Curriculum Vitae for Kelly T. Sanders

February 2022

Dr. Kelly Twomey Sanders

Associate Professor and Dr. Teh Fu Yen Early Career Chair
Sonny Astani Department of Civil and Environmental Engineering
University of Southern California
Kaprielian Hall, Room 200b
3620 S. Vermont Avenue
Los Angeles, CA 90089-2531
Email: ktsanders@usc.edu, Phone: (717) 329-5392

EDUCATION

- Ph.D., Civil, Architectural, & Environmental Engineering, 2013,
  The University of Texas at Austin (Advisor: Professor Michael E. Webber)
  Dissertation: *Strategies on using the energy-water nexus to achieve cross-cutting efficiency gains*
- M.S., Mechanical Engineering, 2010, The U. 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

- Associate Professor of Civil and Environmental Engineering at the University of Southern California with a courtesy Appointment in Spatial Sciences at USC, 2020 - present
- Assistant Professor of Civil and Environmental Engineering at the University of Southern California (USC) with a courtesy Appointment in Spatial Sciences at USC, 2014 - 2020
- Graduate Research Assistant, Cockrell School of Engineering, U. 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

HONORS, AWARDS, AND FELLOWSHIPS

- 2020: Recipient of the Orange County Engineering Council's *Outstanding Engineering Merit Award*
- 2019: National Science Foundation Early CAREER Award Recipient (2019-2024)
- 2019: USC Women in Science and Engineering Hanna Reisler Mentorship Award
- 2017, 2019: Invited to participate in the 2017 *NAE Frontiers of Engineering* and 2019 *EU-US Frontiers of Engineering* symposiums
- 2018: Invited as one of seven US Delegates (including NAS President, Marcia McNutt) to attend the first *Chinese Academy of Sciences - U.S. National Academy of Sciences Symposium on S&T Innovation for Sustainable Development Goals* in Beijing, China.
- 2017: Appointed as the Dr. Teh Fu Yen Early Career Endowed Chair
- 2016: Featured in MIT Technology Review's *35 Innovators Under 35* (pictured on cover)
- 2016: Recipient of the Orange County Engineering Council's *Outstanding Educator Award*

- 2016: Recipient of the Society of Petroleum Engineers' *Regional Health, Safety, Security, Environment & Social Responsibility Award*
- 2012: Featured in Forbes Magazine's *30 under 30 in Energy* feature
- 2009-2012: Recipient of a National Science Foundation Graduate Research Fellowship

RESEARCH-RELATED ACTIVITIES

PAPER AWARDS AND RECOGNITIONS

- 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 PUBLICATIONS

Students Advised by K.T. Sanders

2022

1. S. Mayes* and **K.T. Sanders** (2022). Quantifying the electricity, CO2 emissions, and economic tradeoffs of precooling strategies for a single-family home in Southern California. *Environmental Research: Infrastructure and Sustainability*, in press.
2. J. Ko, H. Schlaerth, A. Bruce, **K.T. Sander**s, and G. Ban-Weiss (2022). Measuring the impacts of a real-world neighborhood-scale cool pavement deployment on albedo and temperatures in Los Angeles. *Environmental Research Letters*, in press.
   DOI: 10.1088/1748-9326/ac58a8
3. A. Jin*, and **K.T. Sanders** (2022). Analyzing Changes to U.S Municipal Heat Response Plans During the COVID-19 Pandemic, *Environmental Science & Policy*, 128, 347-358.
   DOI: 10.1016/j.envsci.2021.11.022

2021

4. X. Wei*, **K.T. Sanders**, and A.E. Childress. (2021). Reclaiming wastewater with increasing salinity for potable water reuse: Water recovery and energy consumption during reverse osmosis desalination, *Desalination, 520, 115316*.
   DOI: 10.1016/j.desal.2021.115316
5. A. Zohrabian* and **K.T. Sanders** (2021). Emitting Less Without Curbing Usage? Exploring Greenhouse Gas Mitigation Strategies in the Water Industry Through Load Shifting. *Applied Energy*, 298, 117194
   DOI: 10.1016/j.apenergy.2021.117194
6. A. Zohrabian*, S.L. Plata, D. Kim*, A.E. Childress, **K.T. Sanders** (2021). Leveraging the water-energy nexus to derive benefits for the electric grid through demand-side management in the water supply and wastewater sectors. *WIREs Wiley Interdisciplinary Reviews: Water*, 8(3).
   DOI: 10.1002/wat2.1510
7. M.V. Chester, B.S. Underwood, B. Allenby, M. Garcia, C. Samaras, S. Markolf, **K.T. Sanders**, B. Preston, and T. Miller. (2021). Infrastructure Resilience to Navigate Increasingly Uncertain and Complex Conditions in the Anthropocene, *NPJ Urban Sustainability (Inaugural Issue)*, 1(1), 1-6.
   DOI: 10.1038/s42949-021-00016-y

2020

8. A. Zohrabian* and **K.T. Sanders** (2020). The Energy Trade-offs of Transitioning to a Locally Sourced Water Supply Portfolio in the City of Los Angeles. *Energies*, 13 (21), 5589.
   DOI: 10.3390/en13215589
9. E. Grubert, E. Rogers*, and **K.T. Sanders**. (2020). Consistent Terminology and Reporting is Needed to Describe Water Quantity Use. *Journal of Water Resources Planning and Management*, 146 (8), 04020064.
   DOI: 10.1061/(ASCE)WR.1943-5452.0001241
10. M. Chen*, G. Ban-Weiss, and **K.T. Sanders.** (2020). Utilizing smart-meter data to project impacts of urban warming on residential electricity use for vulnerable populations in Southern California, *Environmental Research Letters*, 15 (6), 064001.
    DOI: 10.1088/1748-9326/ab6fbe
11. B. Tarroja, R.A.M. Peer*, **K.T. Sanders**, and E. Grubert. (2020). How do non-carbon priorities affect zero-carbon electricity systems? A case study of freshwater consumption and cost for Senate Bill 100 compliance in California, *Applied Energy*, 265, 114824.
    DOI: 10.1016/j.apenergy.2020.114824
12. M. Meng*, E.A. Grubert, R.A.M. Peer*, and **K.T. Sanders**. (2020). Spatially allocating lifecycle water use for US coal-fired electricity across producers, generators, and consumers, *Energy Technology*, 1901497
    DOI: 10.1002/ente.201901497
13. X. Wei*; Z.M. Binger, A. Achilli, **K.T. Sanders**, and A.E. Childress. (2020). A Modeling Framework to Evaluate Blending of Seawater and Treated Wastewater Streams for Synergistic Desalination and Potable Reuse, *Water Research,* 170, 115282.
    DOI: 10.1016/j.watres.2019.115282
14. Erik Porse, K.B. Mika, A. Escriva-Bou, E. Fournier, **K.T. Sanders**, E. Spang, J. Stokes-Draut, F. Federico, M. Gold, and S. Pincetl. (2020). Energy use for urban water management by utilities and households in Los Angeles, *Environmental Research Communications*, 2 (1), 015003.
    DOI: 10.1088/2515-7620/ab5e20

