

Center for the Study of Inflammatory Bowel Disease
20th Annual Workshop

**Gene – Environment Interactions
in Health and Disease**

Friday, November 12, 2010

7:30 - 7:55 Registration and Continental Breakfast
 Opening Remarks
 Ramnik J. Xavier, M.D., Director, CSIBD

Session I: FUNCTIONAL ANALYSIS OF HUMAN MICROBIOME GENE CATALOGUE

Moderators: Fabio Cominelli, M.D., Ph.D. and Atul Bhan, M.D.

8:00 – 8:20 ***Update on the Human Microbiome Project***
 Bruce Birren, Ph.D., Broad Institute of MIT and Harvard, Cambridge, MA

8:25 – 8:45 ***Microbial Communities of the Human Body: Bacteria and Viruses from Child to Adult***
 George Weinstock, Ph.D., Washington University School of Medicine, St. Louis, MO

8:50 – 9:20 ***Impact of Diet on Intestinal Microbiota Function: Mechanistic Insight into Microbiota Manipulation***
 Justin Sonnenburg, Ph.D., Stanford School of Medicine, Stanford, CA

9:25 – 9:55 ***SPECIAL LECTURE: Gut Stem Cells, Intestinal Villus and Environmental Cues***
 Hans Clevers, M.D., Ph.D., Hubrecht Institute, The Netherlands

10:00 – 10:20 Discussion

10:25 – 10:40 Break

Session II: COMMUNITY STRUCTURE AND PERTUBATION'S IN INTESTINAL FLORA

Moderators: Stephen James, M.D. and Mark Daly, Ph.D.

10:45 – 11:05 ***NOD2, Microbes and Intestinal Inflammation***
 R. Balfour Sartor, M.D., University of North Carolina School of Medicine, Chapel Hill, NC

11:10 – 11:30 ***Segmented Filamentous Bacteria and Intestinal Immunity***
 Dan Littman, M.D., Ph.D., New York University School of Medicine, New York, NY

11:35 – 11:55 ***The Evolutionary Conundrum of Pathogen Mimicry***
 Nels C. Elde, Ph.D., Fred Hutchinson Cancer Research Center, Seattle, WA

12:00 – 12:15 Discussion

12:20 – 1:15 Lunch

Session III:

INNATE IMMUNITY AND MODEL ORGANISMS

Moderators: Wayne Lencer, M.D. and Hans-Christian Reinecker, M.D.

- 1:20 – 1:40 ***Innate Immunity and Physiological Endoplasmic Reticulum Stress in C. Elegans***
Dennis Kim, M.D., Ph.D., Massachusetts Institute of Technology, Cambridge, MA
- 1:45 – 2:05 ***Tuberculous Granuloma Formation and Function Revealed in the Zebrafish***
Lalita Ramakrishnan, M.D., Ph.D., University of Washington, Seattle, WA
- 2:10 – 2:30 ***Genetic Screens and Sensors of the Innate Immune System***
Bruce Beutler, M.D., The Scripps Research Institute, La Jolla, CA
- 2:35 – 2:50 Discussion
- 2:55 – 3:10 Break

Session IV:

MICROBES AND SIGNALING PATHWAYS

Moderators: Gary Wu, M.D. and Charles Elson, M.D.

- 3:15 – 3:35 ***AIM2 Inflammasome***
Katherine Fitzgerald, Ph.D., University of Massachusetts Medical School, Worcester, MA
- 3:40 – 4:00 ***Systems Biology and the Inflammasome***
Alan Aderem, Ph.D., Institute for Systems Biology, Seattle, WA
- 4:05 – 4:25 ***How Cells Defend Their Cytosol from Bacterial Invasion***
Felix Randow, Ph.D., MRC Laboratory of Molecular Biology, Cambridge, United Kingdom
- 4:30 – 4:50 ***Enterobacteriaceae Act in Concert with the Gut Microbiota to Induce Spontaneous and Maternally Transmitted Colitis***
Wendy Garrett, M.D., Ph.D., Harvard School of Public Health, Boston, MA
- 4:55 – 5:15 ***SLAM Family Co-Stimulatory Molecules are also Microbial Sensors that Regulate Bacterial Phagosome Functions***
Cox Terhorst, Ph.D., Beth Israel Deaconess Medical Center, Boston, MA
- 5:20 – 5:40 Discussion

Saturday, November 13, 2010

- 7:30 - 8:00 Registration and Continental Breakfast

Session V:

META GENOMICS AND METATRANSCRIPTOMICS

Moderators: Maria Abreu, M.D. and Joel Weinstock, M.D.

- 8:05 – 8:25 ***Deeply Sequencing the Human Gut Microbiome and Meta-Transcriptome***
Peter Turnbaugh, Ph.D., Harvard University, Cambridge, MA
- 8:30 – 8:50 ***Pathogens, Toxins and Host Factor Screens***
Thijn Brummelkamp, Ph.D., Whitehead Institute for Biomedical Research, Cambridge, MA
- 8:55 – 9:15 ***Proteogenomics and the Gut Microbiome***
Robert Hettich, Ph.D., Oak Ridge National Laboratory, Oak Ridge, TN

- 9:20 – 9:35 Discussion
- 9:40 – 10:00 ***Influence of Microbial Community on Autoimmunity***
Alexander Chervonsky, M.D., Ph.D., The University of Chicago, Chicago, IL
- 10:05 – 10:25 ***Human Microbiome Program at Broad Institute***
Eric Alm, Ph.D., Massachusetts Institute of Technology, Cambridge, MA
- 10:30 – 10:40 Discussion
- 10:45 – 11:00 Break

Session VI: **MICROBES AND INTESTINAL IMMUNITY**

Moderators: James Fox, M.D. and Scott Snapper, M.D., Ph.D.

- 11:05 – 11:25 ***A Paradigm for Commensalism – A Journey With Bacteroides Fragilis***
Dennis L. Kasper, M.D., Harvard Medical School, Boston, MA
- 11:30 – 11:50 ***New Strategies for Cultivation of Gut Microbiota***
Thomas Schmidt, Ph.D., Michigan State University, East Lansing, MI
- 11:55 – 12:15 ***Linking Microbiome Pathways to Disease in MetaHIT and the HMP***
Curtis Huttenhower, Ph.D., Harvard School of Public Health, Boston, MA
- 12:20 – 12:40 ***Type III Effector Systems, Pathway Maps and Microbial Pathogenesis***
Cammie Lesser, M.D., Ph.D., Massachusetts General Hospital, Boston, MA
- 12:45 – 1:05 ***Synthetic Multispecies Bacterial Communities and Therapeutics***
Rustem Ismagilov, Ph.D., University of Chicago, Chicago, IL
- 1:10 – 1:35 Discussion