

CURRICULUM VITAE

W. Shane Walker, Ph.D., P.E.

Director, [Water and the Environment Research \(WATER\) Center](#)

Director, [Texas Produced Water Consortium](#)

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EDUCATION AND CERTIFICATION

Ph.D. The University of Texas at Austin

Environmental and Water Resources Engineering (EWRE), 2010

Advisor: Desmond F. Lawler, PhD, PE

Dissertation: *Improving Recovery in Reverse Osmosis Desalination of Inland Brackish Groundwaters via Electrodialysis*

M.S.E. The University of Texas at Austin, EWRE, 2006

Advisor: David R. Maidment, PhD, PE

Thesis: *Geodatabase Design for FEMA Flood Hazard Studies*

B.S.C.E. Texas Tech University, Civil Engineering, Summa Cum Laude, 2004

Minor: Mathematics

P.E. Texas, #113368, Issued Dec. 2012 (Civil/Wat. Res. & Envr. Exam)

PROFESSIONAL EXPERIENCE

Texas Tech University - Civil, Environmental, & Construction Engr.. Sep. 2023 – Present

- *Director, Water and the Environment Research (WATER) Center*, September 2023 – Present
- *Director, Texas Produced Water Consortium (TxPWC)*, October 2024 – Present
- *Professor*, September 2023 – Present

Courses taught: ENVE 4307 Physical and Chemical Water/Wastewater Treatment Processes, ENVE 4391 Advanced Water Treatment, CE 3354 Engineering Hydrology

Engineering Consulting Aug. 2009 – Present

Consultant – Water treatment and water resources consulting to engineering consulting firms.

University of Texas at El Paso (UTEP) - Civil Engineering..... Sep. 2010 – Aug. 2023

- *Director, Center for Inland Desalination Systems*, July 2018 – Present
- *Professor*, September 2022 – Present
- *Associate Professor*, September 2016 – August 2022
- *Assistant Professor*, August 2010 – August 2016

Courses taught: CE 3342 Water and Wastewater Engr., CE 5409/5390 Envr. Engr. Chemistry, CE 5345 Adv. Phys-Chemical Water Treatment Proc., CE 5349 Design of Membrane Filtration and Desalination Systems, CE 1301 Civil Engr. Fundamentals

Franklin W. Olin College of Engineering, Needham, MAAug. 2013 – Dec. 2013

Argosy Visiting Assistant Professor – (Faculty Development Leave from UTEP):
taught ENGR 3310 Transport Phenomena and supported interdisciplinary courses of
Intro. to Sustainability and Affordable Design & Entrepreneurship (ADE).
Collaborators: Jessica Townsend, Jon Stolk, and Ben Linder

Envr. & Water Res. Engineering, UT Austin Sep. 2006 – Aug. 2010

Graduate Research Assistant – research in high-recovery inland brackish groundwater
desalination (funded by Water Research Foundation and Texas Water Development Board);
PI: Desmond Lawler, PhD, PE
Teaching Assistant – Dr. Lawler’s undergraduate and graduate water treatment courses

General Engineering (GE), UT Austin..... Sep. – Dec., 2008 & 2009

Teaching Assistant – taught engineering students concurrently registered for Chem. I; lectured,
facilitated discussion, and managed in-class exercise sets; Supervisor: Livy Knox

Center for Research in Water Resources (CRWR), UT AustinSep. 2004 – Aug. 2006

Graduate Research Assistant – prototype geodatabase to consolidate DFIRM (App. L) and Data
Capture Standards (App. N) databases of engineering and mapping data in the FEMA Flood
Ins. Study Map Modern.; funded by Watershed Concepts; PI: David Maidment, PhD, PE
Teaching Assistant – taught Hydraulic Engr. Lab (pipes, pumps, hydr. controls, and jumps)

Watershed Concepts (HSMM, AECOM), Austin.....Jan. 2005 – May 2006

Engineering Intern – developed hydrologic and hydraulic models using ArcGIS, WISE, and
HEC-RAS to perform “approximate” flood studies as part of the FEMA Flood Insurance
Study Map Modernization Program; Supervisor: Rick Frithiof, PE

Espey Consultants, Inc., Austin.....Jun. – Aug. 2004

Engineering Intern – developed a 3D CAD soil-profile of PCB contamination for site litigation
and remediation; searched historical documents for data for Texas Bays Studies; collaborated
on GIS characterization of in-stream flows for Lower Colorado River; Supervisor: David
Harkins, PhD, PE

Water Resources Center, Texas TechJan. – May 2004

Research Assistant – aggregated rainfall and runoff data for selected storm events in selected
sites in Texas to be used in statistics analysis; PI: David Thompson, PhD, PE

Wind Science and Engineering Research Center, Texas TechJan. – Dec. 2003

Research Assistant – developed cost/benefit model for storm-shelter installation; reporting of
debris-impact testing at Texas Tech; PI: Ernst W. Kiesling, PhD, PE
Teaching Assistant – Dr. Kiesling’s statics and mechanics of materials courses

Alan Plummer Associates, Inc., Dallas..... May – Jun. 2002

Engineering Intern – performed quantity takeoffs for cost estimates, pipeline designs and pump
selection, provided CAD team support; Supervisors: Alan Tucker, PE and Tim Noack, PE

White River Lake Municipal Water District.....Jun. – Aug., 2000 & 2001; Dec. 2002 & 2003

Plant-operations Assistant – created a lake evaporation and water use forecasting model;
performed daily water quality testing for plant reporting; Supervisor: Tommy O'Brien, PE

Teaching and Tutoring, Texas TechSep. 2000 – May 2004

P.A.S.S. Learning Center, Supplemental Instruction (SI) Leader – lectured, facilitated discussion,
provided exam review sessions (Chemistry I – Spring 2002; Calculus II – Fall 2002)

TECHniques Center Tutor – tutored three students with learning disabilities in their
mathematics and science courses (Spring 2001)

Private Tutor – tutored over 500 hours with individuals and small groups in chemistry,
engineering mechanics, mathematics, and physics (Fall 2000 - Spring 2004)

FUNDED RESEARCH PROJECTS

Director: *Texas Produced Water Consortium*, State of Texas, \$13M, 2025–2027, Co-
Director: Eric Bernard

Co-PI: US Environmental Protection Agency (EPA), \$1.6M, *Evaluating and Mitigating
Bioaccumulation of PFAS in Plant, Mammalian, and Aquaculture Systems*, Sep 2024 – Aug 2028,
PI: Jennifer Guelfo, Co-PIs: Todd Anderson, Jordan Crago, Evan Gray, and Andrew Jackson

Director: *Texas Produced Water Consortium*, State of Texas, \$5M, 2023–2025, Co-
Director: Eric Bernard (Inaugural Director: Rusty Smith)

PI: US Department of Energy (DOE) through Lawrence Berkeley National Laboratory:
National Alliance for Water Innovation (NAWI), \$44k to Texas Tech, *Salt-Free Electrodialysis
Metathesis (EDM) for High Recovery Concentrate Management*, Jan 2024 – Sep 2025,
Co-PIs: Eva Deemer (UTEP) and Pei Xu (NMSU)

PI: Food and Agriculture Organization (FAO) of the United Nations, \$35k, *Zero-Waste Brackish
Desalination for Agriculture in Antigua and Barbuda* Dec 2023 – Nov 2024

Co-PI: US Department of Energy (DOE) through Lawrence Berkeley National Laboratory:
National Alliance for Water Innovation (NAWI), \$395k to UTEP, *Copper recovery from mining
process waters with ion-selective electrodialysis*, Aug 2022 – Sep 2025, PI: Rafael Verduzco, Rice
University

PI: El Paso Water, \$894k, *Research & Collaboration Pipeline*, Feb 2022 – Feb 2027, Co-PIs: Joseph
Feuille and Jeff Weidner

PI: US Department of Energy (DOE) through Univ. of Connecticut, Solar Desalination Prize
Competition, \$60k, *Membrane distillation with ceramic membranes*, Sep 2021 – Aug 2022, Co-PI:
Joseph Feuille