2019

15. M. Chen*, **K.T. Sanders**, and G Ban-Weiss. (2019). A New Method Utilizing Smart Meter Data for Identifying the Existence of Air Conditioning in Residential Homes. *Environmental Research Letters*, 14 (9), 094004. (2018 IF: 6.19)
    DOI: 10.1088/1748-9326/ab35a8.
16. M. Meng* and **K.T. Sanders**. (2019). A Data-Driven Approach to Investigating the Impacts of Air Temperature on the Efficiencies of Coal and Natural Gas Generators. *Applied Energy*, 253. 113486.
    DOI: 10.1016/j.apenergy.2019.113486.
17. R.A.M. Peer*, E. Grubert, and **K.T. Sanders**. (2019). A Regional Assessment of the Water Embedded in the US Electricity System. *Environmental Research Letters,* 14(8), 084014.
    DOI: 10.1088/1748-9326/ab2daa
18. S.J. Kenway, K.L. Lam, J Stokes-Draut, **K.T. Sanders**, A. Binks, J. Bors, B. Head, G. Olsson, J.E. McMahon. (2019). Water-related energy: Why clearer estimates, language, and policy are needed. *Journal of Cleaner Production,* 236, 117502.
    DOI: 10.1016/j.jclepro.2019.06.333

2018

19. M. Chen*, G. Ban-Weiss, and **K.T. Sanders**. (2018). The role of household level electricity data to improve estimates of the impacts of climate on building electricity use. *Energy and Buildings*, *180*, 146-158.
    DOI: 10.1016/j.enbuild.2018.09.012
20. A. Zohrabian* and **K.T. Sanders**. (2018). Assessing the impact of drought on the emissions- and water-intensity of California's transitioning power sector. *Energy Policy*, *123*, 461-470.
    DOI: 10.1016/j.enpol.2018.09.014
21. E. Grubert and **K.T. Sanders**. (2018). Water use in the US energy system: A national assessment and unit process inventory of water consumption and withdrawals. *Environmental Science & Technology*, *52*(11), 6695–6703.
    DOI: 10.1021/acs.est.8b00139
22. R.A.M. Peer* and **K.T. Sanders**. (2018). Water for Power: Evaluating recent changes in the power sector and associated impacts on water usage across the US. *Applied Energy*, *210*, 613-622.
    DOI: 10.1016/j.apenergy.2017.08.021

2017

23. G. Alhanaee, **K.T. Sanders**, and N. Meshkati. (2017). Rising Temperatures, Rising Risks: The Food-Energy-Water Nexus in the Persian Gulf. *Environmental Science & Technology*, *49*(1), 51-66.
    DOI: 10.1021/acs.est.7b00688 [Note: ES&T Commentary]
24. C. Zhang, L. Zhong, S. Liang, **K.T. Sanders**, J. Wang, and M. Xu. (2017). Virtual water and virtual scarce water transfer embodied in inter-provincial electricity transmission in China. *Applied Energy, 187*(1), 438–448.
    DOI: 10.1016/j.apenergy.2016.11.052

2016

25. R.A.M. Peer* and **K.T. Sanders**. (2016). Characterizing Cooling Water Source and Usage Patterns Across US Thermal Power Plants: A Comprehensive Assessment of Self-Reported Cooling Water Data. *Environmental Research Letters, 11*(12), 124030.
    DOI: 10.1088/1748-9326/aa51d8
26. M. Meng*, M. Chen* and **K.T. Sanders**. (2016). Evaluating the feasibility of using produced water from oil and natural gas production to address water scarcity in California's Central Valley. *Sustainability, 8*(12), 1318.
    DOI:10.3390/su8121318
27. R.A.M. Peer*, J.B. Garrison, C. Timms* and **K.T. Sanders**. (2016). A Spatially and Temporally Resolved Analysis of Environmental Trade-Offs in Electricity Generation. *Environmental Science & Technology*, *50*(8), 4537-4545.
    DOI: 10.1021/acs.est.5b05419
28. **K.T. Sanders** and S.F. Masri. (2016). The Energy-Water-Agriculture Nexus: The Past, Present and Future of Holistic Resource Management. *Journal of Cleaner Production, 117*, 73–88.
    DOI: 10.1016/j.jclepro.2016.01.034
29. **K.T. Sanders**. (2016). The Energy Tradeoffs of Adapting to an Increasingly Water Scarce Future: A Case Study of Los Angeles. *International Journal of Water Resources Development, 32*(3), 362-378. DOI: 10.1021/ez500129a

2015

30. **K.T. Sanders** and M.E. Webber. (2015). Evaluating the Energy and Greenhouse Gas Emissions Impacts of Shifts in Residential Water Heating in the United States. *Energy*, *81*, 317–327.
    DOI: 10.1016/j.energy.2014.12.045
31. **K.T. Sanders**. (2014). Uncharted Waters? The Future of the Electricity-Water Nexus. *Environmental Science & Technology*, *49*(1), 51-66.
    DOI: 10.1021/es504293b

2014

32. 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), 300–304.
    DOI: 10.1021/ez500129a
33. 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), 2028–2035.
    DOI: 10.1021/sc500236g
34. **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.
    DOI: 10.1021/es500469q
35. **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.
    DOI: 10.1088/1748-9326/9/4/044011

<2013 (Prior to USC)

36. 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.
37. **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.
    DOI: 10.1007/s10668-013-9441-5
38. **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.
    DOI: 10.1088/1748-9326/7/3/034034
39. 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.
    DOI: 10.2166/wrd.2011.058
40. **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.
    DOI: 10.1039/B913137J

BOOK CHAPTERS

1. **K.T. Sanders** and C.W. King. (2017). Integration of Water and Energy Sustainability, *Sustainable Water Management and Technologies*, ROUTLEDGE in association with GSE Research, 341-379. DOI: 10.9774/GLEAF.9781482215199_14

NASEM CONSENSUS STUDIES

- National Academies of Sciences, Engineering, and Medicine. 2021. *Advancing United States-Mexico Binational Sustainability Partnerships*. Washington, DC: The National Academies Press.https://doi.org/10.17226/26070. DOI: https://doi.org/10.17226/26070
- National Academies of Sciences, Engineering, and Medicine. 2018. *Advancing Sustainability of U.S.-Mexico Transboundary Drylands: Proceedings of a Workshop*. Washington, DC: The National Academies Press.https://doi.org/10.17226/25253. DOI: https://doi.org/10.17226/25253

PEER-REVIEWED CONFERENCE PROCEEDINGS

1. A. Zohrabian*, **K.T. Sanders** (2020). Demand Response in Water Supply and Wastewater Systems: What are the Opportunities? Applied Energy Symposium: MIT A+B, Cambridge, MA.
2. M. Meng*, M. Chen* and **K.T. Sanders**. (2016). "A Geospatial Feasibility Assessment of Utilizing Produced Water from Oil and Natural Gas Production in California for Beneficial Uses." *Proceedings of the World Environmental & Water Resources Congress 2016*, May 22-26, 2016, West Palm Beach, FL.
3. R.A.M. Peer* and **K.T. Sanders**. (2015). "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.
4. **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. (**Presenting Author**)
5. **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. (**Presenting Author**)
6. **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. **(Presenting Author)**
7. **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. **(Presenting Author)**
8. **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. **(Presenting Author)**
9. **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. **(Presenting Author)**
10. 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. **(Presenting Author)**

11. **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. **(Presenting Author) [Best Student Paper Award]**
12. **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. **(Presenting Author)**

