The mammalian GI track harbors a complex assemblage of microbial organisms that are essential for the development of the immune system. Alterations of the gut microbiota may lead to immune dysregulation both in the gut and in distal effector sites leading to the development of autoimmune disease. This meeting will focus on the role of the microbiota in balancing the effector and regulatory response leading to immune homeostasis. Recent findings suggest that altering certain bacterial populations present in the gut can lead to an inflammatory state associated with Th1/Th17 polarization. In contrast, other commensal bacteria and their antigenic products, when presented in the correct context, are regulatory and protect against inflammation. Particular emphasis will be placed on the biologic dynamics of the microbiota, the interaction with APC, modulation of the regulatory network and the immunologic consequences on experimental and human autoimmune conditions such as IBD, CNS demyelination and RA. The practical application of these novel interactions between the host and gut microbiota may lead to the identification of new therapeutics and novel insights into the mechanisms of human autoimmunity. The opportunity to assemble basic scientists in bacteriology and mucosal immunology with clinicians to explore this rapidly expanding arena is unique as there have been no previous organized meetings to meet this need. How the gut microbiome guides effector and regulatory immune functions will provide new pathways for the development of novel therapeutic targets.
Gut Microbiome: The Effector/Regulatory Immune Network (B3)
February 10-15, 2013 • Sagebrush Inn & Suites • Taos, New Mexico, USA

Scientific Organizers: Lloyd H. Kasper, Javier Ochoa-Repáraz and Sarkis K. Mazmanian

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Discounted Abstract & Scholarship Deadline: October 9, 2012 / Late-Breaking Abstract Deadline: November 8, 2012 / Early Registration Deadline: December 5, 2012

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Gut Modulation of Effector/Regulatory Networks in CNS Disease

*Richard S. Blumberg*, Brigham and Women's Hospital, USA

**Gurumoorthy Krishnamoorthy**, Max Planck Institute of Neurobiology, Germany

Commensal Microbiota as a Trigger of Spontaneous Autoimmune Demyelination

**Yun Kyung Lee**, California Institute of Technology, USA

The Microbiota Impacts Vitamin D Status and Experimental Autoimmune Encephalomyelitis

**Lloyd H. Kasper**, Geisel School of Medicine at Dartmouth, USA

Role of Commensal Bacteria in the Regulation of Central Nervous System Disease Demyelination

**Sin-Hyeog Im**, POSTECH, South Korea

Short Talk: Modulation of the Gut Microbiome in Multiple Sclerosis Patients

Howard L. Weiner, Brigham and Women’s Hospital, Harvard Medical School, USA

Short Talk: Investigation of the Gut Microbiome in Multiple Sclerosis Patients

Poster Session 3

THURSDAY, FEBRUARY 14

Modulation of Gut Microbiota

* **Lloyd H. Kasper**, Geisel School of Medicine at Dartmouth, USA

**Peter J. Turnbaugh**, University of California, San Francisco, USA

An Active Subset of the Gut Microbiome Responsive to Xenobiotics

**Curtis Huttenhower**, Harvard School of Public Health, USA

From Microbial Surveys to Mechanisms of Interaction in the Gut Microbiome

**Paul D. Cotter**, Teagasc Food Research Centre, Ireland

Modulation of the Gut Microbiota; Impact of Antimicrobial Administration, Diet and other Factors

**Fei Sjöberg**, University of Gothenburg, Sweden

Short Talk: The Oral Microbiota in Infancy and its Relation to Allergy Development

**Taylor J. Feehley**, University of Chicago, USA

Short Talk: Oral Tolerance to Dietary Antigen Relies on TLR-Mediated Signals from the Enteric Microbiota

**Georg K. Gerber**, Harvard Medical School, USA

Short Talk: Principled Probabilistic Machine Learning Models for Analyzing Microbiome Time-Series Data

**Joël Doré**, INRA / MetaGenoPolis, France

Short Talk

Gut Bacteria Modulation of Autoimmunity

* **Javier Ochoa-Repáraz**, Eastern Washington University, USA

**Dennis Sandris Nielsen**, University of Copenhagen, Denmark

The Role of Gut Microbiota in Diabetes Type I and II Development

**Alexander V. Chervonsky**, University of Chicago, USA

Glycosylation of Gut Epithelial Surfaces in Response to Systemic Infections

Christophe Benoist, Harvard Medical School, USA

**Gut-Residing Segmented Filamentous Bacteria Drive Autoimmune Arthritis via T Helper 17 Cell**

Ivan Vujkovic-Cvijin, NIAID, National Institutes of Health, USA

**Short Talk: Dysregulation of the Colonic Mucosally-Adherent Microbiota Is Associated with Inflammatory Markers of HIV Disease Progression**

**Mark Bazett**, Qu Biologics, Canada

**Short Talk: The Intestinal Microbiome and Intestinal Disease in a deltaF508 Cystic Fibrosis Mouse Model**

Sarkis K. Mazmanian, California Institute of Technology, USA

Closing Remarks