

*David L. Freedman, Ph.D.*

*Biographical Sketch for UWGB*

David L. Freedman is a professor and Chair of the Department of Environmental Engineering and Earth Sciences at Clemson University. David's academic journey started at UWGB in 1973, when he made the move from his hometown of Worcester, Massachusetts to Green Bay to join many other undergraduates from across the U.S. who shared a deep concern for the fate of the planet. David earned a B.S. degree in Science and Environmental Change in 1978. Among his many experiences at UWGB, one that stands out is his participation in a project to build a pilot-scale anaerobic digester on a dairy farm, one of the first to be built in Wisconsin. The project was unusual because it was a student led effort, from design to construction to operation. David was part of the project from start to finish, culminating in successful demonstration of a technology that has now been widely adopted.

Thanks to Dr. David Kriebel, his roommate, classmate, and lifelong friend from UWGB, David landed a dream job after graduating at the Center for the Biology of Natural Systems (CBNS) at Washington University, where he worked for Dr. Barry Commoner. At CBNS, David extended what he learned at UWGB to a project that explored the potential to replace all US gasoline and diesel fuel with renewable ethanol based fuel, without impacting the food supply. From CBNS, David went on to earn an M.S. in Environmental Engineering in 1985 from the University of Cincinnati, where he worked at the EPA's Test and Evaluation Facility. This gave David an opportunity to further explore environmental research, leading to a doctoral program at Cornell University. While there, his focus shifted to studying microbial degradation of chlorinated solvents. Along with his advisor, Dr. Jim Gossett, he published a paper entitled *Biological Reductive Dechlorination of Tetrachloroethylene and Trichloroethylene to Ethylene under Methanogenic Conditions*, which was given a landmark publication award by the Association for Environmental Engineering and Science Professors. This publication provided the first evidence that tetrachloro- and trichloroethene can be completely dechlorinated to non-hazardous ethene. He also developed an anaerobic enrichment culture that converts the solvent dichloromethane, also a significant groundwater pollutant, to nonhazardous acetic acid and methane. Upon graduation from Cornell in 1990, David was awarded a post-doctoral fellowship from the American College of Toxicology. That same year he began his academic career at the University of Illinois at Champaign-Urbana, where his research focused on microbial dehalogenation and anaerobic degradation of nitrated organic compounds.

In 1996, David moved to Clemson University where has been ever since. He extended his research to include abiotic degradation of chlorinated ethenes through reaction with iron minerals in soils, a process that is of great interest for management of sites with persistent levels of contamination. During the pandemic, he spearheaded a research effort to conduct surveillance of the SARS-CoV-2 virus by monitoring the wastewater in three sewersheds in the Clemson area. That work culminated in a model that predicts the number of infected individuals based on viral RNA levels in the wastewater. Over his career, David has mentored 66 M.S. students, 12 Ph.D. students, and five post-docs. He has taught 14 different environmental engineering courses, ranging from the sophomore to graduate level.

David made many wonderful friends at UWGB and has kept in contact with a core group of “Eco-freaks.” David met his wife of 40+ years at UWGB, Dr. Susan Peirce, who is currently an independent medical writer. It is safe to say that UWGB provided a foundational experience like no other.