CONTRIBUTED CONFERENCE PRESENTATIONS

1. A. Jin*, and **K.T. Sanders** (2021). Using smart meter data to classify patterns of residential electricity usage across disparate populations. *American Geophysical Union's 2021 Annual Meeting*, December 14, 2021, New Orleans, LA. demographic groups and climate zones. *American Geophysical Union's 2021 Annual Meeting*, December 14, 2020, New Orleans, LA.
2. M.K. Peplinski*, M Chen*, G.A. Ban-Weiss and **K.T. Sanders**(2021). Characterizing patterns of residential AC ownership across Southern California in the context of urban warming. *American Geophysical Union's 2021 Annual Meeting*, December 16, 20 21, New Orleans, LA.
3. **K.T. Sanders** (2021). Leveraging Smart-meter Data To Understand How Residential Electricity Consumers Respond To Increases In Urban Warming. *INFORMS 2021 Annual Meeting.* October 24-27. Anaheim, CA.
4. **K.T. Sanders** (2020). Leveraging big data to inform better policy responses to climate change and extreme heat events. *American Geophysical Union's 2020 Annual Meeting*, December 14, 2020. Remote due to COVID-19 pandemic. (Invited)
5. M.K. Peplinski*, M Chen*, B Dilkina, **K.T. Sanders**, and G.A. Ban-Weiss (2020). Predicting changes in Southern California's residential electricity consumption due to urban warming using machine learning models. *American Geophysical Union's 2020 Annual Meeting*, December 14, 2020. Remote due to COVID-19 pandemic.
6. M.K. Peplinski*, M Chen*, B Dilkina, G.A. Ban-Weiss, and **K.T. Sanders** (2020). Predicting Changes in Southern California's Residential Electricity Consumption using Machine Learning Models. *Duke University Energy Initiative's Energy Data Analytics Symposium*, December 8, 2020. Remote due to COVID-19 pandemic. (Awarded Honorable Mention)
7. M. Meng*, E.A. Grubert, and **K.T. Sanders** (2019). Resolving the life cycle water consequences of US coal-fired electricity: A challenge of data availability, spatial attribution, and consumer accountability. *American Geophysical Union's 2019 Annual Meeting*, December 11, 2019, San Francisco, CA.
8. M. Chen*, G. Ban-Weiss, and **K.T. Sanders** (2019). Identifying potentially vulnerable communities to extreme heat events by characterizing air conditioning penetration patterns in the Southern California region. *American Geophysical Union's 2019 Annual Meeting*, December 11, 2019, San Francisco, CA.
9. A. Zohrabian* and **K.T. Sanders** (2019). Towards a Sustainable Urban Water Supply: Analyzing the Energy and Emissions Trade-Offs of Los Angeles's Shifting Water Supply Portfolio. *American Geophysical Union's 2019 Annual Meeting*, December 10, 2019, San Francisco, CA.
10. M. Chen*, G. Ban-Weiss, and **K.T. Sanders** (2019). Identifying Potentially Vulnerable Communities to Extreme Heat Events by Characterizing Air Conditioning Penetration Patterns in the Southern California Region. *Computational Sustainability Doctoral Consortium.* October 19, 2019, Pittsburg. PA.
11. M. Meng* and **K.T. Sanders** (2019). A Data-Driven Approach to Investigating the Impacts of Ambient Temperature on Thermoelectric Generators. *Computational Sustainability Doctoral Consortium.* October 19, 2019, Pittsburg. PA.
12. R.A.M. Peer* and **K.T. Sanders** (2019). A High-Resolution Geospatial Assessment of Water for the US Energy System. *ASCE World Environmental & Water Resources Institute Congress 2017*, May 19-23, 2019, Pittsburg. PA.

13. A. Zohrabian* and **K.T. Sanders** (2019). Assessing the Drought Resiliency Benefits of Expanding Renewable Energy Resources: A Case Study of California. *ASCE World Environmental & Water Resources Institute Congress 2017*, May 19-23, 2019, Pittsburg. PA.
14. A.E. Childress, **K.T. Sanders**, A. Achilli, X. Wei, S.L. Plata, Z.M. Binger (2019). "Evaluating Synergistic Opportunities to Utilize Impaired Waters in Coastal Regions", *AEESP*, May 16, 2019, Tempe, Arizona.
15. A. Achilli, **K.T. Sanders**, A.E. Childress, Z. Binger, and Xin Wei* (2018). "Synergistic opportunities to utilize impaired waters in coastal regions." *IWA Regional Conference on Opportunity for Water Reuse in Southeast Asia*, October 31, 2018, Phuket, Thailand.
16. R.A.M. Peer* and **K.T. Sanders** (2018). "Estimating water usage for the US energy system: Suggestions for improving data collection and reporting." Resources for Future Generations 2018 (RFG2018), June 18, 2018, Vancouver, BC, Canada.
17. M. Meng* and **K.T. Sanders** (2018). "Assessing power sector vulnerabilities to climate change using an integrated water, energy, and climate modeling framework." *ASCE World Environmental & Water Resources Institute Congress 2018*, June 3-7, 2018, Minneapolis, MN.
18. E. Grubert and **K.T. Sanders** (2017). "A National Assessment of the Water Withdrawn and Consumed for the US Energy Economy." *Joint Conference of the International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technology* (*ISIE-ISSST) 2017: Science in Support of Sustainable and Resilient Communities*, June 25-29, 2017, Chicago, IL. **(Presenter)**
19. R.A.M. Peer* and **K.T. Sanders** (2017). "Water for power: evaluating the water impacts of recent shifts in the electricity sector." *ASCE World Environmental & Water Resources Institute Congress 2017*, May 21-25, 2017, Sacramento, CA.
20. M. Meng*, M. Chen*, and **K.T. Sanders** (2017). "Assessing the Role of Climate Variability on the Efficiency and Cooling Water Requirements of Thermal Power Plants." *ASCE World Environmental & Water Resources Institute Congress 2017*, May 21-25, 2017, Sacramento, CA.
21. A. Zohrabian* and **K.T. Sanders** (2017). "The impact of recent drought on the water consumed and air emissions produced by California's power sector." *ASCE World Environmental & Water Resources Institute Congress 2017*, May 21-25, 2017, Sacramento, CA.
22. E. Grubert and **K.T. Sanders** (2016). "H31J-05: Water for Energy: Quantifying Water Use in the United States Energy Economy as of 2014." *American Geophysical Union 2016 Fall Meeting*, December 14, 2016, San Francisco, CA.
23. R.A.M. Peer*, V. Espinoza* and **K.T. Sanders** (2016). "The influence of California water rights on water management and agricultural production practices during the recent drought." ASCE *World Environmental & Water Resources Institute Congress 2016*, May 22-26, 2016, West Palm Beach, Fl.
24. V. Espinoza* and **K.T. Sanders** (2016). "A Geospatial Energy Analysis of Groundwater Pumping During the Recent California Drought." ASCE *World Environmental & Water Resources Institute Congress 2016*, May 22-26, 2016, West Palm Beach, Fl.
25. **K.T. Sanders** (2015). "The Power-Water-Air Nexus: Developing Powerful Analytical Tools to Quantify Trade-offs in a Dynamic World." *Association of Environmental Engineering & Science Professors (AEESP) 2015*, June 13-16, 2015, New Haven, CT. **(Presenter)**
26. **K.T. Sanders** and S.F. Masri (2014). "The Energy-Water-Food Nexus: A call for improved and integrated data collection." *Conference on Energy, Water and Food Security*, December 12-13, 2014, Beirut, Lebanon.
27. **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. **(Presenter)**

