

Curriculum Vitae for Kelly T. Sanders

September 22, 2014

Dr. Kelly Twomey Sanders

Assistant Professor

Sonny Astani Department of Civil and Environmental Engineering

University of Southern California

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EDUCATION

- Ph.D., Civil, Architectural, & Environmental Engineering, 2013, The University of Texas at Austin (Advisor: Professor Michael E. Webber)
Topic: *Strategies on using the energy-water nexus to achieve cross-cutting efficiency gains*
- M.S., Mechanical Engineering, 2010, The University of Texas at Austin (Advisor: Professor Michael E. Webber)
Thesis: *The Energy Water Nexus: An Examination of the Water Quality Impacts of Biofuels*
- B.S., Bioengineering (B.S. Minors: Engineering Mechanics and Kinesiology), 2007, The Pennsylvania State University, University Park, PA

EXPERIENCE

- Assistant Professor of Civil and Environmental Engineering at the University of Southern California, 2014 to present
- Graduate Research Assistant, Cockrell School of Engineering, University of Texas at Austin, 2008 - 2013
- Summer Research Fellow, Congressional Research Service, Washington, D.C., 2009
- Software Engineer and Engineering Intern, REMCOM Inc., State College, PA, 2005 - 2008
- Undergraduate Research Assistant, Neil A. Sharkey, Ph.D, University Park, PA, 2007
- Undergraduate Research Assistant, James A. Pawelczyk, Ph.D, University Park, PA, 2007

HONORS, AWARDS, AND FELLOWSHIPS

- 2012: Recognized in Forbes' Magazine's "30 under 30: Today's disrupters and tomorrow's brightest stars" feature
- 2009-2012: National Science Foundation Graduate Research Fellowship

PAPER AWARDS AND RECOGNITION

- 2014: Article selected to appear in Environmental Research Letters' *monthly highlights* collection (Sanders & Webber, "A comparative analysis of the greenhouse gas emissions intensity of wheat and beef in the United States.")
- 2012: Article selected to appear in Environmental Research Letters' *'Highlights of 2012' collection* (Sanders & Webber, "Evaluating the energy consumed for water use in the United States.")
- 2010: Best Student Paper Award at the 2010 ASME 4th International Conference on Energy Sustainability (Twomey & Webber, "The Cost of Food in a Carbon Constrained Economy")

PEER-REVIEWED JOURNAL ARTICLES

1. **K.T. Sanders**. (2014). "Uncharted Waters? The Future of the Electricity-Water Nexus." *Environmental Science & Technology*, in review.
2. **K.T. Sanders** and M.E. Webber. (2014). "Evaluating the Energy and Greenhouse Gas Emissions Impacts of Shifts in Residential Water Heating in the United States." *Energy*, in press.
3. Y.R. Glazer, J.B. Kjellsson, **K.T. Sanders**, and M.E. Webber. (2014). "Using Flared Gas From Shale Production For On-Site Hydraulic Fracturing Wastewater Treatment." *Environmental Science & Technology Letters*, 1(7), pp 300–304.
4. A. Pacsi, **K.T. Sanders**, M.E. Webber, and D.T. Allen. (2014). "The spatial and temporal impacts on water consumption in Texas from rapid shale gas development and use." *ACS Sustainable Chemistry & Engineering*, 2(8), pp 2028–2035.
5. **K.T. Sanders**, Michael F. Blackhurst, Carey W. King, and M.E. Webber. (2014). "The Impact of Water Use Fees on Water Used for Cooling Thermoelectric Power Generators." *Environmental Science & Technology*, 48 (12), 7128–7134.
6. **K.T. Sanders** and M.E. Webber. (2014). "A comparative analysis of the greenhouse gas emissions intensity of wheat and beef in the United States." *Environmental Research Letters*, 9(14), 1-9.
7. C.W. King, A.S. Stillwell, **K.T. Sanders**, and Michael E. Webber. (2013). "Coherence Between Water and Energy Policies." *Natural Resources Journal*, 53(1), 117-215.
8. **K.T. Sanders**, C.W. King, A.S. Stillwell, and M.E. Webber. (2013). "Clean Energy and Water: Assessment of Mexico for Improved Water Services and Renewable Energy." *Journal of Environment, Development, and Sustainability*, 14, 1-19.
9. **K.T. Sanders** and M.E. Webber. (2012). "Evaluating the energy consumed for water use in the United States." *Environmental Research Letters*, 7(3), 1-11.
10. A.S. Stillwell, **K.M. Twomey**, R. Osborne, D.M. Greene, D.W. Pedersen, and M.E. Webber. (2012). "An Integrated Energy, Carbon, Water, and Economic Analysis of Reclaimed Water Use in Urban Settings: A Case Study of Austin, Texas." *Journal of Water Reuse and Desalination*, 1(4), 208-223.
11. **K.M. Twomey**, A.S. Stillwell, and M.E. Webber. (2010). "The unintended energy impacts of increased nitrate contamination from biofuels production." *Journal of Environmental Monitoring*, 12(1), 218-224.

