

Ian M. Bradley

RENEW Institute
Department of Civil, Structural & Environmental Engineering
University at Buffalo – SUNY

email: ianbradl@buffalo.edu
phone: 815.575.1161

RESEARCH EMPHASES:

Sustainable Water & Wastewater Treatment. Environmental Biotechnology. Microbial Ecology.

EDUCATION

2017 (Dec)	Ph.D. Environmental Engineering. University of Illinois at Urbana-Champaign Dissertation: <i>Selection of lipid and carbohydrate accumulators for enhanced algal feedstock production and nutrient recovery from wastewater.</i>
2011	M.S. Environmental Engineering. University of Illinois at Urbana-Champaign Thesis: <i>Iron-oxide amended biosand filters for virus removal.</i>
2010	M.S. Civil Engineering (Structures). University of Illinois at Urbana-Champaign
2009	B.S. Industrial & Enterprise Systems Engineering. University of Illinois at Urbana-Champaign.

PROFESSIONAL EXPERIENCE

January 2018	Assistant Professor , Dept. of Civil, Structural and Environmental Engineering and RENEW Institute. University at Buffalo, SUNY.
2010-2017	Research and Teaching Assistant , Dept. of Civil and Environmental Engineering. University of Illinois at Urbana-Champaign.

PUBLICATIONS

Published

Bradley, I.M., Pinto, A.J., Guest, J.S. Design and Evaluation of Illumina MiSeq-Compatible, 18S rRNA Gene Specific Primers for Improved Characterization of Mixed Microalgal Communities. *Applied and Environmental Microbiology*. 2016, 82 (19), pp 5878-5891.

Shoener, B.D., **Bradley, I.M.**, Cusick, R.D., Guest, J.S. Energy Positive Domestic Wastewater Treatment: The Roles of Anaerobic and Phototrophic Technologies. *Environmental Science: Processes & Impacts*, 2014, 16(6): 1204-1222

Wang, H., Narihiro, T., Straub, A.P., Pugh, C.R., Tamaki, H., Moor, J.F., **Bradley, I.M.**, Kamagata, Y., Liu, W.T., Nguyen, T.H., MS2 Bacteriophage Reduction and Microbial Communities in Biosand Filters, *Environmental Science and Technology*, 2014, 48(12): 6702-6709

Bradley, I.M., Straub, A., Maraccini, P., Markazi, S., Nguyen, T.H. Iron-oxide Amended Biosand Filters for Virus Removal. *Water Research*, 2014, 45 (15), pp. 4501-4510

Gardner-Dale, D.A., **Bradley, I.M.**, Guest, J.S. The Influence of Solids Residence Time and Dynamic Carbon Storage on Nitrogen and Phosphorus Recovery by Microalgae Across Diel Cycles. *Water Research*. 2017, 122 pp. 231-239

In Preparation

Bradley, I.M., Guest, J.S. The Effect of Solids Residence Time on Structure and Function in Microalgal Wastewater Communities. *In preparation. To be submitted to Environmental Science & Technology.*

Bradley, I.M., Guest, J.S. Dynamic Carbon Storage and Nitrogen and Phosphorus Recovery from Wastewater by Mixed Microalgal Communities. *In preparation. To be submitted to Environmental Science & Technology.*

RESEARCH EXPERIENCE

2012-2017	Ph.D. Research: Selection of lipid and carbohydrate accumulators for enhanced algal feedstock production and nutrient recovery from wastewater.
2014-2016	Eukaryotic Gene Sequencing Collaboration: Design of 18S rRNA Gene Specific Primers for the Characterization of Mixed Eukaryotic Communities.
2013-2016	Nutrient Recovery Collaboration: The Influence of Operating Parameters on Nutrient Recovery by Microalgal Systems.
2013-2014	Energy Positive Wastewater Treatment Collaboration: Evaluating the Roles of Anaerobic and Phototrophic Technologies in Achieving Energy Positive Wastewater Treatment.
2010-2011	M.S. Research: Iron-Oxide Amended Biosand Filters for Virus Removal.

TEACHING & MENTORING EXPERIENCE

Teaching Assistant	Course: Introduction to Environmental Engineering, CEE 330, University of Illinois. (Spring 2010 and 2016)
Graduate Student Instructor	Course: Independent Study – Biosand Filter Water Purification. University of Illinois. (2010-2011)
Graduate Advising	Peer Advisor: Served as peer advisor and mentor to 4 graduate students. Helped guide research and professional development, in addition to overseeing training and daily operation of all laboratory research. (2012-present)
Undergraduate Advising	Research and Technical Advisor: As part of Independent Study courses, Ph.D, and M.S. research, served as an advisor and mentor to 30+ undergraduate students. Taught experimental design, laboratory methods, and data analysis, in addition to managing work schedules and overseeing experimental work. (2010-present)
Mentoring	Research Mentor: Served as an advisor and mentor to two students in the Illinois Scholars Undergraduate Research (ISUR) Program, a program that seeks to provide research opportunities to underrepresented students in engineering. (2010-2012)

AWARDS & HONORS

2012-2013	Walter E. Deuchler Fellowship, University of Illinois at Urbana-Champaign
2013	Illinois Water Environment Association Clean Water Scholarship
2010	Water Environment Federation National Student Design Competition – 2 nd Place
2010	Central States Water Environment Association Student Design Competition – 1 st Place
2010	American Society of Civil Engineers (ASCE) – EWB Sustainable Development Award
2010	EPA's People, Planet, and Prosperity (P3) Phase II Grant
2009	EPA's People, Planet, and Prosperity (P3) Phase I Grant

SELECT CONFERENCE PRESENTATIONS & POSTERS (*presenter underlined*)

Bradley, I.M., Guest, J.S.; Gardner-Dale, D.A.; Fedders, A.C.; DeBellis, J.L. (Presentation) Development of selective pressures for nitrogen and phosphorus recovery by microalgae across diurnal cycles. 1st IWA Conference on Algal Technologies for Wastewater Treatment and Resource Recovery; International Water Association; Delft, The Netherlands. March 16-17, 2017.