28. 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.
29. 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.
30. **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. **(Presenter)**
31. **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. **(Presenter)**
32. **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.
33. 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.
34. **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. **(Presenter)**

CONTRIBUTED CONFERENCE POSTERS

1. M.K. Peplinski*, M Chen*, B Dilkina, **K.T. Sanders**, and G.A. Ban-Weiss (2021). Building machine learning models to predict residential electricity use in Southern California, *American Geophysical Union's 2021 Annual Meeting*, December 13, 2021, New Orleans, LA.
2. S. Mayes*, and **K.T. Sanders** (2021). Achieving peak load and CO2 emissions reductions by aligning AC usage with solar energy availability through residential precooling strategies. *American Geophysical Union's 2021 Annual Meeting*, December 16, 2021, New Orleans, LA.
3. B Tarroja, R Peer*, **K.T. Sanders,** and E Grubert (2020). Assessing the influence of freshwater consumption priorities on zero-carbon electricity planning: A case of Senate Bill 100 compliance in California. *American Geophysical Union's 2020 Annual Meeting*, December 11, 2020. Remote due to COVID-19 pandemic.
4. A Jin*, J Cegan, B Trump, I Linkov, and **K.T. Sanders** (2020). Compound Extreme Heat and COVID-19 Risks in the United States. *American Geophysical Union's 2020 Annual Meeting*, December 15, 2020. Remote due to COVID-19 pandemic.
5. S Mayes* and **K.T. Sanders** (2020). Cooling our Homes with the Sun: Exploring Precooling Strategies to Reduce Greenhouse Gas Emissions. *American Geophysical Union's 2020 Annual Meeting*, December 11, 2019. Remote due to COVID-19 pandemic. *American Geophysical Union's 2020 Annual Meeting*, December 17, 2020. Remote due to COVID-19 pandemic.
6. A Zohrabian* and **K.T. Sanders** (2020). Electricity Customers as Batteries? Exploring the Demand-Side Management Strategies to Balance Solar Energy. *American Geophysical Union's 2020 Annual Meeting*, December 17, 2020. Remote due to COVID-19 pandemic.
7. M.K. Peplinski*, M Chen, B Dilkina, G.A. Ban-Weiss, and **K.T. Sanders** (2020). Developing a machine learning model to understand climate-energy Interactions in Southern California. *Arizona*

State University Urban Climate Research Center Interactive Online Poster Event 2020, October 15, 2020, Remote due to COVID-19 pandemic.

8. R.A.M. Peer, E. Grubert, and **K.T. Sanders** (2018). "GC33G-2769: A Geospatial Assessment of the Water Consumed and Withdrawn for US Fossil Fuel Production." *American Geophysical Union 2018 Fall Meeting*, Dec 12, 2018, Washington, DC.
9. M. Chen*, G. Ban-Weiss, and **K.T. Sanders** (2018). "GC31D-0753: Spatial and Socioeconomic Distributions of Electricity-temperature Sensitivities in the Los Angeles Metropolitan Region." *American Geophysical Union 2018 Fall Meeting*, Dec 12, 2018, Washington, DC.
10. R.A.M. Peer* and **K.T. Sanders** (2017). "IN51E-0049 Quantifying the Sensitivity of the Production of Environmental Externalities to Market-Based Interventions in the Power Sector." *American Geophysical Union 2017 Fall Meeting*, Dec 13, 2017, New Orleans, LA.
11. R.A.M. Peer* and **K.T. Sanders** (2016). "GC43C-1174: The Water-Use Implications of a Changing Power Sector." *American Geophysical Union 2016 Fall Meeting*, Dec 14, 2016, San Francisco, CA.

TECHNICAL REPORTS AND WHITE PAPERS

1. A. Zohrabian and K.T. Sanders (2021). Contributed chapter report to "LA100: The Los Angeles 100% Renewable Energy Study". maps.nrel.gov/la100
2. A. Zohrabian and K.T. Sanders (2020). "A summary of prior work and future opportunities for water-related demand response services", Report for the Electric Power Research Institute.
3. A. Escriva-Bou, E. Hanak, J. Lund, N. Ajami, K. Jessoe, K. Madani, **K.T. Sanders**, J. Viers, and R. Wilkinson. (2016). "California's Water: Energy and Water." Public Policy Institute of California, Sacramento, CA.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.

TECHNICAL COMMENTARY, OP-EDS, AND COLUMNS

1. **K.T. Sanders**. (2016). "Op-ed: How Climate Change Mitigation and Energy Choices Affect Water," Water Deeply, September 14, 2016.
2. **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, 38-45.
3. **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.
4. **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.

5. 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, 26-29.

INVITED TECHNICAL TALKS

1. Public Report Briefing on *Advancing United States-Mexico Binational Sustainability NASEM Consensus Study*, Hosted by the National Academies of Sciences, Engineering, and Medicine, January 19, 2022, via ZOOM.
2. *The Energy-Water Nexus*. 2021 Chevron Virtual Summer Colloquium for Science Teachers, July 19, 2021, via ZOOM due to COVID-19.
3. *The Energy-Water Nexus*. 2021 Discovery Project Webinar Series, July 8, 2021, via ZOOM due to COVID-19.
4. *The Energy-Water Nexus*. USC/Chevron Frontiers of Energy Resources Summer Camp 2020, July 22, 2020, via ZOOM due to COVID-19.
5. *The Energy-Water Nexus*. Grand Challenges Lecture Series, March 24, 2020, Los Angeles, CA.
6. *The Energy-Water Nexus*. Engineers Week: High School Day, February 21, 2020, Los Angeles, CA.
7. *Addressing Complexity at the Intersection of Energy and Water Management Systems*. 2nd Infrastructure and Complexity workshop, February 1, 2020, Toronto, Canada.
8. *The Energy-Water Nexus*. USC/Chevron Frontiers of Energy Resources Summer Camp 2019, July 15, 2019, Los Angeles, CA.
9. *The Energy Tradeoffs of Adapting to an Increasingly Water Scarce Future in Southern California*. Invited talk for the League of Women Voters, June 19, 2019, Irvine, CA.
10. *Estimating the water usage of the US energy system*. Invited seminar at Carnegie Mellon University, February 15, 2019, Pittsburgh PA.
11. *Estimating the water usage of the US energy system within the context of change*. American Geophysical Union 2018 Fall Meeting, December 10-14, 2018, Washington, D.C.
12. *The basic science and applied knowledge needed to characterize the interaction of water, food and energy supply in urban environments*. The First CAS-NAS Symposium on S&T Innovation for Sustainable Development Goals", November 1, 2018, Beijing, China.
13. *Quantifying Water Across the US Energy System: A Discussion Existing of Data Challenges and Recommendations for Best Practices*. 9th International Congress on Environmental Modelling and Software (iEMSs 2018), June 25, 2018, Fort Collins, CO.
14. *Managing energy and water resources in a changing world*. USC Trustees Retreat, March 24, 2018, Ojai, CA.
15. *The Energy Water Nexus*. Electric Power Research Institute Advisory Meeting, January 30, 2018, Palo Alto, CA.
16. *Innovation, Implementation and Financing of Water Infrastructure*. VerdeXchange 2018 Conference, January 29, 2018, Los Angeles, CA.
17. *Evaluating the Water Use Implications of a Changing US Power Sector*. WiSE on Complex Systems, Models and Materials: a Research Horizons Symposium hosted by USC's Women in Science and Engineering, March 24, 2017, Los Angeles, CA.
18. *The Energy-Water Nexus*. USC Wrigley Institute's Special Seminar on Sustainable Solutions, March 10, 2017, Los Angeles, CA.
19. *The Energy-Water Nexus: The Past, Present and Future*. Seminar at Caltech, February 28, 2017, Pasadena, CA.

