



Exponent[®]
Engineering & Scientific Consulting

Kate Lassman, Ph.D.

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Professional Profile

Trained as an analytical chemist, Dr. Lassman specializes in the detection and characterization of small molecules, proteins, and polymeric materials. She has experience in numerous characterization techniques including liquid chromatography mass spectrometry (LC-MS), ultra/high performance liquid chromatography (U/HPLC), Fourier transform infrared (FTIR) spectroscopy, UV/vis spectroscopy, optical profilometry, electrochemistry, capillary electrophoresis (CE), thermal gravimetry analysis (TGA), differential scanning calorimetry (DSC), atomic force microscopy (AFM), and nuclear magnetic resonance (NMR).

Dr. Lassman uses her expertise to help clients detect compounds in complex matrices across multiple industries.

Prior to joining Exponent, Dr. Lassman developed specialized small molecule detection methods in protein mixtures. She also developed protein analysis methods using LC-MS, HPLC, and CE. She characterized biopharmaceutical formulations using HPLC, CE, FTIR, TGA, and DSC. Her graduate research focused on microfluidics and electrochemistry to detect various environmental contaminants. One project included collaborating with engineers and epidemiologists to sample, test, and analyze the health effects of air pollution.

Academic Credentials & Professional Honors

Ph.D., Chemistry, Colorado State University, 2019

B.S., Biochemistry, University of Nebraska, Lincoln, 2014

Chateaubriand Fellow, 2018

Rodney Bush Fellow in Organic Chemistry, 2014

Prior Experience

Assay and Expression Research Associate, ATUM, 2020-2022

Postdoctoral Researcher, Legacy BioDesign, 2019-2020

Intern, Department of Energy, 2013

Publications

Jang, I., Berg, K.E., and Henry, C.S. "Viscosity Measurements Utilizing a Fast-Flow Microfluidic Paper-Based Device" *Sensors and Actuators B: Chemical*, 2020, 319.

Berg, K.E., Leroux, Y.R., Hapiot, P., and Henry, C.S. "SECM Comparison of Carbon Composite Thermoplastic Electrode (TPE) Surfaces" *Analytical Chemistry*, 2020, 3, 1304-1309.

Berg, K.E., Clark, K.M., Li, X., Carter, E.M., Volckens, J., and Henry, C.S. "High-Throughput, Semi-Automated Dithiothreitol (DTT) Assays for Oxidative Potential of Fine Particulate Matter" *Atmospheric Environment*, 2019.

Berg, K.E., Leroux, Y.R., Hapiot, P., and Henry, C.S. "Increasing Applications of Graphite Thermoplastic Electrodes (TPEs) with Aryl Diazonium Grafting" *ChemElectroChem*, 2019, 6, 4811-4816.

Klunder, K.J., Clark, K.M., McCord, C., Berg, K.E., Minter, S.D., and Henry, C.S. "Polycaprolactone-Enabled Sealing and Carbon Composite Electrode Integration into Electrochemical Microfluidics" *Lab on a Chip*, 2019, 19, 2589-2597.

Berg, K.E., Turner, L.R., Volckens, J., and Henry, C.S. "Electrochemical Dithiothreitol Assay for Particulate Matter Studies" *Aerosol Science & Technology*, 2019, 3, 268-275.

Noblitt, S.D., Berg, K.E., Cate, D.M., and Henry, C.S. "Characterizing Nonconstant Instrumental Variance in Emerging Miniaturized Analytical Techniques" *Analytica Chimica Acta*, 2016, 915, 64-73.

Berg, K.E., Adkins, J.A., Boyle, S.E., and Henry, C.S. "Manganese Detection Using Stencil-printed Carbon Ink Electrodes on Transparency Film" *Electroanalysis*, 2016, 28, 679-684.

Wang, Y., Paletta, J.P., Berg, K., Reinhart, E., Rajca, S., and Rajca, A. "Synthesis of Unnatural Amino Acids Functionalized with Sterically Shielded Pyrroline Nitroxides" *Organic Letters*, 2014, 16, 5298-5300.

Presentations

Measuring Oxidative Activity with Automated Electrochemical Flow Systems. Poster presentation, Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Orlando, FL, 2018.

Combining Vibrational Spectroscopy with Microfluidics. Poster presentation, Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Atlanta, GA, 2016.