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.

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

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

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

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<td>8:05 – 8:25</td>
<td><em>Deeply Sequencing the Human Gut Microbiome and Meta-Transcriptome</em></td>
<td>Peter Turnbaugh, Ph.D.</td>
<td>Harvard University, Cambridge, MA</td>
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<td>8:30 – 8:50</td>
<td><em>Pathogens, Toxins and Host Factor Screens</em></td>
<td>Thijn Brummelkamp, Ph.D.</td>
<td>Whitehead Institute for Biomedical Research, Cambridge, MA</td>
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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