Publications: * denotes undergraduate student

Edmiston, P.L., Hill, N., Hershberger*, R., Hartmann*, H., Carter, E. and Divine, C., 2023. Laboratory validation of an integrative passive sampler for per-and polyfluoroalkyl substances in water. Environmental Science: *Water Research & Technology. 2023*

Edmiston, P.L., Carter, E., Toth, K., Hershberger, R.*, Hill, N.*, Versluis, P., Hollinden, P., Divine, C. Field evaluation the Sentinel™ integrative passive sampler for the measurement of per- and polyfluoroalkyl substances in water using a modified organosilica adsorbent. *Groundwater Monitoring & Remediation* (2023) *in press.*

Kim, Y.,* Pike, K. A.*, Gray, R., Sprankle, J. W.*, Faust, J. A., & Edmiston, P. L. Non-targeted identification and semi-quantitation of emerging per-and polyfluoroalkyl substances (PFAS) in US rainwater. *Environmental Science: Processes & Impacts. 25,* 1771 - 1787 (2023)

Burkett, C. M.*; Underwood, L. A.*, Volzer, R. S.*; Baughman, J. A.*; Edmiston, P. L. Organic-Inorganic Hybrid Materials that Rapidly Swell in Non-Polar Liquids: Nanoscale Morphology and Swelling Mechanism. *Chemistry of Materials* 20, 1312-1321 (2008).

Jourden, M. J.*; Clarke, C. N.*; Palmer, A. K.*; Barth, E. J.*; Prada, R. C.*; Hale, R. N.*; Fraga, D. Snider, M. J.; Edmiston, P. L. Changing the Substrate Specificity of Creatine Kinase from Creatine to Glycocyamine: Evidence for a Highly Evolved Active Site"*Biochim. Biophys. Acta,* 1774, 1519-1527 (2007).

Walker, N. R.*; Linman M. J.*; Timmers, M. M.*; Dean S. L.*; Burkett, C. M.*; Lloyd, J. A.*; Keelor, J. D.*; Baughman, B. M.*; Edmiston, P. L.. Selective Detection of Gas-Phase TNT by Integrated Optical Waveguide Spectrometry Using Molecularly Imprinted Sol-Gel Sensing Films. *Analytica Chimica Acta*, 593, 82-91 (2007).

Ohren, J. F.; Kundracik, M. L.*; Borders, C. L.; Edmiston P. L.; and Viola R. E. Structural Asymmetry and Intersubunit Communication in Muscle Creatine Kinase. *Acta Cryst*. D63, 381-389 (2007).

Carlson, C. A.; Lloyd, J. A.; Dean, S. L.; Walker, N. R., Edmiston, P. L. Sensor for Fluorene Based on the Incorporation of an Environmentally Sensitive Fluorophore Proximal to a Molecularly Imprinted Binding Site, *Anal. Chem*., 78 (11), 3537 -3542 (2006).

Edmiston, P. L. and Williams, T. R. An Analytical Experiment in Error Analysis: Repeated Determination of Glucose Using Commercial Glucometers. *J. Chem. Educ.77*, 377-379 (2000).

Edmiston, P. L. and Saavedra, S. S. Molecular Orientation Distributions in Protein Films III. Yeast Cytochrome *c* Films Immobilized on Pyridine Disulfide Capped Phospholipid Bilayers. *Biophys. J. 74*, 999-1006 (1998).

Edmiston, P. L. and Saavedra, S. S. Molecular Orientation Distribution in Protein Films IV. A Multilayer Composed of Yeast Cytochrome *c* Bound through an Intermediate Streptavidin Layer to a Planar Supported Phospholipid Bilayer. *J. Am. Chem. Soc. 120*, 1665-1671 (1998).

Wood, L. L., Cheng, S. S., Edmiston, P. L. and Saavedra, S. S. Molecular Orientation Distributions in Protein Films II. Site Directed Immobilization of Yeast Cytochrome *c* on Thiol-Capped, Self-Assembled Monolayers." *J. Am. Chem. Soc. 119*, 571-576 (1997).

Edmiston, P. L., Lee, J. E., Cheng, S. S. and Saavedra, S. S. Molecular Orientation Distributions in Protein Films. I. Cytochrome *c* Adsorbed to Substrates of Variable Surface Chemistry.", *J. Am. Chem. Soc. 119*, 560-570 (1997).

Edmiston, P. L. and Saavedra, S. S. Fabrication and Characterization of Uranium Oxide Doped Sol-Gel Planar Waveguides for Attenuated Total Reflectance Spectrometry. 119

Invited Seminars and Conference Presentations **(Past 12 years):**

SERDP Webinar Series. “Field-Ready PFAS Passive Sampler Calibrated to EPA 1633 Analytes” August 2023

“Passive Sampler for the Time-Integrative Measurement of Per- and Polyfluoroalkyl Substances in Water, SETAC North America Conference November 2022.

2022 Emerging Contaminants in the Environment Conference, “Elucidating the Mechanisms of PFAS Adsorption by Varying Sorbent Surface Chemistry” March 2022

SERDP & ESTCP Symposium, “Elucidating the Mechanisms of PFAS Adsorption by Varying Sorbent Surface Chemistry” December 2021

BASF Scientific Innovation and Interaction Seminar, BASF North America, “Adsorption and Encapsulation Using Mesoporous Organosilica that Swells”, Detroit, February 2020.

