

**Environmental Engineering**

**and Earth Sciences**

**EEES Department Seminar**

**“Under the Radar – Accounting for Large Scale Animal Agriculture to Address Nutrient Pollution”**

PRESENTED BY

Dr. Rebecca Muenich

Assistant Professor

School of Sustainable Engineering and the Built Environment

Arizona State University

<https://clemson.zoom.us/j/94316615078>

To meet the growing demand for meat and other animal-derived products more efficiently, livestock farms have been moving from small, pasture-raised operations to large, concentrated animal feeding operations (CAFOs) in the U.S. and globally. While this change has made production activities more efficient, the potential environmental impacts of this change is not well understood. CAFOs tend to cluster in space, with aggregated groups of CAFOs producing as much waste as some cities. CAFO location and subsequent management tends to fly “under the radar” due to varied interpretations of federal regulations. This dearth of data available to evaluate and manage this large emissions source makes it difficult to truly account for animal agriculture in pollution management. Given that we know the presence of CAFOs can have impacts to human health, environmental justice, and an increased risk for air, water, and soil contamination, it is imperative to develop strategies to track these entities and how they are influencing their surrounding environment. Herein, I will summarize my current work related to filling in the knowledge gaps about how these operations affect their surrounding environment and how we can use this knowledge to advance watershed level solutions for their subsequent management.

**About Dr. Muenich:**

Dr. Muenich holds a B.S. in Biological Engineering from the University of Arkansas in 2009, an M.S. and Ph.D. in Agricultural & Biological Engineering from Purdue University in 2011 and 2015 respectively, and completed a postdoctoral position at the Graham Sustainability Institute at the University of Michigan in 2017. She joined Arizona State University as an Assistant Professor in the School of Sustainable Engineering and the Built Environment in the Fall of 2017 where her research has focused on integrating geospatial sciences and watershed modeling to evaluate trade-offs in land and water management, especially for water quality outcomes. She has published 26 peer-reviewed articles and her work has been presented over 60 times at national and international conferences, including 5 invited presentations. She was a recipient of the ASABE Robert E. Stewart Engineering and Humanities Award from ASABE in 2011, named a New Face of ASABE in 2020, and inducted into the Arkansas Academy of Agricultural and Biological Engineering in 2020. In addition to academic work she is passionate and active in recruiting and maintaining women in engineering, participating and leading multiple programs throughout her career devoted to the next generation of women engineers.

**2:30 PM**

 **Friday, September 11, 2020**

**Online via Zoom**

***“Attendance is mandatory for graduate students enrolled in EES 8610, EES 9610, and GEOL 8510***