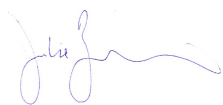


# Julie Beth Zimmerman



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## EDUCATION

- Ph.D.** Dual Interdepartmental Doctoral Degree. *June 2003.*  
Environmental and Water Resources Engineering, College of Engineering  
Resource Policy and Behavior, School of Natural Resources and Environment  
The University of Michigan at Ann Arbor  
Dissertation: *Formulation and Evaluation of Emulsifier Systems for Petroleum- and Bio-Based Semi-Synthetic Metalworking Fluids*  
(Dr. Kim F. Hayes; Dr. Steven J. Skerlos; Dr. Gregory A. Keoleian, advisors)
- Cert.** Industrial Ecology. *December 2002.*  
School of Natural Resources and Environment, The University of Michigan at Ann Arbor.
- M. S.** Environmental and Water Resources Engineering. *May 1999.*  
Concentration in Environmental Sustainability  
College of Engineering, The University of Michigan at Ann Arbor.
- B. S.** Civil Engineering (Environmental Option) with high distinction. *May 1997.*  
Minor Environmental Sciences.  
School of Engineering and Applied Sciences, University of Virginia.

## ACADEMIC APPOINTMENTS

- 2023 -** **Inaugural Vice Provost for Planetary Solutions.** Provost's Office, Yale University, New Haven, Connecticut
- 2017 - 2023** **Senior Associate Dean for Academic Affairs.** School of Forestry and Environmental Studies, Yale University, New Haven, Connecticut
- 2017 -** **Professor.** School of Forestry and Environmental Studies; **Professor.** Department of Chemical and Environmental Engineering, School of Engineering and Applied Sciences; **Deputy Director,** Center for Green Chemistry and Green Engineering at Yale; Yale University, New Haven, Connecticut
- 2015 -** **Professor of Management.** School of Management; Yale University, New Haven, Connecticut
- 2014 - 2017** **Professor.** School of Forestry and Environmental Studies; **Associate Professor with tenure.** Department of Chemical and Environmental Engineering, School of Engineering and Applied Sciences; **Deputy Director,** Center for Green Chemistry and Green Engineering at Yale; Yale University, New Haven, Connecticut
- 2013 - 2014** **Inaugural Donna L. Dubinsky Associate Professor of Environmental Engineering.** Department of Chemical and Environmental Engineering, School of Engineering and Applied Sciences; School of Forestry and Environmental Studies; Yale University, New Haven, Connecticut
- 2011 - 2014** **Associate Professor.** Department of Chemical and Environmental Engineering, School of Engineering and Applied Sciences; School of Forestry and Environmental Studies; **Acting Director** (2010-2012); **Assistant Director for Research,** Center for Green Chemistry and Green Engineering at Yale; Yale University, New Haven, Connecticut
- 2007 - 2011** **Assistant Professor.** Department of Chemical and Environmental Engineering, School of Engineering and Applied Sciences; School of Forestry and Environmental Studies; **Acting Director** (2010-2012); **Assistant Director for Research,** Center for Green Chemistry and Green Engineering at Yale; Yale University, New Haven, Connecticut

**2005 - 2006**      **Assistant Professor.** Department of Civil Engineering, School of Engineering and Applied Science, University of Virginia, Charlottesville, Virginia.

#### **OTHER RELEVANT PROFESSIONAL EXPERIENCE**

**2007 -**            **Private Consultant.** Provide strategic guidance to Fortune 500 companies, State and International Organizations on sustainability, green chemistry, and green engineering.

**2003 - 2006**      **Engineer/Program Coordinator.** National Center for Environmental Research, Office of Research and Development, United States Environmental Protection Agency. Responsible for the Technologies for a Sustainable Environment academic research grants program; designed and implemented the P3 (People, Prosperity and Planet) Award: A National Student Design Competition for Sustainability; designed and implemented the Benchmarking of the Integration of Sustainability in Engineering Curricula at U.S. Institutions of Higher Education; served on intra- and inter-agency committees on emerging chemicals, sustainability in the federal government, and green buildings

#### **AWARDS and HONORS**

Tieckelmann Lecturer, University at Buffalo, 2023

Unsung Hero Award, Yale School of the Environment, 2022

Fulbright United States Scholar (Stockholm University, Sweden), 2021-2022 (deferred due to COVID-19)

Ackerman Award for Teaching and Mentoring, Yale School of Engineering and Applied Sciences, 2020

Honorary Professor, Department of Materials and Environmental Chemistry, Stockholm University, Sweden, 2019 - 2021

Teaching Award, Yale School of Forestry and Environmental Studies, 2018

Fellow, Royal Society of Chemistry, United Kingdom, 2015

Elected Member, Connecticut Academy of Science and Engineering, 2015

Walter J. Weber Distinguished Lecturer, School of Engineering and Applied Sciences, University of Michigan, 2014.

Finalist, Connecticut Women of Innovation, Research Category, 2013

Karman Fellow, RWTH-Aachen University, Aachen, Germany, 2013

Invited speaker, Gordon Research Conference – Environmental Nanotechnology, June 2013

Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineering, 2012

Keynote speaker, 2011 Michigan Green Chemistry and Engineering Conference, October 2011

Invited speaker, Gordon Research Conference – Green Chemistry, July 2010

Invited speaker, Gordon Research Conference – Environment: Water, June 2010

National Academy of Engineering, Frontiers in Engineering Education, 2009.

American Association of Engineering Education, Environmental Engineering Division, Best Paper Award, 2009

EPA Bronze Medal for Commendable Service, 2007

EPA Gold Medal for Commendable Service, 2006

National Academy of Engineering, Frontiers in Engineering, 2005

EPA Bronze Medal for Commendable Service, 2005

University of Michigan Distinguished Dissertation Award, 2004

Graduate Student Paper Award, Environmental Chemistry, American Chemical Society, 2003

Marian Sarah Parker Prize for Outstanding Woman Graduate Engineering Student, 2001

Graduate Student Award, Environmental Chemistry, American Chemical Society, 2000

United States Environmental Protection Agency STAR Fellow, 1999 – 2002

Alfred P. Sloan Fellowship, 1998

## CURRENT AND PAST RESEARCH GRANTS AND CONTRACTS

United National Industrial Development Organization, Advancing Green Chemistry in Developing Countries, co-PI, total budget \$12,500,000, 2022-2027

Gordon and Betty Moore Foundation: Enabling the Biorefinery: Isolation, Fractionation, and Transformation of Biobased Feedstocks into High-Value Chemical Products and Fuels, PI, total budget \$725,000, 2021-2023

National Institutes of Health: National Institute for Environmental Health Sciences: Superfund Research Center - Metals and Metals Mixtures: Cognitive Aging, Remediation, and Exposure Sources (MEMCARE), Deputy Director and co-PI, total budget \$8,200,000, 2019-2024

National Institutes of Health: Food and Drug Administration: Yale Tobacco Center of Regulatory Science, co-PI, total budget \$20,000,000, 2018-2022

National Institutes of Health: Food and Drug Administration: Anesthetic and synthetic cooling flavors in E-cigarettes: Chemistry and respiratory effects modulating nicotine intake, co-PI, total budget \$500,000, 2018-2020

United National Industrial Development Organization, Advancing Green Chemistry in Developing Countries, co-PI, total budget \$800,000, 2017-2021

National Science Foundation/Environmental Protection Agency: Network for Sustainable Molecular Design and Synthesis supplement, co-PI, total budget \$200,000, 2015-2019

National Science Foundation: Engineering Research Center: Nano-Enabled Water Treatment, senior personnel, total budget \$10,000,000, 2015-2024

Food and Drug Administration: Irritant Flavor Products in Heated E-Cigarette Liquids and Vapors, co-PI, \$350,000, 2015-2017

Food and Drug Administration: The Effects of Flavors on Nicotine Consumption and Addiction in Mice, co-PI, \$350,000, 2014-2016

National Science Foundation/Environmental Protection Agency: Network for Sustainable Molecular Design and Synthesis supplement, co-PI, total budget \$200,000, 2014-2015

National Science Foundation: Fraction, Extraction, and Conversion of Biomass for Fuels and Value-Added Chemicals, PI, \$450,000, 2014-2016

National Science Foundation/Environmental Protection Agency: Network for Sustainable Molecular Design and Synthesis, co-PI, total budget \$4,400,000, 2013-2017

Connecticut Innovations Challenge, Adding value to Biomass Pathways-Sustainable Energies: Innovative technologies involving biomass conversion processes and equipment to produce fuels, power or bio-based chemicals, co-PI @ 40% (with PI AgriFuels, LLC @ 60%), total budget \$150,000, 2013-2014

Environmental Protection Agency: Networks for Characterizing Chemical Life Cycle: Life Cycle of Nanomaterials, Senior Personnel, total budget \$4,400,000, 2013-2016

Environmental Protection Agency: National Center for Reinventing Aging Infrastructure for Nutrient Management, co-PI, total budget \$2,000,000, 2013-2016

National Science Foundation: A Workshop on the Molecular Design of Commercial Chemicals for Minimal Unintended Biological Activity, co-PI, total budget \$90,500, 2012-2014

National Science Foundation: Designing and Integrating Life Cycle Assessment Methods for Nanomanufacturing Scale-up, co-PI, total budget \$1,670,000, 2012-2016  
Center for Business and the Environment at Yale: Greening Supply Chains: Enabling Sustainability Beyond Firm Boundaries, PI, total budget \$75,000, 2012-2013

The Kendeda Fund, The Yale Center for Green Chemistry and Green Engineering: Leading the Way to a Sustainable World, PI, \$300,000, 2010-2013

United States Department of Agriculture: Transformation of lignin into building blocks for protective coatings, PI, total budget \$500,000, 2009-2013

National Science Foundation: Targeted Design of Biomaterials for Water Treatment: Arsenic Removal and Recovery, PI, total budget \$325,000, 2009-2013

National Science Foundation: Design of Safer Carbon-Based Nanomaterials: The Impact of Surface Modifications on Toxicity and Environmental Fate and Transport, PI, total budget \$360,000, 2009-2013

National Science Foundation: Exploring the Relationships between Gene Regulation and Microbial Ecology for the Sustainable Production of Microalgae-based Biofuels, co-PI, total budget \$300,000, 2009-2013

National Science Foundation: BE MUSES: Collaborative Research: Modeling and Analyzing the Use, Efficiency, Value and Governance of Water as a Material in the Great Lakes Region Through an Integrated Approach, PI, total budget \$2,000,000, 2007-2014

National Science Foundation: Collaborative Research: Civil & Environmental Engineering Education (CEEE) Transformational Change: Tools & Strategies for Sustainability Integration & Assessment in Engineering Education, PI, total budget \$500,000, 2007-2010

National Aeronautics and Space Administration, Precision Cleaning of Oxygen Systems and Components through Green Chemistry and Green Engineering, PI, total budget \$220,000, 2007-2009

National Science Foundation: Mechanistic Laboratory and Field Evaluation of Sustainable Point-of-Use Water Treatment Technologies to Remove Turbidity and Deactivate Coliform Bacteria, co-PI, total budget \$400,000, 2006-2009

#### **PATENT(S)**

Zimmerman, J. B.; Soh, L., inventors; Yale University, assignee. System and method for separating lipid based products from biomass. United States patent US 9,718,757. 2017 Aug 1.

#### **SERVICE**

##### **Editorial Services**

Editor in Chief, *Environmental Science & Technology*, 2020 – present.

Editorial Board, *Journal of Green Chemistry*, 2014 – present.

Associate Editor, *Environmental Science and Technology*, 2012 – 2020.

Editorial Advisory Board, *Environmental Science and Technology*, 2010 – 2012.

