

JOE FRANK BOZEMAN III
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EDUCATION

Ph.D. in Civil Engineering (Lab of Dr. Thomas L. Theis)

R1 University of Illinois at Chicago, May 2020

Dissertation: An exploration of climate change, human behavior, and socioecological factors in managing food-energy-water impacts

Energy & Environmental Sustainability Concentration

Master of Science in Engineering (Lab of Dr. Hong Huang)

Wright State University, 2010

Thesis: Sulfur-tolerant catalysts for the solid oxide fuel cell

Materials Engineering Concentration

Renewable & Clean Energy Major

Bachelor of Science in Mechanical Engineering

Wright State University, 2008

Mechanical Engineering Major

MAJOR RESEARCH EXPERIENCE

R1 University of Illinois at Chicago (UIC) (Advisor: Dr. Thomas L. Theis)

08/2016-Present

Researcher, Institute for Environmental Science and Policy (IESP)

- Uncovers novel findings in climate change and social identity as it relates to food-energy-water impacts attaining national and international media attention
- Serves as grant writer, conference organizer, and budgeter for the Gordon Research Symposium (Industrial Ecology) and International Society for Industrial Ecology (ISIE) activities
- Performs research on peri/urban carbon emission management at global and regional levels
- *Resulted in 3 publications (Journal of Industrial Ecology, Environmental Engineering Sciences, and CRC Press [Book Chapter]), and 4 in preparation*

Key Skills: Industrial Ecology, Life Cycle Assessment, Economic Analysis, Policy Development, Food Systems, Research Leadership, Energy Management, Machine Learning, Neural Network Modeling, Python Coding, Agent-Based Modeling, Netlogo Coding, Science Communication

U.S. Department of Veterans Affairs
Researcher & Developer for the Veterans Health Administration

03/2011-06/2013

- Researched and developed a tool that estimates cold compost volumes nationally
- *Resulted in 1 internal publication and adoption of tool in several federal agencies (Veterans Affairs, Navy, Air Force, and the Environmental Protection Agency)*

Key Skills: Interagency Coordination, Environmental Engineering, Program/Project Management

Wright State University (Advisor: Dr. Hong Huang)
Research & Teaching Assistant

05/2008-06/2010

- Synthesize and computationally analyze sulfur-tolerant catalysts for the solid oxide fuel cell
- Wet-lab synthesized cerium oxide doped catalysts using the sol-gel method
- Used supercomputing techniques to administer quantum mechanical algorithms that simulated molecular motion and reactivity
- Lectured and tutored for undergraduate and graduate courses
- *Resulted in 2 publications (Journal of Nanomaterials and Electrochemical Society Transactions)*

Key Skills: X-Ray Diffractometry, Scan Electron Microscopy, Supercomputing, Gaussian Coding, Quantum Mechanical Analysis, and Electrochemical System Analysis

PUBLICATIONS

Bozeman, J.F., J. Mulrow, S. Derrible, and T.L. Theis. (In-Press). *Urban Carbon Management Strategies* (of the book titled "Advances in Carbon Management Technologies"). CRC Press.

Bozeman III, J.F., W.S. Ashton, and T.L. Theis. (2019a). Distinguishing Environmental Impacts of Household Food-Spending Patterns Among U.S. Demographic Groups. *Environmental Engineering Science* 36(7): 1-15.

Bozeman III, J.F., R. Bozeman, and T.L. Theis. (2019b). Overcoming Climate Change Adaptation Barriers: A Study on the Demographics of the Food-Energy-Water (FEW) Nexus for U.S. Food Consumption. *Journal of Industrial Ecology* 1-17.

Bozeman III, J.F. and R. Watson. (2012). The Cold Composting Calculator: A Novel Tool. *Internally Published Oct 2012. VHA Center for Engineering & Occupational Safety and Health (CEOSH)*.

Bozeman III, J.F. and H. Huang. (2011). Structural Characteristics of Bimetallic Catalysts Supported on Nano-Ceria. *Journal of Nanomaterials* 329757: 1-6.

Bozeman, J., A. Marruffo, I. Barney, A. Jackson, S. Mukhopadhyay, and H. Huang. (2011). Synthesis and Characteristics of Nano-ceria Supported Bimetallic Catalysts for S-tolerant SOFCs. *Electrochemical Society Transactions* 35(1): 1689-1696.