PI: US Bureau of Reclamation (USBR) More Water Less Concentrate (MWLC) Competition,
\$135k, *Double Bonus: high-recovery concentrate treatment with salt-free electrodialysis metathesis (EDM)*, Jul
2021 – Jun 2022, Co-PIs: Malynda Cappelle, Joseph Feuille

Co-PI: National Science Foundation (NSF) - \$119k, *MRI: acquisition of inductively coupled plasma
optical emission spectrometer for research and education uses in water, energy*, Sep 2020 – Aug 2022,
PI: Mark Engle, Co-PIs: Lixin Jin, and Lin Ma

Co-PI: National Science Foundation (NSF) Engineering Research Center (ERC) - Renewal, \$1.3M to UTEP, *Nanotechnology Enabled Water Treatment Systems (NEWT)*, Aug 2020 – Jul 2025, PI: Jorge Gardea-Torresdey, Co-PIs: Dino Villagrán

Co-PI: UTEP Inter-Disciplinary Research (IDR), \$20k, *Space and Seed Grant Proposal to Establish a "One Water" Cluster in the Interdisciplinary Research Building (IDRB)*, Jul 2020 – Aug 2021, PI: Alex Mayer

PI: El Paso Water, \$50k, *Edmund Archuleta Legacy Research*, Sep 2019 – Aug 2024, Co--PI: Malynda Cappelle

PI: US Bureau of Reclamation (USBR) Desalination & Water Purification Research (DWPR), \$398k, *All of the above and the kitchen sink: High-recovery zero liquid discharge desalination for direct potable reuse*, Sep 2020 – Dec 2022, Co-PIs: Malynda Cappelle, Tanner Schaub, and Pei Xu

PI: US Bureau of Reclamation (USBR) Desalination & Water Purification Research (DWPR) through Arizona State University, \$15k to UTEP, *Advancing Pervaporation for the Treatment of Concentrates in Inland Desalination*, Mar 2020 – Aug 2021

PI: National Science Foundation (NSF), \$99k, *Planning Grant: Engineering Research Center for One Water*, Sep 2018 – Aug 2021, Co-PIs: Deana Pennington, William Hargrove, Ivonne Santiago, and Ed Archuleta

PI: Magna Imperio Systems (MIS) Corp., \$97k, *Evaluation of electrochemical nano diffusion (end) for desalination of real brackish groundwater*, Feb 2018 – Dec 2020, Co-PI: Malynda Cappelle

PI: National Science Foundation (NSF) - \$41k to UTEP, INTERN: *Nanotechnology Enabled Water Treatment Systems*, Aug 2019 – Aug 2020

PI: El Paso Water, \$27k, *Laboratory evaluation of high-efficiency dewatering of municipal wastewater sludge cake*, Jan 2019 – Dec 2019

PI: National Science Foundation (NSF) Small-business Technology Transfer Research (STTR) through Atlas Regeneration Technologies, \$103k to UTEP, *Hardness sensor using cation exchange fibers*, Dec 2016 – Sep 2018, Co-PIs: Malynda Cappelle and Tom Davis

Co-PI: Sandia National Labs, \$184k to UTEP, *Novel membranes for electrodialysis*, Nov 2016 – Sep 2019, PI: Tom Davis, Co-PI: Malynda Cappelle

Co-PI: National Cooperative Highway Research Program (NCHRP) through McMahon & Mann Consulting Engineers, \$265k to UTEP, *Improved test methods and practices for characterizing steel corrosion potential of earthen materials*, Jul 2016 – Jan 2019, PI: Soheil Nazarian, Co-PI: Art Bronson

PI: US Bureau of Reclamation (USBR) Desalination & Water Purification Research (DWPR) through Arizona State University, \$19k to UTEP, *Modeling and experiments of advanced membrane processes to minimize concentrate volume in inland brackish water desalination*, Sep 2016 – Sep 2017

PI: US Dep. of Transport. Fed. Highway Admin. through Rutgers University NUTCC, \$117k to UTEP, *Evaluating corrosivity of geomaterials in MSE walls- determination of resistivity from pore water chemistry*, Jun 2016 – May 2018

Co-PI: National Science Foundation (NSF) Engineering Research Center (ERC), \$1.5M to UTEP, *Nanotechnology Enabled Water Treatment Systems (NEWT)*, Aug 2015 – Jul 2020, PI: Jorge Gardea-Torresdey, Co-PIs: Dino Villagrán and Juan Noveron

Co-PI: US Department of Agriculture (USDA), \$2.0M, *Wheels of Change: A Consortium to Develop Champions in Agriculture*, Sep 2015 – Aug 2019, PI: Jose Espiritu, Co-PIs: Heidi Taboada-Jimenez, Juan Noveron

PI: Hazen & Sawyer, \$10k, *Analysis of Ozonation for Jonathan Rogers Surface Water Treatment Plant*, Jun 2015 – Jul 2015, Co-PI: Ivonne Santiago

Co-PI: Texas Department of Transportation (TxDOT), \$364k, *Implementation of New Specification Requirements for Coarse Backfill Materials for Mechanically Stabilized Earth (MSE) Walls*, August 2015 – Dec 2018, PI: Soheil Nazarian, Co-PIs: Arturo Bronson, Jose Garibay, Sergio Rocha

PI: ARCADIS, \$92k, *Direct Potable Reuse Piloting: Evaluation of Water Quality and Treatment Performance*, March 2015 – January 2016, Co-PIs: Ivonne Santiago, Malynda Cappelle

Key Personnel: US Department of Agriculture (NIFA, AFRI), \$4.9M, *Sustainable water resources for irrigated agriculture in a desert river basin facing climate change and competing demands*, March 2015 – February 2021, PIs: Bill Hargrove and Joe Heyman

Co-PI: US Agency for International Development, \$173k, *Desal Prize – Securing Water for Food: A Grand Challenge for Development*, December 2014 – September 2016, PI: Malynda Cappelle, Co-PIs: Tom Davis

PI: US Environmental Protection Agency, \$499k, *Point of Use (POU) Water Treatment Systems for Improving Sustainability and Environmental Justice in Colonias of the Paso del Norte Region*, December 2011 – November 2014, Co-PIs: Ivonne Santiago, John Walton, Joe Tomaka, Rebecca Palacios

Consultant: California Energy Commission and Black & Veatch, *Full-scale Demonstration of an Innovative Electrodialysis Technology for Zero Liquid Discharge Desalination*, November 2012 – February 2014

PI: KII/Sun's River, \$10k, *Desalination of Brackish Groundwater by Solar Distillation*, US Bureau of Reclamation, January 2012 – August 2013, Co-PI: Malynda Cappelle

PI: Carollo Engineers, \$64k, *Practical Alternatives to Pilot Plant Studies for Innovative Water Technologies*, Texas Water Development Board, September 2011 – March 2013, Co-PIs: Malynda Cappelle, Tom Davis

Co-PI: US Department of Agriculture, \$3.3M, *BGREEN – Building a Regional Energy and Educational Network*, September 2011 – August 2015, PI: Heidi Taboada-Jimenez, Co-PIs: Jose Espiritu, Salvador Hernandez, Juan Noveron, Bill Hargrove

PI: Carollo Engineers, \$37k, *Stabilization of Inland Brackish Water Reverse Osmosis Permeate with Upflow Calcite Contactors*, Texas Water Development Board, March 2011 – December 2011, Co-PIs: Malynda Cappelle, Tom Davis

Key Personnel: U.S. Bureau of Reclamation, Desalination and Water Purification Research, \$1.2M, *Demonstration of Zero Discharge Desalination*, October 2010 – September 2014, PI: Malynda Cappelle

PATENTS

E.M. Deemer, **W.S. Walker**, T.A. Capt. (2020 Jan 07) Compositions and methods for improving the anti-fouling properties of polyethersulfone membranes, USPTO 10,525,420

A.J. Tarquin, **W.S. Walker**, G.G. Delgado. (2018 June 26) Sea water reverse osmosis system to reduce concentrate volume prior to disposal, USPTO 10,005,681

