Bringing light into the darkness!

Soberly, the production of beer is a complex sequence of (bio-)chemical reactions, at the end of which there is hopefully a tasty and visually appealing drink. And even though, all beer is brewed using the same four classes of ingredients, contemporary beer styles show a broad range in flavor and color, suggesting differences in their chemical profiles. A wide variety of liquid chromatographic methods are used in beer analysis, ranging from comparatively simple LC-UV to (non-targeted) LC-MS applications. Within the scope of this seminar, some substance groups that are important for beer quality and sensory analysis will be considered, the analysis of which would not be possible without liquid chromatography. In view of the location of the conference, we look in particular at the Altbier, which is unique to this part of Germany, and explore how it differs analytically from other beer.

Presentation 1: **Application of liquid chromatographic methods in (Alt-)beer analysis**

Laura Knoke, Research Institute for Beer and Beverage Analysis at VLB Berlin, Germany

Presentation 2: **Untargeted Beer Analysis using LC-QTOF-MS – Differentiation of Beer Styles based on Phenolic and iso-alpha-Acids**

Prof. Kevin Schug, Shimadzu Distinguished Professor of Analytical Chemistry at The University of Texas at Arlington, US

Biography
Laura Knoke

Laura Knoke holds a diploma in biotechnology from TU Berlin and is also a trained chemical technical assistant. She thus possesses all the necessary skills to both find and solve analytical problems. Laura is now responsible for the Metabolomics Team at the department for Special Analysis at the VLB Research Institute for Raw Materials and Beverage Analysis (FIBGA). Laura's scientific work is focused on high-resolution mass spectrometry in combination with UHPLC and GC for the development of untargeted metabolomics workflows and quantitative analyses.

Biography
Kevin Schug

Prof. Dr. Kevin Schug

Kevin A. Schug is Professor and the Shimadzu Distinguished Professor of Analytical Chemistry in the Department of Chemistry and Biochemistry at The University of Texas at Arlington (UTA). He is also Director of the Collaborative Laboratories for Environmental Analysis and Remediation (CLEAR) at UTA. He received his B.S. degree in Chemistry in 1998 from the College of William and Mary, and his Ph.D. degree in Chemistry from Virginia Tech in 2002. From 2003-2005, he performed post-doctoral research at the University of Vienna in Austria. Since joining UTA in 2005, his research has been focused on the theory and application of separation science and mass spectrometry for solving a variety of analytical and physical chemistry problems, in the fields of environmental, pharmaceutical, biological, and energy research. Dr. Schug has received several research awards and was named to the 2019 and the 2021 The Analytical Scientist's Top 100 Power List of the most influential analytical chemists in the world.