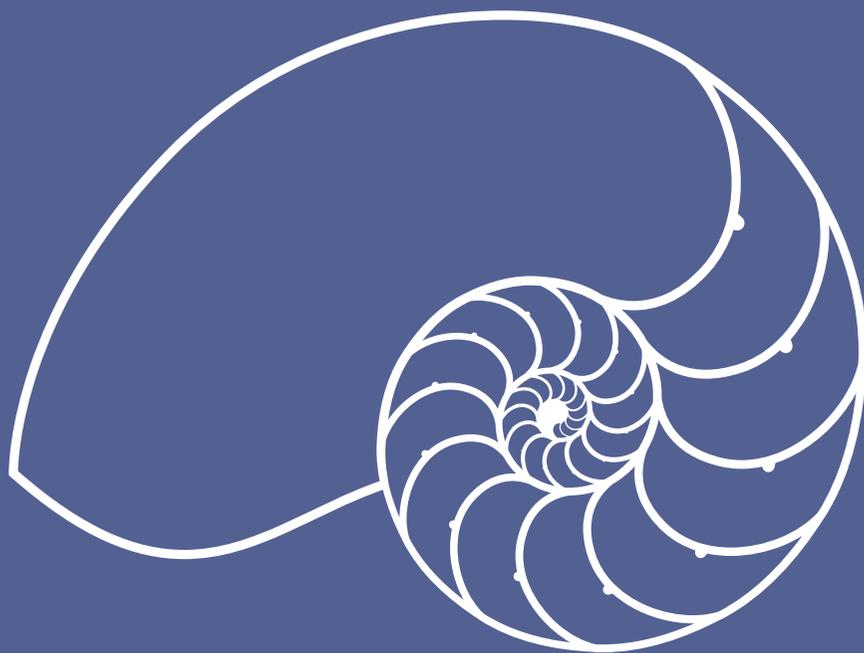


# Antimicrobial Resistance: A Problem Without Borders

*The Richard & Hinda Rosenthal Symposium at the Institute of Medicine*



*Tuesday, May 6, 2014*

Through the generosity of the Richard & Hinda Rosenthal Foundation,  
a discussion series was established at the Institute of Medicine in 1988 to bring greater  
attention to some of the critical health policy issues facing our country today.

**WELCOME**

Harvey V. Fineberg, M.D., Ph.D.  
*President, Institute of Medicine*

**PANEL DISCUSSION, MODERATED BY HARVEY V. FINEBERG**

Rima F. Khabbaz, M.D.  
*Deputy Director for Infectious Diseases*  
*Director, Office of Infectious Diseases*  
*Centers for Disease Control and Prevention*

Stuart B. Levy, M.D.  
*Distinguished Professor of Molecular Biology & Microbiology and of Medicine*  
*Director, Center for Adaptation Genetics & Drug Resistance*  
*Tufts University School of Medicine*  
*President, Alliance for the Prudent Use of Antibiotics*

Margaret A. Riley, Ph.D.  
*Professor, Department of Biology*  
*University of Massachusetts Amherst*

Brad Spellberg, M.D.  
*Associate Medical Director for Inpatient Services*  
*Harbor-UCLA Medical Center*  
*Los Angeles Biomedical Research Institute*

**CLOSING REMARKS**

Harvey V. Fineberg

**RECEPTION**



**Rima F. Khabbaz, M.D.** is Deputy Director of Infectious Diseases and Director of the Office of Infectious Diseases at the Centers for Disease Control and Prevention (CDC). Prior to her current position, she served as Director of CDC's National Center for Preparedness, Detection, and Control of Infectious Diseases and held other leadership positions across the agency's infectious disease national centers. She is a graduate of the American University of Beirut, Lebanon, where she obtained both her bachelor's degree in science and her medical doctorate degree. She trained in internal medicine and completed a fellowship in infectious diseases at the University of Maryland, Baltimore.