BOOKS AND REPORTS

- Fishman, K.L., Nazarian, S., **Walker, W.S.**, and Bronson, A., 2020, National Academies of Sciences, Engineering, and Medicine, Improved Test Methods and Practices for Characterizing Steel Corrosion Potential of Earthen Materials. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25925>
- Mancha, E., and **Walker, W.S.**, 2019, “Desalination: Growing opportunities in Texas”, in Sharp, J.M., Jr., Green, R.T., and Schindel, G.M., eds., The Edwards Aquifer: The Past, Present, and Future of a Vital Water Resource: Geological Society of America Memoir 215, p. 259–265, The Geological Society of America. <https://rock.geosociety.org/Store/detail.aspx?id=MWR215>
- Mirchi, A., Heyman, J., Tchobanoglous, G., Minakata, D., **Walker, W.S.**, Samimi, M., Guerrero, B., Handler, R. (2019) “Ch. 15. Community Implementation of Potable Reuse of Treated Wastewater” In: Halvorsen, K.E., Schelly, C., Handler, R., and Knowlton, J.L. (Eds.). A Research Agenda for Environmental Management. Edward Elgar Publishing. Cheltenham. ISBN 9781788115186, <https://doi.org/10.4337/9781788115193>
- W.S. Walker, S.J. Ghadimi, J.L. Arciniega, S. Nazarian. (2019) “Evaluating Corrosivity of Geomaterials in MSE Walls: Determination of Resistivity from Pore Water Chemistry”, Rutgers Center for Advanced Infrastructure and Transportation, Report CAIT-UTC-NC38
- E. Mancha, D. DeMichele, W.S. Walker, T. Seacord, J. Sutherland, and A. Cano. (2014) “Part II. Performance Evaluation of Reverse Osmosis Membrane Computer Models”, Texas Water Development Board Report 1148321310. ([available online](#))
- E. Mancha, D. DeMichele, W.S. Walker, T. Seacord, J. Sutherland, and A. Cano. (2014) “Part I. Alternatives to Pilot Plant Studies for Membrane Technologies”, Texas Water Development Board Report 1148321310. ([available online](#))
- Benjamin, M.M and Lawler, D.F. (2013) “§15.10 Electrodialysis” In: Water Quality Engineering: Physical/Chemical Treatment Processes. Wiley. ISBN 9781118169650
- W.Y. Shih, Justin Sutherland, Bradley Sessions, Erin Mackey, W.S. Walker. (2012) “Upflow Calcite Contactor Study”, Texas Water Development Board, Contract #1004831105. ([available online](#))
- D.F. Lawler, L.F. Greenlee, W.S. Walker, S.H. Hekman. (2011) “Enhanced Reverse Osmosis Systems: Intermediate Treatment to Improve Recovery”, Water Research Foundation, Project #4061. ([available online](#))
- D.F. Lawler, M. Cobb, B. Freeman, L.F. Greenlee, L. Katz, K. Kinney, W.S. Walker. (2011) “Improving Recovery: A Concentrate Management Strategy for Inland Desalination”, Texas Water Development Board, Report 0704830717. ([available online](#))

PUBLICATIONS ([GOOGLE SCHOLAR](#), [SCOPUS](#), [ORCID](#))

- JH Tzeng, DA Ladner, C Williams, R Karthikeyan, WS Walker, N Moe, R Huehmer, G Amy. (2025) “Partial desalination as a new paradigm for cultivation of salt-tolerant food crops in hydroponic controlled environment agriculture using brackish waters: A critical review.” *Desalination*, 119072 <https://doi.org/10.1016/j.desal.2025.119072>
- J Dhanasekaran, PS Senanayake, A Lugo, P Xu, WS Walker, H Wang, S Allu. (2025) “Optimal design of power constrained bipolar membrane electrodialysis over a wide brine range.” *Chemical Engineering Journal*, 163497 <https://doi.org/10.1016/j.cej.2025.163497>
- PS Senanayake, A Lugo, MF Ahmed, Z Stoll, NE Moe, J Barber, WS Walker, P Xu, H Wang. (2025) “Electrodialysis modeling for desalination and resource recovery.” *Current Opinion in Chemical Engineering*, 47, 101081 <https://doi.org/10.1016/j.coche.2024.101081>
- L Chen, EM Deemer, XJ Li, WS Walker. (2024) “Sulfonated Polyethersulfone Membranes for Brackish Water Desalination: Fabrication, Characterization, and Electrodialysis Performance Evaluation.” *Applied Sciences*, 15 (1), 216 <https://doi.org/10.3390/app15010216>
- TA Oddonetto, EM Deemer, A Lugo, MA Cappelle, P Xu, I Santiago, WS Walker. (2024) “Assessment of salt-free electrodialysis metathesis: A novel process for brine management in brackish water desalination using monovalent selective ion exchange membranes.” *Desalination*, 592, 118160 <https://doi.org/10.1016/j.desal.2024.118160>
- MH Molina, Y Li, WS Walker, R Verduzco, ML Lind, F Perreault. (2024) “Desalination of complex saline waters: sulfonated pentablock copolymer pervaporation membranes do not fail when exposed to scalants and surfactants.” *Journal of Membrane Science Letters*, 4 (2), 100080, <https://doi.org/10.1016/j.memlet.2024.100080>
- EM Deemer, P Xu, R Verduzco, WS Walker. (2023) “Challenges and opportunities for electro-driven desalination processes in sustainable applications.” *Current Opinion in Chemical Engineering*, 42, 100972 <https://doi.org/10.1016/j.coche.2023.100972>
- A Habib, EN Landa, KL Holbrook, W Walker, WY Lee. (2023) “Rapid, efficient, and green analytical technique for determination of fluorotelomer alcohol in water by stir bar sorptive extraction”, *Chemosphere*, 338, 139439, <https://doi.org/10.1016/j.chemosphere.2023.139439>
- A Wutich, P Thomson, W Jepson, J Stoler, AD Cooperman, J Doss-Gollin, A Jantrania, A Mayer, J Nelson-Núñez, WS Walker, P Westerhoff. (2023) “MAD water: Integrating modular, adaptive, and decentralized approaches for water security in the climate change era”, *WIREs Water*, <https://doi.org/10.1002/wat2.1680>
- WL Hargrove, JM Heyman, A Mayer, A Mirchi, A Granados-Olivas, G Ganjegunte, D Gutzler, DD Pennington, FA Ward, L Garnica Chavira, Z Sheng, S Kumar, N Villanueva-Rosales, WS Walker. (2023) “The future of water in a desert river basin facing climate change and competing demands: A holistic approach to water sustainability in arid and semi-arid regions”, *Journal of Hydrology: Regional Studies*, 46, 101336 <https://doi.org/10.1016/j.ejrh.2023.101336>

