Resistance Movement: Drugs, bugs and the fight against über-germs

Tuesday, March 28, 2017
6:00 – 7:30 p.m.

The Joseph B. Martin Conference Center
The New Research Building
Harvard Medical School
77 Avenue Louis Pasteur
Boston, MA 02115

THE Longwood SEMINARS AT HARVARD MEDICAL SCHOOL

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Resistance Movement: Drugs bugs and the fight against über-germs

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James Kirby, MD

Associate Professor of Pathology
Harvard Medical School
Medical Director, Clinical Microbiology
Beth Israel Deaconess Medical Center

Michael Gilmore, PhD

Sir William Osler Professor of Ophthalmology
Harvard Medical School
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About the Speakers:

Bill Hanage, PhD

Bill Hanage is Associate Professor of Epidemiology at the Harvard University T.H. Chan School of Public Health and a faculty member in the Center for Communicable Disease Dynamics. He researches the epidemiology and evolution of infectious diseases, using genetics to trace the emergence and spread of dangerous pathogens causing pneumonia, meningitis and drug resistant infections. He has written over 100 articles and book chapters on these subjects and has won the Fleming Prize for his research, named for the discoverer of Penicillin, Alexander Fleming.

Maha Farhat, MD

Maha Farhat holds an MD from the McGill University Faculty of Medicine and a MSc in biostatistics from the Harvard Chan School of Public Health. She is also a practicing physician at the Massachusetts General Hospital Division of Pulmonary and Critical Care Medicine. Dr. Farhat's research focuses on the development and application of methods for associating genotype and phenotype in infectious disease pathogens, with a strong emphasis on translation to better diagnostics and surveillance in resource-poor settings. To date, Farhat's work has focused on the pathogen Mycobacterium tuberculosis and spans the spectrum from computational analysis to field studies. She is PI and Co-Investigator on several large projects funded by NIH including the NIAID and the BD2K initiative.

James Kirby, MD

James Kirby is an Associate Professor of Pathology at Harvard Medical School and the Medical Director of the Clinical Microbiology Laboratory at Beth Israel Deaconess Medical Center. Dr. Kirby's current interests in his National Institutes of Health-funded research laboratory include developing novel antimicrobials, understanding how bacterial pathogens cause disease, and use of inkjet printing technology to identify multidrug-resistant pathogens more quickly. He is currently on the editorial boards of the Journal of Clinical Microbiology, and Applied and Environmental Microbiology, and was former President of the Northeast Branch of the American Society of Microbiology. He also serves on the Harvard Committee on Microbiological Safety (COMS). More information about his research laboratory may be found at http://www.kirbylab.org.

Michael Gilmore, PhD

Michael S. Gilmore, PhD is currently the Sir William Osler Professor of Ophthalmology, and Microbiology and Immunobiology at Harvard Medical School. He serves on the steering committees of the Harvard Microbial Sciences Initiative, and the Infectious Disease Initiative of the Broad Institute of MIT and Harvard. As Principal Investigator of the Harvard-wide Program on Antibiotic Resistance, his research focuses on the evolution and development of multidrug resistant strains of enterococci, staphylococci, and streptococci, and the development of new therapeutic approaches. He is founder and organizer of the international ASM Conference on Enterococci series, Editor in Chief of the public access book, Enterococci: From Commensals to Leading Causes of Drug Resistant Infection. Gilmore continues to serve on numerous advisory boards and committees for public and private organizations, mainly focused on drug discovery, antibiotic resistance, and bacterial pathogenesis.

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With many bacteria becoming impervious to drugs, new approaches are needed to combat the rise of antibiotic resistance. In this seminar, Harvard scientists and clinicians will discuss the history of drug resistance, how bacteria become able to shrug off the medications we use to treat disease, and ways to address the crisis.

Articles

The drug-resistant bacteria that pose the greatest health threats
Cassandra Willyard, Nature
nature.com/news/the-drug-resistant-bacteria-that-pose-the-greatest-health-threats-1.21550

Simple Method Quickly Tests Hard-to-Treat Bacteria's Susceptibility to Different Antibiotics
Jacqueline Mitchell, Beth Israel Deaconess News
bidmc.org/News/PRLandingPage/2016/July/Kirby-Antibiotics.aspx

Drug-resistant 'nightmare bacteria' show worrisome ability to diversify and spread
Karen Feldscher, Harvard T.H. Chan News
hsph.harvard.edu/news/press-releases/drug-resistant-nightmare-bacteria-diversify-spread/

Superbug: An Epidemic Begins
Katherine Xue
harvardmagazine.com/2014/05/superbug

Video

Epidemiologist Bill Hanage
Tavis Smiley, WGBH
pbs.org/wnet/tavissmiley/interviews/associate-professor-bill-hanage/

Plagues and populations -- patterns of pathogen evolution.
Microbiology Society
https://www.youtube.com/watch?v=gwl61-jcyro

TB's Surprising Family Tree
Harvard Medical School
https://hms.harvard.edu/news/global-health/tbs-surprising-family-tree-9-1-13