Dr. Khabbaz joined CDC in 1980 as an epidemic intelligence service officer, working in the Hospital Infections Program. She has made major contributions to advance infectious disease prevention, including leadership in defining the epidemiology of non-HIV retroviruses (HTLV-I and II) in the United States and developing guidance for counseling HTLV-infected persons, establishing national surveillance for hantavirus pulmonary syndrome following the 1993 U.S. outbreak, and developing CDC's blood safety and food safety programs related to viral diseases. She has also played key roles in CDC's responses to outbreaks of new and/or reemerging viral infections, including Nipah, Ebola, West Nile, SARS, and monkeypox, as well as the 2001 anthrax attacks. She is a fellow of the Infectious Diseases Society of America and a member of the American Epidemiologic Society. In addition to her CDC position, she serves as adjunct professor of medicine (infectious diseases) at Emory University. She is a graduate of the National Preparedness Leadership Initiative at Harvard University and of the Public Health Leadership Institute at the University of North Carolina.



**Stuart B. Levy, M.D.** is Distinguished Professor of Molecular Biology and Microbiology and of Medicine, and the Director of the Center for Adaptation Genetics and Drug Resistance at Tufts University School of Medicine, in addition to Staff Physician at the Tufts Medical Center. He co-founded and leads the Alliance for the Prudent Use of Antibiotics (APUA), an international non-profit with 65 country chapters and members in over 100 countries. He is a past President of the American Society for Microbiology (ASM) and co-founder and part-time CSO of Paratek Pharmaceuticals, Inc. Dr. Levy has published more than 250 papers, as well as four edited books and two special journal editions on the subject of antibiotic use and resistance. His 1992 book, *The Antibiotic Paradox: How Miracle Drugs Are Destroying the Miracle*, has been cited widely and translated into four languages.

Dr. Levy has received honorary degrees in biology from Wesleyan University (1998) and from Des Moines University (2001). In 2005, colleagues honored him with the ASM book *Frontiers in Antibiotic Resistance: a Tribute to Stuart B. Levy*. He was awarded ASM's 1995 Hoechst-Roussel Award for esteemed research in antimicrobial chemotherapy, the 2011 Hamao Umezawa Memorial Award by the International Society of Chemotherapy, and the 2012 Abbott-ASM Lifetime Achievement Award. He is a Fellow of the American College of Physicians, Infectious Disease Society of America, the American Academy of Microbiology, and the American Association for the Advancement of Science. He was Chairperson of the U.S. Fogarty Center study of "Antibiotic use and resistance worldwide" and helped write the U.S. Office of Technology Assessment report on antibiotic resistant bacteria. He consults for international and national organizations including the World Health Organization, National Academy of Sciences, Institute of Medicine, Food and Drug Administration, and the U.S. Environmental Protection Agency.



**Margaret A. Riley, Ph.D.** is a Professor in the Department of Biology at the University of Massachusetts Amherst. She received her Ph.D. at Harvard University in 1991 and joined the faculty at Yale University, where she was granted tenure and remained for 15 years while developing an internationally renowned research program in antimicrobial drug discovery. She has published over 100 articles and edited four books in her research area. Her early studies in microbial ecology and the evolution of antibiotic resistance suggested an alternative to the current paradigm of antibiotic drug discovery, one that recognizes the power of targeted approaches to therapeutic intervention, which result in lower levels of antibiotic resistance and reduced collateral damage to the healthy human microbiome. In 2009 Dr. Riley co-founded a

biopharmaceutical company, Bacteriotix, whose mission is to provide proof of concept for this new drug development paradigm, with a focus on therapeutic interventions for catheter acquired urinary tract infections. In 2009, she co-founded the Institute for Drug Resistance, whose mission is to facilitate novel, multidisciplinary approaches to addressing the challenge of drug resistance, and created a new Gordon Research Conference on Drug Resistance.

In 2008, Dr. Riley created the Massachusetts Academy of Sciences, a non-profit organization whose mission is to increase levels of civic science literacy. She currently serves as its President and oversees science outreach and education reform efforts aimed at engaging middle and high school students in independent research experiences and providing their teachers with professional development opportunities in inquiry-based teaching methods. She is a fellow of the American Academy of Microbiology and recently joined the Board on Life Sciences of the National Academy of Sciences.