PEER-REVIEWED CONFERENCE PROCEEDINGS

1. R.A.M. Peer* and **K.T. Sanders**. (2013). "A Quantitative Assessment of Temporally-Resolved Environmental Trade-offs in the Electric Reliability Council of Texas." *Proceedings of the World Environmental & Water Resources Congress 2015*, May 17-21, 2015, Austin, TX, USA.
2. **K.T. Sanders**. (2014). "Utilizing a unit commitment and dispatch model to temporally resolve water use data in the Western United States' power sector." *Proceedings of the ASCE International Conference on Sustainable Infrastructure 2014*. November 6-8, 2014, Long Beach, California, USA. **(Presenting Author)**
3. **K.T. Sanders**, A.K. Townsend, M. Blackhurst, and M.E. Webber. (2013). "Evaluating the role of water prices in reducing water use in the power sector: A case study of ERCOT." *Proceedings of the World Environmental & Water Resources Congress 2013*, May 19-23, 2013, Cincinnati, OH, USA. **(Presenting Author)**
4. **K.M. Twomey**, S. Conover, and M.E. Webber. (2012). "Reducing Residential and Commercial Energy Consumption in the US: The Role of Water Heaters." *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23-26, 2012, San Diego, CA, USA. **(Presenting Author)**
5. **K.M. Twomey** and M.E. Webber. (2011). "Evaluating The Carbon Embedded In The US Public Water Supply," *Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11-17, 2011, Denver, CO, USA. **(Presenting Author)**
6. **K.M. Twomey** and M.E. Webber. (2011). "Evaluating the Energy Intensity of the US Public Water System." *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7-10, 2011, Washington, DC, USA. **(Presenting Author)**
7. A. S. Stillwell, **K.M. Twomey**, M.E. Webber, R. Osborne, D.M. Greene, D.W. Pedersen. (2011). "An Integrated Energy, Carbon, and Economic Analysis of Reclaimed Water Use in Austin, Texas." *Proceedings of the 2011 World Environmental and Water Resources Congress*, May 22-26, 2011, Palm Springs, CA, USA. **(Presenting Author)**
8. **K.M. Twomey** and M.E. Webber. (2010). "Evaluating the Cost of Food in a Carbon Constrained Economy." *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17-22, 2010, Phoenix, AZ, USA. **(Presenting Author) [Best Student Paper Award]**
9. **K.M. Twomey**, A.S. Stillwell, and M.E. Webber. (2009). "The Water Quality and Energy Impacts of Biofuels." *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19-23, 2009, San Francisco, CA, USA. **(Presenting Author)**
10. R. Belmonte, S.A. Fast, K. Keefe, and **K.M. Twomey**. (2007). "Clustering Analysis of Refractive Index Profiles: Toward a Ducting Climatology." *Proceedings of the 2007 IEEE Radar Conference*, April 17-20, 2007, Waltham, MA, USA.

