How to reduce risks of colonic inflammation and colon cancer?
-identification of novel therapeutic targets, biomarkers, and risk factors

By Dr. Guodong Zhang
Department of Food Science and Molecular and Cell Biology Program,
University of Massachusetts Amherst

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Open to FST Alumni, registration by 4 Aug required

Abstract
Our research focuses on how to reduce the risks of gut diseases, such as colonic inflammation (inflammatory bowel disease or IBD), colon cancer, and intestinal barrier dysfunction. To achieve this, we address two issues: (1) identification of novel therapeutic targets of gut disorders. We use LC-MS/MS-based metabolomics to systematically profile bioactive lipids (termed eicosanoids) in vivo, in order to identify the specific lipid pathways that are deregulated in these diseases, then use mouse models to determine the functional roles of the identified lipid pathways in the pathogenesis of these diseases; and (2) identification of novel risk factors of gut disorders. We study how exposure to certain environmental and/or dietary compound alters gut microbiota to increase the risks of developing colonic inflammation and colon cancer, in order to identify novel risk factors of these diseases. Overall, through identification of novel therapeutic targets, biomarkers, and risk factors of these gut diseases, our research aims to develop novel diet-based strategies to reduce the risks of these diseases.

About the speaker
Guodong Zhang is an associate professor (with tenure) in the Department of Food Science at the University of Massachusetts Amherst. He received his B.S. degree in chemistry (2003) from Xi’an Jiaotong University in China, M.S. degree of chemistry from National University of Singapore (2005), and a Ph.D. degree in food science (2010) from the University of Wisconsin-Madison, and performed postdoctoral training (2010-2013) at the University of California-Davis.

His research focuses on bioactive compounds in gut health. He has produced more than 60 peer-reviewed publications, including several corresponding-author publications in high-impact journals such as Science Translational Medicine, PNAS, Cancer Research, and Gut Microbes, and has four U.S. patents or applications. He is the recipient of the 2020 Institute of Food Technologists (IFT)’s Samuel Cate Prescott Award for Research, 2019 American Oil Chemists (AOCS)’ Society Young Scientist Research Award, and is on the editorial advisory board of the Journal of Agricultural and Food Chemistry.