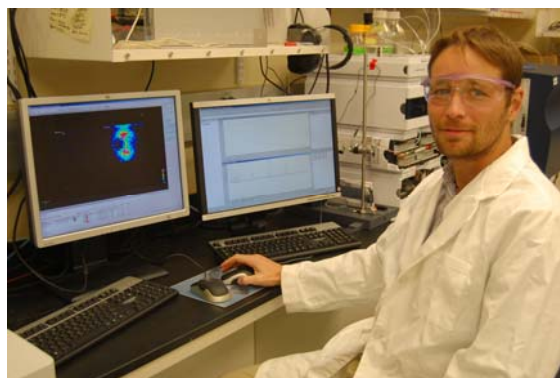


Pieter Dorrestein, PhD, contact information pdorrestein@ucsd.edu



Title: “GoogleMAP”-type molecular view of microbes - from culture to topographical maps of people.

Abstract: The world is covered in one large polymicrobial biofilm. The molecules that microbes produce affect all areas of biology—from the food we eat to the balance of health and disease in humans. In this presentation Dorrestein will highlight the spatial analysis of molecules and mapping of structural space through molecular networking using a variety of mass spectrometry, sequencing and informatics methodologies. The challenge we face is navigating the volumes of data and how to integrate the different types of data in one interpretable model and across multiple scales. Our solution to this challenge is to map the molecular world in 2D, 3D and topographically. We will show its applicability to “seeing” the molecular nature of interacting microbes grown in Petri-dishes all the way to microbes on the skin of people. We will highlight the highest resolution microbiome and molecular topographical maps of the skin of people but, in principle, the workflows can be applied to many other biological systems. In effect we are beginning to lay the foundations to create a “GoogleMAP” for our molecular understanding of microbes.

Biography: Dr. Dorrestein is an associate Professor at the University of California - San Diego. He is the Director of the Therapeutic Discovery Mass Spectrometry Center and a Co-Director, Institute for Metabolomics Medicine in the Skaggs School of Pharmacy & Pharmaceutical Sciences, Departments of Pharmacology, Chemistry and Biochemistry. Dr. Dorrestein was trained by Tadgh Begley in the chemical biology of enzymes involved in vitamin biosynthesis and by Neil Kelleher and Christopher Walsh, whom were co-sponsors of his NRSA postdoctoral fellowship, in Top and Middle down mass spectrometry on proteins that made small molecules of therapeutic value. Since his arrival to UCSD in 2006, Dr. Dorrestein has been pioneering the development of mass spectrometry methods to study the chemical and ecological crosstalk between population of organisms for agricultural, diagnostic and therapeutic applications. He has published over 120 articles and is the recipient of several awards, including the Beckman foundation young investigators award, The NIH EUREKA, Lilly award in analytical chemistry, the V-foundation, Hearst foundation, The Pharmaceutical Research and Manufacturers of America Award, and the Matt Suffness Award. In addition he is a technological and research advisor/consultant for INDICASET, Janssen, Agraquest-Bayer, CUBIST and Sirenas Marine Discovery.