Guest Editor, *Environmental Science and Technology*, “The World’s Water” special issue published June 15, 2008.

##### **Government Advisory Committee Memberships and Workshops**

Witness, House Committee on Science and Technology, Subcommittee on Research and Technology, draft legislation – H.R. 2051 “Sustainable Chemistry Research and Development Act of 2019”, July 25, 2019.

Member, National Academy of Engineering Committee on Grand Challenges for Environmental Engineering and Science in the 21<sup>st</sup> Century, 2017 – 2019.

Speaker, U.S. Government Accountability Office, Expert Meeting on Sustainable Chemistry Technologies, Washington, DC, May 24-25, 2016.

Speaker, National Academies of Sciences, Engineering, and Medicine’s workshop, *Transition toward Sustainability after 15 Years: Where Do We Stand in Advancing the Scientific Foundation*, Irvine, CA, January 14-15, 2016.

Member, Steering Committee, Water Planning Council, State of Connecticut, 2015-2018.

Member, Green Ribbon Science Panel, Department of Toxic Substances Control, State of California, 2009 – 2013.

Witness, House Committee on Science and Technology, Subcommittee on Technology and Innovation, draft legislation – “Electronic Waste Research Development Act of 2009”, February 11, 2009.

### **Professional Societies**

Member, Connecticut Academy of Science and Engineering, Science, Technology and Policy Fellowship Design and Selection Committee, 2018.

Member, Governing Board, Green Chemistry Institute, American Chemical Society, 2010 – 2013.

Chair, Green Chemistry and Engineering Subdivision, Industrial and Engineering Chemistry Division, American Chemical Society, January 2007 – January 2008.

### **Session Chair and Symposia Organizer**

Session chair, “Green Engineering”, Gordon Conference on Green Chemistry, Barcelona, July, 2018.

Session co-chair, “The Design of Safer Chemicals from First Principles”, American Chemical Society National Meeting, Boston, August, 2015.

Organizer, NSF-supported Workshop on “Rational Design of Molecules”, American Chemical Society, Washington, DC, June 25-26, 2013.

Organizer, “Workshop on Biobased Feedstocks: Supply Chain Risks and Rewards”, American Chemical Society, Washington, DC, November 29-30, 2012

Session co-chair, “Designing Safer Chemicals with Minimized Unintentional Biological Activity”, Society of Environmental Toxicology and Chemistry, Long Beach, CA, November 11-15, 2012.

Convener, “Designing Chemicals for Reduced Toxicity: ‘First-tier’ Approaches to Linking Physicochemical Properties and Toxicological Hazards”, Washington, DC, June 23-24, 2011.

Session chair, “Green Engineering”, 15<sup>th</sup> Annual Green Chemistry & Engineering Conference, Washington, DC, June 21-23, 2011.

Convener, “Monash-Waseda-Yale Symposium on Green Chemistry, Greenberg Conference Center, Yale University, February 7-9, 2010.

Convener, “Integrating Green Chemistry and Green Engineering into the Revitalization of the Toxic Substances Control Act”, Woolsey Hall, Yale University, October 29-30, 2009.

Organizer, “Integrating Sustainability into Environmental Engineering: Design principles and tools to expand your educative capacity”, American Society of Environmental Engineering and Science Professors Conference on Grand Environmental Challenges, Iowa City, Iowa, July 26-29, 2009.

Organizer, NSF-supported International Workshop on Delivering Sustainable Infrastructure that Supports the Urban Built Environment, Auckland, New Zealand, December 15-17, 2008.

Organizer, “Training the Trainer: Lessons of Green Chemistry for Worker Safety and Job Security for the Steelworkers Union”, Yale University, October 3-4, 2007.

Session co-Chair, “Design and Manufacturing for Sustainability” 2006 International Symposium on Flexible Automation, Osaka, Japan, July 10-12, 2006.

Steering Committee, US Partnership for the UN Decade for Education for Sustainable Development, 2004 – 2007.

### **Peer Review**

Reviewer for Environmental Science and Technology, Journal of Industrial Ecology, Chemosphere, Environmental Engineering Science, Bioresource Technology, Water Research, ChemSusChem, Journal of Green Chemistry, Science of the Total Environment, Journal of Surfactants and Detergents, International Journal of Engineering Education, Journal of the American Chemical Society, Nature Nanotechnology, Proceedings of the National Academy of Sciences

Panelist for National Science Foundation, Environmental Protection Agency, Department of Energy, Department of Agriculture, Canadian Research Chairs of Excellence, United States Department of Agriculture.

## **Yale University**

Poorvu Center for Teaching and Learning Advisory Board, Yale University (2021 – 2023)

Physical Sciences and Engineering Tenure Appointment Committee, Yale University (2020 - 2021)

Yale Research Continuity Committee (2020 – 2021)

Yale School of the Environment Faculty Search Committee, chair (2019-2020)

Department of Chemical and Environmental Engineering Faculty Search Committee (2018-2019)

Yale-NUS Faculty Search Committee (Science Division – Environment) (2017-2018)

Yale College Porter & Field Prize Selection Committee (2017)

Yale College Committee for Advising, Placement, and Enrollment (member, 2015 – 2017; Chair, 2017)

Yale Pathways to Science Advisory Board (2015 – present)

Yale Committee on College Admissions and Financial Aid (2014 – present)

Yale Teaching Center, Associates in Teaching Selection Committee (2014 – 2019)

Director of Undergraduate Studies, Environmental Engineering major (2014 – 2015)

School of Engineering and Applied Sciences Center for Engineering Innovation and Design Faculty Advisory Group (2013 – present)

School of Forestry and Environmental Studies Masters Program Committee (2013 – 2023)

School of Forestry and Environmental Studies Search Committee (2013 – 2014)

Department of Chemical and Environmental Engineering Faculty Search Committee (2012 – 2013; 2015 – present)

School of Forestry and Environmental Studies PhD Admissions Committee (2012 – present)

Yale Energy Sciences Institute Advisory Committee (2011 – 2013)

School of Engineering and Applied Sciences Victor Tyler Lectureship Selection Committee (2011, 2012)

Yale Bulldog Days Master Class Lecturer (2011, 2012)

School of Forestry and Environmental Studies 5-year Degree (BS/MEM) Admissions Committee (2011)

School of Forestry and Environmental Studies Doctoral Program Committee (2011-present)

Lecturer and discussion participant for “Perspectives on Science and Engineering” (2011)

Acting Director of the Center for Green Chemistry and Green Engineering at Yale (2010 – 2012)

Yale Climate and Energy Institute Policy and Strategy Board (2010, 2011)

School of Forestry and Environmental Studies Ladder Faculty Search Committee (2010)

Yale Institute for Biospheric Studies Faculty Council (2009 – present)

Yale Sustainability Advisory Committee (2009 – 2013)

Yale School of Management’s Executive Education trainer and facilitator (2009 – present)

Environmental Studies Major Advisory Committee (2009 – 2013)

Yale Climate and Energy Institute Executive Committee (2009, 2010)

Morris K. Udall Scholarship Selection Committee (2009)

School of Forestry and Environmental Studies Faculty Development and Advancements Committee (2008 – 2013)

School of Forestry and Environmental Studies Space Committee (2008 – 2009)

Environmental Studies Fellowship Committee (2008 – present)

School of Engineering and Applied Sciences Graduate Prize Committee (2008)

Redpath Seminar for Association of Yale Alumni (2008)

Assistant Director of the Center for Green Chemistry and Green Engineering at Yale  
(2007 – 2010; 2012 – present)

### **PROFESSIONAL DEVELOPMENT**

Business Skills for Faculty Leaders, Executive Education (at the Invitation of the Provost), Yale School of Management, Yale University, 2015 – 2016.

The National Academies Summer Institute on Undergraduate Education, Yale University, July 18-20, 2012.

Service Learning Projects, Association of Environmental Engineering and Science Professionals, University of South Florida, July 15, 2011.

### **ASSOCIATIONS**

American Chemical Society (ACS)

Association of Environmental Engineering and Science Professors (AEESP)

American Society of Civil Engineers (ASCE)

American Society for Engineering Education (ASEE)

Connecticut Academy of Science and Engineering (CASE)

Royal Society of Chemistry (RSC)

### **CURRENT MASTERS STUDENTS**

Jessie Wainer (MESC, 2022)

Research area: Lignin-based sorbents for water treatment

### **PAST MASTERS STUDENTS**

Erin Barnes (MEM, 2007)

Current Title and Affiliation: Executive Director/Co-Founder, ioby

Jen Ace (MEM, 2009)

Current Title and Affiliation: Sustainability Consultant, Accenture

Eva Gladek (MEM, 2009)

Current Title and Affiliation: Executive Director, Metabolic Lab – The Netherlands

Peter Caligiuri (MF, 2010)

Current Title and Affiliation: Central Oregon Forest Ecologist, The Nature Conservancy

Jacob Iverson (MEM, 2010)

Current Title and Affiliation: Environmental Scientist, California State Water Resource Control Board

Jack Yeh (MEM, 2010)

Current Title and Affiliation: Director of Marketing and Communications, The Good

Steven Williams (MESC/MPH, 2011)

Current Title and Affiliation: Industrial Hygiene Program Owner, Global Health and Safety, The Intel Corporation

Simon De Stercke (MEM, 2012)

Current Title and Affiliation: Research Assistant, IIASA-Austria

Ashley MacDonald (MEM, 2012)

Current Title and Affiliation: Environmental Specialty Claims Associate, ACE Group

Juan Ramirez (MEM, 2012)

Current Title and Affiliation: General Manager, ViveSolar SA de CV-Mexico

Jake Seligman (MEM, 2012)

Current Title and Affiliation: Associate, Chadbourne & Parke, LLC

Mitchell Bauer (MEM, 2013)  
Current Title and Affiliation: Development Intern, NRG Energy

Pooja Jain (MEM/MBA, 2013)  
Current Title and Affiliation: Sustainability Intern, Bigelow Tea

Charissa Rujanavech (MEM, 2013)  
Current Title and Affiliation: Environmental Program Manager, Apple Inc.  
Troy Savage (MEM/MDiv, 2013)  
Current Title and Affiliation: Assistant Pastor, Raleigh, North Carolina

Jonathan Sullivan (MF, 2013)  
Current Title and Affiliation: Community Forester, Yale University Forests

Jessica Brooks (MESc, 2014)  
Current Title and Affiliation: PhD Student, University of North Carolina

William Tucker (MESc, 2015)  
Current Title and Affiliation: Presidential Management Fellow, Executive Branch, Washington, DC

Evelyn (Sale) Rhodes (MESc, 2019)  
Current Title and Affiliation: Project Coordinator, Aquaya, San Francisco, CA

#### **CURRENT DOCTORAL STUDENTS (Committee Chair)**

Andreas Backhaus  
Research Area: Synthesis of tunable mixed metal nanoparticles

Yan Du  
Research Area: Scarc water and materials embedded in global trade

Cheldina Jean (NSF Graduate Fellowship)  
Research Area: Sustainable materials

Mary Kate Mitchell Lane (NSF Graduate Fellowship)  
Research Area: Supercritical fluid synthesis of nano metal oxides

Greg Sieczkiewicz  
Research Area: Carbon capture and lignin valorization

Dylan Judd  
Research Area: Flow chemistry for catalyst design and synthesis

Gabriel Gonsalves Bertho  
Research Area: Biomaterials for water treatment

#### **PAST DOCTORAL STUDENTS (Committee Chair)**

Sarah Miller (2011; NSF Graduate Fellowship)  
Dissertation Topic: Toward Sustainable Water Treatment: Use of Biomaterials in Water Purification  
Current Title and Affiliation: Assistant Dean, School of Engineering and Applied Sciences, University of Colorado-Boulder