*Student Advised by K.T. Sanders

BOOK CHAPTERS

1. **Sanders, K.T.** and King, C.W. (2014) Integration of Water and Energy Sustainability In D. Chen (Ed.), *Sustainable Water Management and Technologies*, CRC Press/Taylor & Francis.

TECHNICAL REPORTS AND WHITE PAPERS

1. F.C. Beach, Joshua D. Rhodes, **K.T. Sanders**, and M.E. Webber. (2013). "An Analysis of the Potential for Expanded Use of Natural Gas in the U.S. Residential Sector." The Cynthia and George Mitchell Foundation, Austin, TX, USA.
2. C.W. King, **K.M. Twomey**, A.S. Stillwell, and M.E. Webber. (2011). "Clean Energy and Water: Assessment of Mexico for improved water services with renewable energy." International Development Research Centre, Ottawa, Ontario, Canada.
3. C.W. King, A.S. Stillwell, **K.M. Twomey**, and M.E. Webber. (2010). "Coherence Between Water and Energy Policies." Organisation for Economic Co-operation and Development. ENV/EPOC/GSP(2010)21, Paris, France.
4. N.T. Carter, **K.M. Twomey**, and A.S. Stillwell. (2010). "Energy's Water Demand: Trends Vulnerabilities, and Management," The Congressional Research Service, Washington, D.C., USA.
5. C.W. King, A.S. Stillwell, **K.M. Twomey**, and M.E. Webber. (2010). "A Survey of the Relationship of Water and Biofuels." prepared for ExxonMobil's Division of Corporate Strategic Research, Clinton, NJ, USA.

TECHNICAL COMMENTARY AND COLUMNS

1. **K.T. Sanders** and M.E. Webber. (2013). "Managing Water in an Energy-Constrained World," EARTH Magazine, published by the American Geosciences Institute, 58(7), July 2013, pg. 38-45.
2. **K.T. Sanders** and M.E. Webber. (2013). "Quantifying the Energy Embedded in the US Water System," Global Water Forum, published by the United Nations Educational, Scientific and Cultural Organization, January 7, 2013.
3. **K.M. Twomey**, C.M. Beal, C.W. King, and M.E. Webber. (2012). "Biofuels: An Energy and Water Conundrum," World Energy Monitor, 3(3), March 2012.
4. M.A. Sounny-Slitine, J.A. Alexander, **K.M. Twomey**, J. O'Rourke, P. Ward, E. Hershaw, S. Moorhead. (2012). "Adaptation to Climate Change: A prospective collaboration between the UT at Austin and Latin American institutions in Flood Control." Portal: LLILAS Annual Review, Teresa Lozano Long Institute of Latin American Studies, 6, pg. 26-29.

INVITED TECHNICAL PANEL PARTICIPANT

1. "A call for better data collection and stress metrics for integrated resource management." 2014 ASME's International Mechanical Engineering Congress, Montreal, Canada. (**Panel Moderator and Organizer**)

2. "What are the Climate Change Relationships with the Energy-Water Nexus and with Extreme Weather Events?" The Western Electricity Coordinating Council's Scenario Planning Steering Group Meeting, October 14, 2014, Salt Lake City, UT.
3. "Energy and Water: Essential, Interdependent Commodities and Strategies." 2013 IEEE Power & Energy Society General Meeting, July 26, 2013, Vancouver, Canada. **(Panel Participant)**
4. "Energy-Water Nexus." Clean Energy and Water International Workshop sponsored by the IDRC, September 23, 2011, Porto de Galinhas, Recife, Brazil. **(Panel Moderator and Organizer)**
5. "Energy-Water Nexus." The Texas-Israel Cleanovation Conference, September 14, 2011, Houston, TX, USA. **(Panel Participant)**
6. "The Electricity-Water Nexus in Texas." US Department of Energy Gulf Coast Clean Energy Regional Applications Center's Roadmap Workshop, November 19, 2009, Austin, TX, USA. **(Panel Participant)**

