

Center for the Study of Inflammatory Bowel Disease  
21<sup>st</sup> Annual Workshop

# Genomes, Tools and Technologies in Human Disease

---

**Friday, November 4, 2011**

7:30 - 7:55                      Registration and Continental Breakfast  
Opening Remarks  
                                        Ramnik J. Xavier, M.D., Director, CSIBD  
                                        Mark J. Daly, Ph.D., Chief, Analytic & Translational Genetics Unit

**Session I:                      ANALYTICAL GENETICS**

Moderators: Robert Karp, Ph.D. and Atul Bhan, M.D.

8:00 – 8:20                      ***Progress in Human Genetics: GWAS and Beyond***  
Mark J. Daly, Ph.D., Massachusetts General Hospital, Boston, MA

8:25 – 8:45                      ***Gene-Inactivating Polymorphisms in Normal Human Genomes: Implications for Clinical Sequencing Projects***  
Daniel MacArthur, Ph.D., Wellcome Trust Sanger Institute, Cambridge, UK

8:50 – 9:10                      ***Insights from High-Resolution Genetic Mapping in IBD***  
Jeffrey C. Barrett, Ph.D., Wellcome Trust Sanger Institute, Cambridge, UK

9:15 – 9:35                      ***Microdroplet Enabled Parallel Co-cultivation and Characterization of Symbiotic Microbial Communities***  
Xiaoxia Lin, Ph.D., University of Michigan, Ann Arbor, MI

**Session II:                      EXOME SEQUENCING: APPLICATIONS TO HUMAN DISEASE**

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

9:40 – 10:00                      ***Genetics of T2D***  
David Altshuler, M.D., Ph.D., Massachusetts General Hospital, Boston, MA

10:05 – 10:25                      ***Understanding the Inherited Basis for Blood Lipids and Risk for Myocardial Infarction***  
Sekar Kathiresan, M.D., Massachusetts General Hospital, Boston, MA

10:30 – 10:50                      ***Exome Sequencing in Ashkenazi Jewish IBD***  
Judy H. Cho., M.D., Yale University, New Haven, CT

10:55 – 11:10                      Break

**Session III:**

**BUILDING FROM HUMAN GENETIC DISCOVERY – SYSTEMS APPROACHES AND FUNCTION**

Moderators: Andrew Luster, M.D., Ph.D. and Charles Elson, M.D.

- 11:15 – 11:35 ***Learning a Global Dynamic Regulatory Model for T-Cell Differentiation and Function***  
Richard Bonneau, Ph.D., New York University, New York, NY
- 11:40 – 12:00 ***Deciphering the Genetic Architecture of Immune Responses to Infection***  
Luis Barreiro, Ph.D., University of Montreal, Canada
- 12:05 – 12:25 ***Moving Beyond the Mean: The Role of Variation in Determining Phenotype***  
John Quackenbush, Ph.D., Harvard School of Public Health, Boston, MA
- 12:30 – 1:30 Lunch
- 1:35 – 1:55 ***Interpreting Exome/Genome Sequencing Data***  
Benjamin M. Neale, Ph.D., Massachusetts General Hospital, Boston, MA

**Session IV:**

**EPIGENETICS AND GENE REGULATION**

Moderators: Dennis Brown, Ph.D. and Andrew Chan, M.D., M.P.H.

- 2:00 – 2:20 ***TAL Effectors for Modulating Mammalian Transcription***  
Feng Zhang, Ph.D., Massachusetts Institute of Technology, Cambridge, MA
- 2:25 – 2:45 ***Engineered Nucleases for Targeted Genome Editing***  
J. Keith Joung, M.D., Ph.D., Massachusetts General Hospital, Boston, MA
- 2:50 – 3:05 Break

Moderators: Ramnik Xavier, M.D. and Deanna Nguyen, M.D.

**KEY NOTE SPEAKER**

- 3:10 – 3:55 ***Novel Approaches to Drug Discovery***  
Edward Scolnick, M.D., Broad Institute of MIT and Harvard, Cambridge, MA
- 4:00 – 4:20 ***RNAi Delivery in Primary Cells***  
Hongkun Park, Ph.D., Harvard University, Cambridge, MA
- 4:25 – 4:45 ***Metabolomics: Biomarkers and Metabolic Phenotypes***  
Clary B. Clish, Ph.D., Broad Institute of MIT and Harvard, Cambridge, MA

## Saturday, November 5, 2011

7:30 - 7:55 Registration and Continental Breakfast

### Session V: TOOLS AND TECHNOLOGIES

Moderators: Curtis Huttenhower, Ph.D. and Jonathan Braun, M.D., Ph.D.

8:00 – 8:20 ***Genetics, New Technologies and Pathway Mapping in Cancer***  
Todd Golub, M.D., Broad Institute of MIT and Harvard, Cambridge, MA

8:25 – 8:45 ***Reprogramming Approaches and Functional Genetics***  
Chad Cowan, Ph.D., Harvard Stem Cell Institute, Cambridge, MA

8:50 – 9:10 ***Engineering New Bioanalytic Processes to Profile Human Immune Responses***  
Christopher Love, Ph.D., MIT, Cambridge, MA

### Session VI: IMPACT OF GENETICS ON MOUSE MODELS OF IBD

Moderators: Hans-Christian Reinecker, M.D. and Cox Terhorst, Ph.D.

9:15 – 9:25 ***Mouse Models of Crohn's Ileitis***  
Fabio Cominelli, M.D., Ph.D., University Hospitals Case Medical Center, Cleveland, OH

9:30 – 9:50 ***Novel Models of Colitis***  
Thaddeus S. Stappenbeck, M.D., Ph.D., Washington University School of Medicine, St. Louis, MO

9:55 – 10:10 ***Type 1 Interferon Circuits in Intestinal Immunity***  
Bana Jabri, M.D., Ph.D., The University of Chicago, Chicago, IL

10:15 – 10:30 Break

Moderators: Vijay Yajnik, M.D., Ph.D. and Dirk Gevers, Ph.D.

10:35 – 10:55 ***Mucosal Biologic Neighborhoods and Microbial Ecology***  
Jonathan Braun, M.D., Ph.D., UCLA, Los Angeles, CA

11:00 – 11:20 ***Pathologist View of IBD Models***  
Atul Bhan, M.D., Massachusetts General Hospital, Boston, MA

11:25 – 11:45 ***Gut-homing T Cells and Retinoic Acid in Gut Immune Tolerance***  
J. Rodrigo Mora, M.D., Ph.D., Massachusetts General Hospital, Boston, MA

11:50 – 12:10 ***Emerging Technologies for RNA Profiling in Human Disease***  
Cosmas Giallourakis, M.D., Massachusetts General Hospital, Boston, MA

12:15 Lunch