- Y. Li, E.R. Thomas, M.H. Molina, S. Mann, W.S. Walker, M.L. Lind, F. Perreault. (2023) “Desalination by membrane pervaporation: A review”, *Desalination*, 547, 116223 <https://doi.org/10.1016/j.desal.2022.116223>
- A. Atrashkevich, A.S. Fajardo, P. Westerhoff, W.S. Walker, C.M. Sanchez-Sanchez, S. Garcia-Segura. (2022) “Overcoming barriers for nitrate electrochemical reduction: By-passing water hardness”, *Water Research*, 225, 119118 <https://doi.org/10.1016/j.watres.2022.119118>
- I.A. Said, N. Fuentes, Z. He, R. Xin, K. Zuo, W.S. Walker, Q. Li. (2021) “Treatment of Brackish-Water Reverse Osmosis Brine Using Only Solar Energy” *Environmental Science: Water Research & Technology*, 10 <https://doi.org/10.1039/D1EW00291K>
- K. Zuo, K. Wang, R.M. DuChanois, Q. Fang, E.M. Deemer, X. Huang, R. Xin, I.A. Said, Z. He, Y. Feng, W.S. Walker, J. Lou, M. Elimelech, X. Huang, Q. Li. (2021) “Selective Membranes in Water and Wastewater Treatment: Role of Advanced Materials.” *Materials Today* <https://doi.org/10.1016/j.mattod.2021.06.013>
- EW Tow, MS Ersan, S Kum, T Lee, TF Speth, C Owen, C Bellona, MN Nadagouda, AM Mikelonis, P Westerhoff, C Mysore, VS Frenkel, V DeSilva, WS Walker, AK Safulko, and DA Ladner. (2021) “Managing and treating per-and polyfluoroalkyl substances (PFAS) in membrane concentrates.” *AWWA Water Science*, 3(5), e1233 <https://doi.org/10.1002/aws2.1233>
- AHM G. Hyder, B.A. Morales, M.A. Cappelletti, S.J. Percival, L.J. Small, E.D. Spoerke, S.B. Rempel, W.S. Walker. (2021) “Evaluation of Electrodialysis Desalination Performance of Novel Bioinspired and Conventional Ion Exchange Membranes with Sodium Chloride Feed Solutions.” *Membranes*, 11(3), 217 (Special Issue: Ion-Exchange Membranes: From Synthesis to Applications) <https://doi.org/10.3390/membranes11030217>
- W.S. Walker, E.B. Cavalcanti, A. Atrashkevich, A.S. Fajardo, E. Brillas, S. Garcia-Segura. (2021) “Mass transfer and residence time distribution in an electrochemical cell with an air-diffusion electrode: effect of air pressure and mesh promoters”, *Electrochimica Acta*, 378(10) 138131 <https://doi.org/10.1016/j.electacta.2021.138131>
- T. Capt, A. Mirchi, S. Kumar, and W.S. Walker. (2020) “Urban Water Demand: A Statistical Optimization Approach to Modeling Daily Demand”, *Journal of Water Resources Planning and Management (ASCE)*, [https://doi.org/10.1061/\(ASCE\)WR.1943-5452.0001315](https://doi.org/10.1061/(ASCE)WR.1943-5452.0001315)
- E.R. Thomas, A. Jain, S.C. Mann, Y. Yang, M.D. Green, W.S. Walker, F. Perreault, M.L. Lind, R. Verduzco. (2020) “Freestanding self-assembled sulfonated pentablock terpolymer membranes for high flux pervaporation desalination”, *Journal of Membrane Science*, 613, 118460 <https://doi.org/10.1016/j.memsci.2020.118460>
- S. Garcia-Segura, X. Qu, P.J.J. Alvarez, B.P. Chaplin, W. Chen, J.C. Crittenden, Y. Feng, G. Gao, Z. He, C.-H. Hou, X. Hu, G. Jiang, J.-H. Kim, J. Li, Q. Li, J. Ma, J. Ma, A.B. Nienhauser, J. Niu, B. Pan, X. Quan, F. Ronzani, D. Villagran, T.D. Waite, W.S. Walker, C. Wang, M.S. Wong, P. Westerhoff. (2020) “Opportunities for Nanotechnology to Enhance Electrochemical Treatment of Pollutants in Potable Water and Industrial Wastewater -A perspective”, *Environmental Science: Nano*, 7, 2178-2194 <https://doi.org/10.1039/D0EN00194E>

- S.K. Patel, M. Qin, W.S. Walker, and M. Elimelech. (2020) “Energy Efficiency of Electro-Driven Brackish Water Desalination: Electrodialysis Significantly Outperforms Membrane Capacitive Deionization”, *Environmental Science & Technology (ACS)*, 54, 6, 3663–3677 <https://doi.org/10.1021/acs.est.9b07482>
- R. Stirling, W.S. Walker, P. Westerhoff, S. Garcia-Segura. (2020) “Techno-economic analysis to identify key innovations required for electrochemical oxidation as point-of-use treatment systems”, *Electrochimica Acta*, 338, 135874 <https://doi.org/10.1016/j.electacta.2020.135874>
- D. Rice, S. Ghadimi, A. Barrios, S. Henry, W.S. Walker, Q. Li, F. Perreault. (2020) “Scaling Resistance in Nanophotonics-Enabled Solar Membrane Distillation”, *Environmental Science & Technology (ACS)*, 54, 4, 2548-2555 <https://doi.org/10.1021/acs.est.9b07622>
- A. Tarquin, W.S. Walker, G. Delgado, and A. Bustamante. (2019) “UTEP-EPW University-Utility Partnership: Concentrate Enhanced-Recovery Reverse Osmosis (CERRO) Process for High Water Recovery from Silica-Saturated Desalination Concentrates”, *Water Environment Research*, 93, 2, 369-377 <https://doi.org/10.1002/wer.1176>
- E. Deemer, T. Capt, O. Owoseni, T. Akter, and W.S. Walker. (2019) “Hypochlorite Resistant Graphene Oxide Incorporated Ultrafiltration Membranes with High Sustainable Flux”, *Industrial & Engineering Chemistry Research (ACS)*, 58, 11964–11975, <http://dx.doi.org/10.1021/acs.iecr.9b01685>
- M. Qin, A. Deshmukha, R. Epsztein, S.K. Patel, O.M. Owoseni, W.S. Walker, M. Elimelech. (2019) “Comparison of energy consumption in desalination by capacitive deionization and reverse osmosis”, *Desalination*, 455, 100-114 <https://doi.org/10.1016/j.desal.2019.01.003>
- J.L. Arciniega, W.S. Walker, S. Nazarian, K.L. Fishman. (2019) “A Model for Estimating Resistivity of In-Service Backfill of Mechanically Stabilized Earth Walls Based on Minimum Resistivity and Degree of Saturation”, *Transportation Research Record*, <https://doi.org/10.1177/0361198118825121>
- A. Jain, C. Weathers, J. Kim, M.D. Meyer, W.S. Walker, Q. Li, R. Verduzco. (2019) “Self assembled, sulfonated pentablock copolymer cation exchange coatings for membrane capacitive deionization”, *Molecular Systems Design & Engineering (RSC)*, 2019, 4, 348-356 <https://doi.org/10.1039/C8ME00115D>
- J.L. Arciniega, W.S. Walker, S. Nazarian, K.L. Fishman. (2018) “A Process for Optimizing Gradation of Marginal Backfill of Mechanically Stabilized Earth Walls to Achieve Acceptable Resistivity”, *Transportation Research Record*, <https://doi.org/10.1177/0361198118770166>
- A. Jain, J. Kim, O.M. Owoseni, C. Weathers, D. Caña, K. Zuo, W.S. Walker, Q. Li, R. Verduzco. (2018) “Aqueous-Processed, High-Capacity Electrodes for Membrane Capacitive Deionization”, *Environmental Science & Technology (ACS)*, 2018, 52 (10), pp 5859–5867, <http://dx.doi.org/10.1021/acs.est.7b05874>

- M.A. Cappelle, W.S. Walker, and T.A. Davis. (2017) “Improving Desalination Recovery Using Zero Discharge Desalination (ZDD): A Process Model for Evaluating Technical Feasibility”, *Industrial & Engineering Chemistry Research (ACS)*, 56 (37) pp. 10448-10460
<http://dx.doi.org/10.1021/acs.iecr.7b02472>
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- A.F. Toro-Vélez, C.A. Madera-Parrab, M.R. Peña-Varón, W.Y. Lee, J.C. Bezares Cruz, W.S. Walker, H. Cárdenas-Henao, S. Quesada-Calderón, H. García-Hernández and P.N.L. Lens. (2016) “BPA and NP removal from municipal wastewater by tropical horizontal subsurface constructed wetlands”, *Science of the Total Environment*, 542, Part A, pp. 93-101.
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PRESENTATIONS