FELLOWSHIPS & AWARDS

Bayer Diversity STEM Fellowship – 2018-2019 Bayer: \$24,475 (includes research support)
Board of Trustees Fellowship – Spring Semester 2018 UIC: \$7,000
Board of Trustees Fellowship – Fall Semester 2018 UIC: \$7,000
Graduate Student Council Travel Award – 2018 UIC: \$275
Student Presenter Award – 2018 UIC: \$200
Carl Storm Underrepresented Minority Fellowship – 2018 Gordon Research Conference: \$600
3-Minute-Thesis (3MT) Winner: 1st Place – 2018 UIC: \$500
Tuition Support for Sustainability Ph.D. – 2018 U.S. Department of Veterans Affairs: \$5,000
Dr. Martin Luther King, Jr. Scholarship – 2017 – 2018 UIC: \$14,000
Green Partner for Change Award – 2017 Practice Greenhealth Environmental Excellence Awards
Green Partner Recognition Award – 2016 Practice Greenhealth Environmental Excellence Awards
Young Energy Professional of the Year Award: Region III – 2015 The Association of Energy Engineers
Green Partner for Change Award – 2015 Practice Greenhealth Environmental Excellence Awards
Regional Education and Outreach Award – 2015 Environmental Protection Agency Federal Green Challenge
Regional Transportation Award - 2014 Environmental Protection Agency Federal Green Challenge
National Transportation Award - 2013 Environmental Protection Agency Federal Green Challenge
Regional Overall Achievement Award – 2013 Environmental Protection Agency Federal Green Challenge
Regional Innovation Award - 2013 Environmental Protection Agency Federal Green Challenge
Legend in Energy - 2012 Association of Energy Engineers
Excellence: Certificate of Appreciation - 2012 Department of Defense Education Activity STEM Activity
Member of the Quarter – Fall Quarter 2009 Wright State University's Student Government
OSEA Certificate of Achievement – 2008 Glenn Stokes Summer Research Internship Program; NSF conference
Dean Honorable Mention – High Altitude Balloon Team (Senior Design Project)
Best Student Paper Award – Won award for technical paper and presentation; 2008 ASEE NCSC
OSEA Certificate of Achievement – 2007 Glenn Stokes Summer Research Internship Program; NSF conference
2004 Student Athlete Achievement for Outstanding Grade Point Average

TALKS

ISIE Beijing, China: 2019
Distinguishing Environmental Impacts of Household Food-Spending Across U.S. Demographic Groups

6th Symposium of Industrial Ecology for Young Professionals (*Invited*) Beijing, China: 2019
Social Receptivity of Industrial Ecology: A case study for overcoming climate change adaptation barriers

How Technology Innovation Can Start Up Companies (*Invited*) Chicago, IL: 2019
Environmental Impact of your Startups

Association of Energy Engineers Chicago/Illiana Chapter (*Invited*) Chicago, IL: 2019
Global climate change initiatives and U.S. Government energy and environmental sustainability

Midwestern Association of Graduate Schools Grand Rapids, MI: 2018
Food-energy-water (FEW) impacts as they relate to U.S. dietary intake and food insecurity (3-Minute-
Thesis Regional Competition Finalist)

BarnRaise Chicago, IL: 2017
Alleviating food insecurity in urban environments

Low Carbon Earth Summit (*Invited*) Qingdao, China: 2014
U.S. Interagency Sustainability

Environmental Sustainability and Innovation at VA (*Invited*) Chicago, IL: 2013
The Cold Composting Calculator

Region 5 Federal Green Challenge Symposium (*Invited*) Chicago, IL: 2013
Sustainability Programming and the Cold Composting Calculator

GreenGov Symposium Washington, DC: 2011
Developing the Cold Composting Calculator

Dayton Engineering Science Symposium Dayton, OH: 2009
Sulfur tolerance of the solid oxide fuel cell

Ohio Aerospace Institute Dayton, OH: 2009
Testing shape memory polymer in a high-altitude environment

National Science Foundation (NSF) Dayton, OH: 2008
Triangular truss system and thermal conductivity of Shape Memory Polymer

POSTER PRESENTATIONS

ISIE Beijing, China: 2019
All Cars Run on Renewables: Tracing solar and manufactured energy flow through the fuel cycle

Gordon Research Conference: Industrial Ecology Les Diablerets, Switzerland: 2018
The demographics of food-energy-water (FEW) impacts as they relate to U.S. food commodity
consumption