Patrick Foley (2011)  
Dissertation Topic: The Derivation and Synthesis of Renewable Surfactants  
Current Title and Affiliation: Chief Technology Officer, P2 Science, New Haven, CT

Lindsay Soh (2013; EPA STAR Fellowship)  
Dissertation Topic: Advancements in Sustainable Biofuel Production: Optimization of Algal Cultivation Practices and Development of Greener Extraction and Conversion Technologies  
Current Title and Affiliation: Associate Professor of Chemical Engineering, Lafayette College, Easton, PA



Leanne Pasquini (2014; NSF Graduate Fellowship / EPA STAR Fellowship)  
Dissertation Topic: Cytotoxicity of carbon nanotubes: Relationship of physiochemical properties, functionalization, and reactivity  
Current Title and Affiliation: Associate Professor, Department of Civil and Environmental Engineering, Duke University

Jamila Yamani (2015; EPA STAR Fellowship)  
Dissertation Topic: Towards Sustainable Remediation of Metal Contaminants from Wastewater: A Novel Nano Metal Oxide Impregnated Chitosan-based Adsorption Technology  
Current Title and Affiliation: Strategic Climate Advisor, Salesforce

Ranran Wang (2016; Yale School of Forestry and Environmental Studies Doctoral Fellowship)  
Dissertation Topic: Sustainable Water Resource Management through Systems Modeling  
Current Title and Affiliation: Associate Professor, Department of Water Engineering and Management, University of Leiden

Amanda Lounsbury (2017; EPA STAR Fellowship)  
Dissertation Topic: Understanding the Influence of Nano-Hematite Characteristics for Selenium Adsorption and Toxicity Through Mechanistic Analysis  
Current Title and Affiliation: AAAS Fellow, Department of Energy, Washington, DC

Thomas Kwan (2018; NSF Graduate Fellowship)  
Dissertation Topic: Tuning Supercritical Carbon Dioxide for Selective Extraction of Microalgae Lipids and Carotenoids  
Current Title and Affiliation: Vice President for Sustainability, Schneider Electric, Boston, MA

Fjodor Melnikov (2019: EPA STAR Fellowship)  
Dissertation Topic: Relating physiochemical properties to oxidative stress mechanism using high-throughput screening  
Current Title and Affiliation: Data Scientist in Computational Toxicology, Genentech, San Francisco, CA

Lauren Pincus (2020: Yale School of Forestry and Environmental Studies Doctoral Fellowship)  
Dissertation Topic: Toward Sustainable Water Treatment: Design of Multifunctional and Selective Water Treatment Technologies  
Current Title and Affiliation: Post-doctoral Associate, Princeton University, Princeton, NJ

Mark Falinski (2020)  
Dissertation Topic: Advancing Safe, Sustainable, and Functional Nanomaterial Selection and Design: Optimizing Carbon Nanotube Properties for Limited Toxicity and Enhanced Energy Storage  
Current Title and Affiliation: Consultant, Boston Consulting Group, New York, NY

Cammryn Fausey (2020: NSF Graduate Research Fellowship)  
Dissertation Topic: Nanotechnology Design and Environmental Modeling in Tackling Contaminants of Global Concern  
Current Title and Affiliation: Lead Artificial Intelligence Engineer, Mitre, McLean, VA

Tong Wang (2022: China Scholarship Council)  
Dissertation Topic: Criticality and future recycled flow of copper  
Current Title and Affiliation: Assistant Professor, East China Normal University, Shanghai, China

Holly Rudel (2023)  
Dissertation Topic:  
Current Title and Affiliation: Science and Technology Policy Fellow, Department of Toxic Substances Control, State of California

#### **CURRENT POST-DOCTORAL ASSOCIATES / ASSOCIATE RESEARCH SCIENTISTS**

Hanno Erythropel, PhD  
Department of Chemistry, McGill University, Canada

Elise Gilcher, PhD  
Department of Chemistry, University of Wisconsin-Madison

Darren Lee, PhD  
Department of Chemistry, University of Nottingham

Predrag Petrovic, PhD  
Department of Chemistry, University of Belgrade, Serbia and University of Strasbourg, France

Lars Ratjen, PhD  
Department of Chemistry, Max Plank Society

#### **PAST POST-DOCTORAL ASSOCIATES**

Dr. Fuzhan Nasiri (2009-2010)  
Current Title and Affiliation: Assistant Professor, Faculty of Built Environment, University College London, London, UK

Dr. Matthew Eckelman (2009-2011)  
Current Title and Affiliation: Associate Professor, Department of Civil and Environmental Engineering, Northeastern University, Boston, MA

Dr. Laura Brentner (2010)  
Current Title and Affiliation: Lecturer, Loyola University Chicago

Dr. Valerie Fuchs (2010-2011)  
Current Title and Affiliation: Water Resources Engineer, MWH Global

Dr. Kira Matus (2010-2011)  
Current Title and Affiliation: Associate Professor, Division of Environment and Sustainability  
The Hong Kong University of Science and Technology

Dr. Adelina Voutchkova (2011-2012)  
Current Title and Affiliation: Associate Professor, Department of Chemistry, George Washington University, Washington, DC

Dr. Azadeh Kermanshahpour (2011-2013; NSERC Fellowship)  
Current Title and Affiliation: Assistant Professor, Department of Process Engineering and Applied Science, Dalhousie University, Halifax, Nova Scotia, Canada

Dr. Weiwei Mo (2013-2014)  
Current Title and Affiliation: Associate Professor, Department of Civil and Environmental Engineering, University of New Hampshire

Dr. Chun-Chi Chen (2013-2014)  
Current Title and Affiliation: Research Scientist, Taiwanese Research Corporation

Dr. Jonathan Mellor (2013-2014)  
Current Title and Affiliation: Assistant Professor, Department of Civil and Environmental Engineering, University of Massachusetts-Dartmouth

Dr. George Gachumi (2014-2015)  
Current Title and Affiliation: Post-doctoral Associate, Department of Chemistry/Chemical Engineering, University of Saskatchewan

Dr. Amanda Lounsbury (2018-2019)  
Current Title and Affiliation: AAAS Science and Technology Policy Fellow, Department of Energy

Dr. Qingshi Tu, PhD (2016 – 2019)  
Current Title and Affiliation: Assistant Professor, Department of Wood Science, University of British Columbia

#### **THESIS COMMITTEE MEMBER**

Sarah Miller, Ph.D. (*chair*), Chemical and Environmental Engineering, Yale University

Patrick Foley, Ph.D. (**chair**), Chemical and Environmental Engineering, Yale University  
Lindsay Soh, Ph.D. (**chair**), Chemical and Environmental Engineering, Yale University  
Leanne Pasquini, Ph.D. (**chair**), Chemical and Environmental Engineering, Yale University  
Jamila Yamani, Ph.D. (**chair**), Chemical and Environmental Engineering, Yale University  
Ranran Wang, Ph.D. (**chair**), School of Forestry and Environmental Studies, Yale University  
Amanda Lounsbury, Ph.D. (**chair**), Chemical and Environmental Engineering, Yale University  
Thomas Kwan, Ph.D. (**chair**), Chemical and Environmental Engineering, Yale University  
Fjodor Melnikov, Ph.D. (**co-chair**), School of Forestry and Environmental Studies, Yale University  
Matthew Eckelman, Ph.D., Chemical and Environmental Engineering, Yale University  
Laura Sima, Ph.D., Chemical and Environmental Engineering, Yale University  
Shan Young, Ph.D., Chemical and Environmental Engineering, Yale University  
Candice Pelligra, Ph.D., Chemical and Environmental Engineering, Yale University  
Kyle Bibby, Ph.D., Chemical and Environmental Engineering, Yale University  
Zachary Fishman, Ph.D., Chemical and Environmental Engineering, Yale University  
James Gutierrez, Ph.D., Chemical and Environmental Engineering, Yale University  
Sarah Kwan, Ph.D., Chemical and Environmental Engineering, Yale University  
Akshay Deshmukh, Ph.D., Chemical and Environmental Engineering, Yale University  
Bridgette Hegarty, Ph.D., Chemical and Environmental Engineering, Yale University

#### **Ph.D. STUDENT SPECIAL INVESTIGATIONS AND ROTATIONS**

Louis Fazen (MD-PhD), "Drinking Water Quality and Health Outcomes: Study Design", Fall 2007

Ezekiel Fugate, "Cluster Analysis of Great Lakes Basin Watersheds", Fall 2007

Rebecca Grove, "Survey of Green Solvents for Precision Cleaning of Oxygen Systems", Fall 2007

Sarah Miller, "Natural Coagulants for Drinking Water Treatment", Fall 2007

Sarah Miller, "Isolation of Active Coagulant in Opuntia", Spring 2007

Lindsay Soh, "Carbon Nanotube Toxicity on E. Coli", Fall 2007

Lindsay Soh, "Fate and Transport of Sucralose in Wastewater Treatment Plants", Spring 2007

Eric Fox, "Methodology to Evaluate Precision Cleaning of Oxygen Systems", Spring 2008

Peter Tobin, "Use of Ionic Liquids for Precision Cleaning of Oxygen Systems", Spring 2009

Kathryn Dana, "Fate of Functionalized Carbon Nanotubes under Irradiation", Fall 2010

Kathryn Dana, "Impact of Carbon Nanotube Functionalization on Fate and Transport in Environmental Systems", Spring 2011

Leanne Pasquini, "Functionalization of Carbon Nanotubes" Fall 2009

Leanne Pasquini, "Impact of Functionalization of Carbon Nanotubes on Cytotoxicity" Spring 2010

Jamila Yamani, "Arsenic Sorption by Nano-Metal Oxides" Fall 2010

Jamila Yamani, "Role of Systems Conditions on Sorption of Arsenic by Nano-Aluminum Oxide" Spring 2011

Amanda Lounsbury, "Selenium Sorption by Nano-Metal Oxides" Fall 2011

Amanda Lounsbury, "Synthesis of Nano-Iron Oxides" Spring 2012

Thomas Kwan, "Role of Systems Conditions on Catalytic Activity of Nafion in Supercritical Carbon Dioxide" Fall 2012

Thomas Kwan, "Extraction and Fractionation of Algal Biomass in Supercritical Carbon Dioxide" Spring 2013

Jon Powell, "Cytotoxicity of N- and S-Functionalized Multiwalled Carbon Nanotubes" Fall 2014  
Mark Falinski, "Potential of Nano-hematite Sourced from Acid Mine Drainage for Remediation Applications" Fall 2014  
Mark Falinski, "Controlled Modification of Functionalized Multiwalled Carbon Nanotubes" Spring 2015  
Keira Roberts, "Controlled Synthesis of Nano-hematite" Fall 2015  
Cammryn Fausey, "Electrospun Nano-enabled Biopolymers for Application in a Filtration" Fall 2015  
Mary Kate Mitchell Lane, "Supercritical fluid extraction and fractionation of algal oils" Fall 2017  
Holly Rudel, "Crystal facet engineering of nano hematite" Fall 2018

## **UNDERGRADUATE PROJECTS**

Dominic Albino, "Bayesian Material Separation" (2007)  
Paul-Harvey Weiner, "Scanning the Statistics: Targeting Current Sources of Industry Pollution in the Great Lakes (2008)  
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Fundamentals of Green Chemistry and Green Engineering (Yale)  
Green Engineering and Sustainable Design (UVA; Yale)

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## BOOKS

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## CONFERENCE PROCEEDINGS and POSTERS / CONFERENCE and SEMINAR PRESENTATIONS

Lane, M.K.M. and **Zimmerman, J.B.** "Evaluating Green Solvent Nanoparticle Production Via Supercritical Fluid Synthesis." American Institute of Chemical Engineers Annual Meeting, Boston, MA, 8 Nov 2021.

