**Lesley Joseph, Ph.D, P.E.**

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# Education

**PhD** University of South Carolina, Civil and Environ. Engineering May 2021

Dissertation: “Removal of heavy metals using novel adsorbent materials”

Committee: Dr. Yeomin Yoon (chair), Dr. Joseph Flora, Dr. Shamia Hoque

**MSE** Johns Hopkins University, Geography and Environ. Engineering Dec. 2013

GPA: 3.8/4.0

Recipient of the National Science Foundation (NSF) Graduate Research Fellowship

**MS** University of South Carolina, Civil and Environ. Engineering May 2012

Thesis: “Removal of endocrine disrupting compounds and natural organic matter by physicochemical processes: Coagulation and adsorption”

Committee: Dr. Yeomin Yoon (chair), Dr. Joseph Flora, Dr. Nicole Berge

**BS** University of South Carolina, Civil and Environ. Engineering May 2011

Graduated Magna Cum Laude

Minored in Environmental Studies

# Certifications

Registered Professional Engineer (PE-ENV), License #35534, South Carolina Board of Engineers and Surveyors

# Professional Engineering Experience

**Savannah River Nuclear Solutions**, Aiken County, SC 2022 to Present

**Senior Engineer**, Water/Wastewater Systems

* Exercise ownership and maintenance of utility systems across the Savannah River Site, including power distribution, water and wastewater systems, and cooling water systems
* Supervise, coordinate, and review the work of junior engineers, technicians, and field inspectors

**Hazen and Sawyer**, Columbia, SC 2019 to 2022

**Principal Engineer**, Water/Wastewater Treatment Division

* Plan, develop, execute, coordinate, and direct projects related to water and wastewater treatment facilities
* Supervise, coordinate, and review the work of EITs, CAD technicians, and field inspectors

**Goodwyn Mills and Cawood**, Columbia, SC 2018 to 2019

**Project Manager**

* Manage engineering/process design, hydraulics, pumping systems, and treatment process projects to ensure work is completed within time and budget constraints

**Hussey Gay Bell**, Columbia, SC 2017 to 2018

**Project Engineer,** Water/Sewer Division

* Designed water and wastewater pump stations and various treatment process units
* Provided construction administration and observation services for municipal water and sewer projects

**Ardurra (formerly LNV, Inc.),** Corpus Christi, TX 2015 to 2017

**Engineer-in-Training**

* Designed various water and wastewater system elements, including piping, pump stations, and process units

# Honors and Awards

GEM Fellowship Recipient (Declined Award) 2020

Water Environment Association of SC Endowed Fellowship 2020

National Science Foundation (NSF) IGERT: Water, Climate, and Health 2012

National Science Foundation (NSF) Graduate Research Fellowship 2012

Johns Hopkins University M. Gordon Wolman Fellowship 2012

EPA STAR Fellowship (Declined Award) 2012

GEM Fellowship Affiliate 2012

South Carolina Society of Professional Engineers – Outstanding Student 2011

Udall Scholarship Recipient 2010

APHA Environment Section Student Scholarship Award Recipient 2010

University of South Carolina Magellan Scholarship Recipient 2009

University of South Carolina Environmental Stewardship Award 2009

Bruce C. Coull Outstanding Student in Environmental Studies 2009

South Carolina Alliance for Minority Participation Research Award 2009

# Research Experience

**University of South Carolina**, Columbia, SC 2018 to 2021

**Graduate Researcher**, Water/Wastewater Treatment Lab

* Evaluate the water treatment capabilities of metal-organic frameworks (MOFs)
* Perform adsorption experiments to determine the removal capacities of novel materials (e.g., mango peel, orange waste)

**Johns Hopkins University**, Baltimore, MD 2012 to 2014

**Graduate Research Assistant,** Environmental Engineering Lab

* Provided literature reviews of published scientific research related to anaerobic digestion
* Conducted experiments to evaluate the degradation of solid waste using small scale anaerobic digesters

**Institute for Families in Society**, Columbia, SC 2008 to 2011

**Research Assistant**

* Provided literature reviews of impacts of global climate change on public health and environmental disparities
* Examined existing literature on climate change and environmental justice

**Universite Catholique de Louvain**, Louvain, Belgium Summer 2009

**Research Assistant**

* Worked on Partnerships for International Research and Education (PIRE) project entitled “Modeling of Flood Hazards and Geomorphic Impacts of Levee Breach and Dam Failure”

# Teaching Experience

**Benedict College**, Columbia, SC August 2022 to Present

**Professor of the Practice**, Department of Computer Science, Physics, and Engineering

* Teach ENVE 427: Senior Design I & II in the Environmental Engineering program and ENGR 321: Engineering Professional Development for the entire department
* Mentor and advise graduating seniors regarding career choices and job placement