INVITED TECHNICAL TALKS

1. "Water Management Considerations for Hydraulic Fracturing in the Marcellus Shale Region." Oil, Gas, and Groundwater in California: Wise Production and Protection of Our Valuable Natural Resources, February 18, 2015, Long Beach, CA.
2. "The Energy-Water Nexus." Invited seminar at Stanford University, October 29, 2014, Stanford, CA.
3. "The Energy-Water Nexus." Briefing to the Chevron Fellows, October 28, 2014, Los Angeles, CA.
4. "Adapting to an Increasingly Water Scarce Future: Best Practices in the US." King Abdullah Petroleum Studies and Research Center's Energy for Water Workshop, September 15, 2014, Paris, France.
5. "The Energy-Water Nexus." USC/Chevron Frontiers of Energy Resources Summer Camp 2014, June 25, 2014, Los Angeles, CA, USA.
6. "The Power-Water Nexus in the West." Environmental Engineering Friday Seminar at University of California at Irvine, February 21, 2014, Irvine, CA, USA.
7. "The Energy-Water Nexus." Environmental Law Section Meeting of the Austin Bar Association, December 5, 2013, Austin, TX, USA.
8. "Renewable Energy's Role in Addressing Our Water Woes." Texas Renewable Energy Industries Association Annual Conference, November 12, 2013, San Antonio, TX, USA.
9. "The Energy-Water Nexus." Invited lecturer for CE 587: Smart Infrastructures, University of Southern California, April 23, 2013, via webcast.
10. "The role of solid waste management in energy and water conservation." Invited lecturer for GEO 4350: Solid Waste Planning and Management, Texas State University, January 29, 2013, San Marcos, TX, USA.
11. "The water-energy nexus and its relevance to drought." Drought Technology Steering Committee Meeting, December 10, 2012, via webcast.
12. "Quantifying the energy embedded in the US water system." Water-Energy Research Work Group Meeting, November 30, 2012, via webcast.

13. "The Nexus of Water and Energy." Total Energy USA Conference, November 28, 2012, Houston, TX, USA.
14. "The Energy-Water Nexus." Clean EnergyY-Factor: Women in Clean Energy, Hosted by the Austin Community College's Renewable Energy Student Association, April 11, 2012, Austin, TX, USA.
15. "The Energy-Water Nexus." Clean Energy Education for Veterans, Hosted by the Austin Community College's Renewable Energy Student Association, March 23, 2012, Austin, TX, USA.
16. "Water Quality Considerations in the Water for Energy Evaluation Framework." 6th World Water Forum: Key Priority 2.3 Harmonize Energy and Water, Target 4: Evaluation Framework for Energy and Water, September 30, 2011, Marseille, France.
17. "The Energy-Water Nexus in Mexico." Clean Energy and Water International Workshop sponsored by the IDRC, September 24, 2011, Porto de Galinhas, Recife, Brazil.
18. "The Energy-Water Nexus." Clean Energy and Water International Workshop sponsored by the IDRC, September 23, 2011, Porto de Galinhas, Recife, Brazil.
19. "Young Scientist's Event for Energy-Water Researchers." Union of Concerned Scientist's Webinar, June 9, 2011, via webcast.
20. "The Environmental Impacts of Renewable Fuel Production." Osher Lifelong Learning Institute's UT NOVA program, November 17, 2010, Austin, TX, USA.
21. "The Water-Energy Nexus in Texas." 2010 American Planning Association Meeting, October 7, 2010, San Antonio, TX, USA.
22. "The Energy-Water Nexus and its Impact on America's Future." 2010 American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Winter Conference, January 23-27, 2010, Orlando, FL, USA.
23. "Introduction to Renewable Energy." Lecture to Garza High School, January 25, 2010, Austin, TX, USA.
24. "The Trade-offs Associated with Renewable Fuel Production." Mad Science Engineering Day hosted by North East Independent School District, November 13, 2009, San Antonio, TX, USA.
25. "Introduction to Energy." Texas Assessment of Knowledge and Skills Science Camp hosted by Round Rock High School, April 27, 2009, Round Rock, TX, USA.

