SOPHIA LAUREN PLATA

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EDUCATION

PhD University of Southern California, Los Angeles, CA July 2021
Environmental Engineering
Dissertation: "Integrated technologies, blending schemes, and reuse practices to address contaminant and energy challenges in water reclamation"
Advisors: Amy Childress and Daniel McCurry

MS University of Southern California May 2017
Environmental Engineering

BS Widener University, Chester, PA May 2015
Civil Engineering, Minor in Environmental Engineering

EXPERIENCE

- Postdoc Scholar and Visiting Assistant Professor, Swarthmore College, 08/21 - Present
- Research and Teaching Assistant, University of Southern California, 08/15 - 07/21
- Mathematics Tutor, Widener University, 01/13 - 05/15
- Engineering Student Trainee, US Army Corps of Engineers, 12/13 - 08/14
- Teaching Assistant, Widener University, 01/13 - 05/13
- Office Assistant, Widener University, 09/11 - 12/13
- Co-Op Intern, Mobile Dredging and Pumping Co., 08/12 - 12/12

HONORS AND AWARDS

National

- Consortium for Faculty Diversity Postdoctoral Fellowship, 2021
- National Science Foundation's ASSIST Travel Grant Recipient, 2017, 2018, 2019
- Great Minds in STEM Early Faculty Symposium Attendee, 2017, 2018, 2019

University

- USC Order of the Arête Award, 2021
- USC WiSE Leadership Award, 2020
- USC Sonny Astani Department of Civil and Environmental Engineering Department's Outstanding Teaching Assistant Award, 2016 and 2018
- USC Viterbi School of Engineering's Jenny Wang Excellence in Teaching Award, 2017 and 2018
- USC Viterbi School of Engineering Ph.D. Fellowship, 2015
- Widener University Top Civil Engineering Student Award, 2015
- Widener University's Dean's List, 2012-2015

Regional

- Michael Baker Corporation Scholarship for Diversity in Engineering, 2013
- American Society of Highway Engineers Delaware Valley Engineering Scholarship, 2013

PUBLICATIONS

Journal Publications

- **S. L. Plata**, C. L. Devenport, A. Miara, K. A. Sitterley, A. Evans, M. Talmadge, K. M. Van Allsburg, P. Kurup, J. Cox, S. Kerber, A. Howell, R. Breckenridge, C. Manygoats, J. R. Stokes-Draut, J. Macknick, and A. E. Childress, "Zero Liquid Discharge and Water Reuse in Recirculating Cooling Towers at Power Facilities: Review and Case Study Analysis," *ACS ES&T Eng.*, vol. 2, no. 3, pp. 508–525, Mar. 2022.
- J. L. Shi, **S. L. Plata**, M. Kleimans, A. E. Childress, and D. L. McCurry, "Formation and Fate of Nitromethane in Ozone-Based Water Reuse Processes," *Environ. Sci. Technol.*, Apr. 2021.
- A. Zohrabian, **S. L. Plata**, D. M. Kim, A. E. Childress, and K. T. Sanders, "Leveraging the water-energy nexus to derive benefits for the electric grid through demand-side management in the water supply and wastewater sectors," *WIREs Water*, 2021. p.e1510.
- **Plata, S. L.** and Childress, A. E., "Limiting power density in pressure-retarded osmosis: Observation and implications," *Desalination*, 2019. 467, 51–56.

Journal Papers in Review and Preparation

- **Plata, S. L.**, Childress, A. E., McCurry, D. L., "Disinfection kinetics of seawater augmented reuse: A model- and experimental-based study," (In preparation).

Peer-Reviewed Conference Papers

- **Plata, S. L.**, Hasbun, I., Rodriguez, M., Renaud, D., "Social-cognitive leadership theory of SHPE's premier leadership conference for undergraduates and professionals in the STEM workforce," 2020 CoNECD Conference Proceedings, 2020.
- **Plata, S. L.**, Garbarino, D., Smith, E., Turley, S., Simpson, T., "Determination of factors influencing waste composition at institutions of higher education," 30th Annual International Conference on Solid Waste Technology Management, 2015.

