biology, and M.S. in botany from the University of North Carolina at Chapel Hill, and B.A. from Williams College.

**Jonathan B. Wiener, J.D.**  
**Duke University**

A member of the Duke faculty since 1994, Prof. Wiener serves as Faculty Director of the Duke Center for Environmental Solutions, which he helped found in 2000. He is Professor of Law at Duke Law School, and Professor of Environmental Policy at the Nicholas School of the Environment & Earth Sciences at Duke. He is also a University Fellow of Resources for the Future (RFF) in Washington DC, and a member of the governing Council of the Society for Risk Analysis (SRA). In 1999 he was a visiting professor at Harvard Law School.

Prof. Wiener's work examines the interplay of science, economics, and law in addressing risks to human health and the environment. His writing includes *Risk vs. Risk: Tradeoffs in Protecting Health and the Environment* (Harvard Univ. Press 1995) (with John D. Graham); *Reconstructing Climate Policy* (AEI Press, forthcoming 2002) (with Richard B. Stewart); "Comparing Precaution in the U.S. and Europe," in the *Journal of Risk Research* (2002) (with Michael D. Rogers); "Precaution in a Multirisk World," in *Human and Ecological Risk Assessment* (Dennis Paustenbach, ed., John Wiley & Sons, 2002); "Global Environmental Regulation," in the *Yale Law Journal* (1999); and "Managing the Iatrogenic Risks of Risk Management" in the journal *Risk: Health Safety and Environment* (1998).

Before coming to Duke, Prof. Wiener served in both the first Bush and Clinton administrations, handling U.S. and international environmental policy at the White House Council of Economic Advisers, White House Office of Science and Technology Policy, and U.S. Department of Justice. He also helped organize the environmental component of the Americorps national service program. After graduating from Harvard College (1984) and Harvard Law School (1987), he clerked for federal judges Jack B. Weinstein and Stephen G. Breyer.

**Jacob E. Williams, Ph.D.**  
**World Health Organization/Roll Back Malaria Cabinet Project**

Jacob E. Williams currently serves as the point person on DDT related issues in the Roll Back Malaria Cabinet Project of the World Health Organization (WHO). His primary role is to coordinate Roll Back Malaria efforts on the sustainable reduction of DDT use for Malaria Vector control among Member states, and the effective management of current use. Previous assignments with the World Health Organization include the Programme of the WHO/FAO/UNEP Joint Panel of Experts on Environmental Management for Vector Control (PEEM), and WHO Regional Centre for Environmental Health Activities. Dr. Williams also held the positions of Research Fellow/Lecturer with the Department of Zoology in the University of Ghana; Executive Director with the Organization for Children In Need in Ghana; and Consultant to the World Bank and the United Nations Population Fund.

**Brooks B. Yeager**  
**World Wildlife Fund**

As Vice President for the World Wildlife Fund-US Global Threats Program, Brooks B. Yeager supervises the efforts of five campaign teams working to conserve global forests and ocean resources, to avert damage to the global environment from climate change and toxic pollution,

and to assure that world commerce is environmentally sustainable. In addition, Mr. Yeager supervises WWF's governmental relations office, and is a member of WWF's senior management team.

Before joining WWF, Mr. Yeager was the Deputy Assistant Secretary for Environment and Development at the U.S. State Department. At State, Mr. Yeager was responsible for the development and negotiation of U.S. Government policy in a wide variety of global environmental discussions, including, among others, the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), U.N. forest discussions, and various global chemical negotiations. Mr. Yeager was the United States' lead negotiator for the Stockholm 2001 Global Convention on Persistent Organic Pollutants, and also played a key role in negotiating the CBD Biosafety Protocol. Mr. Yeager also represented the U.S. to global environmental institutions such as the Global Environment Facility (GEF) and the U.N. Environment Program (UNEP).

Prior to his service at the State Department, Mr. Yeager served as Deputy Assistant Secretary for Policy and International Affairs at the U.S. Department of the Interior, where he worked with Secretary Bruce Babbitt on issues ranging from Everglades restoration and Alaska natural resources to wildlife and park cooperation with Mexico and South Africa. Mr. Yeager also supervised departmental offices responsible for environmental compliance, policy analysis, and territorial affairs.

Mr. Yeager joined the government on January 21, 1993, after twelve years spent as a leader in the U.S. non-governmental environmental community. He received his B.A. from Stanford University.