

CURRICULUM VITAE

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

Associate Professor

Alumni Academy of Civil Engineering Professorship

Department of Civil Engineering
The University of Texas at El Paso
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EDUCATION AND CERTIFICATION

- Ph.D.:** **The University of Texas at Austin**
Environmental and Water Resources Engineering (EWRE), August 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**, August 2006
Advisor: David R. Maidment, PhD, PE
Thesis: *Geodatabase Design for FEMA Flood Hazard Studies*
- B.S.C.E.:** **Texas Tech University**, Civil Engineering (Minor: Mathematics), May 2004
Summa Cum Laude
- P.E.:** **Texas**, #113368, Issued Dec. 2012, (Civil/Wat.Res.&Envr. Exam – Oct. 2012)

PROFESSIONAL EXPERIENCE

UT El Paso, Civil Engineering, Ctr. for Inland Desal. Systems.....Sep. 2010 – Present

Associate Professor – September 2016 – Present

Assistant Professor – August 2010 – August 2016

- CE 4342 – Water and Wastewater Engr. (Fall 2010-Spring 2016, 11 times)
- CE 1301 – Civil Engineering Fundamentals (Fall 2016)
- CE 5409 – Environmental Engineering Chemistry (Fall 2011, 2015)
- CE 5345 – Adv. Physical Chemical Water Treatment Proc. (Spring 2012, '14, '16)
- CE 5349 – Design of Membrane Filtration and Desalination Systems (Fall 2012, '14, '16)
- CE 5344 – Biological Unit Operations/Processes (Spring 2013, 2015)

Engineering Consulting.....Aug. 2009 – Present

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

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.

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 Austin Sep. 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 Tech Jan. – 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

Co-PI: National Science Foundation (NSF) Engineering Research Center (ERC), \$1.8M, *Nanotechnology Enabled Water Treatment Systems (NEWTS)*, Aug 2015 – Jul 2020, PI: Jorge Gardea-Torresdey, Co-PIs: Juan Noveron, Dino Villagrán, Eva Moya

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 2020, PIs: Bill Hargrove and Joe Heyman

Co-PI: US Agency for International Development, \$60k, *Desal Prize – Securing Water for Food: A Grand Challenge for Development*, January 2011 – November 2014, 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

PUBLICATIONS

- L. Garcia, C. Sobin, J. Tomaka, I. Santiago, R. Palacios, **W.S. Walker**. (Accepted) A Comparison of Water-Related Perceptions and Practices among West Texas and South New Mexico Colonia Residents Using Hauled-Stored and Private Well Water. *Journal of Environmental Health*
- B.A. Rocha-Gutierrez, W.Y. Lee, and **W.S. Walker**. (2016) Mass balance and mass loading of Polybrominated Diphenyl Ethers (PBDEs) in a tertiary wastewater treatment plant using SBSE-TD-GC/MS. *Water Science & Technology*, 73 (2) pp. 302-308. <http://dx.doi.org/10.2166/wst.2015.492>
- 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. <http://dx.doi.org/10.1016/j.scitotenv.2015.09.154>
- W. Huang, **W.S. Walker**, Y. Kim. (2015) Junction potentials in thermolytic reverse electrodialysis. *Desalination*, 369, pp. 149-155. <http://dx.doi.org/10.1016/j.desal.2015.05.005>
- W.S. Walker**, Y. Kim, and D.F. Lawler. (2014) Treatment of Inland Brackish Groundwater Reverse Osmosis Concentrate with Electrodialysis – Part III: sensitivity to solution composition and hydraulic recovery. *Desalination*, 347, pp. 158-164. <http://dx.doi.org/10.1016/j.desal.2014.05.034>
- W.S. Walker**, Y. Kim, and D.F. Lawler. (2014) Treatment of Inland Brackish Groundwater Reverse Osmosis Concentrate with Electrodialysis – Part II: sensitivity to voltage application and membranes. *Desalination*, 345, pp. 128-135. <http://dx.doi.org/10.1016/j.desal.2014.04.026>
- W.S. Walker**, Y. Kim, and D.F. Lawler. (2014) Treatment of Inland Brackish Groundwater Reverse Osmosis Concentrate with Electrodialysis – Part I: sensitivity to superficial velocity. *Desalination*, 344, pp. 152-162. <http://dx.doi.org/10.1016/j.desal.2014.03.035>
- 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](#))

- Y. Kim, **W.S. Walker**, and D.F. Lawler. (2012) Competitive separation of di- vs. mono-valent cations in electro dialysis: Effects of the boundary layer properties. *Water Research*, 46(7), 2042-2056. <http://dx.doi.org/10.1016/j.watres.2012.01.004>
- Y. Kim, **W.S. Walker**, and D.F. Lawler. (2011) Electro dialysis with Spacers: Effects of Variation and Correlation of Boundary Layer Thickness. *Desalination*, 274(1-3), 54-63. <http://dx.doi.org/10.1016/j.desal.2011.01.076>
- 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](#))
- Y. Kim, **W.S. Walker**, and D.F. Lawler. (2010) The Painlevé Equation of the Second Kind for the Binary Ionic Transport in Diffusion Boundary Layers near Ion-exchange Membranes at Overlimiting Current. *Journal of Electroanalytical Chemistry*, 639(1-2), 59-66. <http://dx.doi.org/10.1016/j.jelechem.2009.11.019>

