

## **Brian A. Wrenn, Ph.D.**

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### **Educational Background:**

Ph.D. 1992. Environmental Science in Civil Engineering. University of Illinois at Urbana-Champaign.

M.S. 1984. Biological Oceanography. University of Miami, Coral Gables, FL.

B.S. 1980. Biochemistry/Chemistry. University of Illinois at Urbana-Champaign.

### **Professional Experience:**

Environmental Analysis and Technology, LLC 2011 to present

*Principal*

- provide consulting and related services in environmental engineering, environmental biotechnology, water and wastewater treatment, and environmental remediation
- conduct laboratory and field research studies in support of consulting services
- examples of completed projects include:
  - investigated alternatives to antibiotics for controlling microbial infections in fuel-ethanol fermentations
  - investigated the effect of varying proportions of milo (grain sorghum) on ethanol yield in a corn-based fuel ethanol plant
  - evaluated different methods for controlling microbial contamination and hydrogen sulfide in produced water used for enhanced oil recovery and the effects on corrosion in pipes and tanks
  - developed a chlorine-dioxide-based process for treating produced water from oil and gas production for reuse in hydraulic fracturing; process included microbial control, removal of sulfides, dissolved iron and manganese, and suspended solids
  - investigated and determined the source of corrosion in a new bottling line at a bottling plant for a major winery

New Jersey Institute of Technology, Department of Civil and Environmental Engineering, Newark, NJ 2012 to 2013

*Senior Scientist*

- conducted pilot-scale bioremediation field study for treatment of lingering oil from *Exxon Valdez* oil spill on two Prince William Sound (Alaska) beaches with significant oil contamination, including study design, site setup, operation of treatment systems, sample collection, data analysis, and reporting
- conducted survey of twenty-four Prince William Sound (Alaska) beaches suspected of being contaminated with lingering oil from the *Exxon Valdez* oil spill
- supervised graduate and undergraduate research assistants
- managed contractor that was hired to install and maintain treatment systems

Temple University, Department of Civil and Environmental Engineering, Philadelphia, PA 2010 to 2012

*Senior Scientist*

- conducted field investigation of factors controlling the fate of oil from the BP-Deepwater Horizon oil spill on three beaches along the U.S. coastline of the Gulf of Mexico (2010-2011)
- conducted pilot-scale bioremediation field study for treatment of lingering oil from *Exxon Valdez* oil spill on four Prince William Sound (Alaska) beaches with significant oil contamination, including study design, site setup, operation of treatment systems, sample collection, data analysis, and reporting (2011-2012)
- supervised graduate and undergraduate research assistants
- managed contractors that were hired to install and maintain treatment systems

Southern Illinois University Edwardsville, National Corn-to-Ethanol Research Center (NCERC), Edwardsville, IL 2007 to 2010

*Research Director*

- provided research direction and leadership for not-for-profit research center that conducts contract research to evaluate or demonstrate new technologies for production of fuel ethanol from starch-based feedstocks
- responsible for study design, project management, data analysis and reporting to clients and granting agencies
- managed 14 major pilot-plant studies from conception through completion
- managed more than 40 laboratory research projects, including several long-term externally funded NCERC-initiated research projects
- supervisory responsibility for six direct reports, including Ph.D. scientists, laboratory technicians, and research engineers
- provided conceptual and detailed guidance for the development of a formal one-year paid internship program for recent graduates (M.S., B.S., A.A.S., and A.T. in science and engineering) seeking careers in the biofuels industry

Washington University, Department of Civil Engineering and Environmental Engineering Science Program, St. Louis, MO 1998 to 2007

*Assistant Professor*

- teaching responsibilities included courses in water and wastewater treatment, biological processes in environmental engineering, and laboratory methods in environmental engineering
- managed externally funded research program involving bioremediation of crude oil, fate of vegetable oil in anaerobic sediments, chemical dispersion of crude oil, and biological transformations of nanoscale iron oxides
- advised dissertation research for 2 Ph.D. students, thesis research for 9 M.S. students, and independent research projects for 17 undergraduate students

Environmental Technologies & Solutions, Inc., Rochester, NY 1995 to 1997

*Vice-President*

- principal and corporate officer in charge of environmental biotechnology services

University of Cincinnati, Dept. Civil & Environmental Engineering 1992 to 1995  
*Postdoctoral Research Associate*

- oil-spill bioremediation, petroleum microbiology, nutrient transport in intertidal zones

University of Illinois at Urbana-Champaign, Dept. Civil Engineering 1986 to 1991  
*Graduate Research Assistant*

- Dissertation: Effect of Primary Electron-Donor and Electron-Acceptor Substrates on the Kinetics of Reductive Dehalogenation of Halogenated Aliphatic Hydrocarbons.

E. I. DuPont de Nemours and Co., Inc., Central Research and Development Dept., Wilmington, DE 1984 to 1986  
*Microbiologist/Biochemist*

### **Professional Activities:**

#### Committee Memberships

- National Academy of Sciences (National Research Council): Understanding Oil Spill Dispersants - Efficacy and Effects (2005)
- American Society of Civil Engineering: Natural Attenuation Task Committee (1999-2000)

#### Session Chairmanships

- *Twenty-Fifth Annual International Fuel Ethanol Workshop & Expo*, Optimizing the Value of Thin Stillage, June 16-17, 2009, Denver, CO
- *USDA-ARS, Midwest Area Bioenergy Showcase*, Scope of ARS Research Part 1: Bioenergy Panel, July 18, 2008, Peoria, IL
- *Fourth Biennial Freshwater Spills Symposium*, Biological Control Methods, March 19-21, 2002, Cleveland, OH

### **Publications:**

(1) Peer-Reviewed Journals

Over 30 publications in peer-reviewed scientific journals

(2) Books and Book Chapters

3 books or book chapters

### **Conference Presentations:**

Over 50 presentations at scientific and technical conferences

### **Invited Lectures:**

10 invited lectures