UIC Student Research Forum Chicago, IL: 2018
Food-energy-water (FEW) impacts and their interplay with socioeconomic factors

ISIE – International Symposium on Sustainable Systems and Technology Chicago, IL: 2017
Food desert emergence as it relates to energy and environmental sustainability

Captain James A. Lovell Federal Health Care Center Research Symposium Chicago, IL: 2012
The Cold Composting Calculator

University Clean Energy Alliance of Ohio Columbus, OH: 2010
Sulfur-tolerant catalyst for the solid oxide fuel cell

University Clean Energy Alliance of Ohio Columbus, OH: 2009
Thesis approach for the solid oxide fuel cell 04/2009

TEACHING

U.S. Department of Veterans Affairs Little Rock, AK: 2016
Subject: Life Cycle Cost Analysis
Type: One-segment course
Mode: In-person
Audience: Program Managers from across the nation

U.S. Department of Veterans Affairs Little Rock, AK: 2016
Subject: Understanding Energy and Environmental Calculations
Type: One-segment course
Mode: In-person
Audience: Program Managers from across the nation

U.S. Department of Veterans Affairs Little Rock, AK: 2016
Subject: Project Engineering and Green Environmental Management System
Programming
Type: One-segment course
Mode: In-person
Audience: Program Managers from across the nation

U.S. Department of Veterans Affairs 2015
Subject: The Green Environmental Management System – Energy Connection
Type: One-segment course
Mode: Online
Audience: Program Managers from across the nation

Wright State University Dayton, OH: 2010
Course: Finite Element Analysis Lab
Type: Quarter-length course
Mode: In-person
Audience: Undergraduates

Wright State University Dayton, OH: 2009
Course: Mechanical Vibrations Lab
Type: Quarter-length course
Mode: In-person
Audience: Undergraduates

Wright State University

Dayton, OH: 2009

Course: Fundamental Engineering Exam Review Class: Statics
Type: Single class
Mode: In-person
Audience: Undergraduates

Central State University

Dayton, OH: 2009

Courses: Physics, Statics, and Dynamics
Type: Quarter-length (Tutor)
Mode: In-person
Audience: Undergraduates

EMPLOYMENT HISTORY

U.S. Department of Veterans Affairs & Defense

07/2010-Present

Green Environmental Management System (GEMS) Program Manager

- Facilitates interagency collaboration on energy and environmental matters (e.g., green engineering and construction, symbiosis, environmental compliance, and energy conservation)
- Maintains facility compliance with EPA, OSHA, NRC, and other federal regulatory entities & federal mandates
- Advises and mentors other GEMS professionals across the nation
- Performed strategic assessments to ensure asset identification, capital planning, and engineering capacity (1-month detail)

Key Skills: Strategic Planning, Program/Project Management, Directive/Policy Writing, Advising and Consultation, Environmental Compliance, Complex Negotiation and Advisement, Healthcare

United Parcel Service [UPS]

09/2006-06/2008

Plant Engineer and Supervisor

- Supervised 20+ employees in conveyor and drive maintenance, health and safety, and porter tasks
- Oversaw monthly budget and record keeping expenditures for projects and functional billing
- Prepared management reports, organized and led meetings, and maintained business relationships

Key Skills: Supervisorial Tact, Project Management, Budgeting

PROFESSIONAL SERVICE

Energy Engineers Advisory Board

02/2012-Present

Type: U.S. Government
Level: National
Role: GEMSAG member

City Grange	01/2018-Present
<u>Type:</u> Non-Profit	
<u>Level:</u> Local	
<u>Role:</u> Advisory Board	
GEMS Advisory Group	01/2015-03/2016
<u>Type:</u> U.S. Government	
<u>Level:</u> National	
<u>Role:</u> Chair	
Chicago Interagency Sustainability Council	09/2014-07/2015
<u>Type:</u> U.S. Government	
<u>Level:</u> Regional (Chicago Federal Executive Board)	
<u>Role:</u> Chair	
Intergovernmental Affairs Committee	07/2013-07/2015
<u>Type:</u> U.S. Government	
<u>Level:</u> Regional (Chicago Federal Executive Board)	
<u>Role:</u> Member	
Centers for Companies That Care	02/2012-07/2015
<u>Type:</u> Non-Profit	
<u>Level:</u> City (Chicago, IL)	
<u>Role:</u> STEM career representative and mentor	
New Story Church	2013-2015
<u>Type:</u> Non-Profit	
<u>Level:</u> Local (Chicago, IL)	
<u>Role:</u> Developer and Facilitator of Racial Reconciliation	
Department of Justice's Community Relations Service	01/2015
<u>Type:</u> U.S. Government	
<u>Level:</u> Regional (Chicago Federal Executive Board)	
<u>Role:</u> Facilitator for Discussion on Race	
Department of Defense Educational Activity	04/2012
<u>Type:</u> U.S. Government	
<u>Level:</u> National	
<u>Role:</u> STEM Representative at Marine Corp Base Camp Lejeune	