20. *The Energy-Water Nexus*. Engineering Week Lecture for Viterbi's Undergraduate Research Education Connect, February 23, 2017, Los Angeles, CA.
21. *Generating better accounting at the nexus of water and energy*. IBM PartnerWorld Future Innovators Forum, February 14, 2017, Las Vegas, NV.
22. *Water Quality, Efficiency & Supply Management: Science and Technology*. VerdeXchange 2017 Conference, January 31, 2017, Los Angeles, CA.
23. *Energy Storage and the Future of the Electric Utility*. Seminar hosted by the Marshall Energy and Resources Club, November 2, 2016, Los Angeles, CA.
24. *The Energy Water Nexus*. MIT Technology Review's EmTech 2016, October 18, 2016, Boston, MA.
25. *Assessing Tradeoffs: Issues at the Nexus of Energy, Water and the Environment*. National Energy Education Summit, June 7, 2016, Washington DC.
26. *The Water-Energy Nexus*. 13th Annual Water Conservation Showcase hosted by USGBC Northern California, Pacific Gas & Electric and East Bay Municipal Utility District, March 22, 2016, San Francisco, CA.
27. *Uncharted Waters? The Future of the Electricity-Water Nexus*. Youngstown State University Energy and the Environment Skype Lecture Series, March 2, 2016. Via Skype.
28. *The Power-Water-Air Quality Nexus*. NSF-AEESP Grand Challenges Workshop, January 8, 2016, Los Angeles, CA.
29. *The Energy-Water Nexus*. USC/Chevron Frontiers of Energy Resources Summer Camp 2015, July 7, 2015, Los Angeles, CA.
30. *The Energy-Water Nexus*. Viterbi Corporate Advisory Board meeting, April 9, 2015, Los Angeles, CA.
31. *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.
32. *The Energy-Water Nexus*. Chevron Learning Group Meeting, February 12, 2015, San Francisco, CA.
33. *Just Add Water: The relationship between water and real estate in CA*. USC Alumni Association Inaugural Event, January 22, 2015, Los Angeles, CA.
34. *The Energy-Water-Climate Nexus*. Invited seminar at Stanford University, November 11, 2014, Palo Alto, CA.
35. *The Energy-Water Nexus*. Briefing to the Chevron Fellows, October 28, 2014, Los Angeles, CA.
36. *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.
37. *The Energy-Water Nexus*. USC/Chevron Frontiers of Energy Resources Summer Camp 2014, June 25, 2014, Los Angeles, CA.
38. *The Power-Water Nexus in the West*. Environmental Engineering Friday Seminar at University of California at Irvine, February 21, 2014, Irvine, CA.
39. *The Energy-Water Nexus*. Environmental Law Section Meeting of the Austin Bar Association, December 5, 2013, Austin, TX.
40. *Renewable Energy's Role in Addressing Our Water Woes*. Texas Renewable Energy Industries Association Annual Conference, November 12, 2013, San Antonio, TX.
41. *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.

42. *The water-energy nexus and its relevance to drought*. Drought Technology Steering Committee Meeting, December 10, 2012, via webcast.
43. *Quantifying the energy embedded in the US water system*. Water-Energy Research Work Group Meeting, November 30, 2012, via webcast.
44. *The Nexus of Water and Energy*. Total Energy USA Conference, November 28, 2012, Houston, TX.
45. *The Energy-Water Nexus*. Clean EnergY-Factor: Women in Clean Energy, Hosted by the Austin Community College's Renewable Energy Student Association, April 11, 2012, Austin, TX.
46. *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.
47. *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.
48. *The Energy-Water Nexus in Mexico.* Clean Energy and Water International Workshop sponsored by the IDRC, September 24, 2011, Porto de Galinhas, Recife, Brazil.
49. *The Energy-Water Nexus*. Clean Energy and Water International Workshop sponsored by the IDRC, September 23, 2011, Porto de Galinhas, Recife, Brazil.
50. *Young Scientist's Event for Energy-Water Researchers*. Union of Concerned Scientist's Webinar, June 9, 2011, via webcast.
51. *The Environmental Impacts of Renewable Fuel Production*. Osher Lifelong Learning Institute's UT NOVA program, November 17, 2010, Austin, TX.
52. *The Water-Energy Nexus in Texas*. 2010 American Planning Association Meeting, October 7, 2010, San Antonio, TX.
53. *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.
54. *Introduction to Renewable Energy*. Lecture to Garza High School, January 25, 2010, Austin, TX.
55. *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.
56. *Introduction to Energy*. Texas Assessment of Knowledge and Skills Science Camp hosted by Round Rock High School, April 27, 2009, Round Rock, TX.

INVITED TECHNICAL PANELS

1. *L.A.'s fossil fuel-free future*, USC Office of University Communication's Facebook Live Earth Day Broadcast. April 19, 2021. **(Panel Participant)**
2. *Sustainability: No Planet B.* USC OWN IT Women's Leadership Summit 2021. April 11, 2021, Digital. **(Panel Moderator)**
3. Association of Women in Water, Energy and Environment's Thirst For Power Screening. A film screening and live Q&A, March 18, 2021, Digital. **(Panel Participant)**
4. Thirst for Power: The Digital Field Trip Experience. A film screening and live Q&A, October 28, 2020, Digital. **(Panel Participant)**
5. *A Conversation with Distinguished Speaker Debra L. Reed-Klages, Retired Chairman, President and CEO of Sempra Energy.* Albert Dorman Lecture Series, September 5, 2019, Los Angeles, CA. **(Moderator)**
6. *The Changing Climate: A Conversation with Bill Nye.* USC Earth Day Featured Speaker Event, April 23, 2019, Los Angeles, CA. **(Moderator)**

7. *Water/Energy Challenges: Integrating Water Flexibility Into Grid Planning*. VerdeXchange Conference, January 28, 2019, Los Angeles, CA. **(Panel Moderator)**
8. *From the Lab to the City: Commercialization of Climate Research*. VerdeXchange Conference, January 28, 2019, Los Angeles, CA. **(Panel Participant)**
9. *Water Conflict: What Can Southern California Learn from Cape Town?* Pacific Council on International Policy, April 13, 2018, Los Angeles, CA. **(Panel Moderator)**
10. *The Food-Energy-Water Nexus*. ASCE World Environmental & Water Resources Institute Congress 2017, May 24, 2017, Sacramento, CA. **(Panel Participant)**
11. *Utilities & Behind the Meter*. UCLA Energy Innovation Conference, April 22, 2017, Los Angeles, CA. **(Panel Moderator)**
12. *One Nation: Let's Talk Climate Change*. Summit sponsored by One Nation, USA TODAY and The Desert Sun, April 20, 2016, Palm Springs, CA. **(Panel Participant)**
13. *The California Drought: California Summit 2015*. Summit sponsored by the Milken Institute, December 8, 2015, Marina Del Rey, CA. **(Panel Participant)**
14. *Staying Afloat During the Drought: Using Technology to Reshape Our Relationship to Water*. Panel sponsored by KPCC and the Milken Institute, October 20, 2015, Santa Monica, CA. **(Panel Participant)**
15. *Trending Topics Series: The California Drought*. USC Speakers Committee Series, October 6, 2015, Los Angeles, CA. **(Panel Participant)**
16. *The Energy-Water Nexus in California*. Southern California Energy & Water 2015 Summit, October 1, 2015, Palm Springs, CA. **(Panel Participant)**
17. *A call for better data collection and stress metrics for integrated resource management*. 2014 ASME's International Mechanical Engineering Congress, November 14-20, 2014, Montreal, Canada. **(Panel Moderator and Organizer)**
18. *The Climate Change Relationships within the Energy-Water Nexus*. The Western Electricity Coordinating Council's Scenario Planning Steering Group Meeting, October 14, 2014, Salt Lake City, UT. **(Panel Participant)**
19. *Energy and Water: Essential, Interdependent Commodities and Strategies*. 2013 IEEE Power & Energy Society General Meeting, July 26, 2013, Vancouver, Canada. **(Panel Participant)**
20. *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)**
21. *Energy-Water Nexus*. The Texas-Israel Cleanovation Conference, September 14, 2011, Houston, TX. **(Panel Participant)**
22. *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. **(Panel Participant)**