Conference Presentations

- Childress, A. E., Wei, X., Binger, Z., **Plata, S. L.**, Sanders, K. T., Achilli, A., "Integrating Systems of Water Reuse and Desalination," 9th IWA Membrane Technology Conference and Exposition of Water and Wastewater Treatment, June 24, 2019, Toulouse, France.
- **Plata, S. L.** and Childress, A. E., "Identifying limiting flux behavior in pressure-retarded osmosis," AEESP Research and Education Conference, May 15, 2019, Tempe, AZ
- **Plata, S. L.** and Childress, A. E., "Membrane mechanics and fouling behavior in pressure-retarded osmosis," AMTA's 2019 Membrane Technology Conference and Exposition, February 28, 2019, New Orleans, LA.

TEACHING EXPERIENCE

Swarthmore College Aug 2021 to Present
Visiting Assistant Professor, Engineering

- Water Quality and Pollution Control, undergraduate course
- Experimentation for Engineering Design, undergraduate course

University of Southern California Aug 2015 to May 2021
Teaching Assistant, Civil Environmental Engineering

- Biological Processes for Environmental Engineering, graduate course
- Mechanical Behavior of Materials, Junior/Senior laboratory course
- Geotechnical Engineering, Junior/Senior laboratory course

Undergraduate Students Mentored

Swarthmore College

- Nathaniel Russo (2022)

University of Southern California

- Connie Devenport (2024)
- Catherine Knox (2020), Current Position: Fulbright scholar at Vrije Univ. Amsterdam
- Samantha McVety (2019), Current Position: M.S. Student at Stanford
- Cassandra Boyle (2019), Current Position: Engineer at LA County Sanitation District
- Justine Lee (2018), Current Position: Air Resources Engineer at California Air Resources Board

High School Students Mentored

- Pearson Mewbourne, "Electrospun membranes yield pore results", 2019
- Elise Hou, "Renewable power generation through pressure-retarded osmosis", 2017
- Laurence Tremblay, "Testing the removal of nitromethane for applications in potable reuse", 2019
- Ashley Shim, "Characterizing membranes with liquid entry pressure for membrane distillation", 2018
- Yenifer Hernandez, "Characterizing membranes with liquid entry pressure for membrane distillation", 2018

Widener University Jan 2012 to May 2012
Teaching Assistant and Tutor, Civil Engineering

- AutoCAD, First-year laboratory course
- Mathematics Tutor, all undergraduate levels

SKILLS

Programming Languages: LaTEX, MATLAB
Engineering Software: AutoCAD, LabVIEW, Kintecus, ROSA, WAVE, Visual Minteq
Spoken Languages: English (Fluent), Spanish (Conversational)

PRESENTATIONS AND INVITED LECTURES

Presentation, "Water Reuse: A Solution for Freshwater Scarcity," Discover Swarthmore Lecture, September 2021, Swarthmore, PA.

As an invited speaker for an annual event, I have spoken to +300 K-12 students

- "Global Water Challenges: Desalination and Reuse," USC Viterbi's REACH Symposium, February 2019, Los Angeles, CA.
- "Water Power!," Second Annual Viterbi Press Friends Symposium, February 2018, Los Angeles, CA.
- "One Water," First Annual Viterbi Press Friends Symposium, February 2017, Los Angeles, CA.

Invited Speaker, "Quenching the Thirst: The Global Shift to Alternative Sources of Water," Educator Workshop hosted by USC, March 2016, Los Angeles, CA.

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers, 2011 - Present
- Society of Women Engineers (SWE), 2011 - Present
- Society of Hispanic Professional Engineers (SHPE), 2015 - Present
- Tau Beta Pi Honor Society, member since 2014
- Kappa Theta Epsilon, member since 2013

PROFESSIONAL SERVICE

Peer-Reviewed Articles for:

- *Desalination*
- *NPJ Clean Water*

Society of Hispanic Professional Engineers (SHPE)

- Swarthmore SHPE Academic Advisor, 08/2021 - present
- Member of the National Board of Directors, 07/2019 - 06/2020
- Regional Graduate Representative, 07/2018 - 06/2019

Mexico Innova at USC

- Co-Founder and Treasurer, 09/2018 - 12/2019

REFERENCES

Prof. Lynne Molter, Professor and Interim Chair of Engineering
Swarthmore College
Phone: 610-328-8078
Email: lmolter1@swarthmore.edu

Prof. Amy Childress, Professor and Director of Environmental Engineering
University of Southern California
Phone: 231-740-6304
Email: amyec@usc.edu
Additional references upon request