Erythropel HC, Anastas PT, Krishnan-Sarin S, O'Malley SS, Jordt SE, **Zimmerman JB**: "Differences in flavorant levels and synthetic coolant use between USA, EU and Canadian Juul products", 30<sup>th</sup> Annual European Respiratory Society (ERS) International Congress (virtual), Sept. 7-9, 2020

Erythropel HC, **Zimmerman JB**: "Flavor additives in emerging tobacco products & an update on EVALI". Invited talk at the Yale School of Medicine, Dept. of Pediatric Pulmonology, New Haven, CT, Nov. 22, 2019

Lane, M.K.M. and **Zimmerman, J.B.** "Size and shape controlled ceria nanoparticles through supercritical ethanol synthesis." Sustainable Nanotechnology Organization Conference, San Diego, CA, November 7-9 2019.



Pincus L. N., Lounsbury A. W. , **Zimmerman J.B.**, "Toward realizing multifunctionality: Photoactive and selective adsorbents for the removal of inorganics in water treatment". 258<sup>th</sup> ACS National Meeting, San Diego, CA. November 7-9 2019.

Pincus L. N., **Zimmerman J.B.**, "Towards sustainable water treatment: Selective adsorption of arsenic over competing phosphate by transition metal cross-linked chitosan". 258<sup>th</sup> ACS National Meeting, San Diego, CA. November 7-9 2019.

Erythropel HC, Davis LM, de Winter TM, Anastas PT, O'Malley SS, Krishnan-Sarin S, Jordt SE, **Zimmerman JB**: "Presence and Aerosol Delivery of Flavor Aldehyde-Solvent Reaction Products, Menthol, and Nicotine in JUUL e-cigarettes". NIH tobacco regulatory science meeting, Bethesda, MD, October 21-23, 2019

Jabba SV, Erythropel HC, Drtil A, Delgado L, Anastas PT, **Zimmerman JB**, Jordt SE: "Synthetic Cooling Agents in E-Cigarette Liquids: Chemistry, Pharmacology and Effects on Nicotine Intake". NIH tobacco regulatory science meeting, Bethesda, MD, October 21-23, 2019

Lane, M.K.M. and **Zimmerman, J.B.** "Green solvent synthesis of controlled ceria and mixed nickel-palladium nanoparticles with supercritical fluids." Nanosystems Engineering Research Center for Nanotechnology-Enabled Water Treatment: Industrial/Practitioner Advisory and Scientific Advisory Board Meeting, Tempe, AZ, October 7-9, 2019.

Erythropel HC, Davis LM, de Winter TM, Anastas PT, O'Malley SS, Krishnan-Sarin S, Jordt SE, **Zimmerman JB** "Flavorant-Solvent Reaction Products and Menthol in JUUL E-cigarettes and Aerosol" Society for Research on Nicotine & Tobacco Europe Meeting, Oslo, Norway, Sept. 12-14, 2019

**Zimmerman, J. B. (invited)**, "Enabling the Biorefinery Isolation, Fractionation, and Transformation of Biobased Feedstocks into High-Value Chemical Products and Fuels using Carbon Dioxide", International Union of Pure and Applied Chemistry, Paris, France, July 7, 2019.

Lane, M.K.M. and **Zimmerman, J.B.** "Supercritical fluid synthesis of shape controlled ceria nanoparticles." Environmental Nanotechnology Gordon Research Seminar and Conference, Newry, ME, June 1-7 2019.

Fausey, CL; Zucker, I; Shaulsky, E; **Zimmerman, JB**; Elimelech, M., "Removal of arsenic with reduced graphene oxide-TiO<sub>2</sub>-decorated nanofibrous mats". Oral presentation at Environmental Nanotechnology Gordon Research Seminar, Newry, ME June 1-2, 2019

Fausey, CL; Zucker, I; Shaulsky, E; **Zimmerman, JB**; Elimelech, M. "Molybdenum disulfide-enabled fibers for high-efficiency removal of mercury from water". Poster at AEESP Research and Education Conference, Arizona State University, May 14-16, 2019

Erythropel HC, Melnikov F, Kümmerer K, **Zimmerman JB**, Anastas PT: "Pharmaceuticals as Environmental Contaminants of Concern". International Symposium on Green Chemistry 2019, La Rochelle, France, May 13-17, 2019

Erythropel HC, Melnikov F, Kümmerer K, **Zimmerman JB**, Anastas PT: "Pharmaceuticals as Environmental Contaminants of Concern". 4th Green and Sustainable Chemistry Conference, Dresden, Germany, May 5-8, 2019: poster presentation

**Zimmerman, J. B. (invited)**, "Assessment Informed Design: Innovative Examples from Water, Energy, and Chemical/Material Systems", The International Conference on Waste Management and Technology (ICWMT) Basel Convention Regional Centre for Asia and the Pacific, Beijing, China, March 21, 2019.

Erythropel HC, Davis LM, de Winter TM, Anastas PT, O'Malley SS, Krishnan-Sarin S, Jordt SE, **Zimmerman JB**: "Presence and Aerosol Delivery of Flavor Aldehyde-Solvent Reaction Products, Menthol, and Nicotine in JUUL e-cigarettes". Society for Research on Nicotine & Tobacco Meeting, San Francisco, CA, Feb. 20-23, 2019

Jabba SV, Caceres AI, Erythropel HC, **Zimmerman JB**, Jordt SE: "Flavor solvent adducts in electronic cigarette liquids are modulators of respiratory irritant receptors and cytotoxic to human lung epithelial cells". Society for Research on Nicotine & Tobacco Meeting, San Francisco, CA, Feb. 20-23, 2019

Erythropel HC, Zimmerman JB, Anastas PT, "If chemistry had a color, what would it be?". Yale Flipped Science Fair, October 13, 2018

Erythropel HC, Kong G, de Winter TM, O'Malley SS, Krishnan-Sarin S, Jordt SE, Anastas PT, Zimmerman JB, "Artificial sweetener content in flavored cigarillos". Society for Research on Nicotine & Tobacco Europe Meeting, Munich, Germany, Sept. 6-9, 2018

Erythropel HC, Jabba SV, de Winter TM, Mendizabal M, Anastas PT, Zimmerman JB, Jordt SE, "Formation of Flavorant-Propylene Glycol Adducts with Novel Toxicological Properties in Chemically Unstable E-Cigarette Liquids". Society for Research on Nicotine & Tobacco Europe Meeting, Munich, Germany, Sept. 6-9, 2018

Lounsbury, A.W., Barrios, A., Albalghiti, E., Perreault, F., Zimmerman, J.B., "Mechanistic understanding of nano-hematite (n-Fe<sub>2</sub>O<sub>3</sub>) inherent property impact on toxicity and adsorption for sustainable water". Gordon Research Conference: Green Chemistry, Castelldefels, Spain, July 29- August 3, 2018

Lounsbury, A.W., Barrios, A., Albalghiti, E., Perreault, F., Zimmerman, J.B., "Mechanistic understanding of nano-hematite (n-Fe<sub>2</sub>O<sub>3</sub>) inherent property impact on toxicity and adsorption for sustainable water". Gordon Research Seminar: Green Chemistry, Castelldefels, Spain, July 28-29, 2018

Erythropel HC, Zimmerman JB, Plata DL, Anastas PT, "The Green ChemisTREE: 20 years after taking root with the 12 principles". The Gordon Research Conferences – Green Chemistry, Castelldefels, Spain, July 29 – Aug. 3, 2018

Erythropel HC, Kong G, De Winter T, Krishnan-Sarin S, O'Malley SS, Anastas PT, Zimmerman JB: "Determination of artificial sweetener content in cigarillos popular with youth". NIH tobacco regulatory science meeting, Bethesda, MD, June 18-20, 2018

Jabba SV, Caceres A, Erythropel HC, de Winter TM, Zimmerman JB, Jordt SE: "Flavor-Solvent Adducts in E-Cigarette Liquids Are Modulators of Respiratory Irritant Receptors and Cytotoxic to Human Lung Epithelial Cells". NIH tobacco regulatory science meeting, Bethesda, MD, June 18-20, 2018

Fausey, C.L., Zucker, I., Shaulsky, E., Zimmerman, J.B., Elimelech, M., "Removal of Arsenic with Reduced Graphene Oxide-TiO<sub>2</sub>-Decorated Nanofibrous Mats". North East Graduate Student Water Symposium, University of Massachusetts Amherst, September 8, 2018

Lane, M. K. M., Zimmerman, J. B., "Synthesis of nanoparticles in supercritical fluids: A green approach to producing green technologies". ACS Fall 2018 National Meeting, Boston, MA, August 19-23, 2018

Pincus, L.N., Lounsbury, A.W., Zimmerman, J.B., "Towards a Mechanistic Understanding of the Selective Adsorption of Arsenic Over Competing Phosphate by Nano-Enabled Transition Metal Cross-linked Chitosan". 256th ACS National Meeting, Boston, MA, August 19-23, 2018

Pincus, L.N., Lounsbury, A.W., Zimmerman, J.B., "Towards a Mechanistic Understanding of the Selective Adsorption of Arsenic Over Competing Phosphate by Nano-Enabled Biomaterials". Gordon Research Conference on Environmental Sciences: Water, Holderness, NH, June 25-29, 2018

Pincus, L.N., Lounsbury, A.W., Zimmerman, J.B., "Towards a Mechanistic Understanding of the Selective Adsorption of Arsenic Over Competing Phosphate by Nano-Enabled Biomaterials". Gordon Research Seminar on Environmental Sciences: Water, Holderness, NH, June 23-24, 2018

Jabba SV, Drtil A, Erythropel HC, Bonner P, Zimmerman JB, Jordt SE: "The Role of Sweeteners in Smokeless Tobacco Product Preference in Mice". Society for Research on Nicotine & Tobacco Annual Meeting, Baltimore, MD, February 21-24, 2018

Mitchell, M., Kwan, T. Soh, L. Zimmerman, J. B., "Heterogeneous catalysis in carbon dioxide for the sustainable conversion of bio-oil." National Biodiesel Conference, Fort Worth, TX. January 24 2018

Falinski, M., Gilbertson, L., Chopra, S., Theis, T., Plata, D., Zimmerman, J.B., "Navigating Nanomaterial Space for Performance, Hazard, and Cost: Approaching Sustainable Nanomaterial Selection and Design" NEWT Industrial/Practitioner Advisory Board Meeting, El Paso, TX, October 3-4, 2017

Falinski, M., Zimmerman, J.B., "Selection of Safe and Sustainable Nanomaterials for Water Treatment Applications" NEWT Industrial/Practitioner Advisory Board Meeting, El Paso, TX, October 3-4, 2017

Falinski, M., Gilbertson, L., Chopra, S., Theis, T., Plata, D., **Zimmerman, J.B.**, "*Employing Ashby Material Selection Diagrams in Sustainable Nano-enabled Product Design*" ISIE-ISSST 2017, Chicago, IL, June 25-29, 2017 (Note: Prepared by M. Falinski, Presentation by S. Chopra)

Tu, Q., Wang, R., **Zimmerman, J.B.**, "Modeling for transition: Deploying rainwater harvesting systems in citywide water infrastructure systems". ISIE and ISSST Joint Conference, Chicago, IL, June 25-29, 2017

Lounsbury, A., Albalghiti, E.; Chu, C.; Falinski, M.; Fishman, Z.; Perreault, F.; Pfefferlee, L.; McNeill, K.; **Zimmerman, J. B.** "Understanding the relationship between form and toxicity of nano-hematite" AEESP Conference, University of Michigan, Ann Arbor, Michigan, June 20-22 2017.