- W.S. Walker, WL Hargrove, JM Heyman, A Mayer, A Mirchi, A Granados-Olivas, G Ganjegunte, D Gutzler, DD Pennington, FA Ward, L Garnica Chavira, Z Sheng, S Kumar, N Villanueva-Rosales. (2023 Jun 21) *Climate change adaptation in the Middle Rio Grande: improving sustainability and resiliency of water supply through conservation, potable reuse, and brackish desalination*, presented at the 2023 Research & Education Conference of the Association of Environmental Engineering and Science Professors (AEESP), Boston, MA (invited)
- M. Chavarin, W.S. Walker. (2022 Sep 20) *Desalination of Brackish Groundwater with Photovoltaic-Thermal Solar Power*, presented at the Brackish Groundwater National Desalination Research Facility (BGNDRF) Water Innovations and Networking (WIN) workshop, Alamogordo, NM (invited)
- T. Oddonetto, W.S. Walker. (2022 Sep 14) *Reverse Osmosis Concentrate Treatment with Fujifilm’s Salt-free Electrodialysis Metathesis*, presented at the Texas Desalination Association Conference, Austin, TX (invited)
- W.S. Walker. (2021 Oct 21) *Solutions: Desalination & Reuse*, presented virtually to the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), South Aral Sea: Bringing Back Blue Infrastructure – Expert Group Pre-meeting (Hydro-Resources) (invited)
- W.S. Walker. (2021 Sep 29) *Inland Brackish Desalination*, presented virtually to the United Nations Food and Agriculture Organization (FAO) Regional Office for Latin America and the Caribbean (invited)
- W.S. Walker. (2021 Sep 23) *Sustainable and resilient water supplies: una frontera próspera*, presented at the “Big Ideas for USA/Mexico Border Prosperity: On Sustainable Manufacturing” workshop sponsored by Purdue University and hosted by UTEP (invited)
- W.S. Walker, M.A. Cappelle, and M. Herrera-Alvarez. (2021 Sep 14) *Startup of high-recovery direct potable reuse (DPR) piloting in El Paso, TX*, presented virtually to the Texas Desalination Association Conference (invited)

- W.S. Walker. (2021 May 27) *Advancing Inland Brackish Groundwater Desalination and Potable Reuse*, presented virtually to the Desert Mountain Chapter of the Texas American Water Works Association, El Paso, TX (invited)
- W.S. Walker, A. Tarquin, G. Delgado, A. Bustamante, and P. Diaz. (2021 Feb 11) *Concentrate Enhanced-Recovery Reverse Osmosis (CERRO)*, presented virtually to the CalDesal Annual Conference (invited)
- A.H.M. Golam Hyder, M.A. Cappelle, and W.S. Walker. (2020 Oct 8) *Evaluation of Electrodialysis Desalination Performance of Novel Bioinspired and Conventional Ion Exchange Membranes With NaCl Feed Solution*, presented at the Texas Desalination Association 2020 Virtual Conference – Part 2 (invited)
- W.S. Walker and M.A. Cappelle. (2020 Sep 17) *Research and Service Progress at UTEP's Center for Inland Desalination Systems*, presented at the Texas Desalination Association Webinar on Talks with Operations – Part 3 (invited)
- W.S. Walker, A. Tarquin, G. Delgado, A. Bustamante, and P. Diaz. (2020 Aug 27) *Concentrate Enhanced-Recovery Reverse Osmosis (CERRO)*, presented at the American Membrane Technology Association (AMTA) Webinar on Enhanced Recovery of NF/RO Systems (invited)
- U. Shashvatt, M. Raphael, W.S. Walker, Lee Blaney. (2020 Aug 17-20) *Donnan dialysis for phosphorus recovery from wastewater using brackish water reverse osmosis concentrate*, presented at the American Chemical Society (ACS) Fall 2020 Virtual Meeting & Expo (online)
- W.S. Walker, A. Tarquin, G. Delgado, A. Bustamante, and P. Diaz. (2019 Oct 30) *Concentrate Enhanced-Recovery Reverse Osmosis (CERRO)*, presented at the American Membrane Technology Association (AMTA) and Southwest Membrane Operator Association (SWMOA) Technology Transfer Workshop on Enhanced Recovery of NF/RO Systems, Albuquerque, NM (invited)
- W.S. Walker. (2019 Oct 18) *Sustainable and Resilient Water Supply in Arid Inland Communities*, presented to the Graduate Seminar of the Department of Civil & Environmental Engineering at Rice University, Houston, TX (invited)
- M.A. Cappelle and W.S. Walker. (2019 Sep 22) *Water Quality & Quantity Topics for Indirect & Direct Potable Reuse – The El Paso Story (Reusing Water Since 1963)*, presented at WEFTEC 2019, Chicago, IL (invited)
- W.S. Walker. (2019 Aug 15) *Technologies for Sustaining Water Availability*, presented at the NSF Workshop on Environmental Sustainability in Arid Region Urban Communities, at Texas Tech University, Lubbock, TX (invited)
- W.S. Walker, D. Pennington, W. Hargrove, I. Santiago, E. Archuleta, and M.A. Cappelle. (2019 Apr 24) *One Water Approaches to Complex Problems*, presented at the Two-Nations One-Water regional conference, Las Cruces, NM (invited)

- W.S. Walker. (2019 Apr 24) *Nanotechnology-Enabled Water Treatment (NEWT) Engineering Research Center*, presented at the Two-Nations One-Water regional conference, Las Cruces, NM (invited)
- W.S. Walker, I. Santiago, and M.A. Cappelle. (2019 Apr 5) *A tale of Two Cities: Point-of-Use Drinking Water Treatment*, presented at the Engineers for a Sustainable World (ESW) 2019 Annual Conference, El Paso, TX (invited)
- W.S. Walker and M.A. Cappelle. (2019 Feb 28) *Advances in Inland Desalination*, presented at the Multi-State Salinity Coalition (MSSC) Summit, Las Vegas, NV (invited)
- K.J. Howe, M. Hightower, M. Cappelle, and W.S. Walker. (2019 Feb 25) *AWWA Manual of Practice M69: Salt Recovery and Beneficial Reuse*, presented at the 2019 AWWA-AMTA Membrane Technology Conference (MTC), New Orleans, LA (invited)
- W.S. Walker. (2018 Apr 25) *Engineering Ethics: Practical Strategies*, presented at the joint engineering ethics meeting of the El Paso chapters of the Texas Society of Professional Engineers (TSPE) and American Society of Civil Engineers (ASCE), El Paso, TX (invited)
- W.S. Walker. (2018 Apr 09) *High-Recovery Inland Brackish Desalination with ZDD and CERRO*, presented to the University of Oklahoma WaTER center, Norman, OK (invited)
- W.S. Walker. (2018 Mar 18) *A tale of two cities: point-of-use drinking water treatment with membrane filtration and desalination*, presented at the 255th ACS conference, New Orleans, LA (invited)
- W.S. Walker. (2017 Sep 20) *Perspectives on global water contamination and scarcity*, presented to the Congreso Calidad del Agua, Cd. Chihuahua, MX (invited)
- W.S. Walker. (2017 Sep 18) *A Tale of Two Cities – Point of Use Drinking Water Filtration*, presented to the University of Oklahoma WaTER biannual conference, Norman, OK (invited)
- W.S. Walker. (2017 Jun 23) *A Tale of Two Cities – Point of Use Drinking Water Filtration*, presented to the International Water Association North America (IWANA) meeting, Ann Arbor, MI (invited)
- W.S. Walker. (2017 Mar 02) *Sustainable drinking water treatment with membrane filtration and solar-powered desalination*, presented to the Texas-Mexico ASCE Student Symposium, El Paso, TX (invited)
- W.S. Walker. (2017 Jan 25) *Improving access to reliable drinking water: centralized and decentralized approaches*, presented to the ASCE El Paso Chapter, El Paso, TX (invited)
- W.S. Walker. (2016 May 26) *Solar Desalination for Drinking Water and Irrigation*, presented to the UTEP and CETYS collaboration for Sustainable Communities, El Paso, TX (invited)
- W.S. Walker. (2016 May 3) *Direct potable reuse piloting: fate of nitrogen, TOC, cations, and select metals*, presented to the El Paso Water Utilities, Arcadis, and the National Water Research Institute (NWRI) panel, El Paso, TX (invited)