**Penn State University**, University Park, PA August 2022 to Present

**Adjunct Lecturer**, School of Engineering Design, Department of Civil and Environmental Engineering

* Teach ENGR 405: Project Management, a required, undergraduate course averaging 20 students per semester, covering the following topics: Project Management, Leadership, and Engineering Design

**University of South Carolina**, Columbia, SC August 2020 to May 2022

**Adjunct Professor**, Department of Civil and Environmental Engineering

* Developed and currently teach ECIV 307: Professional Development for Civil Engineers, a required, undergraduate course averaging 40 students per semester, covering the following topics: Project Management, Leadership, and Engineering Design
* Revised the syllabus to meet accreditation standards

**Central State University**, Wilberforce, OH August 2021 to Nov. 2021

**Adjunct Professor**, Department of Water Resource Management

* Taught WRM 2200: Introduction to Water Resource Management in an exclusive online format

# Publications

1. **Joseph, L.**, Saha, M., Kim, S., Park, C., Flora, J., Yoon, Y., 2021. Removal of heavy metals from water using fabricated MIL-100(Fe) and MIL-101(Cr): Experimental and molecular modeling study. *Journal of Environmental Chemical Engineering:* 106663.
2. **Joseph, L.**, Jun, B., Flora, J., Park, C., Yoon, Y., 2019. Removal of heavy metals from water sources in the developing world with low-cost materials: A review. *Chemosphere* 229: 142-159.
3. **Joseph, L.**, Jun, B., Jang, M, Park, C., Senmache, J., Hernández-Maldonado, A., Heyden, A., Yu, M., Yoon, Y., 2019. Removal of contaminants of emerging concern by metal-organic framework nanoadsorbents: A review, *Chemical Engineering Journal* 369: 928-946.
4. **Joseph, L.**, Flora, J., Boateng, L., Park, Y., and Yoon, Y., 2013. Removal of bisphenol A and 17α ethinyl estradiol by combined coagulation and adsorption using carbon nanomaterials and powdered activated carbon, *Separation and Purification Technology* 107: 37-47. DOI: 10.1016/j.seppur.2013.01.012
5. **Joseph, L.**, Flora, J., Park, Y., Badawy, M., Saleh, H., and Yoon, Y., 2012. Removal of natural organic matter from potential drinking water sources by combined coagulation and adsorption using carbon nanomaterials, *Separation and Purification Technology* 95: 64-72. DOI: 10.1016/j.seppur.2012.04.033
6. **Joseph, L.**, Heo, J., Park, Y., Flora, J., Yoon, Y., 2011. Adsorption of bisphenol A and 17α-ethinyl estradiol on single walled carbon nanotubes from seawater and brackish water. *Desalination* 281: 68-74. DOI: 10.1016/j.desal.2011.07.044
7. **Joseph, L.**, Zaib, Q., Berge, N., Park, Y., Khan, I., Saleh, N., Yoon, Y., 2011. Removal of bisphenol A and 17α-ethinyl estradiol from landfill leachate using single walled carbon nanotubes. *Water Research* 43: 4056- 4068. DOI: 10.1016/j.watres.2011.05.015
8. Heo, J., **Joseph, L.**, Park, Y., Her, N., Sohn, J., Yoon, Y., 2011. Removal of micropollutants and NOM in carbon nanotube-UF membrane system from seawater. *Water, Science and Technology* 63: 2737-2744.
9. Wilson, S., **Joseph, L.**, Richard, R., Williams, E., 2010. Climate change, environmental justice, and vulnerability: An exploratory spatial analysis. *Environmental Justice* 3: 13-19.