CONTRIBUTED PAPERS, POSTERS AND PRESENTATIONS

1. **K.T. Sanders** (2014). "The Water-Power Nexus: Is the Power Sector an Untapped Opportunity for Water Conservation?" *Energy, Utility, & Environment Conference*, February 3-5, 2014, Phoenix, AZ, USA. **(Presenting Author)**
2. Y.R. Glazer, J.B. Kjellsson, **K.T. Sanders**, M.E. Webber. (2013). "A Cost-Benefit and Environmental Impact Analysis of Using Distributed Energy Sources to Treat Hydraulic Fracturing Wastewater in Texas." *American Institute of Chemical Engineers' 3rd International Congress on Sustainability Science & Engineering*, August 11-15, 2013, Cincinnati, OH, USA.
3. Y.R. Glazer, J.B. Kjellsson, **K.T. Sanders**, M.E. Webber. (2013). "A Cost-Benefit and Environmental Impact Analysis of Implementing Distributed Energy Sources to Treat

Hydraulic Fracturing Wastewater in Texas' Permian Basin." *Unconventional Oil & Gas Water Management Forum*, July 9-11, 2013, Houston, TX, USA.

4. **K.T. Sanders.** (2013). "Quantifying the energy embedded in water." *Webber Energy Group Research Symposium*, January 22, 2012, Austin, TX, USA. **(Presenter)**
5. **K.M. Twomey** and M.E. Webber. (2012). "Evaluating Regional Variations in the Energy Intensity of US Water Systems." *ASME International Mechanical Engineering Congress and Exposition*, November 9-15, 2012, Houston, TX, USA. **(Presenting Author)**
6. **K.M. Twomey**, A.S. Stillwell, C.W. King, and M.E. Webber. (2012). "Clean Energy and Water: Assessment of Mexico for Improved Water Services with Renewable Energy." *ASME International Mechanical Engineering Congress and Exposition*, November 9-15, 2012, Houston, TX, USA. **(Presenting Author)**
7. **K.M. Twomey** and M.E. Webber. (2012). "Evaluating the Energy Intensity of the US Water System." *International Water Association's World Congress on Water, Climate, and Energy 2012*, May 13-18, 2012, Dublin, Ireland. **(Presenting Author)**
8. **K.M. Twomey**, M. Clayton, C.W. King, A.S. Stillwell, and M.E. Webber. (2012). "The energy-water nexus: future opportunities and challenges." *Proceedings of Planet Under Pressure*, March 26-29, 2012, London, England.
9. **K.M. Twomey.** (2012). "The energy embedded in water." *Webber Energy Group Research Symposium*, January 12, 2012, Austin, TX, USA. **(Presenter)**
10. A.S. Stillwell, **K.M. Twomey**, M.E. Webber, R. Osborne, D.M. Greene and D.W. Pedersen. (2011). "An Integrated Energy, Carbon, and Economic Analysis of Reclaimed Water Use in Austin, Texas." *ASME International Mechanical Engineering Congress & Exposition*, November 11-17, 2011, Denver, CO, USA.
11. **K.M. Twomey.** (2012). "Reducing energy and carbon through water efficiency." *Webber Energy Group Research Symposium*, January 22, 2012, Austin, TX, USA. **(Presenter)**
12. **K.M. Twomey** and M.E. Webber. (2010). "The Unintended Energy Impacts of Increased Nitrate Contamination from Biofuels Production." *Ground Water Protection Council's Water Energy in Changing Climates*, September 26-29, 2010, Pittsburgh, PA, USA. **(Presenting Author)**

COURSES TAUGHT AT UNIVERSITY OF SOUTHERN CALIFORNIA

- **Graduate level course, ENE 505: Energy and the Environment in Spring 2014:** A multidisciplinary course intended to give graduate students an introduction to quantitative concepts related to energy and the environment. The course is lecture-oriented and provides students with a working knowledge of the critical issues facing energy extraction, cultivation, transformation, transportation, consumption, disposal, and environmental externalities. Topics such as energy history and current events will be incorporated throughout.