Falinski, M., Garland, M., Tanguay, R., **Zimmerman, J.B.**, "*Establishing Physicochemical Properties Affecting Toxicity of O-Functionalized MWNT*" Gordon Research Conference: Environmental Nanotechnology, Stowe, VT, June 18-23, 2017.

Falinski, M., Gilbertson, L., Chopra, S., Theis, T., Plata, D., **Zimmerman, J.B.**, "*Simplified Selection: Adapting Traditional Selection Frameworks to Consider Sustainability and Functionality in Emerging Nanomaterials*" Gordon Research Seminar: Environmental Nanotechnology, Stowe, VT, June 17-18, 2017.

Erythropel HC, Jabba SV, DeWinter TM, Falinski M, Anastas PT, **Zimmerman JB**, Jordt SE, "Chemical Adducts of Flavorants in E-cigarette Liquid Solvents Act as Modulators of Respiratory Irritant Receptors" American Thoracic Society (ATS) conference 2017, Washington, DC, May 19-24, 2017.

Erythropel HC, Maric M, Nicell JA, Leask RL, **Zimmerman JB**, Anastas PT, "Designing Greener Plasticizers: Structural Considerations" (poster) 2nd Green and Sustainable Chemistry Conference, Berlin, Germany, May 14-17, 2017.

Jabba SV, Fan L, Balakrishna S, Bonner P, Taylor SR, Ghosh K, Smith GJ, Erythropel HC, DeWinter TM, **Zimmerman JB**, Morris JB, Picciotto MR, Jordt SE, "TRP Ion Channels as Key Targets of Tobacco and Electronic Cigarette Irritants and Flavor Additives" Association for Chemoreception Sciences (AChemS) Annual Meeting, Bonita Springs, FL, April 26-29, 2017.

Kwan, T. A., **Zimmerman, J. B.**, "Sustainable Technologies Towards an Integrated Biorefinery" 253rd ACS National Meeting, San Francisco, CA, April 5, 2017

Pincus, L., Yamani, J., **Zimmerman, J.B.**, "Towards multifunctionality in water treatment: developing photoactive selective adsorbents for inorganic contaminants using nano-enabled biomaterials" 253rd ACS National Meeting, San Francisco, California, April 2-April 6 2016.

**Zimmerman, J. B. (invited)**, "Of Shrimp Shells and Pond Scum", Department of Ecological Engineering, Purdue University, West Lafayette, Indiana, April 4, 2017.

Jabba SV, Tiwari C, Bonner B, deWinter TM, Miao S, Beach E, Sommer T, Zimmerman JB, Jordt SE, "Analysis and Behavioral Effects of High-Intensity Sweeteners in Alternative Sweeteners in Alternative Tobacco Products" Society for Research on Nicotine & Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017 (presentation).

Jabba SV, DeWinter TM, Erythropel HC, Zimmerman JB, Jordt SE, "Novel Adducts of Flavor Chemicals in E-Cigarette Liquids act as Modulators of Chemosensory Irritant Receptors" Society for Research on Nicotine & Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017 (poster).

**Zimmerman, J. B. (invited)**, "Assessment informs Design: Innovative Examples from Water, Energy and Materials", Department of Chemical Engineering, Brown University, Providence, Rhode Island, March 2, 2017.

Tu, Q.; Eckelman, M; **Zimmerman, J.B.**, "Meta-analysis of algae-based biofuels life cycle assessments", LCA XVI, Charleston, South Carolina, September 27-29, 2016.

Lounsbury, A., Billmeyer, N., Peak, D., **Zimmerman, J.B.**, "*Impact of nanoparticle size, shape, and crystallinity Selenium adsorption*" Gordon Research Conference: Water, Harkness, New Hampshire, June 26-July 1 2016.

Fausey, C.; De Faria, A., Shaulsky, E., Elimelech, M., **Zimmerman, J. B.**, "Toward a Multi-Layer, Multi-Functional

Filter: Modifying Electrospun Fibers with TiO<sub>2</sub>-Decorated Graphene Oxide." 20th Annual Green Chemistry & Engineering Conference, Portland, Oregon, June 14-16, 2016.

Kwan, T.A., **Zimmerman, J.B.**, "Biorefinery Trade-Offs: Technology, Economy, and the Environment", ACS Green Chemistry & Engineering Conference 2016, Portland, Oregon, June 16, 2016.

Kwan, T.A., **Zimmerman, J.B.**, "Green Making and Sustainable Team Design", ACS Green Chemistry & Engineering Conference, Portland, Oregon, June 16, 2016.

Kwan, T.A., **Zimmerman, J.B.**, "Microalgae Lipid and Nutraceutical Fractionation with Supercritical Carbon Dioxide", ACS Green Chemistry & Engineering Conference 2016, Portland, Oregon, June 14, 2016.

Pincus, L.N.; Yamani, J., **Zimmerman, J.B.**, "Towards Sustainable Water Treatment: Developing Selective Adsorbents for Inorganic Contaminants Using Nano-enabled Biomaterials", American Chemical Society Green Chemistry and Green Engineering Conference 2016, Portland, Oregon, June 14-16, 2016.

Lounsbury, A.; Billmyer, N., Yamani, J., Peak, D., **Zimmerman, J. B.**, "Mechanistic understanding of impact of hematite nanoparticle (α-Fe<sub>2</sub>O<sub>3</sub>) size and shape on sustainable aqueous inorganic remediation", American Chemical Society National Meeting 2016, San Diego, California, March 14-18, 2106.

Lounsbury, A.; Rose-Willen, E., Falinski, M., **Zimmerman, J. B.**, "Closing the loop: Synthesis of hematite nanoparticles (α-Fe<sub>2</sub>O<sub>3</sub>) from mine tailing sources for remediation of mine tailing contamination", American Chemical Society National Meeting 2016, San Diego, California, March 14-18, 2106.

Kwan, T.; **Zimmerman, J. B.**, "The role of supercritical fluid extraction in advancing the integrated biorefinery: Fuel and Nutraceutical Products", National Biodiesel Conference, Miami, Florida, February 25-28, 2016.

Lounsbury, A. W.; Billmeyer, N.; Yamani, J. S.; Peak, D.; **Zimmerman, J. B.**, "In-situ ATR-FTIR observation of selenate reduction by photocatalytic nano-metal oxides, American Chemical Society National Meeting 2015, Boston, Massachusetts, August 16-20, 2015.

Gilbertson, L. M.; **Zimmerman, J. B.**, "Sustainability by Design: Development of an Engineered Nanomaterials Selection Framework that Includes Property, Function and Hazard Criteria", poster, Gordon Research Conference in Environmental Nanotechnology, Mount Snow, West Dover, VT, June 21–26, 2015.

Wang, R.; **Zimmerman, J. B.**, "The water footprints: From consumption perspective to consumer empowerment", Association of Environmental Engineering & Science Professors (AEESP) Research and Education Conference, New Haven, CT, June 13-16, 2015.

Lounsbury, A. W.; Billmeyer, N.; Yamani, J. S.; Johnston, C.; Larese-Casanova, P.; Peak, D.; **Zimmerman, J. B.**, "Impact of nanoparticle size, shape, and crystallinity on Selenate and Selenite adsorption", Association of Environmental Engineering & Science Professors (AEESP) Research and Education Conference, New Haven, CT, June 13-16, 2015.

Gilbertson, L. M.; **Zimmerman, J. B.**, "Development of a Pre-Screening Tool to Quantify Impact and Benefit Tradeoffs of Emerging Technologies", Association of Environmental Engineering and Science Professors (AEESP) Conference, Yale University, New Haven, CT, June 13–16, 2015.

Lounsbury, A. W.; Billmeyer, N.; Yamani, J. S.; Larese-Casanova, P.; **Zimmerman, J. B.**, "Impact of hematite nanoparticle (α-Fe<sub>2</sub>O<sub>3</sub>) morphology and size on photocatalytic potential as exemplified by reduction of chromate", ACS National Meeting 2015, Denver, Colorado, March 22-26, 2015

Mellor, J.E., **Zimmerman, J. B.**, "A Systems Approach to Climate, Water and Diarrhea in Hubli-Dharward, India", American Geophysical Union Fall Meeting, San Francisco, CA, December 15-17, 2014.

Gilbertson, L. M.; Tanguay, R.; **Zimmerman, J. B.**, "Towards the Development of a Model that Informs Safer Carbon Nanotube Design: Using Zebrafish Mortality to Evaluate Carbon Nanotube Ecotoxicity Potential", Sustainable Nanotechnology Organization Conference, Boston, MA, November 2-4, 2014.

Mellor, J.E., Burt, Z., Ercumen, A., Kumpel, E., **Zimmerman, J.B.**, Nelson, K.L., "A Systems Approach to Climate, Water and Diarrhea in Hubli-Dharward, India", Water and Health Conference: Where Science Meets Policy,

University of North Carolina at Chapel Hill, Chapel Hill, NC, Oct. 13-17, 2014.

Gilbertson, L. M.; **Zimmerman, J. B.**, Eckelman, M. J., "Life Cycle Impacts and Benefits of a Carbon Nanotube-Enabled Chemical Gas Sensor", Sustainable Nanotechnology Organization Conference, Boston, MA, November 2-4, 2014.

Lounsbury, A.; Yamani, J.; Larese-Casanova, P.; **Zimmerman, J. B.** "Identification of physicochemical properties associated with enhanced anionic adsorption of Se via nano- $\alpha$ - $\text{Al}_2\text{O}_3$  and nano- $\alpha$ - $\text{Fe}_2\text{O}_3$ ", Poster presented at ACS National Meeting San Francisco, CA, August 10–14, 2014

Gilbertson, L. M.; **Zimmerman, J. B.**, "Towards Tailored Functional Design of Multi-Walled Carbon Nanotubes (MWNTs): Electrochemical and Antimicrobial Activity Enhancement via Oxidation and Selective Reduction", American Chemical Society National Meeting, San Francisco, CA, August 10–14, 2014.

Lounsbury, A.; Yamani, J.; Larese-Casanova, P.; **Zimmerman, J. B.** "Understanding physicochemical properties associated with improved Se remediation from aqueous systems via nano- $\alpha$ - $\text{Al}_2\text{O}_3$  and nano- $\alpha$ - $\text{Fe}_2\text{O}_3$ ," Poster at the Gordon Research Conference in Environmental Sciences: Water, Holderness, NH, June 22–27, 2014.

Gilbertson, L. M.; **Zimmerman, J. B.**, "Impact of Oxygen Functional Groups on Multi-Walled Carbon Nanotube (MWNT) Reactivity: Potential Environmental Implications. Poster at the Gordon Research Conference in Environmental Sciences: Water, Holderness, NH, June 22–27, 2014.

**Zimmerman, J. B. (invited)**, "Mitigating Arsenic Risk through Novel Green Sorbents", National Institutes of Environmental Health Sciences, Research Triangle Park, North Carolina, March 4, 2014.

**Zimmerman, J. B. (invited)**, "Designing Safer Molecules and Materials", Department of Civil and Environmental Engineering, Worcester Polytechnic Institute, Worcester, MA, February 25, 2014.

**Zimmerman, J. B. (invited)**, "The Water-Energy Nexus: Life Cycle Impacts of Urban Water Infrastructure Systems", Department of Civil and Environmental Engineering, University of South Florida, February 27, 2014.

**Zimmerman, J. B. (invited)**, "Fundamental Needs in Advancing Supercritical Fluids Implementation in Establishing an Integrated Biorefinery", NSF-Supported Workshop on Supercritical Fluids and Energy", Campanias, Brazil, December 8-11, 2013.

Gilbertson, L.; Fairbrother, H.; **Zimmerman, J. B.**, "Realizing Comparable Oxidative and Cytotoxic Potential of Single- and Multi-Walled Carbon Nanotubes through Annealing", 2nd Annual Conference of Sustainable Nanotechnology Organization, Long Beach, CA, November 3 – 5, 2013.

