

*Virulence Mechanisms of Bacterial Pathogens, International Symposium,
Scheman Conference Center, Iowa State University,
Ames IA, September 6-8, 2006*

PROGRAM

WEDNESDAY, SEPTEMBER 6, 2006

7:00 am *Registration and Continental breakfast*

Introduction and Overview

Moderator: Nancy Cornick, Iowa State University

8:00 am *Welcome and opening remarks*

Kim A. Brogden, University of Iowa, Iowa City, IA

Charlotte R. Bronson, Associate Vice Provost, Research Administration, Iowa State University

Kurt Zuelke, Center Director, USDA ARS National Animal Disease Center

8:30 am *The burden of bacterial diseases and the need to focus on the virulence mechanisms of bacterial pathogens*

Abigail Salyers, University of Illinois, Urbana, IL

SESSION I. Virulence Genes

Moderator: F. Chris Minion, Iowa State University

9:15 am *Type III secretory proteins in Pseudomonas*

Dara Frank, Medical College of Wisconsin, Milwaukee, WI

10:00 am **BREAK**

10:30 am *Identification and characterization of small non-coding RNAs in bacterial pathogens*

Dr. Jonathan Livny, Department of Molecular Biology and Microbiology, Tufts University School of Medicine and Howard Hughes Medical Institute, Boston, MA

11:15 am *Pathogenesis of Mycobacterium tuberculosis*

William R. Jacobs, Jr., Department of Microbiology and Immunology, Howard Hughes Medical Institute, Albert Einstein College of Medicine, Bronx, NY

12:00 pm **LUNCH**

1:15 pm *Capsules and the integration of their synthesis with metabolic and virulence pathways*

Janet Yother, University of Alabama at Birmingham, Birmingham, AL

SESSION II. Bacterial Attachment, Invasion, and Colonization

Moderator: Qijing Zhang, Iowa State University

- 2:00 pm *Mycoplasma pneumoniae attachment and colonization of the respiratory mucosa*
Duncan C. Krause, Department of Microbiology, 523 Biological Sciences Building,
Athens, GA
- 2:45 pm *Cross-talks between bacterial LOS and host cells*
Michael Apicella, Department of Microbiology, University of Iowa, Iowa City, IA
- 3:30 pm **BREAK**
- 4:00 pm *E. coli at the intestinal mucosal surface*
Paul S. Cohen, Department of Cell and Molecular Biology, University of Rhode Island,
Kingston, RI
- 4:45 pm *The role of flagella in Campylobacter jejuni virulence*
Patricia Guerry, Enteric Diseases Department, Naval Medical Research Center, Silver
Spring, MD
- 5:30 pm Social hour
- 6:00 pm Banquet – 2nd floor lobby

THURSDAY, SEPTEMBER 7, 2006

7:30 am *Continental breakfast*

SESSION III. Microbial Interactions in Health and Disease

Moderator: Thaddeus B. Stanton, USDA, ARS, National Animal Disease Center

- 8:30 am *Bacteriophage (lytic) in bacterial diseases. Bacteriophage and Streptococcal Infections*
Vincent A. Fischetti, Laboratory of Bacterial Pathogenesis, Rockefeller University, New
York, NY
- 9:15 am *Effect of antimicrobial peptides on adaptive immunity and mucosal adjuvanticity*
Kim A. Brogden, Department of Periodontics and Dows Institute for Dental Research,
College of Dentistry, The University of Iowa, Iowa City, IA.
- 10:00 am **BREAK – Poster session**
- 10:30 am *Free-living and host-associated protozoa as training camps for intracellular pathogens*
Steve Carlson, USDA, ARS, National Animal Disease Center, Ames, IA
- 11:15 am *Commensal Bacteria in Health and Disease*
Prof. Harry Flint, The Rowett Research Institute, Aberdeen, Scotland, UK
- 12 noon **LUNCH – Poster session**

1:15 pm *Physical, physiological (food chains) and genetic interactions among oral pathogens and non-pathogens. Concept of co-aggregation and networks based on physiology and gene exchange*
Paul E. Kolenbrander, National Institutes of Health/NIDCR, Bethesda, MD

SESSION IV. Bacterial Effects on Host Cells

Moderator: Lisa Nolan, Iowa State University

2:00 pm *Quorum Sensing*
Barbara H. Iglewski, Department of Microbiology and Immunology, University of Rochester School of Medicine and Dentistry, Rochester, NY

2:45 pm *Type III Secretion Systems*
Sheng Yang He, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI

3:30 pm **BREAK – Poster session**

4:00 pm *Type IV Secretion Systems*
Renee M. Tsois, University of California, Davis School of Medicine, Davis CA

4:45 pm *Bacterial toxins as RNA N-glycosidases*
Alison D. O'Brien, Uniformed Services University, MD

FRIDAY, SEPTEMBER 8, 2006

7:00 am *Continental Breakfast*

SESSION V. Innate and Adaptive Resistance to Pathogens

Moderator: Michael J. Wannemuehler, Iowa State University

8:00 am *Role of TLRs - NOD 1/2 in regulating mucosal immune responses in the colon*
Elke Cario, University Hospital of Essen, Division of Gastroenterology and Hepatology, Essen, Germany

8:45 am *Effect of defensins on susceptibility to infection at the mucosal surface*
Janet M. Guthmiller, Department of Periodontics and Dows Institute for Dental Research, College of Dentistry, The University of Iowa, Iowa City, IA

9:30 am *Host specific genes in Salmonella*
Stanley Maloy, Center for Microbial Sciences, San Diego State University, San Diego, CA

10:15 am **BREAK**

10:45 am *Induction of host immune responses using Salmonella-vectored vaccines*
Roy Curtiss III, Co-Director, Center for Infectious Diseases & Vaccinology, Biodesign Institute Arizona State University, Tempe, AZ

11:30 pm *T cell mediated immunity to bacterial pathogens (Listeria)*
J. John Harty, Interdisciplinary Graduate Program in Immunology, University of Iowa,
Iowa City, IA

SESSION VI. Concluding Perspective

Moderator: Kim A. Brogden, University of Iowa

12:15 pm Studies on bacterial pathogenicity since 1950 and their future
Harry Smith, Medical School, University of Birmingham, Birmingham, UK