From Oceans to Clouds: The Environmental Chemistry of Water. Graduate Student Symposium – Presidential Event. “Per- and Polyfluoroalkyl Substances (PFAS) in the Environment: Lessons Learned from Studying Adsorption to Porous Solids. ACS National Meeting, San Diego, CA, September 2019

University of Illinois, Sustainable Technology Center, “Removal of Perfluoroalkyl Substances (PFAS) from Water Using Tailored and Highly Porous Organosilica Adsorbents” March 2019.

American Chemical Society Meeting National Meeting Presentation: Removal of Perfluoroalkyl Substances from Water Using Molecularly Engineered Coatings on Sand and Silica San Francisco, CA April 2017

“Combining Forces: Enhancing Function Through Chemomechanical Hybrid Materials” Indiana University-Purdue, Fort Wayne, IN March 2016.

The U.S. Algal Toxin Conference 2015. “Testing of new filter media to remove undesired molecules produced by Algae: Osorb media products for the Selective Removal of Microcystin” Akron, OH April 2015.

SERDP Tech

Edmiston, P.L. ACS Presidential Symposium on Ensuring the Sustainability of Critical Materials and Alternatives. “New Tools in the Water Technology Toolbox: Swellable Organosilica for the Reversible Extraction of Organics and Metals” American Chemical Society National Meeting, Philadelphia August 2012.

Lubrizol Innovation Week, Plenary Speaker, Cleveland, September 2012 “Discovery Process in the Chemical Sciences” (Talk on innovation to 200 scientists at Lubrizol, and billion dollar specialty chemical company.)

Edmiston, P.L.; Pickett, D. “Osorb: A new platform technology for water purification” World IUPAC Meeting, San Juan, Puerto Rico, July 2011.

Edmiston, P.L. “The ACS Graduate Fellowship: Past, Present, and Future.” PITTCON, Orlando, FL March 2012.

Edmiston, P.L. Varga, M. Curtze, A. “Versatile catalyst supports that use swellable, highly tensioned organosilica materials to pre-concentrate reagents in nanoscale pore

Strategic Environmental Research and Development Program (SERDP). Method to Measure PFAS in MIL-Spec AFFF by Extraction Using Osorb and Advanced Sorbents with Organofluorine Analysis. $113,740

Strategic Environmental Research and Development Program (SERDP). Sorbents to Remove PFAS from Natural Waters. 2022-2024, $186,863

National Science Foundation, MRI: Acquisition of a Liquid Chromatograph, Quadrupole, Time-of-Flight Mass Spectrometer to Enhance Undergraduate Research and Education in the Chemical and Biochemical Sciences $232,158 Funded 2020.

Strategic Environmental Research and Development Program (SERDP). “Osorb® Media Use in Per- and Polyfluoroalkyl Substances (PFAS) Passive Samplers” 2020-2022, $188,977

Strategic Environmental Research and Development Program (SERDP). “Removal of Complex Mixtures of Perfluoroalkyl Acids from Water Using Molecularly Engineered Coatings on Sand and Silica” 2018-2020, $199,998

NSF-GOALI: “Swellable Superhydrophobic Organosilica Materials as a Novel Catalyst Support for Water Purification Systems” PI: Umit Ozkan, Ohio State University in collaboration with ABS Materials 2014-2017, $362,520

National Science Foundation: “Food-Energy-Water Systems Challenging Chemists and Chemical Engineers in the 21st Century” PI: Tim Long, Virginia Tech; Co-PIs: Paul Edmiston, Frank Bright (SUNY Buffalo). (015-2016, $74,548

Strategic Environmental Research and Development Program (SERDP). “Multipurpose Sediment Passive Sampler with Improved Tissue Mimicry to Measure the Bioavailable Fraction” 2014-2016, $148.377

U.S. Department of Energy, SBIR Phase IIB. “Removal of Organics and Phenols for Refinery Waters Using Swellable Organosilica” $999,150. Funded 2014-2016. (funded with ABS Materials being lead organization)

National Science Foundation, SBIR Phase II. “Produced Water Treatment Using Animated Organosilicas that Rapidly and Reversible Swell” $498,222. Funded 2011-2014.

National Science Foundation, RAPID. $200,000 “Process Development to Restore Osorb Swelling Glass Fouled While Recovering Gulf Oil-Water Mixtures” Funded 2010.

U.S. Department of Energy, SBIR Phase II. “Removal of Dissolved Organics From Flow Back Waters Using Swellable Organosilica” $978,821. Funded 2011-2014. (funded with ABS Materials being lead organization)

National Science Foundation, SBIR Phase I. “Produced Water Treatment Using Animated Organosilicas that Rapidly and Reversible Swell” $149,850. Funded 2010-2011.

Department of Energy, SBIR. “Frac Fluid and Flow Back water Treatment Using Animated Organosilicas that Rapidly and Reversible Swell” $98,150. Funded 2010-2011.

National Science Foundation, Chemical and Biological Separations. “Engineering Organosilica Materials that Rapidly and Reversible Swell for Water Remediation” $126,000. 2009-2011.

National Science Foundation EXP. “Active Sampling and Reactive Chemistry for Enhanced Detection of Explosives” $800,000, with David Gottfried, Daniel Campbell, and Jayme Caspell, Georgia Tech Research Institute. Funded 2007-2010.