Soh, L.; Beckman, E. J.; **Zimmerman, J. B.**, "Establishing the role of carbon dioxide for extractions and processing in an integrated biorefinery", American Chemical Society National Meeting, Indianapolis, IN, September 8-12, 2013.

Soh, L.; **Zimmerman, J. B.**, "The Role of Supercritical Carbon Dioxide in the Algal Biorefinery", Association of Environmental Engineering and Science Professors, Golden, CO, July 14-16, 2013.

Soh, L.; **Zimmerman, J. B.**, "Establishing the Role of Carbon Dioxide in Super- and Sub-Critical Systems to Enable the Integrated Biorefinery, Annual Green Chemistry and Engineering Conference, Washington, DC, June 18-20, 2013.

Yamani, J.; Lounsbury, A. W.; **Zimmerman, J. B.**, "Sustainable Remediation of Inorganic Contaminants from Wastewater: A novel nano-metal oxide impregnated chitosan sorbent", Annual Green Chemistry and Engineering Conference, Washington, DC, June 18-20, 2013.

Kostal, J.; Anastas, P. T., **Zimmerman, J. B.**, "Improved design guidelines for minimal aquatic ecotoxicity based on octanol/water partition and frontier orbital energies", Annual Green Chemistry and Engineering Conference, Washington, DC, June 18-20, 2013.

Wang, R.; **Zimmerman, J.B.** "Exploring the Water-Energy Nexus in an Interconnected, Dynamic, and Uncertain World", 31<sup>st</sup> International Conference of the System Dynamics Society, Cambridge, MA, July 21-25, 2013.

**Zimmerman, J. B. (invited)**, "Nano – Greener Living, Better Design",\_Gordon Research Conference: Environmental Nanotechnology, Stowe, VT, June 25, 2013.

Lounsbury, A. W.; Yamani, J. S.; Sommer, T.; **Zimmerman, J. B.** "Improved Selenium Remediation from Aqueous systems using nano-iron oxide," Gordon Research Conference: Environmental Nanotechnology, Stowe, VT, June 25, 2013.

Pasquini, L.M.; Sekol, R. C.; Taylor, A. D.; Pfefferle, L. D.; **Zimmerman, J. B.** "Impact of Annealing Treatment on the Electrochemical Activity of Multi-Walled Carbon Nanotubes," Gordon Research Conference: Environmental Nanotechnology, Stowe, VT, June 25, 2013.

Soh, Beckman, Zimmerman, Properties and Phase Equilibria for Product and Process Design, Iguazu Falls, Argentina-Brazil, May 26-30, 2013.

**Zimmerman, J.B. (invited)**, "Designing and Demonstrating the Integrated Biorefinery", School of Engineering and Applied Sciences, Harvard University, February 28, 2013.

**Zimmerman, J.B.**, "Designing Benign Chemistries", Society of Environmental Toxicology and Chemistry, Long Beach, CA, November 11-14, 2012.

Pasquini, L.; Elimelech, M.; **Zimmerman, J.B.**, "Understanding the Impact of Single Walled Carbon Nanotube Aggregation on Toxicity to Inform Greener Nano Design", Society of Environmental Toxicology and Chemistry, Long Beach, CA, November 11-14, 2012.

**Zimmerman, J.B. (invited)**, "Green Chemistry and Engineering Principles Applied to Biorefinery Design", Department of Civil and Environmental Engineering, McGill University, Montreal, Canada, October, 19, 2012.

**Zimmerman, J.B. (invited)**, "Design of Safer Chemicals: Physiochemical Property Relationships to Mechanisms for Aquatic Toxicity Endpoints", Center for Green Chemistry, University of California at Berkeley, Berkeley, CA, October 15, 2012.

**Zimmerman, J.B. (invited)**, "Sustainability, Innovation and Pond Scum: Advances towards a Algal Biorefinery", Department of Civil and Environmental Engineering, University of California at Berkeley, Berkeley, CA, October 12, 2012.

**Zimmerman, J.B. (invited)**, "Advancing the Algal Biorefinery through Supercritical Carbon Dioxide", Department of Civil and Environmental Engineering, Arizona State University, Tempe, AZ, September 19, 2012.

Soh, L.; **Zimmerman, J.B.** "One-Pot Algal Biodiesel Production in Supercritical Carbon Dioxide", International Society for Supercritical Fluid, San Francisco, CA, May 13-16, 2012.

Soh, L.; **Zimmerman, J.B. (invited)**. "Algal biodiesel production in super critical carbon dioxide", 243rd American Chemical Society National Meeting, San Diego, CA, March 25-29, 2012.

**Zimmerman, J.B. (invited)** "Assessments and Innovation to Advance Sustainable Water and Energy Systems", Department of Civil and Environmental Engineering, Duke University, March 22, 2012

**Zimmerman, J.B. (invited)**, "Sustainable Innovation through Green Chemistry and Engineering", Sustainable Chemistry, Chemical Engineering and Materials, SusChEM Workshop, Arlington, VA, January 18-19, 2012.

Voutchkova, A., **Zimmerman, J.B.**, "Towards Rational Design of Safer Chemicals: Property Guide- lines for Reduced Acute Aquatic Toxicity", Society of Environmental Toxicology and Chemistry, Boston MA, November 13 -17, 2011.

Husowitz, B., **Zimmerman, J.B.**, Anastas, P.T., "Acute Aquatic Toxicity: Designing guidelines by Support Vector Machines", Society of Environmental Toxicology and Chemistry, Boston MA, November 13 -17, 2011.

**Zimmerman, J.B. (invited)**, "Better Living through Green Chemistry", 2011 Michigan Green Chemistry and Engineering Conference, Ann Arbor, MI, October 27-29, 2011.

Soh, L., **Zimmerman, J.B.**, "Towards one-pot algal biodiesel using supercritical carbon dioxide", Algae Biomass Summit, Minneapolis, MN, October 24-27, 2011.

Yamani, J., **Zimmerman, J.B.**, "Metal Oxide Impregnated Chitosan Beads for Arsenic Remediation of Groundwater", Water Technologies for Emerging Regions (WaTER) Conference, Norman, OK, October 24-25, 2011.

**Zimmerman, J.B. (invited)**, "Better Living through Green Chemistry", Consumer Specialty Products Association's (CSPA) Cleaning Products Division: New Horizons 2011 Conference, Ponte Vedra, FL, October 16-19, 2011.

Eckelman, M., Quale, J., Guy, Bradley, **Zimmerman, J.B.** "Two recent LCA studies for buildings: On-site vs off-site construction and Building material reuse", Greenbuild 2011, Toronto, Canada, October 5, 2011.

Eckelman, M., **Zimmerman, J.B.**, Christensen, P., "Resource Requirements for Urbanization: Three Perspectives on Urban Metabolism", Greenbuild 2011, Toronto, Canada, October 5, 2011.

Eckelman, M., Fyfe, E., **Zimmerman, J.B.**, "Meta-analysis of LCAs for algal fuels", Life Cycle Assessment XI, Chicago, IL, October 4, 2011.

Pasquini, L.M., **Zimmerman, J.B.**, "Towards Green Design of Single-Walled Carbon Nanotubes: Decreased Cytotoxicity via Addition of Surface Functional Groups", 2011 EPA STAR Graduate Fellowship Conference, Washington, DC, September 19-20, 2011.

**Zimmerman, J.B. (invited)**, "Discussion: Increasing Demand for Energy & Strategic Resources", US Manufacturing Competitiveness Sustainable, Effective and Prosperous, Duke University, Durham, NC, September 20-21, 2011.

Beach, E.S., Brentner, L.B., Eckelman, M.J., **Zimmerman, J.B.** "Algae as a source of biofuels and bio-based chemicals", Green Technologies for Developing Nations, Montego Bay, Jamaica, August 19 – 20, 2011.

Beach, E.S.; Voutchkova, A.; Husowitz, B. **Zimmerman, J.B.**, "Designing Chemicals for Reduced Toxicity" Paris, France, 2011.

**Zimmerman, J.B. (invited)**, "The Frontiers of Green Chemistry & Green Engineering", Guangdong Provincial Government Leadership Program, Maurice R. Greenberg Conference Center, Yale University School of Management, New Haven, CT, August 18, 2011.

Nasiri, F., Wang, R. Savage, T., Barawid, N., **Zimmerman, J.B.**, "Municipal Water System Planning and Optimization: Exploring wastewater reclamation and reuse from water utilities' perspective", International System Dynamics Society Conference, Washington D.C., July 24-28, 2011.

Nasiri, F., Wang, R., Savage, T, Barawid, N., **Zimmerman, J.B.**, "Water Reuse Planning and Management: A System Dynamics Approach", International System Dynamics Society Conference, Washington D.C., July 24-28, 2011.

Nasiri, F., Savage, T., Wang, R., **Zimmerman, J.B.**, "A System Dynamic Approach for Urban Water Reclamation-Reuse Planning", International System Dynamics Society Conference, Washington D.C., July 24-28, 2011.

Fuchs, V., **Zimmerman, J.B.**, State of the science of stormwater management: critical review and necessary steps to develop resilient urban stormwater infrastructure. Conference of the Association for Environmental Engineering and Science Professors, Tampa FL, July 10-12, 2011.

**Zimmerman, J.B.**, "Integrating Sustainable Development into Courses throughout the Engineering Curriculum", 2011 Association of Environmental Engineering & Science Professors (AEESP) Education & Research Conference, Tampa, FL, July 10-12, 2011.

Soh, L., **Zimmerman, J.B.**, "Biodiesel production potential of algal lipids extracted with supercritical carbon dioxide", 15th Annual Green Chemistry & Engineering Conference, Washington, DC, June 21-23, 2011.

Voutchkova, A., Kostal, J., Brooks, B., **Zimmerman, J.B.**, "Green Toxicology: Towards molecular design guidelines for reduced acute aquatic toxicity", 15th Annual Green Chemistry & Engineering Conference, Washington, DC, June 21-23, 2011.

Pasquini, L. M., Sommer, T. J., Hashmi, S. M., Elimelech, M., **Zimmerman, J. B.**, "Towards Green Design of Single-Walled Carbon Nanotubes: Decreased Cytotoxicity via Addition of Surface Functional Groups", 15th Annual Green Chemistry & Engineering Conference, Washington, DC, June 21-23, 2011.

Matus, K., Beach, E., **Zimmerman, J.B.**, "Green and sustainable innovation in the chemical industry: A survey of practices and perceptions", 15th Annual Green Chemistry & Engineering Conference, Washington, DC, June 21-23, 2011.

Foley, P., Beach, E., **Zimmerman, J.B.**, "Algae as a source of renewable chemicals: Opportunities and challenges", 15th Annual Green Chemistry & Engineering Conference, Washington, DC, June 21-23, 2011.

**Zimmerman, J.B. (invited)** "Assessment and Sustainable Design of Appropriate Water Treatment Technologies", Princeton Plasma Physics Laboratory, Princeton University, June 14, 2011.

Pasquini, L.M., Sommer, T.J., Hashmi, S.M., Elimelech, M., **Zimmerman, J. B.**, "Towards Green Design of Single-Walled Carbon Nanotubes: Decreased Cytotoxicity via Addition of Surface Functional Groups", Gordon Research Conference: Environmental Nanotechnology, Waterville Valley Resort, NH, May 29 - June 3, 2011.

**Zimmerman, J.B. (invited)**, "Green Chemistry and Engineering: The How of Sustainability", University of New Haven Chemistry Seniors Symposium: Chemistry Makes History, West Haven, CT, April 15, 2011.

