

DEB/ECH 294 SEMINAR

Large scale analysis of food ingredient metatranscriptomes reveals insights about hazards and food quality

Kristen Beck, Ph.D.
Research Staff Member, Industrial and Applied Genomics
IBM Almaden Research Center, San Jose

Friday, May 18, 2018
11:00am * 1022 Life Sciences

Abstract: As the challenges of protecting global food supply chains become more complex, the technical approaches being used to understand and guard against threats are becoming more sophisticated. Food safety testing is beginning to adopt new technologies such as next generation sequencing of DNA or RNA in their monitoring procedures and the cost of next generation sequencing is only decreasing with time. Together, this makes providing food safety solutions a very data-intensive problem. By surveilling the microbiome of food ingredients, we can develop methods and best practices that can be used to improve food testing standards and security of the food supply chain. As part of the Consortium for Sequencing the Food Supply Chain, we've utilized hundreds of terabytes of raw sequencing and derivative data to show that microbes will respond to perturbations in their environment and can be useful as an indicator of food safety hazards. By monitoring food microbiomes, we can better understand food safety hazards and quality issues that may arise in the supply chain.

Bio: Dr. Beck is a research staff member in the Industrial and Applied Genomics group in the Accelerated Discovery Lab of IBM Research. She has been involved in food-related research for over a decade. She has published contributions in mechanistic studies of omega-3 fatty acids in tumorigenesis as well as composition of primate breast milks among other topics. Since joining IBM Research in 2015, she has been an essential member of the Consortium for Sequencing the Food Supply Chain and now serves as the IBM Technical Lead. Her current research focuses on analyzing next generation sequencing data to gain insights about microbial ecology in food ingredients as well as confidently determining of the presence of various hazards such as pathogenic organisms, antimicrobial resistance genes, and food fraud. She received a Ph.D. in Biochemistry, Molecular, Cellular, and Developmental Biology with a Designated Emphasis in Biotechnology from the University of California, Davis and is a proud alumna and trainee of the Biotechnology Program.

Why not get a Designated Emphasis in Biotechnology along with your PhD? For more information, contact the Biotechnology Program (biotechprogram@ucdavis.edu) or checkout our website: deb.ucdavis.edu/.

Sponsored by: The UC Davis Biotechnology Program, The College of Biological Science-Section of Molecular and Cellular Biology and The College of Engineering- Department of Chemical Engineering.