Symposium
60th Anniversary of the Selman Waksman Nobel Prize in Physiology or Medicine

Antibiotics – Soil’s Microbial Miracles

Wednesday, December 12, 2012 (9 a.m. - 6 p.m.)
Trayes Hall, Douglass Campus Center,
Rutgers University, New Brunswick, NJ

Hosted by the Department of Biochemistry and Microbiology
Rutgers University, School of Environmental and Biological Sciences, New Brunswick, NJ

This extraordinary symposium will focus on “Antibiotics – Soil’s Microbial Miracles.”

The day long symposium addresses the sweet smell of success driven by antibiotics in diverse fields – how the roles of wispy, bacterial threads, the Actinomycetes, went from soil fertility enhancers to a practical and vital broad based medical resource. The speakers all nationally recognized, explore both the direct and indirect effects of antibiotics. The Waksman novel antibiotic armamentarium that followed penicillin and tyrothricin, including actinomycin, streptothricin, fradicin, chaetomin and especially streptomycin, stimulated the uncovering of a variety of “block buster” antibiotics which changed the approaches to treatment of world diseases. This treasure trove expanded to include anti-tumor agents, immunosuppressants, food preservatives and insecticides. Impacts on Society were diverse - the enhancement of the human life span resulting in more distant considerations as delayed retirement to Social Security issues. The Symposium recognizes the effects of antibiotics in diverse spheres- new antibiotics through novel screening, new interpretations of their role, how they aid in unraveling metabolic and microbiome conundrums and the current status of tuberculosis. They have turned the world topsy-turvy. The inspiration behind the Morrill Act in the creation the Land Grant Universities system was again realized. Waksman received the Nobel Prize in Physiology or Medicine, 1952 for "ingenious, systematic and successful studies of the soil microbes" that led to the discovery of streptomycin. As Selman Waksman later commented: "Out of the earth shall come thy salvation."
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8:00-9:00 Coffee and Donuts

9:00-9:30 Introductions
Dean Robert M. Goodman (Rutgers University, School of Environmental and Biological Sciences)
President Robert Barchi (Rutgers University)
Joachim Messing (Rutgers University, Waksman Institute)
Amy Vollmer (President, Waksman Foundation)

9:30-9:35 Douglas E. Eveleigh (Rutgers University, Dept. of Biochemistry and Microbiology)
Introduction of H. Boyd Woodruff

9:35-10:15 Boyd Woodruff
History of the discovery of antibiotics at Rutgers

10:15-10:45 Richard Ebright (Rutgers University, Waksman Institute)
Soil microbes: an unexhausted source of antibacterial drug leads

10:45-11:15 David Hopwood (The John Innes Centre, Norwich, UK)
Streptomyces genomics reveals an Aladdin’s Cave of novel natural products

11:00-12:00 Coffee Break

11:30-12:00 Jeff Boyd (Rutgers University, Dept. of Biochemistry and Microbiology)
Intracellular iron metabolism in Staphylococcus aureus: A novel antimicrobial target?

12:00-12:30 Ann Stock (UMDNJ, Center for Advanced Biotechnology and Medicine)
Targeting novel features of response regulator proteins for antimicrobial drug development

12:30-1:00 Eva Top (University of Idaho, Institute of Bioinformatics and Evolutionary Studies)
Rapid coevolution of plasmid-host pairs contributes to the spread of antibiotic resistance

Lunch

2:00-2:30 Lee Reichman (NJ Medical School UMDNJ – Newark)
Forgotten but not gone

2:30-3:00 Richard Baltz (CognoGen Biotechnology Consulting, Indianapolis, IN)
Combinatorial biosynthesis of lipopeptide antibiotics related to daptomycin

3:00-3:30 Barry Kreiswirth (NJ Medical School UMDNJ – Newark)
The challenges of tuberculosis in 2013...........Calling Dr. Waksman

3:30-4:00 Carl Zimmer (New York Times Science Reporter)
Collateral damage from the magic bullet: Antibiotics and the microbiome

Reopening of the Waksman Museum, Martin Hall, School of Environmental and Biological Sciences Wine/Cheese Reception