CHRISTOPH THAIS, PHD, LAB UPDATE

Christoph A. Thaiss obtained his undergraduate degrees from the University of Bonn, Yale University, and ETH Zurich. After a short-term fellowship at the Broad Institute of MIT and Harvard, he performed his graduate studies at the Weizmann Institute of Science. After completion of his PhD, he joined the University of Pennsylvania as an Assistant Professor at the Microbiology Department of the Perelman School of Medicine.

The Thaiss lab studies how environmental factors influence human diseases. Of particular interest is how the intestinal microbiome is shaped by common lifestyle elements and in turn modulates the physiology of its mammalian host. Recent examples include the connection between circadian rhythms and the intestinal microbiome, the analysis of gut barrier function in metabolic disease, and the identification of “memory-like” microbiome features in recurrent obesity.

Dr. Thaiss is a recipient of a Center Pilot Grant.

SAVE-THE-DATE

Save the Date for the 19th Annual Center for the Molecular Studies in Digestive and Liver Diseases Symposium

“Technological Advances in the Use of Human Digestive Tissues for Basic Science Research”

Monday, April 15, 2019

The National Constitution Center

Register Now!
MICHAEL C. ABT, PHD, LAB UPDATE

Michael Abt is an Assistant Professor in the Department of Microbiology at the University of Pennsylvania, Perelman School of Medicine. He attended Loyola University of Maryland where he obtained a B.Sc in Biology. Michael performed his graduate studies in the Immunology Graduate Group at the University of Pennsylvania. His thesis work investigated the role of intestinal microbial communities in calibrating antiviral immunity. He joined Dr. Eric Pamer's lab at Memorial Sloan Kettering Cancer Center as a postdoctoral fellow in 2013. His research on innate immunity against enteric bacterial infections led to him being named a recipient of an Irvington Fellowship from the Cancer Research Institute and a K99/R00 NIH Pathway to Independence Award. Michael started his own lab at UPenn in January of 2018 where his lab is currently engaged in research exploring immune-microbiota interactions in the context of infectious disease, specifically studying mucosal immune defenses against enteric pathogens.

The Abt lab’s research focuses on the pathogenesis of and host response to *Clostridium difficile*, a bacterium that infects the large intestine following perturbation of the intestinal microbiota. *C. difficile* represents one of the most urgent public health threats in the United States due to high recurrence rates following antibiotic treatment. The increasing failure of conventional therapy to control *C. difficile* associated disease highlights the need to identify alternative strategies to control this disease.

*C. difficile* is the first disease effectively treated with microbiota-based therapeutics, however implementation of this therapy as a reliable treatment option is limited due to inadequate understanding of its mechanism of action. Using a murine model of *C. difficile* infection and human clinical samples, our research investigates immune-microbiota regulation of *C. difficile* associated disease. These studies seek to reveal insights that are broadly applicable to the treatment of infectious or inflammatory diseases driven by dysbiosis of the microbiome.

Dr. Abt is a recipient of a Center Pilot Grant.

Please remember to cite the Center (NIH-P30-DK050306) and its core facilities (Molecular Pathology and Imaging Core, Host-Microbial Analytic and Repository Core, Genetically-Modified Mouse Core, and Cell Culture and iPSC Core) in your publications.

For access to our Center website and list of current members, please visit us at www.med.upenn.edu/molecular/
Our NIDDK P30 Center is part of the Digestive Diseases Research Core Centers and we have called it the Center for Molecular Studies in Digestive and Liver Diseases (CMSDLD) since its original inception and funding in 1997 (competitively renewed in 2002, 2007, 2012, and 2017). The CMSDLD's vision is to unite investigators with interests in digestive, liver and pancreatic diseases in the exploration of creative experimental and translational approaches as well as to stimulate others to enter this area of research. The CMSDLD’s mission revolves around the molecular controls of cellular growth and differentiation in the digestive tract, liver and pancreas with the goal of achieving a new level of integration in biology, pathobiology, and therapy. The targeted areas of pathobiology include genetic, malignant, and inflammatory disease of the liver, pancreas and digestive tract. The Center is divided into two major thematic areas: (1) Developmental biology, stem cell biology, regenerative medicine and genetics (Program Co-Directors: Chris Lengner, PhD and Ken Zaret, PhD); and (2) Microbial pathogens and host immune responses (Kyong-Mi Chang, MD and E. John Wherry, PhD). Center resources include four scientific cores (listed in the left panel) that drive technology and service to support Center members (typically 40-45) and associate members (typically 15-20), a pilot project program that often interdigitates with other Departments/Centers/Institutes on campus and importantly supports our new investigators, and various educational enrichment programs (e.g. weekly seminar series; weekly joint labs meetings; monthly topic focused meetings; annual symposium/retreat; endowed lectureships; academic and professional development series for trainees and new faculty; mentorship activities). We benefit from interactions and collaborations with CHOP, the VA medical center, the Wistar Institute, School of Arts and Sciences, School of Engineering and School of Veterinary Medicine, Institute of Regenerative Medicine, Institute for Immunology, the Penn-CHOP Microbiome Program and the newly created Penn Nutrition Center for Science and Medicine. We are privileged to have advice, input and support from our internal and external advisory committees, the former of which meets quarterly and latter convenes annually during our symposium/retreat.

Our CMSDLD is a wonderful Center, which is recognized nationally, due to the vision, vitality and innovation of our leaders, program directors, committees and administrative staff. Transitions occur. As I leave Penn and assume new positions at Columbia University, I wish to thank all of you for making the Center special and unique, and over the last few months, we have been working to ensure a seamless transition. To that end, based upon recommendations from our external advisory committee and the NIH/NIDDK leaders, Drs. Klaus Kaestner and Gary Wu will assume the roles of Co-Directors as of April 2019. They bring incredible experience, expertise and commitment. This also permits plenty of time for new and exciting directions in science and translational medicine for the CMSDLD, as well as administratively prepare for the competing renewal in 2021 for 2022.

With best wishes,

Anil K. Rustgi

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