- W.S. Walker and M.A. Cappelle. (2016 Mar 23) *Drinking Water and Irrigation Supply from Solar-Powered High-Recovery Inland Brackish Desalination*, presented to the UTEP ASCE student chapter, El Paso, TX (invited)
- W.S. Walker. (2016 Mar 22) *Low-cost water treatment solutions for developing communities*, presented to the UTEP Engineers Without Borders (EWB) student chapter, El Paso, TX (invited)
- W.S. Walker and M.A. Cappelle. (2016 Mar 2) *Drinking Water and Irrigation Supply from Solar-Powered High-Recovery Inland Brackish Desalination*, presented to the NSF ReNUWIt ERC, Las Cruces, NM (invited)
- M.A. Cappelle, W.S. Walker, T.A. Davis. (2016 Feb 4) *High Recovery Desalination in Developing Countries*, presented at the 2016 AWWA-AMTA Membrane Technology Conference (MTC), San Antonio, TX
- W.S. Walker and M.A. Cappelle. (2015 Nov 17) *Drinking Water and Irrigation Supply by High-Recovery Inland Brackish Desalination with Renewable Power*, presented at the monthly meeting of the Desert Mountain Chapter of AWWA, El Paso, TX (invited)
- M.A. Cappelle, T.A. Davis, and W.S. Walker. (2015 Sep 30) *Competing in the Desal Prize*, presented at the Texas Desal 2015 conference, Austin, TX
- W.L. Hargrove and W.S. Walker. (2015 Jun 13) *Water Supply and Conservation in El Paso*, presented at the Water Matters Workshop, sponsored by the El Paso Water Captains, supported by the Texas Interfaith Center for Public Policy, El Paso, TX (invited)
- W.S. Walker. (2015 May 28) *Advanced Water Purification Processes: Direct Potable Reuse in El Paso*, presented at the monthly meeting of the El Paso Chapter of the Texas Society of Professional Engineers, El Paso, TX (invited)
- L. Katz, W.S. Walker, and B. Scanlon. (2015 Apr 29) *Sustainable Water Research for Texas*, presented at the Water U! session before the Texas Water Development Board, Austin, TX (invited)
- B.A. Rocha-Gutierrez, W.Y. Lee, and W.S. Walker. (2015 Apr 28) *Mass balance and mass loading of Polybrominated Diphenyl Ethers (PBDEs) in a tertiary wastewater treatment plant using SBSE-TD-GS/MS*, presented at the 4th IWA Mexico Young Water Professionals Conference 2015, sponsored by the International Water Association, Guanajuato, Mexico
- W.S. Walker and M. Cappelle. (2015 Feb 17) *Hybrid RO and ED Membrane Systems for High-Recovery Inland Brackish Water Desalination*, presented at the Advances in Materials and Processes for Polymeric Membrane Mediated Water Purification Conference, sponsored by the ACS Polymer Division, Asilomar Conference Grounds, Pacific Grove, CA (invited)
- W.S. Walker. (2014 Nov 20) *Engineering Ethics: Practical Strategies*, presented at the joint annual engineering ethics meeting of the El Paso chapters of the Texas Society of Professional Engineers (TSPE) and American Society of Civil Engineers (ASCE), El Paso, TX (invited)

- J. Sutherland, D. DeMichele, W.S. Walker, T. Seacord, and E. Mancha. (2014 Nov 17) *Manual of Practice for Regulatory Approval of RO Membranes*, presented at the American Water Works Association (AWWA) Water Quality Technology Conference (WQTC), New Orleans, LA (Poster, Awarded 3rd Place)
- I. Campos-Flores, W.S. Walker, I. Santiago, J. Walton, J. Tomaka, R. Palacios. (2014 Jun 10) *Developing A Sustainable POE/POU Water Treatment System For Households Without Basic Infrastructure in the United States*, presented at the AWWA Annual Conference & Exposition, Boston, MA (Poster)
- R. Palacios, J. Tomaka, A. Torres, L. Garcia, I. Campos-Flores, I. Santiago, W.S. Walker, J. Walton. (2014 Apr 1) *Colonia Resident's Perceptions of Water Quality in Dona Ana, NM and El Paso, TX*, Society of Behavioral Medicine, Philadelphia, PA; Proceedings in Annals of Behavioral Medicine, Springer
- W.S. Walker. (2014 Mar 31) *Comparison of Testing Methods for RO/NF Membranes*, presented at the South Central Membrane Association (SCMA) "Using Pilot Testing to Optimize Your RO/NF System" workshop, Alamogordo, NM (invited)
- W.S. Walker. (2013 Dec 05) *Improving the Sustainability of Inland Desalination: Enhanced Recovery*, presented at the weekly meeting of the MIT Water Club, Massachusetts Institute of Technology, Cambridge, MA (invited)
- W.S. Walker. (2013 Dec 04) *Reflections on the Argosy Collaborative Faculty Exchange*, presented to the Olin faculty, Franklin W. Olin College of Engineering, Needham, MA (invited)
- P. Golding, R Schoephoerster, R. Gonzalez, E. Villa, J. Townsend, M. Somerville, R. Miller, V. Manno, D. Natera, S. Starks, I. Webb, W.S. Walker, R. Martello, D. Aragon, J. Stolk, L. Stein, R. O'Brien. (2013 Oct 24) *Model Collaboration for Advancing Student-Centered Engineering Education*, presented at the 2013 ASEE & IEEE Frontiers in Education (FIE) Conference, Oklahoma City, OK
- W.S. Walker. (2013 Oct 18) *Improving the Sustainability of Inland Desalination*, Shell Seminar Series, Chemical & Biological Engineering, Colorado School of Mines, Boulder, CO (invited)
- W.S. Walker. (2013 Sep 24) *Point-of-Use (POU) hollow-fiber membrane filtration for drinking water*, presented to the Affordable Design and Entrepreneurship course, Olin College and Babson College, Needham, MA (invited)
- I. Campos-Flores, W.S. Walker, I. Santiago, J. Walton, J. Tomaka, R. Palacios. (2013 Aug 12) *Point-Of-Use and Point-Of-Entry Water Treatment Units For Colonias In The Paso Del Norte Region*, presented at the AIChE International Congress on Sustainability Science and Engineering (ICOSSE), Cincinnati, OH, (Poster)
- W.S. Walker. (2013 May 09) *Sustainable Water Treatment Systems*, presented at the monthly meeting of the Desert Mountain Chapter of AWWA, El Paso, TX