Fuchs, V., **Zimmerman, J.B.** "Measuring resilience of green and grey stormwater infrastructure", Engineering Sustainability 2011, Pittsburgh, PA, April 10- 12, 2011.

Nasiri, F., Wang, R. Savage, T, Barawid, N., **Zimmerman, J.B.**, "A System Dynamics Approach for Urban Water Reclamation- Reuse Planning: A Case Study from the Great Lakes Region", Engineering Sustainability 2011, Pittsburgh, PA, April 10- 12, 2011.

Eckelman, M., **Zimmerman, J.B.**, Williams, Kyle, Quale, J., Sloditskie, G. "Comparing the Environmental considerations of modular building versus On-Site Construction". Engineering Sustainability 2011, Pittsburgh, PA, April 10-12, 2011.

Wang, R., Nasiri, F., Savage, T, Barawid, N., **Zimmerman, J.B.**, "Water Reuse Planning and Management: A System Dynamics Approach", Engineering Sustainability 2011, Pittsburgh, PA, April 10-12, 2011.

**Zimmerman, J.B.** "Assessment and Sustainable Design of Algal Biofuels and Novel Arsenic Sorbent through Green Chemistry and Engineering", Department of Environmental Sciences, Rutgers University, April 6, 2011.

Voutchkova, A., **Zimmerman, J.B.**, Anastas, P.T. "Towards Molecular Design Tools for Minimal Endocrine Disruption", Designing for Minimal Endocrine Disruption, Environmental Health Sciences, San Francisco CA, March 2011.

Soh, L., **Zimmerman, J.B.** "Biodiesel production potential of algal lipids extraction with supercritical carbon dioxide", Green Solvents for Synthesis Conference, Berchtesgaden, Germany, October 10-13, 2010.

Miller, S. M., **Zimmerman, J. B. (invited)** "Water 2010: Domestic and International Research, Technologies, Sustainability, and the Future," WEFTEC, New Orleans, LA, October 2-6, 2010.

Brentner, L.B., Eckelman, M.J., **Zimmerman, J.B.** "Life Cycle Analysis of Algae to Biodiesel: A Model to Guide Process Design", Algal Biomass Summit, Phoenix, Arizona, September 28-30, 2010.

Soh, L., **Zimmerman, J.B.** "Biodiesel production potential of algal lipids extraction with supercritical carbon dioxide", Algal Biomass Summit, Phoenix, Arizona, September 28-30, 2010.

Nasiri, F., Savage, T., Wang, R., Barawid, N., **Zimmerman, J.B.** "An Environmental-Economic Measure of Sustainable Development: Water Reuse Planning and Management: A Systems Dynamics Approach", Decision Analysis and Sustainable Development, Montreal, Quebec, Canada, September 27-28, 2010.

Soh, L., Peccia, J., **Zimmerman, J.B.** "Biodiesel production potential of algal lipids extracted with supercritical carbon dioxide", American Chemical Society Fall 2010 National Meeting and Exposition, Boston, Massachusetts, August 22-26, 2010

**Zimmerman, J.B. (invited)**, "Rational Design of Safer Chemicals, Gordon Research Conference on Green Chemistry, North Carolina, July 25-30, 2010.

Voutchkova, A., Osimitz, T., Emerson, J., **Zimmerman, J.B.** "Aquatic Molecular Design for Hazard Reduction", 14<sup>th</sup> Annual Green Chemistry and Engineering Conference, Washington, DC, June 21-23, 2010.

Miller, S., **Zimmerman, J.B.** "Toward Implementation of a Novel, Bio-based Arsenic Sorbent", 14th Annual Green Chemistry and Engineering Conference, Washington, DC, June 21-23, 2010.



Brentner, L.B., Zimmerman, J.B. "Life cycle analysis of algae biodiesel: a model to guide process design for industrial production", 14<sup>th</sup> Annual Green Chemistry and Engineering Conference, Washington, DC, June 21-23, 2010.

Foley, P., Beach, E., Zimmerman, J.B. "Pursuing Useful, Biologically Derived Small Molecules: C-Glycosides as Surface Active Agents", 14<sup>th</sup> Annual Green Chemistry and Engineering Conference, Washington, DC, June 21-23, 2010.

Voutchkova, A., Steinfeld, J., Emerson, J., Zimmerman, J.B., Anastas, P.T. "Molecular Design Guidelines for Reduced Fresh Water Aquatic Toxicity of Commercial Chemicals", QSAR Workshop, Montreal, Canada, June 2010.

Zimmerman, J.B. (invited). "Meeting Global Water Challenges through Green Chemistry and Engineering", Gordon Research Conference on Environmental Science: Water, New Hampshire, June 20-25, 2010.

Voutchkova, A., Osimitz, T., Emerson, J., Zimmerman, J.B. "Application of QSAR approaches to Deriving Molecular Design Rules for Hazard Reduction", 14<sup>th</sup> International Workshop on Quantitative Structure Activity Relationships, Montreal, Canada, May 24-28, 2010.

Beach E. S., Voutchkova A. M., Foley P. M., Zimmerman J. B., Anastas, P.T. "Green Chemistry: Successes, Challenges and State of the Art", Innovation for Sustainable Production, Bruges, Belgium, April 18-21, 2010.

Miller, S., Zimmerman, J.B. "Bio-based Arsenic Sorbent", American Chemical Society Spring 2009 National Meeting and Exposition, San Francisco, California, March 21-25, 2010.

Voutchkova, A., Osimitz, T., Emerson, J., Zimmerman, J.B. "Towards Molecular Design for Hazard Reduction- Deriving Fundamental Relationships Between Chemical Properties and Toxicity", 49<sup>th</sup> Annual Society of Toxicology Meeting, Salt Lake City, Utah, March 15-19, 2010.

Zimmerman, J.B. (invited) "Natural Coagulants and Novel Biomaterials for Arsenic Removal from Water", Department of Geography and Environmental Engineering, Johns Hopkins University, Baltimore, Maryland, March 11, 2010

Beach, E., Anastas, P.T., Zimmerman, J.B. (invited) "Applying the Principles of Green Chemistry and Engineering to Worker Health and Safety", American Public Health Association, Philadelphia, Pennsylvania, November 7-11, 2009

Zimmerman, J.B. (invited) "Design of Sustainable, Resilient Infrastructure Systems", US-Japan Workshop on Life Cycle Assessment of Sustainable Infrastructure Materials", Sapporo, Japan, October 21-22, 2009

Miller, S., Zimmerman, J.B. "Bio-based Arsenic Sorbent", International WaTER Conference, Norman, Oklahoma, October 26-28, 2009.

Zimmerman, J.B. (invited) "Innovation through Green Chemistry and Green Engineering" Chemical Heritage Foundation Innovation Day, Philadelphia, Pennsylvania, September 15, 2009.

Zimmerman, J.B. (invited, Plenary speaker) "Governance and Infrastructure for Sustainable Water Management", The Role of the Engineers in Meeting the 21<sup>st</sup> Century's Societal Challenges, Lausanne, Switzerland, July 22, 2009.

Zimmerman, J.B. (invited, Plenary Speaker) "Frontiers in Green Design for Innovation", Engineering Sustainability 2009: Innovations that Span Boundaries, Pittsburgh, Pennsylvania, April 20, 2009.

Zimmerman, J.B. (invited) "Designing Nanotechnology through the Principles of Green Chemistry and Green Engineering" Advancing the Eco-Responsible Design and Disposal of Engineered Nanomaterials, Houston, Texas, March 9-10, 2009

Miller, S., Zimmerman, J.B. "Toward Understanding Opuntia as a Natural Coagulant", Water Environment Federation Disinfection Conference, Atlanta, GA, February 28-March 3, 2009.

Zimmerman, J.B. (invited) "Aligning human health, environmental and economic goals", Good Jobs, Green Jobs National Conference, Washington, DC, February 4-6, 2009.

**Zimmerman, J.B. (invited)** “Designing Safer Chemicals and Systems”, NASA/C3P- 2008 International Workshop on Pollution Prevention and Sustainable Development, San Diego, California, November 18-19, 2008

**Beach, E., Anastas, P., Zimmerman, J.B.** “Green Engineering and Green Jobs”, NIEHS Worker Education and Training Program (WETP) Fall Awardee Meeting and Technical Workshop, Chapel Hill, NC, USA, October 15–17, 2008.

**Zimmerman, J.B. (invited)** “Nature’s Operating Instructions Meet the Original Instructions: Biomimicry and Traditional Indigenous Knowledge”, Bioneers, San Rafael, California, October 17-18, 2008

**Zimmerman, J.B.** “Enhancing the Implementation of Natural Coagulants for Water Treatment in Developing Countries through Laboratory and Field Work”, Annual Green Chemistry and Engineering Conference, Washington, DC, June 26-29, 2007.

**Zimmerman, J.B. (invited)** “Mitigating and Adapting to Water Impacts of Climate Change through Green Engineering”, National Summit on Coping with Climate Change, University of Michigan, May 8-10, 2007.

**Zimmerman, J.B.** “Integrating Developed and Developing World Knowledge into Global Discussions and Strategies for Sustainability”, Engineering Sustainability, Pittsburgh, Pennsylvania, April 16-17, 2007.

**Zimmerman, J.B. (invited)** “Sustainable Design through the Principles of Green Engineering, Building a World of Difference”, Black and Veatch, Overland Park, Kansas, April 10-11, 2007.

**Beach, E.S., Eghbali, N., Sommer, T.J., Zimmerman, J.B., Anastas, P.T.**, “Green chemistry education for nontraditional students”, 235th ACS National Meeting, New Orleans, Louisiana, April 6-10, 2008.

**Zimmerman, J.B. (invited)** “Green Engineering Opportunities for Civil, Construction, and Environmental Engineering”, North Carolina State University, Raleigh, North Carolina, March 16, 2007.

**Zimmerman, J.B. (invited)** “Designing and Implementing Green Packaging”, Target Corporation’s Sustainable Packaging: From Specifications to Suppliers meeting, Target World Headquarters, Minneapolis, Minnesota, February 26, 2007.

**Zimmerman, J.B. (invited)** “Identifying the Bullseye for Target’s Sustainability Initiatives”, Target Corporation’s Strategic Management Council Annual meeting, Target World Headquarters, Minneapolis, Minnesota, January 25 – 27, 2007.

**Zimmerman, J.B. (invited)** “Green Engineering and the Future of Environmental Engineering”, National Science Foundation’s Future of Environmental Engineering Education, Arizona State University, Tempe, Arizona, January 8 – 10, 2007.

**Zimmerman, J.B. (invited)** “Designing Sustainability into the Mission”, U.S. Army Sustainability and Beyond Course and Workshop, Army War College, Carlisle, Pennsylvania, October 23 – 27, 2006.

**Zimmerman, J.B.** “Using Sustainability Education to Enable the Increase of Diversity in Science, Engineering, and Technology Related Disciplines”, Association of Environmental Engineering and Science Professors Research and Education Conference, Clarkson University, Potsdam, New York, July 23 – 27, 2006.

**Zimmerman, J.B. (invited)** “Sustainability Science and Policy across Borders”, US-German Data Exchange Annex General Meeting, Washington, DC, June 22, 2006.

**Zimmerman, J.B. (invited)** “Green Chemistry and Engineering: Mission Critical,” National Defense Center for Environmental Excellence-Department of Defense Sustainability Partnerships and Planning, Fort Shafter, Honolulu, Hawaii, June 6-7, 2006.

**Zimmerman, J.B. (invited)** "Sustaining the Mission through Green Engineering," Army Environment Policy Institute's Sustainability Seminar Series, Washington, DC, February 17, 2006.

**Zimmerman, J.B. (invited)** "Emerging Opportunities for Sustainability: Green Engineering and Policy Innovations," California Polytechnic State University, "Be the Change" Seminar Series, San Luis Obispo, California, January 20, 2006.