Semester/ Course	Class Size	Instructor Rating		Course Rating	
		Mean	Median	Mean	Median
SP2014 ENE505 Energy and the Environment	24	4.7	5.0	4.5	5.0

TEACHING ASSISTANTSHIPS AT THE UNIVERSITY OF TEXAS AT AUSTIN

- Teaching assistant to Professor Michael E. Webber for graduate level course, *ME 397: Energy, Technology and Policy* in Spring 2013.
- Teaching assistant to Professors Michael E. Webber, David T. Allen, and Thomas Edgar in *UGS 303: Energy, Environment and Society* in Spring 2009.
- Teaching assistant to Professors Michael Webber and Philip Schmidt in *UGS 302: The Engineered World – Energy* in Fall 2008.

STUDENT SUPERVISION

Ph.D. Supervisions in Progress:

Primary Advisor:

- Rebecca Peer, Civil and Environmental Engineering, Topic: Assessing the Environmental Tradeoffs of Power Generation within the Western Electricity Coordinating Council

Committee Member:

- Arian Saffari, Civil and Environmental Engineering
- Nima Jabbari, Civil and Environmental Engineering/Chemical Engineering and Material Science

M.S. Directed Research Students:

- Tong Wang (Fall 2014), Mechanical Engineering, Topic: Environmental Emissions Controls on Coal-fired Power Plants
- Olivia Taldone (Fall 2014), Civil and Environmental Engineering, Topic: Evaluating the Environmental Impacts of Electricity Production
- Christopher Lopez (Summer 2014), Civil and Environmental Engineering, Topic: Evaluating the Freshwater Impacts of Phasing Out Once-through Cooled Power Plants in California
- David Park (Summer 2014), Mechanical Engineering, Topic: Assessing the Impact of Federal Energy Policy Changes on the Water Required for Power Plant Cooling
- Yusong Li (Summer 2014), Civil and Environmental Engineering, Topic: Creating Post-processing Platforms to Output Results Using Python

USC's Summer Undergraduate Research Experience Students:

- Peter Storm (Summer/Fall 2014), Oklahoma State University, Topic: Evaluating the Freshwater Impacts of Phasing Out Once-through Cooled Power Plants in California

Undergraduate Research Assistants:

- Jeremy Molayem (Summer/Fall 2014), Civil and Environmental Engineering, Topic: Identifying Water and Energy Conservation Strategies for the USC Campus

High School Research Assistants:

- Christopher Koo (Summer 2014), Pasadena High School, Topic: EIA Water for Power Plant Data Collection

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES

- American Society of Civil Engineers (ASCE)
- American Society of Mechanical Engineers (ASME)
- American Association for the Advancement of Science (AAAS)
- Future Influencers, A community initiated by Siemens

PROFESSIONAL, INDUSTRIAL AND GOVERNMENTAL COMMITTEE PARTICIPATION:

- Editorial Positions
 - Section Editor, Current Sustainable/Renewable Energy Reports, *Springer (2013-2014)*
- Conference Topic/Track Organization
 - Session Organizer for 2015 ASCE's Environmental and Water Resources Institute's Energy-Water-Food Track in Austin, TX.
 - Topical Organizer for three Energy-Water Nexus tracks at the 2014 ASME's International Mechanical Engineering Congress in Montreal, Canada.
 - Session Chair for the Water Management Track of the 2014 Energy, Utility and Environment Conference in Phoenix, AZ.
- Professional Committee Membership
 - Member, Environmental and Water Resources Institute's Systems Committee, American Society of Civil Engineers (2014 - present)
 - Member, Environmental and Water Resources Institute's Sustainability Committee, American Society of Civil Engineers (2013 - present)
 - Member, Energy-Water Nexus Interdisciplinary Council, American Society of Mechanical Engineers (2011 - present)
- Reviewing:
 - *Manuscript Reviewer for Peer Reviewed Journals*: Environmental Science & Technology, AIChE Journal, Clean Technologies and Environmental Policy
 - *Manuscript Reviewer for Peer Reviewed Conferences*: 2013 & 2014 ASME International Mechanical Engineering Congress, 2014 ASCE Environmental and Water Resources Institute Conference
 - *Proposal Reviewer for Federal Agencies*: National Science Foundation (2014, Environmental Sustainability Program)

PROFESSIONAL OUTREACH ACTIVITIES (INVITED)

- Invited Speaker at NSF-IGERT Meeting at UT-Austin, November 23, 2014, Austin, TX.
- Invited Participant at the 2014 Aspen Institute- Duke University's Nicholas Institute for Environmental Policy Solution Water Forum, May 28-31, 2014, Aspen, CO.
- Invited Participant at Stanford University's Bill Lane Center for the American West Uncommon Dialogue US- Mexico Transboundary Water Issues Workshop, June 3-5, 2014, Stanford, CA.
- Invited Participant at MIT's 2012 Clean Energy Education & Empowerment (C3E) Initiative Symposium, September 19-20, 2013, Cambridge, MA.

- Facilitator at the 2014 Research Workshop on the Energy Water Nexus sponsored by the National Science Foundation, June 13-14, 2014, Washington, DC.
- Invited participant at the EFRI-RESIN: Workshop on Energy, Transportation, and Water Infrastructure: Policy and Social Perspectives, July 17-19, 2013, Ames, Iowa.
- Invited Participant at Siemen’s Future Influencers-Harvard Business Review Global Meeting, May 27-29, 2013, New York, NY.
- Invited Participant at the Building Future Faculty Program at North Carolina State University, April 2-5, 2013, Raleigh, NC.
- Invited Participant at the 6th World Water Forum: Key Priority 2.3 Harmonize Energy and Water, September 29-30, 2011.
- Invited Participant at Managing Water-Related Energy Use in Cities: Opportunities, Needs and Barriers, April 29, 2011, Berkeley, CA.

INSTITUTIONAL SERVICE AT THE UNIVERSITY OF SOUTHERN CALIFORNIA

- Faculty Fellow in the International Residential Community at Parkside (2014- Present)
- Explore USC (2014 Dates: 3/3, 3/6, 4/7, 4/10, 4/17, 4/21)
- 2014 Civil and Environmental Student Recruitment and Scholarship Committee
- 2014 Civil and Environmental Awards Committee
- 2014 Civil and Environmental Website Committee
- 2014 Civil and Environmental Visitor Request Committee
- 2014 Civil and Environmental Expiring Faculty Appointments Committee
- 2014 Environmental Engineering Curriculum Committee

MEDIA APPEARANCES FEATURING SANDERS’ RESEARCH AND INTERVIEWS

- NPR’s State Impact Texas, “How Wasted Gas From Drilling Could Save Millions of Gallons of Texas Water.” June 18, 2014. (regarding publication “Potential for Using Energy from Flared Gas for On-Site Hydraulic Fracturing Wastewater Treatment in Texas.”)
- *Forbes*, Selected to appear in *Forbes’ Magazine’s “30 under 30: Today’s disrupters and tomorrow’s brightest stars”* feature. Published December 2012.
- *TechNewsDaily*, “How Droughts Can Cause Power Outages.” F. Diep, November 16, 2012. (Sanders interviewed for story.)
- *US Water Alliance*, “Energy/Water Nexus.” November 13, 2012. (regarding publication “Evaluating the energy consumed for water use in the United States.”)
- *Wichita Falls’ Times Record News*, “Report links energy consumption, water use.” October 31, 2012. (regarding publication “Evaluating the energy consumed for water use in the United States.”)
- *Energy Guardian*, “Study finds water uses more energy than lighting.” October 31, 2012. (regarding publication “Evaluating the energy intensity of water in the United States”)
- *Consumer Energy Report*, “Water Delivery Accounts for 12.6 Percent of U.S. Energy Consumption: Report.” October 31, 2012. (regarding publication “Evaluating the energy consumed for water use in the United States.”)