- E. Mancha, W.S. Walker, J. Sutherland, and T. Seacord. (2013 Apr 12) *Alternatives to Piloting in Texas: Accuracy and Precision of Commercial Software Modeling for Brackish Groundwater Desalination*, presented at Texas Water 2013, sponsored by Texas AWWA and WEAT, Galveston, TX
- I. Campos-Flores, W.S. Walker, I. Santiago, J. Walton, J. Tomaka, R. Palacios. (2013 Apr 10-11) *Comparison Methodology for Selecting Point of Use Drinking Water Filtration Systems for Colonias in the Paso Del Norte Region*, presented at Texas Water 2013, sponsored by Texas AWWA and WEAT, Galveston, TX (Poster)
- E. Mancha, W.S. Walker, J. Sutherland, and T. Seacord. (2013 Feb 28) *Accuracy and Precision of Commercial Software Modeling for Brackish Groundwater Desalination*, presented at the AMTA-AWWA Membrane Technology Conference, Session TH-3D, San Antonio, TX
- I. Campos-Flores, W.S. Walker, I. Santiago, J. Walton, J. Tomaka, R. Palacios. (2013 Feb 28) *Selection and Evaluation of Point of Use Drinking Water Filtration for Colonias in the Paso del Norte Region*, presented at the AMTA-AWWA Membrane Technology Conference, Session TH-2D, San Antonio, TX
- W.S. Walker, L. Maldonado, J. Sutherland, and W. Shih. (2013 Feb 26) *Mass Transfer Modeling of RO Permeate Post Treatment by Upflow Calcite Contactors*, presented at the AMTA-AWWA Membrane Technology Conference, Session T-3D, San Antonio, TX
- W.S. Walker, L. Maldonado, J. Sutherland, and W. Shih. (2012 Nov 04) *RO Permeate Post-Treatment by Upflow Calcite Contactors: Kinetics*, presented at the AWWA Water Quality Technology Conference, Toronto, ON
- W.S. Walker. (2012 Sep 26) *Sustainable Water Treatment Systems*, presented at the monthly meeting of the El Paso Chapter of ASCE, El Paso, TX
- W.S. Walker. (2012 Sep 21) *Improving the sustainability of inland desalination and water treatment*, presented to the UTEP Engineering Advisory Board, El Paso, TX
- L. Maldonado, W.S. Walker, and J. Sutherland. (2012 Aug 24) *Reverse Osmosis Permeate Post-Treatment by Upflow Calcite Contactors and Calcite Dissolution Kinetics*, presented at the Annual Conference of the South Central Membrane Association, San Antonio, TX
- W.S. Walker, E. Mancha, and J. Sutherland. (2012 Aug 24) *Reverse Osmosis Modeling: Accuracy and Precision*, presented at the Annual Conference of the South Central Membrane Association, San Antonio, TX
- W. Shih, B. Sessions, J. Sutherland, W.S. Walker, and S. Shirazi. (2012 Mar 01) *Post-treatment of Brackish RO Permeate via Upflow Calcite Contactors*, presented at the AMTA-AWWA Membrane Technology Conference, Glendale, AZ
- W.S. Walker and A. Tarquin. (2012 Jan 26) *Concentrate and permeate treatment processes for improving the sustainability of inland brackish water desalination*, presented at the Multi-State Salinity Coalition (MSSC) Summit, Las Vegas, NV

- W.S. Walker. (2011 Jul 20) *Hollow-fiber Microfiltration for Household Potable Treatment in El Recreo, Ecuador*, presented at the AMTA Conference & Exposition, Miami Beach, FL, Proceedings
- W.S. Walker, B. Biagini, B. Mack, T. Davis, M. Cappelle. (2011 Mar 29) *Zero Discharge Desalination: Maximum Recovery of Brackish Groundwater Utilizing Ion Substitution Electrodialysis*, presented at the AMTA-AWWA Membrane Technology Conference (MTC) & Exposition, Session TUE09, Long Beach, CA
- Y. Kim, W.S. Walker, and D.F. Lawler. (2011 Mar 29) *Evaluation of the Statistical Properties of the Boundary Layer near Ion-Exchange Membranes in Electrodialysis*, presented at the AMTA-AWWA Membrane Technology Conference (MTC) & Exposition, Session TUE01, Long Beach, CA
- W.S. Walker, Y. Kim, and D.F. Lawler. (2011 Mar 29) *Feasibility of Electrodialysis for Inland BWRO Concentrate Treatment*, presented at the AMTA-AWWA Membrane Technology Conference (MTC) & Exposition, Session TUE01, Long Beach, CA
- W.S. Walker, Y. Kim, and D.F. Lawler. (2010 Dec 8) *Concentration of Supersaturated BWRO Concentrate with Electrodialysis*, presented at the AMTA Technology Transfer Workshop, El Paso, TX
- W.S. Walker, Y. Kim, and D.F. Lawler. (2010 Jul 15) *Inland BWRO concentrate concentration by electrodialysis*, presented at the AMTA Conference & Exposition, Session THU6, San Diego, CA
- W.S. Walker, Y. Kim, and D.F. Lawler. (2010 Jun 24) *Electrodialysis for treatment of RO concentrate: performance on three waters*, presented at the AWWA Annual Conference & Exposition (ACE) 2010, Session Th-2-C, Chicago, IL
- Y. Kim, W.S. Walker, and D.F. Lawler. (2010 Mar 25) *Ionic transport in diffusion boundary layers near ion-exchange membranes by the Painlevé equation of the second kind*, presented at the American Chemical Society (ACS) Spring 2010 National Meeting & Exposition, INOR 1174, San Francisco, CA
- W.S. Walker, Y. Kim, and D.F. Lawler. (2010 Mar 21) *Treatment of BWRO concentrates: ionic separation performance of electrodialysis*, presented at the ACS Spring 2010 National Meeting & Exposition, ENVR 64, San Francisco, CA
- W.S. Walker, Y. Kim, and D.F. Lawler. (2009 Jul 16) *Investigation of Electrodialysis for RO concentrate treatment*, presented at the AMTA Annual Conference & Exposition, Session Th-2A, Austin, TX
- W.S. Walker, Y. Kim, and D.F. Lawler. (2009 Mar 18) *Treatment of BWRO concentrate waste by electrodialysis: a batch-recycle experimental investigation*, presented at the AMTA-AWWA Membrane Technology Conference & Exposition, Session WED3, Memphis, TN
- Y. Kim, W.S. Walker, and D.F. Lawler. (2009 Mar 16) *Electrodialysis softening: Feasibility Study with Mathematical Model* poster presentation at the AMTA-AWWA Membrane Technology Conference & Exposition, Session MON6, Memphis, TN

- D. F. Lawler, Y. Kim, and W.S. Walker. (2008 Jul 17) *A New Niche for Electrodialysis: Improving Recovery from RO Desalination*, presented at the International Congress on Membranes/Processes (ICOM), Honolulu, HI
- W.S. Walker, Y. Kim, and D.F. Lawler. (2008 Jul 07) *Improving Recovery in Reverse Osmosis Desalination*, Seminars on desalination sponsored by Malcolm Pirnie, Austin, TX
- W.S. Walker, Y. Kim, and D.F. Lawler. (2008 Jun 10) *Improving Recovery in Reverse Osmosis Desalination: Treatment of Concentrate by Electrodialysis*, presented at the AWWA Annual Conference & Exposition, Session TUE13, Atlanta, GA
- W.S. Walker. (2006 Sep 30) *FEMA Flood Hazard Mapping – GIS Archival*, presented to the Engineering Foundation Advisory Council, University of Texas at Austin
- W.S. Walker. (2006 Jun 28) *Summary of Current Research at the Center for Research in Water Resources*, presented to the Water Division of the New York State Department of Environmental Conservation (NYS DEC), Albany, NY
- W.S. Walker and D.R. Maidment. (2006 Jun 12) *FEMA Flood Hazard Mapping - GIS Archival*, presented to the Texas Natural Resources Information System, Austin, TX
- W.S. Walker and D.R. Maidment. (2006 Mar 30) *FEMA Flood Hazard Mapping - GIS Archival*, presented at the HEC-RAS User Conference, Austin, TX
- W.S. Walker and D.R. Maidment. (2005 Jul 12) *Watershed Information System (WISE)*, presented to the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI), Duke University

DISSERTATION AND THESIS ADVISING

- Martin Chavarin, M.S. Environmental Engineering (2023 Aug), UTEP
Performance Evaluation of a Coupled Photovoltaic Thermal Solar Powered Desalination Pilot System
- Marcela Herrera Alvarez, M.S. Environmental Engineering (2022 Dec), UTEP
Direct Potable Reuse Piloting: Optimizing Chloramination, Operationalizing Ultrafiltration, and Understanding Zero Liquid Discharge Options
- Avianna Gallegos, M.S. Civil Engineering (2022 Dec), UTEP
Sulfonated Styrene Grafted SEBS/ABS Made by Additive Manufacturing for Ion Exchange Applications
- A.H.M. Golam Hyder, Ph.D. Environmental Science and Engineering (2021 Aug.), UTEP
Evaluation of Electrodialysis Desalination Performance of Novel and Conventional Ion Exchange Membranes
- Shahrouz Jafarzade Ghadimi, Ph.D. Civil Engineering (2020 Aug), UTEP
Evaluation and Modeling of Electrodialysis for High-Recovery Brackish Water Desalination
- Tallen Capt, Ph.D. Civil Engineering (2019 May), UTEP
Urban Water Demand in Arid-Regions: Modelling and Forecasting Climatic and Economic Effects

