

Biography

Erin S. Baker is an Associate Professor at the University of North Carolina in Chapel Hill, NC. To date, she has published over 150 peer-reviewed papers utilizing different analytical chemistry techniques to study both environmental and biological systems. Erin is currently serving as the Vice President of Education for the International Lipidomics Society, Events Committee Chair for Females in Mass Spectrometry (FeMS) and as an Associate Editor for the *Journal of the American Society for Mass Spectrometry*. She has received seven US patents, two R&D 100 Awards, and was a recipient of the 2016 ACS Rising Star Award for Top Midcareer Women Chemists, 2022 ASMS Biemann Medal, and 2022 IMSF Curt Brunnée Award. Currently, her research group utilizes advanced separations and novel software capabilities to examine how the environment affects human health.

Ion Mobility – mass spectrometry

E. Baker

Ion mobility spectrometry (IMS) is a widely used analytical technique for rapid molecular separations in the gas phase. Though IMS alone is useful, its coupling with mass spectrometry (MS) and front-end separations is extremely beneficial for increasing measurement sensitivity, peak capacity of complex mixtures, and the scope of molecular information available from biological and environmental sample analyses. In fact, multiple disease screening and environmental evaluations have illustrated that the IMS-based multidimensional separations extract information that cannot be acquired with each technique individually. In this tutorial, different IMS techniques such as drift tube IMS, traveling wave IMS, trapped IMS, and field asymmetric IMS will be explained. Additionally, the benefits of using the various IMS techniques in the analyses of complex biological and environmental studies will be showcased.