

Drs. Pieter Dorrestein and Nuno Banderia Cited for Seminal Mass Spectrometry Advances

Pieter Dorrestein, Ph.D. in the Skaggs School of Pharmacy & Pharmaceutical Sciences (SSPPS) and Department of Chemistry & Biochemistry and Nuno Bandeira, Ph.D. in the SSPPS and Department of Computer Science & Engineering have developed a new mass spectrometric method that establishes a dynamic droplet or liquid bridge between a solvent input capillary and outlet capillary leading to a nanospray mass spectrometry (MS) system that can quantitate the contents of bacterial or mammalian cell communities over time and space. Inter-organism and tissue chemical signaling responses can be quantitated providing a new approach to molecular ecology and the discovery of bioactive molecules. Comments on their article published in the Proceedings of the National Academy of Science <pnas.1203689109> in a companion commentary and by the Faculty of 1000 commentary review, state that “in the kind of advance that happens only a few times over a decade, this article describes how the small molecules in and around a living bacterial colony can be identified and quantitated over time and space.” The commentary in the companion article describes their advance as a quantum leap in chemical ecology analogous to Chain and Florey’s discovery of penicillin. “This MS technology, termed NanoDESI, combined with spectra networking, may usher in a new era of discovery in the context of human therapeutics.”