- Oluwaseye Owoseni, Ph.D. Civil Engineering (2018 Dec), UTEP
Evaluation of Brackish Water Desalination by Membrane Capacitive Deionization Systems: Performance Tradeoffs in Salt Removal, Hydraulic Recovery, Charge Efficiency, and Specific Energy Consumption
- Andres Sanchez, M.S. Environmental Engineering (2018 Dec), UTEP
Evaluation of Commercial Pervaporation Membranes for Desalination of Saline and Brackish Waters
- Malynda Cappelle, Ph.D. Civil Engineering (2018 May), UTEP
High recovery inland desalination: a technical and economic performance evaluation of zero discharge desalination and other technologies
- Troy Svede, M.S. Environmental Engineering (2017 Aug), UTEP
Evaluation of a roller method for geochemical leach testing
- Cesar Alvarez, M.S. Environmental Engineering (2016 Aug), UTEP
Treatment of Dissolved Metals for Direct Potable Reuse
- Oscar Ramirez, M.S. Environmental Engineering (2016 Dec), UTEP
Evaluation of Point-of-Use Reverse Osmosis Systems for Drinking Water in Colonias
- Juan Cesar Bezares Cruz, Ph.D. Civil Engineering (2016 May), UTEP
Environmental Impact Assessment and Removal of Endocrine Disrupting Compounds in Municipal Wastewater Treatment
- Oluwaseye Owoseni, M.S. Environmental Engineering (2016 May), UTEP
Analysis of Nitrogen Speciation and Removal in Direct Potable Reuse Treatment in El Paso, TX
- Isaac Campos-Flores, Ph.D. Civil Engineering (2015 Aug), UTEP
Evaluation of Point-of-Use Drinking Water Treatment Systems for Colonias in the Southwest U.S.
- Osvaldo A. Broesicke, M.S. Environmental Engineering (2015 Aug), UTEP
Salt and Mineral Recovery from High Salinity Waters
- Evelyn Rios, M.S. Environmental Engineering (2015 May), UTEP
Recovery of Nutrient Nitrogen From Municipal Wastewater Residuals by Gas Membrane Separation
- Houman Azari, M.S. Environmental Engineering (2014 Dec.), UTEP
Simulation of Heat and Mass Transfer in Suns River Solar Distillation
- Noe Ortega, Ph.D. Environmental Science and Engineering (2013 Dec.), UTEP
High-Recovery Inland Desalination: Concentrate Treatment by Electrodialysis and Batch Reverse Osmosis
Co-advisor: Tom Davis
- Sumayeh Freiwan, Ph.D. Environmental Science and Engineering (2013 Aug.), UTEP
Urban Impact of Dissolved Metals in the Paso del Norte Segment of the Rio Grande
Co-advisor: John Walton
- Michelle Brown, M.S. Environmental Engineering (2013 May), UTEP
Evaluation of Novel Backwashable Cartridge Filters: Efficacy and Sustainability
- Michael Landis, Ph.D. Environmental Science and Engineering (2012 Dec.), UTEP
Sustainable Riparian Restoration – Utilization of Sewage Effluent to Construct Wetlands Along the Rio Grande: A String-of-Pearls Approach to Replenishment
- Luis Maldonado, M.S. Environmental Engineering (2012 Dec.), UTEP
Reverse Osmosis Permeate Post-Treatment by Upflow Calcite Contactors

- Erika Mancha, M.S. Civil Engineering (2012 Dec.), UTEP
Alternatives to Piloting in Brackish Waters: Accuracy and Precision of Commercial Reverse Osmosis Membrane Design Model Projections
- Cora Martinez, M.S. Environmental Engineering (2012 Dec.), UTEP
Sustainable Water Management in The University of Texas at El Paso
- Mariana Chew, Ph.D. Environmental Science and Engineering (2012 May), UTEP
Sustainable Wastewater Management of Paso del Norte Border Communities

SERVICE AND HONORS

Academic and Professional Honors

- Texas Tech STEM Center for Outreach, Research, & Education (CORE) – STEM CORE Affiliate, November 10, 2023
- AWWA 2022 Membrane Treatment Best Paper Award (<https://doi.org/10.1002/aws2.1233>)
- South Central Membrane Association, Presidential Service Award, September 17, 2020
- UTEP Academy of Distinguished Teachers, Member, April 2019
- ACS Industrial & Engineering Chemistry Research: Class of 2017 Influential Researchers
- UTEP Alumni Academy of Civil Engineers Professorship (2016-2026, Endowed \$120,000)
- 2016 University of Texas System Regents' Outstanding Teaching Award (\$25,000 award)
- Texas Regional STEM Accelerator Faculty Partner Teaching Award (\$5,000 award)
- Argosy Collaborative Faculty Exchange (Fall 2013), Franklin W. Olin College of Engineering
- Professional Engineer, Texas, #113368, Issued Dec. 2012
(Score of 92 on the Civil/Wat.Res.&Envr. Exam – Oct. 2012)
- Young Civil Engineer of the Year (2012), ASCE, El Paso Chapter
- JumpStart Distinguished Early Career (2011), UTEP Office of Research and Spons. Projects
- Graduate Fellowship, National Water Research Institute (NWRI) and American Membrane Technology Association (AMTA), UT Austin (Fall 2008 - 2010)
- Graduate Fellowship, Engineering Thrust 2000 – Hagedorn, UT Austin (Spring 2007 - 2010)
- Highest Ranking Graduate in the College of Engineering, Texas Tech Univ. (May 2004)
- Outstanding Senior in Civil Engineering, Texas Tech Univ. (May 2004)
- 90+ Club, Fundamentals of Engineering (FE) Exam (Oct. 2003)

Service within the university

- Faculty Advisor for UTEP Baptist Student Ministries (Fall 2019 – Spring 2023)
- Faculty Titles Working Group, UTEP Office of the Provost (2017-2020)
- Faculty Search Committee, Chair, UTEP Civil Engineering (Fall 2018 – Spring 2019)
- Dean Search Committee, UTEP College of Business Administration (Spring 2018)
- Dean Search Committee, UTEP College of Engineering (Fall 2016 - Spring 2017)
- UTEP Faculty Senate – Secretary (Fall 2017 – Summer 2018)
- UTEP Faculty Senate – Senator (Fall 2015 – Summer 2017)
- Faculty Advisor for UTEP Engineers for a Sustainable World (Fall 2017 – Spring 2023)
- Faculty Advisor for UTEP ASCE Chapter (Fall 2010 – Present)
- Faculty Advisor for UTEP InterVarsity Christian Fellowship (Fall 2010 – Spring 2023)
- Curriculum Development Team for UTEP Engineering Leadership, (2013 – 2017)

Professional Memberships

- American Society of Civil Engineers (ASCE) – since 2001
- American Water Works Association (AWWA) – since 2008
 - Member of the Membrane Processes & Research Committee – since 2012
 - Member of the Membrane Standards Committee – 2011-2015
- American Membrane Technology Association (AMTA) – since 2008
- American Chemical Society (ACS) – since 2009
- Association of Environmental Engineering & Science Professors (AEESP) – since 2014
- American Society for Engineering Education (ASEE) – 2014-2015
- Engineers for a Sustainable World (ESW) – since 2017

Professional Service

- Manuscript Reviewer for peer-reviewed publications
- American Water Works Association (AWWA)
 - Member of the Membrane Process Committee
 - Member of the Manual M38 Electrodialysis sub-committee (2012 - 2021)
 - Member of the Membrane Standards Committee
 - Chair of the Electrodialysis Standard sub-committee (March 2011 – June 2013)

Public Service

- Teaching, leadership, and service with Paseo Christian Church, El Paso (2010 – 2022)
 - Elder (May 2015 – present)
- Board Member and Treasurer, Rio Bravo Project (non-profit), El Paso (Jan 2021 – Present)
- Board Member, Journey to the Garden (non-profit), (Nov 2012 – Dec 2020)