PRESENTATIONS

- 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)
- 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 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 & 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 & 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 & 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

- 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 Science and Engineering (2014 Dec.), UTEP
Simulation of Heat and Mass Transfer in Suns River Solar Distillation
- Noe Ortega, PhD Environmental Science and Engineering (2013 Dec.), UTEP
High-Recovery Inland Desalination: Concentrate Treatment by Electrodialysis and Batch Reverse Osmosis
Co-advisor: Tom Davis
- Sumayah Freiwan, PhD 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, MS Environmental Engineering (2013 May), UTEP
Evaluation of Novel Backwashable Cartridge Filters: Efficacy and Sustainability
- Michael Landis, PhD 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, MS Environmental Engineering (2012 Dec.), UTEP
Reverse Osmosis Permeate Post-Treatment by Upflow Calcite Contactors
- Erika Mancha, MS Civil Engineering (2012 Dec.), UTEP
Alternatives to Piloting in Brackish Waters: Accuracy and Precision of Commercial Reverse Osmosis Membrane Design Model Projections
- Cora Martinez, MS Environmental Engineering (2012 Dec.), UTEP
Sustainable Water Management in The University of Texas at El Paso
- Mariana Chew, PhD Environmental Science and Engineering (2012 May), UTEP
Sustainable Wastewater Management of Paso del Norte Border Communities

SERVICE AND HONORS

Academic and Professional Honors

- Alumni Academy of Civil Engineering Professorship (UTEP)
- 2016 University of Texas System Regents' Outstanding Teaching Award (\$25,000)
- 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 (2012), 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)
- 90+ Club, Fundamentals of Engineering (FE) Exam (Oct. 2003)
- Highest Ranking Graduate in the College of Engineering, Texas Tech Univ. (May 2004)
- Outstanding Senior in Civil Engineering, Texas Tech Univ. (May 2004)

Service within The University of Texas at El Paso

- Faculty Advisor for ASCE Chapter (Fall 2010 – Present)
- Faculty Advisor for InterVarsity Christian Fellowship (Fall 2010 – Present)
- Faculty Advisor for *Vision Juvenil universidad* (VJu) (Fall 2010 – Spring 2013)
- Campus Office of Undergraduate Research Initiatives (COURI), Member of the College of Engineering Advisory Committee (Spring 2012 - present)
- Curriculum Development Team for UTEP Engineering Leadership, (Spring 2013 – present)

Professional Memberships

- American Society of Civil Engineers (ASCE) – since 2001
- American Water Works Association (AWWA) – since 2008
 - Member of the Membrane Process 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
- Paso del Norte Watershed Council (Sep 2011 - present)

Professional Service

- American Water Works Association (AWWA)
 - Member of the Membrane Process Committee
 - Chair of the Manual M38 Electrodialysis sub-committee (Feb 2012 - present)
 - Member of the Membrane Standards Committee
 - Chair of the Electrodialysis Standard sub-committee (March 2011 – June 2013)
- American Membrane Technology Association (AMTA)
 - Conference Session Moderation
 - (2013 Feb 27) *Membrane Research - 2*, Session W-3D at the AMTA-AWWA Membrane Technology Conference, San Antonio, TX
 - (2012 Mar 01) *Wastewater Processing*, Session TH-3D at the AMTA-AWWA Membrane Technology Conference, Glendale, AZ
- Texas Comm. on Envr. Quality, Drinking Water Advisory Work Group (2012 – present)
- Manuscript Reviewer:
 - Desalination and Water Treatment (Taylor & Francis)
 - Industrial & Engineering Chemistry Research (ACS)
 - Journal of Environmental Engineering (ASCE)
 - Journal of Environmental Management (Elsevier)
 - Journal of Desalination (Elsevier)
 - Journal of Hazardous Materials (Elsevier)
 - Journal of Membrane Science (Elsevier)

- Separation and Purification Technology (Elsevier)
- Separation Science and Technology (Taylor & Francis)
- Water Research (Elsevier)

Public Service

- Teaching, leadership, and service with Paseo Christian Church, El Paso (Fall 2010 – present)
 - Elder (May 2015 – present)
- Board Member, Journey to the Garden (non-profit), El Paso (Nov 2012 - present)
- Teaching and service with Great Hills Baptist Church, Austin, TX (Spring 2005 – Sum 2010)
- Service with Indiana Avenue Baptist Church, Lubbock, TX (Fall 2002 – Spring 2004)