- *Western Sustainability and Pollution Prevention Project*, "Water takes more energy than lighting." October 31, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Washington Post*, "13% of U.S.'s Energy Goes to Collect, Prepare Water, Study Shows." R. Hackley, October 30, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Bloomberg and Bloomberg Businessweek*, "13% of U.S.'s Energy Goes to Collect, Prepare Water, Study Shows." R. Hackley, October 30, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Houston Chronicle and San Antonio Express*, "Study: Water takes more electricity than lighting." M. Tresaugue, October 30, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Water World*, "New UT report sheds light on nation's water-energy security goals." October 30, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Texas Energy Report*, "Energy Burned for Water Uses Higher Than Some Realize." P. Hughs, October 30, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *The Chairman's Block*, "Energy use for water nearly 13%." October 30, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Forbes*, "Study: The Best Way To Conserve Energy Is To Conserve Water." C. Helman, October 17, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Environmental Leader: Environmental & Energy Management News*, "Water 'Directly Responsible' for 12.6% of US Energy Use." October 4, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Scientific American: Plugged In*, "UT Austin: Over 12 percent of all U.S. energy consumption is directly related to water." D.M. Wogan, October 2, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Environmental Research Web*, "Can using water wisely trump better lighting?" L. Kalaugher, IOP Publishing, September 25, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Danish Broadcasting Corporation*, Interview with Lasse Engelbrecht Jensen, 2012. (regarding publication "Evaluating the energy consumed for water use in the United States.")
- *Huffingtonpost Green Blog*, "Who Says Oil and Water Don't Mix?" J. Lauria, September 8, 2011. (regarding Sanders' panel talk at the 2010 American Planning Association Meeting)
- *EU's Science for Environmental Policy*, "Unintended energy impact from bioethanol production." European Union's Directorate-General of the Environment, March 4, 2012. (regarding publication "The unintended energy impacts of increased nitrate contamination from biofuels production.")

LEGISLATIVE AND GOVERNMENTAL TESTIMONY *(given by Webber based on Sanders' research)*

- "Trends and Policy Issues For The Nexus of Energy and Water," M.E. Webber, Senate Energy & Natural Resources Committee Hearing, U.S. Congress, March 31, 2011.
- "The Nexus of Energy & Water," M.E. Webber, LCRA Board of Directors, Austin, TX, February 16, 2010.
- "The Nexus of Energy & Water," M.E. Webber, Hearing of the Great Lakes Commission, Erie, PA, September 30, 2009.
- "Trends and Policy Issues For The Nexus of Energy and Water," M.E. Webber, Senate Energy & Natural Resources Committee Hearing, U.S. Congress, March 10, 2009.

LEGISLATIVE AND GOVERNMENTAL BRIEFINGS *(given by Webber based on Sanders' research)*

- "The Nexus of Energy & Water," M.E. Webber, ACS Briefings for Congress (House Science and Technology Committee), Washington, DC, December 8, 2009.
- "Trends and Policy Issues for The Nexus of Energy and Water," M.E. Webber, Senate Energy & Natural Resources Committee staffer briefing, U.S. Congress, March 6, 2009.

CONSULTING

- International Research and Development Centre, Ottawa, Canada, February-December 2011
- Organization for Economic Cooperation and Development (OECD), Paris, France, May-December 2010
- ExxonMobil Corporate Strategic Research, Clinton, NJ, March-June 2010