# Conference Presentations

1. **Joseph, L.\*,** But are you ready for the Real World? Teaching professional development to civil engineering students at the University of South Carolina. *South Carolina Environmental Conference*, Myrtle Beach, SC. March 13-15, 2022.
2. **Joseph, L**.\*, Zaib, Q., Berge, N., Park, Y., Khan, I., Saleh, N., Yoon, Y. Removal of bisphenol A and 17α- ethinyl estradiol from landfill leachate using carbon nanotubes. *American Water Works Association Annual Conference and Exposition*, Washington, D.C. June 12-16, 2011.
3. **Joseph, L**., Zaib, Q., Berge, N., Park, Y., Khan, I., Saleh, N., Yoon, Y\*. Removal of micropollutants from landfill leachate, seawater, and brackish water using single-walled carbon nanotubes. *Gordon Research Conference: Environmental Nanotechnology*, Waterville Valley, N.H., May 29-June 3, 2011.
4. **Joseph, L.\*,** Berge, N, Park, Y., Yoon, Y. Adsorption of bisphenol A and 17α-ethinyl estradiol on single walled carbon nanotubes from seawater, brackish water, and landfill leachate. *American Chemical Society 241st National Meeting,* Anaheim, CA. March 27-31, 2011.
5. **Joseph, L.\*,** Wilson, S.M. Climate Change and Its Health Implications for African Americans and Low- Income Communities: A Review. 73rd Annual Education Conference and Exhibition. *National Environmental Health Association (NEHA).* Atlanta, GA, June 21-24, 2009.
6. **Joseph, L.,** Heo, J., Zaib, Q., Park, Y., Yoon, Y\*. Removal of endocrine disrupting compounds and NOM in single walled carbon nanotubes-UF membrane system from brackish water. *2nd International Congress on Sustainability Science and Engineering*, Tucson, AZ. January 9-13, 2011.
7. **Joseph, L.\*,** Wilson, S.M., Richard, R. Use of Geographic Information Systems to Spatially Examine the Vulnerability of Underserved Populations to Climate Change. *138th Annual Meeting of the American Public Health Association (APHA)*, Denver, CO, November 6-10, 2010
8. **Joseph, L**., Heo, J., Park, Y., Yoon, Y\*. Adsorption of bisphenol A and 17α-ethinyl estradiol on single walled carbon nanotubes from seawater and brackish water. *3rd International Desalination Workshop*, Jeju Island, Korea. November 3-6, 2010.
9. Heo, J.\*, **Joseph, L**., Park, Y., Her, N., Sohn, J., Yoon, Y. Removal of Micropollutants and NOM in Carbon Nanotube-UF Membrane System from Seawater and Brackish Water. *3rd International Desalination Workshop*, Jeju Island, Korea. November 3-6, 2010.
10. Wilson, S.M., **Joseph, L.\*,** Richard, R. Climate Change, Environmental Justice, and Vulnerability: An Exploratory Spatial Analysis. *Environmental Justice, Air Quality, Goods Movement, and Green Jobs: Evolution and Innovation Conference*, New Orleans, LA, January 25-27, 2010.
11. **Joseph, L.\*,** Wilson, S.M. How will Sustainability Lower the Negative Effects of Climate Change for African- Americans? *University of South Carolina Discovery Day Research Symposium*, Columbia, SC. April 23, 2010
12. Tufford, D., Artz, J., **Joseph, L**., Tatum, A\*. Gills Creek Watershed Research Initiative. *University of South Carolina Discovery Day Research Symposium*, Columbia, SC. April 23, 2010
13. **Joseph, L.\*,** Wilson, S.M. Climate Change, Environmental Justice, and Public Health: Disparities among African-Americans and Low-Income Communities. *Capturing the Spirit of Public Health: Compassion, Passion & Commitment. South Carolina Public Health Association (SCPHA*). Myrtle Beach, SC, May 19-22, 2009
14. Wilson, S.M., **Joseph, L\*.** Climate Change, Sustainability, and the Green Economy: Opportunities to Address Economic and Health Issues of Disadvantaged African-Americans. *WE-ACT Advancing Climate Justice Conference. West Harlem Environmental Action (WE-ACT)*. New York, NY, January 29-30, 2009.
15. Wilson, S.M., **Joseph, L.\*,** Assessment of the Impacts of Climate Change on Public Health and Health Disparities. *WE-ACT Advancing Climate Justice Conference. West Harlem Environmental Action (WE- ACT).* New York, NY, January 29-30, 2009.
16. **Joseph, L\***., Jenkins, J., Pierce, C. Ground Penetration of Tornado-Borne Projectiles. *South Carolina Alliance for Minority Participation (SCAMP) Undergraduate Research Conference*, Orangeburg, SC. July 26, 2008
17. **Joseph, L.\*,** Jenkins, J., Pierce, C. Ground Penetration of Tornado-Borne Projectiles. *University of South Carolina Discovery Day Research Symposium*, Columbia, SC. April 25, 2008

**\***Presenter

# Professional Affiliations

American Water Works Association, 2020-Present

Water Environment Association of South Carolina, 2018-Present

# Professional Service

**Diversity Fellow**, Johns Hopkins University, 2013-2014

* Recruited students from underrepresented groups by leading Q&A sessions and informational meetings

**Panelist,** Mellon Mays Program,Dartmouth College

* Spoke on panel for “Grad School 411” event held for prospective students of color that were considering graduate school

**Peer-Reviewed Articles for**:

* Environmental Pollution
* Science of the Total Environment
* Environmental Technology and Innovation

# Community Service

**Engineers Without Borders – USA**

Professional Mentor, Columbia, SC, 2020-Present

**South Carolina State Guard**

First Lieutenant - Engineering Division, Columbia, SC, 2017-Present

**Big Brothers/Big Sisters**

Mentor, Columbia, SC, 2009-2010