**Zimmerman, J.B. (invited)** "Future Visions of Sustainability Education," National Research Council's Workshop on Green Chemistry and Green Engineering Education, November 6-7, 2005.

**Zimmerman, J.B. (invited)** "Sustainable Development through Green Engineering," Engineering for Developing Communities, National Academy of Engineering – U.S. Frontiers in Engineering, Niskayuna, New York, September 22-24, 2005.

**Zimmerman, J.B. (invited)** "Designing Sustainable Infrastructure through Green Engineering" American Society of Civil Engineering – Technical Opportunities for Sustainable Infrastructure, Reston, Virginia, February 24, 2005.

**Zimmerman, J.B. (invited)** "Green Chemistry and Engineering in the Federal Government" New England Green Chemistry Conference, Dartmouth, Massachusetts, January 13-14, 2005.

**Skerlos, S.J., Adriaens, P., Hayes, K., Zimmerman, J.B., Zhao, F., (invited/refereed paper)** "Ecological Material and Green Manufacturing: Design and Technology for Metalworking Fluid Systems", Proceedings of World Engineering Congress, 2004, Shanghai, China, November 2-6, 2004.

**Zimmerman, J.B.** "EPA's Initiatives in Education for Sustainability", Sustainability and Higher Education Conference, Portland, Oregon, October 21-23, 2004.

**Zimmerman, J. B. (invited keynote)** "Green Engineering for Materials Processing", ASM Materials Solutions Conference, Columbus, Ohio, October 18-21, 2004.

**Clarens, A.F., Zimmerman, J.B., Landis, H.R., Hayes, K.F., Skerlos, S.J., 2004,** "Experimental Comparison of Vegetable and Petroleum Base Oils in Metalworking Fluids using the Tapping Torque Test", *Proceedings of the Japan/USA Symposium on Flexible Manufacturing*, Denver, Colorado, July 19-21, 2004.

**Zimmerman, J.B., Anastas, P.T.** "Case Studies Illustrating the 12 Principles of Green Engineering" New Zealand Society for Sustainability Engineering and Science 2004 Conference, Auckland, New Zealand, July 7-9, 2004.

**Zimmerman, J.B. (invited keynote)** "Green Engineering: The Next Frontier at NASA" Innovation through Sustainable Design at NASA, Falls Church, Virginia, June 21-24, 2004.

**Zimmerman, J.B., Anastas, P.T.** "Design through the 12 Principles of Green Engineering: Applications in the Chemical Industry." 5<sup>th</sup> Green Chemistry Conference, Barcelona, Spain, November 10-12, 2003.

**Skerlos, S.J., Hayes, K.F., Morrow, W.R., Zimmerman, J.B.,** "Diffusion of Sustainable Systems through Interdisciplinary Graduate and Undergraduate Education", To appear in the *Proceedings of the ASME: Manufacturing Science and Engineering Division*. Washington, D.C., November, 2003.

**Zimmerman J.B., Keoleian, G., Hayes, K., Skerlos, S.J.,** "Comparative Life Cycle Analysis of Petroleum and Bio Based Metalworking Fluids", 2nd International Symposium of the International Society of Industrial Ecology, Ann Arbor, Michigan, June 29 - July 2, 2003.

**Sutherland, J. W., Gunter, K. L., Haapala, K. R., Khadke, K., Skerlos, S. J., Zimmerman, J. B.; Olson, W. W.; Sadasivuni, R.** "Environmentally Benign Manufacturing: Status and Vision for the Future." North American Manufacturing Conference XXXI, Hamilton, Canada, May 20-24, 2003.

**Zimmerman, J.B., Hayes, K. F., Skerlos, S. J.** "Investigation of Emulsifier Systems for Petroleum- and Bio-Based Metalworking Fluids for Improved Hardwater Stability." Society of Tribology and Lubrication Engineers, New York, New York, April 28-May 1, 2003.

**Zimmerman, J. B.**, Hayes, K. F., Skerlos, S. J. "Influence of Ion Accumulation on the Emulsion Stability and Machining Performance of Two Semi-Synthetic Metalworking Fluids." American Chemical Society National Meeting, New Orleans, Louisiana, March 23-27, 2003.

**Zimmerman, J. B.**, Hayes, K. F., Skerlos, S. J. "Investigation of High-Performance Vegetable Oil-Based Metalworking Fluids for Hardwater Stability." Green Chemistry and Engineering, Washington, D.C., June 24-27, 2002.

**Zimmerman, J. B.**, Hayes, K. F., Skerlos, S. J. "Statistical Analysis of Metalworking Fluid Evaluation Using Tapping Torque Measurements." Society of Tribology and Lubrication Engineers, Houston, Texas, May 20-23, 2002.

**Skerlos, S. J.**, Adriaens, P., Hayes, K. F., Rihana, A., Kurabayashi, K., Takayama, S., **Zimmerman, J. B.**, Zhao, F. "Challenges to Achieving Sustainable Aqueous Systems: A Case Study in Metalworking Fluids." EcoDesign 2001, Tokyo, Japan, December 2001.

**Zimmerman, J. B.**, Skerlos, S. J., Hayes, K. F. "Implications of Eco-Metrics on Metalworking Fluid Design." International Society for Industrial Ecology, Leiden, the Netherlands, November 2001.

Jeong, H., **Zimmerman, J. B.**, Hayes, K. F. "Impact of Nonaqueous Phase Liquid Mixtures on Solubilization Behavior of Nonionic Surfactants." Proceedings of the Environmental Chemistry Workshop, Midwest Regional Meeting, Kalamazoo, MI, October 2000.

**Deitsch, J. J.**, Smith, J. A., **Zimmerman, J. B.** "Surfactant-Enhanced Desorption of 1,2-DCB from a Peat and Sand Soil." Proceedings of the American Geophysical Union Fall Meeting, San Francisco, CA, 1998.

**Cowell, M. A.**, Kibbey, T. C. G., **Zimmerman, J. B.**, Hayes, Kim F. "Partitioning of Surfactants Between Aqueous and Organic Phases During Aquifer Remediation: Effects of Surfactant/Organic Properties." Proceedings of the Environmental Chemistry Workshop, Midwest Regional Meeting, Ann Arbor, MI, October 1998.

**Zimmerman, J. B.**, Cowell, M. A., Kibbey, T. C. G., Hayes, K. F., "A Quantitative Assessment of the Influence of Surfactant Partitioning into Nonaqueous Phase Liquid (NAPL) Contaminants on Solubilization Efficiency in Surfactant-Enhanced Aquifer Remediation." Proceedings of EnviroMEET, Irvine, CA, July 1998.

**Zimmerman, J. B.**, Cowell, M. A., Kibbey, T. C. G., Hayes, K. F., "Partitioning of Surfactants into Nonaqueous Phase Liquids: Implications for Remediation." Proceedings of the Environmental Chemistry Workshop, Midwest Regional Meeting, Bloomington, IN, November 1997.

**Deitsch, J. J.**, **Zimmerman, J. B.** "Effect of Surfactants on the Rate of Carbon Tetrachloride and 1,2-Dichlorobenzene Desorption from Soil to Water." Proceedings of the American Chemical Society National Meeting, Las Vegas, Nevada, July 1997.

## **MEDIA**

Collection of 100s of news stories related to e-cigarette reach can be found at:

<https://oxfordjournals.altmetric.com/details/49887948/news> and

<https://plu.mx/plum/a/?doi=10.1016/j.amepre.2019.04.004&theme=plum-jbs-theme&hideUsage=true>

Trash Talk: Uncovering the Waste in U.S. Landfills, National Public Radio – Science Friday,

<http://www.sciencefriday.com/segment/09/25/2015/trash-talk-uncovering-the-waste-in-u-s-landfills.html>

US may be Drastically Underestimating Landfill Emissions, The Guardian, September 21, 2015,

<http://www.theguardian.com/environment/2015/sep/21/us-may-be-drastically-underestimating-landfill-emissions-study>

How Your Trash Is Contributing to Climate Change, Time, September 21, 2015, <http://time.com/4042559/trash-climate-change-landfill/>

Study: Twice as Much Trash Put in Landfills than Estimated, U.S. News & World Report, September 21, 2015, <http://www.usnews.com/news/science/news/articles/2015/09/21/study-twice-as-much-trash-put-in-landfills-than-estimated>

12 Things to Know About How the Latest Landfill Disposal Study Stacks Up, Waste 360,

<http://waste360.com/emissions/12-things-know-about-how-latest-landfill-disposal-study-stacks>

Yale Project Leads the Way to Find Safer Chemicals, The New Haven Register, October 25, 2013,  
<http://www.nhregister.com/general-news/20131025/yale-project-leads-the-way-to-find-safer-chemicals>

Engineers Develop Sustainable Technique to Remove Arsenic from Water Supplies, The New Haven Independent, July 12, 2012,  
[http://www.newhavenindependent.org/index.php/archives/entry/add\\_beads\\_remove\\_arsenic\\_shrimp\\_shells\\_deliver\\_clean\\_water/](http://www.newhavenindependent.org/index.php/archives/entry/add_beads_remove_arsenic_shrimp_shells_deliver_clean_water/)

A One-Pot Approach to Algae Biodiesel, BIODIESEL Magazine, September 8, 2011,  
<http://www.biodieselmagazine.com/articles/8037/a-one-pot-approach-to-algae-biodiesel>

How to design a safer chemical, Nature, July 29, 2011,  
<http://www.nature.com/news/2011/110729/full/news.2011.448.html>

Better by Design, Science News, 179 (7), March 26, 2011,  
[http://www.sciencenews.org/view/feature/id/70925/title/Better\\_by\\_Design](http://www.sciencenews.org/view/feature/id/70925/title/Better_by_Design)  
Yale Chemists Use Seafood Waste to Remove Arsenic from Groundwater, environment Yale, Fall 2010,  
<http://environment.yale.edu/magazine/fall2010/yale-chemists-use-seafood-waste-to-remove-arsenic-from-groundwater/P0/>

A Formula for Building a Green Chemistry Future, GreenBiz.com, April 23, 2010,  
<http://www.greenbiz.com/blog/2010/04/23/formula-building-green-chemistry-future?page=0%2C1>  
Sustainable Nanotech, Chemical & Engineering News, 87(15), April 13, 2009,  
<http://pubs.acs.org/cen/government/87/8715gov2.html>

Nine-and-a-Half Technologies that could change the world, Quirks and Quarks, a program of the Canadian Broadcast Company, March 28, 2009,  
<http://www.cbc.ca/quirks/archives/08-09/qq-2009-03-28.html>

Fluorescent Bulbs Trade Off Energy Savings For Mercury, Chemical & Engineering News, 86(41), October 13, 2008,  
<http://pubs.acs.org/subscribe/journals/cen/86/i41/html/8641scic5.html>

Study Suggests Energy Saving Light Bulbs May Increase Mercury Pollution, Connecticut Public Broadcasting Network, October 1, 2008, <http://www.cpbm.org/article/study-suggests-energy-saving-light-bulbs-may-increase-mercury-pollution?mini=calendar/2008/12/all&>

Calling All Chemists, Chemical & Engineering News, 86(33), August 18, 2008,  
<http://pubs.acs.org/cen/coverstory/86/8633cover3.html>

Water Desalination: Freshwater from the Sea, American Chemical Society Global Challenges/Chemistry Solutions Series podcast, <http://web.1.c2.audiovideoweb.com/1c2web3536/GlobalChallengesEp2.mp3>

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Students shine at sustainable design contest Six university teams win EPA awards, dozens participated on National Mall, MSNBC, May 12, 2006, <http://www.msnbc.msn.com/id/12755712/>

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