Bradley I.M., Pinto A.J., Guest, J.S., (Presentation) Improved Characterization of Mixed Phototrophic Communities through 18S rRNA Amplicon Sequencing. *IWA Microbial Ecology in Water Engineering & Biofilms 2016*. Copenhagen, Denmark. September 4-7, 2016.

Bradley, I.M., DeBellis, J., Fedders, A., Guest, J.S. (Poster) Selective Pressures Drive Algal Community Function, Nutrient Recovery, and Bioenergy Feedstock Production in Phototrophic Wastewater Treatment. *IWA Leading Edge Conference on Water and Wastewater Technologies*, Jerez de la Frontera, Spain. June 13-16, 2016.

Bradley I.M., Pinto A.J., Guest, J.S., (Poster) Design of 18S Primers for Improved Determination of Mixed Phototrophic Communities in Wastewater Treatment, *Illinois Water Environment Association's (IWEA's) 37th Annual Conference*. Urbana, IL. February 29, 2016.

Bradley I.M., Pinto A.J., Guest, J.S., (Poster) Design of 18S Primers for Improved Determination of Mixed Phototrophic Communities in Wastewater Treatment, *Women Exploring Graduate Opportunities (We Go) in Engineering Symposium*. University of Illinois, Urbana, IL . September 18, 2015.

Bradley I.M., Pinto A.J., Guest, J.S., (Poster) Design of 18S Primers for Improved Determination of Mixed Phototrophic Communities in Wastewater Treatment, *Association of Environmental Engineering and Science Professors 2015*. New Haven, CT. June 13-16, 2015.

Bradley, I.M., Gardner-Dale, D., Guest, J.S. (Poster). Selection of lipid and carbohydrate accumulators for enhanced algal feedstock production and nutrient recovery from wastewater. *Illinois Water 2014 Conference*, Illinois State Water Survey, Urbana, IL, October 14-15, 2014.

Bradley I.M., Straub A., Markazi S.D., Maraccini P.A., Nguyen T.H., (Poster) Removal of Waterborne Viruses Using Iron-Amended Biosand Filters, *Association of Environmental Engineering and Science Professors 2013*. Golden, CO. July 14-16, 2013.

Bradley I.M., Straub A., Markazi S.D., Parker K.M., Maraccini P.A., Nguyen T.H., (Poster and Presentation) Removal of Waterborne Viruses Using Iron-Amended Biosand Filters, *EPA's People, Planet, and Prosperity (P3) National Design Expo 2011*. Washington, D.C. April 16-17, 2011.

Bradley I.M., Straub A., Markazi S.D., Maraccini P.A., Nguyen T.H., Removal of Waterborne Viruses Using Iron-Amended Biosand Filters, (*Presentation*). *2010 Water and Health Conference*, University of North Carolina Chapel-Hill. October 25-26, 2010.

Bradley I.M., Straub A., Sohn A., Nguyen T.H., (Presentation) Removal of Waterborne Viruses Using Iron-Amended Biosand Filters, *2010 Water Environment Federation National Student Design Competition*. New Orleans, LA. October 2-6, 2010.

Bradley I.M., Straub A., Markazi S.D., Maraccini P.A., Nguyen T.H., (Presentation) Removal of Waterborne Viruses Using Iron-Amended Biosand Filters, *2010 American Water Works Association Annual Conference and Exposition*. Chicago, IL. June 20-24, 2010.

Bradley I.M., Markazi S.D., Parker K.M., Maraccini P.A., Nguyen T.H., (Poster and Presentation) Removal of Waterborne Viruses Using Iron-Amended Biosand Filters, *EPA's People, Planet, and Prosperity (P3) National Design Expo 2010*. Washington, D.C. April 24-25, 2010.

Bradley I.M., Straub A., Sohn A., Nguyen T.H., (Presentation) Removal of Waterborne Viruses Using Iron-Amended Biosand Filters, *2010 Central State Water Environment Association Student Design Competition*. Madison, WI. April 5, 2010.

UNIVERSITY SERVICE AND ACTIVITIES

Guatemala Water Project	Research Lead: Directed research for the Guatemala Water Project, an Engineers without Borders (EWB) affiliated group that implemented biosand filters in rural Guatemala. (2009-2013)
UIUC-WEF Student Chapter	Founder & President: Founded and led the Water Environment Federation (WEF student chapter) at UIUC. (2010-2012)

AFFILIATIONS

Association of Environmental Engineers and Science Professors (AEESP)
 International Water Association (IWA)
 Water Environment Federation (WEF)
 E.I.T., State of IL (2009)