**Brad Spellberg, M.D.** is Associate Medical Director for Inpatient Services and Associate Program Director for the Internal Medicine Residency Training Program at Harbor-UCLA Medical Center. He is also a Professor of Medicine at the David Geffen School of Medicine at UCLA. He received his B.A. in Molecular Cell Biology-Immunology from UC Berkeley. He attended medical school at UCLA and completed his Residency in Internal Medicine and fellowship in Infectious Diseases at Harbor-UCLA Medical Center. Dr. Spellberg has extensive patient care and teaching activities, including oversight of inpatient care hospitalwide at Harbor-UCLA Medical Center. His research interests range from basic immunology and vaccinology to pure clinical research and outcomes research. His laboratory research has focused

on developing a vaccine that targets the bacterium *Staphylococcus aureus* and the fungus *Candida*; the vaccine is undergoing clinical development. Dr. Spellberg is currently working on the immunology, vaccinology, and host defense against highly resistant Gram negative bacilli, including *Acinetobacter* and carbapenem-resistant Enterobacteriaceae infections.

Dr. Spellberg has worked extensively with the Infectious Diseases Society of America (IDSA) to attempt to bring attention to the problems of increasing drug resistance and decreasing new antibiotics. His research regarding new drug development was a cornerstone of the IDSA's white paper, *Bad Bugs, No Drugs*. As a member and then co-chair of the IDSA's Antimicrobial Availability Task Force, he first-authored numerous IDSA position papers and review articles relating to public policy of antibiotic resistance and antibiotic development. Dr. Spellberg is the author of *Rising Plague*, which he wrote to inform and educate the public about the crisis in antibiotic resistant infections and lack of antibiotic development.



**Harvey V. Fineberg, M.D., Ph.D.** is President of the Institute of Medicine. He served as Provost of Harvard University from 1997 to 2001, following thirteen years as Dean of the Harvard School of Public Health. He has devoted most of his academic career to the fields of health care, public health, and decision-making at the individual level and for policy. His past research has included health policy development and implementation, assessment of medical technology, evaluation and use of vaccines, and dissemination of medical innovations.

Dr. Fineberg helped found and served as president of the Society for Medical Decision Making and has been a consultant to the World Health Organization. Prior to becoming president of the Institute of Medicine, he chaired and served on a number of panels at the IOM, including committees on AIDS, new imaging technologies, priorities for vaccine development, and measures of population health. He chairs the board of the Carnegie Endowment for International Peace and is chair-elect of the board of the William and Flora Hewlett Foundation and of the China Medical Board. He also serves on the boards of the Josiah Macy, Jr. Foundation and the François-Xavier Bagnoud U.S. Foundation, as well as in a number of advisory capacities, including the National Advisory Committee for the Peterson Institute on Health and the Foresight Committee of the Veolia Environment Institute.

Dr. Fineberg is co-author of the books *Clinical Decision Analysis*, *Innovators in Physician Education*, and *The Epidemic that Never Was*, an analysis of the controversial federal immunization program against swine flu in 1976. He has co-edited several books on such diverse topics as AIDS prevention, vaccine safety, and understanding risk in society. He has also authored numerous articles published in professional journals.

Dr. Fineberg is a Fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science. He is a member of the American Philosophical Society, a Foreign Fellow of the Academy of Athens, a Foreign member of the Chinese Academy of Engineering, and a member of the National Academy of Medicine of Mexico.

Dr. Fineberg is the recipient of the Henry G. Friesen International Prize in Health Research, awarded by the Friends of the Canadian Institutes of Health Research; the Innovator in Health Award from NEHI; the Frank A. Calderone Prize in Public Health, awarded by the Mailman School of Public Health, Columbia University; the Stephen Smith Medal for Distinguished Contributions in Public Health from the New York Academy of Medicine; and a number of honorary degrees. He also received the Harvard Medal from the Harvard Alumni Association and the W. E. B. Du Bois Medal, awarded by Harvard's W. E. B. Du Bois Institute for African and African American Research. Dr. Fineberg earned his bachelor's degree, master's degree in public policy, and doctoral degrees from Harvard University.

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