ACADEMIC SERVICE

ISIE: Students	09/2018-Present
<u>Level:</u> International	
<u>Role:</u> Board Member	

UIC: Interdisciplinary Undergraduate Research Journal	08/2018-Present
<u>Level:</u> University	
<u>Role:</u> Section Head of Engineering and Interdisciplinary Specialist	
Gordon Research Seminar: Industrial Ecology	05/2018-Present
<u>Level:</u> International	
<u>Role:</u> Chair, session organizer, and budgeter	
ISIE: Sustainable Urban Systems	05/2018-Present
<u>Level:</u> International	
<u>Role:</u> Member	
ISIE: Students	09/2017-Present
<u>Level:</u> International	
<u>Role:</u> Member	
Journal of Renewable and Sustainable Energy	2017-Present
<u>Level:</u> International	
<u>Role:</u> Peer reviewer	
UIC: Interview Session for Associate Vice Chancellor for Student Affairs	01/2018
<u>Level:</u> University	
<u>Role:</u> Student Interviewer	
Joint Conference for ISIE – International Symposium on Sustainable Systems and Technology	06/2017
<u>Level:</u> International	
<u>Role:</u> Session manager and volunteer	
Wright State University: VISIONS Mentoring Program	08/2008 – 06/2010
<u>Level:</u> University	
<u>Role:</u> Mentor for underrepresented minorities in STEM	
Wright State University: Leadership Education to Advance Development	07/2008 & 07/2014
<u>Level:</u> International (Durban, South Africa)	
<u>Role:</u> Volunteer	

CERTIFICATIONS

Certified Energy Manager	10/2013-Present
Federal Acquisition Certification for Program/Project Managers	10/2012-Present
Contracting Officer's Representative	11/2011-Present
Engineer-in-Training	05/2011-Present

AFFILIATIONS

Association of Environmental Engineering and Science Professors	12/2017-Present
<u>Level:</u> International	
<u>Role:</u> Member	
American Planning Association	12/2017-Present
<u>Level:</u> National	
<u>Role:</u> Member	
ISIE	11/2017-Present
<u>Level:</u> International	
<u>Role:</u> Member/Student Board	
Association of Energy Engineers	01/2012-Present
<u>Level:</u> National	
<u>Role:</u> Member (Chicago-Illiana, IL Chapter)	

GRANT ACTIVITY

NSF – 6th Symposium of Industrial Ecology for Young Professionals	07/2019
<u>Purpose:</u> Student conference that preceded ISIE 2019 in Beijing, China	
<u>Type:</u> External	
<u>Role:</u> Primary writer (i.e., content, budgeting, framing, and submission)	
<u>Granted:</u> \$50,000	
NSF – Advancing Careers in Academics with Diversity Education and Mentorship in Engineering	06/2018-05/2019
<u>Purpose:</u> Enhance skills for a successful academic career	
<u>Type:</u> External	
<u>Role:</u> Primary writer (i.e., teaching philosophy, research statement, CV, and mini lesson plan)	
<u>Granted:</u> \$3,000	
UIC - IESP	08/2016-Present
<u>Research:</u> Food-Energy-Water (FEW) Impacts as they relate to Climate Change and Social Identity	
<u>Type:</u> Internal	
<u>Role:</u> Primary researcher	
Ohio Space Grant Consortium	05/2008-06/2010
<u>Research:</u> Sulfur-Tolerant Catalysts for the Solid Oxide Fuel Cell	
<u>Type:</u> External	
<u>Role:</u> Member of research team	

Defense Advances Research Projects Agency

06/2007-08/2008

Research: Triangular Truss Deployment in a Near Space Environment
Type: External
Role: Member of research team