STUDENT RESEARCH SUPERVISION

Ph.D. Supervision:

Primary Advisor:

1. Kayley Butler (2021- Present), Civil and Environmental Engineering [Formally advised by Professor George Ban-Weiss]
2. Joseph Ko (2021- Present), Civil and Environmental Engineering [Formally advised by Professor George Ban-Weiss]
3. Yun Li (2021- Present), Civil and Environmental Engineering [Formally advised by Professor George Ban-Weiss]

4. Hannah Schlaerth (2021- Present), Civil and Environmental Engineering [Formally advised by Professor George Ban-Weiss]
5. Diego Ramos Aguilera (2021- Present), Civil and Environmental Engineering
6. Zoia Comrova (2021- Present), Civil and Environmental Engineering
7. McKenna Peplinski (2019- Present), Civil and Environmental Engineering
8. Andrew Jin (2019- Present), Civil and Environmental Engineering
9. Stepp Mayes (2019- Present), Civil and Environmental Engineering
10. Angineh Zohrabian (2016-2021), Civil and Environmental Engineering
11. Measrainsey Meng (2015-2020), Civil and Environmental Engineering
12. Rebecca Peer (2014-2019), Civil and Environmental Engineering [Job upon Graduation: Post-doc with Ken Caldeira at Stanford's Carnegie Institution for Science, Deferred faculty position at the University of Canterbury]

Co-Advised:

1. Mo Chen (2015-2020), co-advised with Dr. George Ban-Weiss, Civil and Environmental Engineering

Ph.D. Dissertation Committee Member:

1. Backer Abu-Jaradeh (March 11, 2022), Electrical Engineering
2. Sophia Plata (July 14, 2021), Civil and Environmental Engineering
3. **Xin Wei* (June 3, 2021)**
4. Amir Azemati (May 6, 2021), Electricity Engineering
5. Ghena Alhanaee (August 26, 2020), Civil and Environmental Engineering
6. **Mo Chen* (June 4, 2020), Civil and Environmental Engineering**
7. **Measrainsey Meng* (June 18, 2020), Civil and Environmental Engineering**
8. James Campbell (September 4, 2019), Electrical Engineering
9. Richard Chen (July 18, 2019), Electrical Engineering
10. Yamrot Ahman (May 7, 2019), Civil and Environmental Engineering
11. **Rebecca Peer* (March 7, 2019), Civil and Environmental Engineering**
12. Ryan Gustafson (January 23, 2019), Civil and Environmental Engineering
13. Christopher Morrow (June 8, 2018), Civil and Environmental Engineering
14. Courtney Downes (May 9, 2018), Chemistry
15. Mahsa Moslehi (April 4, 2018), Civil and Environmental Engineering
16. Arsalan Heydarian (March 20, 2017), Civil and Environmental Engineering
17. Nima Jabbari (January 7, 2015), Civil and Environmental Engineering/Chemical Engineering

Ph.D. Qualifying Exam Committee Member:

1. **Joe Ko* (January 21, 2022), Civil and Environmental Engineering**
2. C.J. Koch (August 26, 2021), Chemistry
3. Yun Li (June 8, 2021), Civil and Environmental Engineering
4. Abdulmalik Altuwayjiri (March 26, 2021), Civil and Environmental Engineering
5. Ehsan Soleimanian (September 30, 2020), Civil and Environmental Engineering
6. **Xin Wei* (September 3, 2020), Civil and Environmental Engineering**
7. Milad Pirhadi (April 22, 2020), Civil and Environmental Engineering
8. Backer Abu-Jaradeh (January 17, 2020), Electrical Engineering

9. Ali Zarei Baygi (December 16, 2019), Civil and Environmental Engineering
10. **Angineh Zohrabian* (November 11, 2019), Civil and Environmental Engineering**
11. Sophia Plata (September 9, 2019), Civil and Environmental Engineering
12. **Mo Chen* (June 26, 2019), Civil and Environmental Engineering**
13. **Measrainsey Meng* (May 8, 2019), Civil and Environmental Engineering**
14. Ariana Libera (May 8, 2019), Civil and Environmental Engineering
15. Ashrant Aryal (May 8, 2019), Civil and Environmental Engineering
16. Ghena Alhanaee (May 8, 2019), Civil and Environmental Engineering
17. Sina Taghvaee (April 19, 2019), Civil and Environmental Engineering
18. Amir Mousavi (March 1, 2019), Civil and Environmental Engineering
19. Amir Azemati (November 28, 2018), Electrical Engineering
20. Siming Chen (October 29, 2018), Civil and Environmental Engineering
21. Mohammad Sowlat (February 28, 2018), Civil and Environmental Engineering
22. Yamrot Amha (January 28, 2018), Civil and Environmental Engineering
23. Christopher Lovett (January 17, 2018), Civil and Environmental Engineering
24. Christopher Morrow (December 8, 2017), Civil and Environmental Engineering
25. Ryan Gustafson (December 7, 2017), Civil and Environmental Engineering
26. Arianna Libera (November 6, 2017), Civil and Environmental Engineering
27. **Rebecca Peer* (September 12, 2017), Civil and Environmental Engineering**
28. Arash Mohegh (May 10, 2017), Civil and Environmental Engineering
29. Farimah Shirmohammadi (May 9, 2017), Civil and Environmental Engineering
30. Jiachen Zhang (May 8, 2017), Civil and Environmental Engineering
31. Simin Karvigh (January 18, 2017), Civil and Environmental Engineering
32. Mahsa Moslehi (October 20, 2016), Civil and Environmental Engineering
33. Trevor Krasowsky (May 12, 2016), Civil and Environmental Engineering
34. Ruda Zhang (April 29, 2016), Civil and Environmental Engineering
35. Ali Ghahramani (January 22, 2016), Civil and Environmental Engineering
36. Arsalan Heydarian (January 21, 2016), Civil and Environmental Engineering
37. Courtney Downes (November 16, 2015), Department of Chemistry
38. Arian Saffari (November 4, 2014), Civil and Environmental Engineering
39. Nima Jabbari (June 11, 2014), Civil and Environmental Engineering/Chemical Engineering

PhD Screening Exam Committee Member:

1. Bana Dahdah (2022),Civil and Environmental Engineering
2. Marella Schammel (2022), Civil and Environmental Engineering
3. Vahid Jalali Farahani (2022), Civil and Environmental Engineering
4. Ramin Tohidi (2022), Civil and Environmental Engineering
5. Raven Althouse (2022), Civil and Environmental Engineering
6. Connor Sauceda (2022), Civil and Environmental Engineering
7. Harmita Golwala Adam Samuel (2022), Chemistry
8. **Stepp Mayes* (2021), Civil and Environmental Engineering**
9. **Andrew Jin* (2021), Civil and Environmental Engineering**
10. Abdulmalik Altuwayjiri (2021), Civil and Environmental Engineering
11. Bianca Costa (2021), Civil and Environmental Engineering

12. **McKenna Peplinksi* (2021), Civil and Environmental Engineering**
13. Milad Pirhadi (2020), Civil and Environmental Engineering
14. Zakiyyah Brown (2020), Civil and Environmental Engineering
15. Hannah Schlaerth (2020), Civil and Environmental Engineering
16. Eshan Soleimanian (2020), Civil and Environmental Engineering
17. Weijian Ding (2020), Civil and Environmental Engineering
18. Euna Kim (2019), Civil and Environmental Engineering
19. Sina Taghvaee (2019), Civil and Environmental Engineering
20. Joseph Ko (2019), Civil and Environmental Engineering
21. Amirhosein Mousavi Nasabi Shams (2018), Civil and Environmental Engineering
22. Yun Li (2018), Civil and Environmental Engineering
23. Stephanie Gee (2018), Civil and Environmental Engineering
24. Jia Wang (2018), Civil and Environmental Engineering
25. **Xin Wei* (2018), Civil and Environmental Engineering**
26. Jinwoo Im (2018), Civil and Environmental Engineering
27. Ali Zarei-Baygi (2017), Civil and Environmental Engineering
28. Allyson McGaughey (2017), Civil and Environmental Engineering
29. Mohammad Hossein Sowlat (2017), Civil and Environmental Engineering
30. Christopher Lovett (2017), Civil and Environmental Engineering
31. **Angineh Zohrabian* (2017), Civil and Environmental Engineering**
32. **Measrainsey Meng* (2017), Civil and Environmental Engineering**
33. **Mo Chen* (2017), Civil and Environmental Engineering**
34. Ghena Alhanaee (2016), Civil and Environmental Engineering
35. Yamrot Mulugeta Amha (2016), Civil and Environmental Engineering
36. Siming Chen (2016), Civil and Environmental Engineering
37. Ryan Gustafson (2016), Civil and Environmental Engineering
38. Jiachen Zhang (2016), Civil and Environmental Engineering
39. Ali Kazemian (2015), Civil and Environmental Engineering
40. Trevor Krasowsky (2015), Civil and Environmental Engineering
41. Arianna Libera (2015), Civil and Environmental Engineering
42. Arash Mohegh (2015), Civil and Environmental Engineering
43. Christopher Morrow (2015), Civil and Environmental Engineering
44. Mahsa Moslehi (2015), Civil and Environmental Engineering
45. **Rebecca Peer* (2015), Civil and Environmental Engineering**

M.S. Research Students:

Grant Funded Research Assistants:

1. Aniket Singh, NSF EAGER, (Fall 2018 – Spring 2019), Mechanical Engineering
2. Sripad Kamdadal, NSF EAGER, (Fall 2018), Mechanical Engineering

Direct Research Students

1. Xueliang Liu (3 units, Spring 2020), Civil and Environmental Engineering
2. Siddharth Bhat (3 units, Spring 2019), Civil and Environmental Engineering

3. Emily Rogers (6 units, Fall 2018- Spring 2019), Mechanical Engineering
4. Saud Al-Fulaij (3 units, Spring 2018), Civil and Environmental Engineering
5. Weijian Ding (3 units, Spring 2018), Civil and Environmental Engineering
6. Sripad Kamdadai (3 units, Spring 2018), Mechanical Engineering
7. Rashi Chaudhary (2 units, Fall 2017), Civil and Environmental Engineering
8. Xiang Li (1 unit, Fall 2017), Civil and Environmental Engineering
9. Siddharth Vibhakar (1 unit, Spring 2017), Civil and Environmental Engineering
10. Nuh Simsek (5 units, F 2016, Spring 2017), Civil and Environmental Engineering
11. Ranveer Ghatge (1 unit, Fall 2016), Civil and Environmental Engineering
12. Duhou Chen (3 units, Spring 2016), Civil and Environmental Engineering
13. Pushpa Lahari Ganti (3 units, Spring 2016), Chemical Engineering
14. Tong Wang (3 units, Fall 2014), Mechanical Engineering
15. Olivia Taldone (3 units, Fall 2014), Civil and Environmental Engineering
16. Christopher Lopez (3 units, Fall 2014), Civil and Environmental Engineering
17. David Park (3 units, Summer 2014), Mechanical Engineering
18. Yusong Li (3 units, Summer 2014), Civil and Environmental Engineering

Volunteer M.S. Research Assistants:

19. Anyao Wang, (Spring 2019), Civil and Environmental Engineering

20. Ambica Nair, (Spring 2017, F 2017), Civil and Environmental Engineering

Undergraduate and High School Research Students

Grant Funded Undergraduate Research Assistants:

1. Natalia Ratner (Spring 2022), Civil and Environmental Engineering
2. Johan Kim (Fall 2021), Mechanical Engineering
3. Nayamo Oo (Spring 2020), Mechanical Engineering
4. Christopher Gullixson (Spring 2019 – Fall 2019), Civil and Environmental Engineering
5. Emil McClean, NSF EAGER (Spring 2018 – Spring 2019), Physics
6. Justin Mendelson, NSF EAGER (Spring 2018 – Fall 2018), Mechanical Engineering

Fellowship Supported Undergraduate Research Assistants:

1. Leonardo Bautista, McNair Scholars, (Spring 2021- present), Civil and Environmental Engineering
2. Noah Brown, Gateway Scholars, (Spring 2019- Summer 2019), Mechanical Engineering
3. Hannah Walker, WiSE Fellow (Spring 2019 -Fall 2019), Mechanical Engineering
4. Emily Rogers, Provost Fellow (Spring 2018 – Spring 2019), Mechanical Engineering
5. Danielle Thomas, McNair Fellow (Spring 2015, Su 2015), Civil Engineering
6. Taylor McCauley, WiSE Fellow (F 2016, Spring 2017), Environmental Engineering
7. Sung Min Kim, WiSE Fellow (Spring 2016, Summer 2016), Environmental Engineering

Volunteer Undergraduate Research Assistants:

8. Fareda Marzouk (Fall 2021), Civil and Environmental Engineering
9. Grace Sampson (Fall 2021), Civil and Environmental Engineering
10. Nina Zanghi (Fall 2021), Civil and Environmental Engineering
11. Wenwen Tang (Fall 2021), Mechanical Engineering
12. Emil McClean, NSF EAGER (Fall 2017), Physics

13. Justin Mendelson, NSF EAGER (Fall 2017), Mechanical Engineering
14. Juan M Martinez (Summer 2016), Civil Engineering
15. Kevin Conde (Fall 2014, Spring 2015), Chemical Engineering
16. Jeremy Molayem (Summer 2014, Fall 2014), Civil Engineering

USC's Summer Undergraduate Research Experience Students:

17. Craig Timms (Summer 2015), University of Dayton
18. Peter Storm (Summer 2014, Fall 2014), Oklahoma State University

US-Brazil Summer Exchange Undergraduate Students:

19. Thiago Favero De Oliveira MacHado (Summer 2016)
20. Mariana Fernandes da Costa (Summer 2016)
21. Joao Gabriel Fabian Silvestre (Summer 2016)
22. Lucas de Olivera (Summer 2016)
23. Vitor Pereira de Goes Telles (Summer 2016)
24. Henrique Teixeira Cardoso Reis Oliveira (Summer 2016)
25. Craig Timms (Summer 2015), University of Dayton

High School Research Assistants:

26. Christopher Koo (Summer 2014), Pasadena High School

Other Resource Employees

1. Dong Min Kim, NREL (Fall 2018 - current), Graduated

PROFESSIONAL DEVELOPMENT & EXTERNAL SERVICE

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES

- American Geophysical Union (AGU)
- American Society of Civil Engineers (ASCE)
- Association of Environmental Engineering and Science Professors (AEESP)
- International Environmental Modeling and Software Society (iEMSs)
- American Association for the Advancement of Science (AAAS)
- Future Influencers, A community initiated by Siemens

PROFESSIONAL ADVISORY BOARDS AND LEADERSHIP ACTIVITIES

- Environmental Science & Technology journal Early Career Editorial Board (2020- present)
- Advisory Board Member, City of Los Angeles One Water LA 2040 (2016 - 2019)
- Technical Advisory Committee Member, Antelope Valley Water Storage Water-Energy Bank, (2017 - 2019)
- Author and Research Network Expert, Public Policy Institute of California (2016 - present)
- Leadership Council Member, Los Angeles Clean Technology Incubator (2016 - present)
- Invited advisor at the EPRI External Advisory Meeting on Water Availability and Ecological Risk, January 30-31, 2018, Palo Alto, CA.

NASEM CONSENSUS STUDIES

- Co-author of the U.S. National Academies of Sciences, Engineering and Medicine's Consensus Study on Sustainability Partnerships in the U.S. – Mexico Drylands Region, (Associated meetings: March 9-11, 2020 in Mexico City, Mexico; April 22-24, 2020 in Mexico City, Mexico; Professional workshop "US-Mexico Sustainability Partnerships": July 15, 2020 via ZOOM due to COVID-19.)

PROFESSIONAL STEERING COMMITTEES

- Invited steering committee member at the U.S. National Academies of Sciences, Engineering and Medicine and the Mexican Academy of Sciences, Academy of Engineering and National Academy of Medicine's Steering Committee Workshop on Sustainability Science in the US - Mexico Border Drylands Region (Planning Meeting: November 27-28, 2017, Mexico City, Mexico; Resulting workshop held May 2-3, 2018 in San Luis Posi, Mexico)
- Invited steering committee member at the WECC Scenario Planning Steering Group meeting to coordinate energy, water and climate change scenario planning hosted by Western Electricity Coordinating Council, October 14, 2014 and December 15, 2014, Salt Lake City, UT.

EDITORIAL POSITIONS

- Section Editor, Current Sustainable/Renewable Energy Reports, *Springer* (2013-2014)

PROFESSIONAL COMMITTEE LEADERSHIP

- Chair, Environmental and Water Resources Institute's Sustainability Committee, American Society of Civil Engineers (2020-2021)
- Vice Chair, Environmental and Water Resources Institute's Sustainability Committee, American Society of Civil Engineers (2019-2020)

PROFESSIONAL COMMITTEE MEMBERSHIP

- Member, Environmental and Water Resources Institute's Sustainability Committee, American Society of Civil Engineers (2013 - present)
- Member, Task Force on Strategic Communications, American Geophysical Union, (2017)
- Member, Energy-Water Nexus Interdisciplinary Council, American Society of Mechanical Engineers (2011 - 2013)

CONFERENCE TOPICAL TRACK ORGANIZATION

- Session organizer and chair for 2021 ASCE's Environmental and Water Resources Institute's Water-Energy tracks (virtual).
- Session organizer and chair for 2020 ASCE's Environmental and Water Resources Institute's Water-Energy tracks (virtual).
- Session organizer and chair for 2019 ASCE's Environmental and Water Resources Institute's Water-Energy tracks in Pittsburg, PA.
- Planning committee for the International Conference on Sustainable Infrastructure in Los Angeles, CA on November 7-9, 2019.
- Session organizer of session "H130. Water and Society: Modeling Tools, Communication Channels, and Stakeholder Engagement to Inform Public Policy (Session ID: Session ID: 52704, Hydrology section)" at the 2018 American Geophysical Union Fall Meeting in Washington, D.C.
- Session organizer of session "H134. Water, Energy, and Society in Urban Systems (Session ID: Session ID: 54285, Hydrology section)" at the 2018 American Geophysical Union Fall Meeting in Washington, D.C.
- Session organizer and chair for 2018 ASCE's Environmental and Water Resources Institute's Water-Energy tracks in Minneapolis, MN.
- Session organizer and chair for 2017 ASCE's Environmental and Water Resources Institute's Water-Energy tracks in Sacramento, CA.
- Session organizer and chair for 2016 ASCE's Environmental and Water Resources Institute's Energy-Water-Food Track in West Palm Beach, FL.
- Session organizer and chair for 2015 ASCE's Environmental and Water Resources Institute's Energy-Water-Food Track in Austin, TX.
- Topical track organizer and session chair for three sessions within the Energy-Water Nexus track 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.

INVITED PROFESSIONAL OUTREACH ACTIVITIES

1. Panel Moderator for session Reach Out to Reach Up at the 2021 SWE-LA Annual Professional Development Conference (PDC), April 16, 2021, virtual due to COVID-19.
2. Invited participant at the 2nd Annual 2020 Infrastructure and Complexity workshop, February 1, 2020, Toronto, Canada.
3. Invited participant at the National Academy of Engineering's 2019 EU-US Frontiers of Engineering Symposium, November 18-20, 2019, Stockholm, Sweden.
4. Invited delegate to attend "The First CAS-NAS Symposium on S&T Innovation for Sustainable Development Goals", November 1, 2018, Beijing, China.

5. Steering Committee member and invited participant to attend "Advancing Sustainability of US – Mexico Transboundary Drylands: Workshop" hosted by the U.S. National Academies of Sciences, Engineering and Medicine, May 2-3, 2018, San Luis Potosi, Mexico.
6. Invited participant at the Public Policy Institute of California Annual Water Meeting, January 24-25, 2018, San Francisco, CA.
7. Invited participant at the National Academy of Engineering's 2017 US Frontiers of Engineering Symposium, September 25-27, 3017, Hartford, CT.
8. Invited participant at the Public Policy Institute of California Annual Water Meeting, January 25, 2017, San Francisco, CA.
9. Invited participant at Understanding the Water-Energy Nexus: Integrated Water and Power System Modeling workshop sponsored by DOE and the European Commission, September 28-29, 2016, Ispra, Italy.
10. Invited participant at Water & Energy workshop sponsored by DOE and ASU, September 8, 2016, Tempe, AZ.
11. Invited participant at the Water-Energy-Food Nexus Roundtable sponsored by the White House Office of Science and Technology Policy, August 25, 2016, Washington, DC.
12. Invited participant at the CA Air Resources Board Policy Roundtable, sponsored by the Los Angeles Clean Technology Incubator and CA Air Resources Board, August 19, 2016, Los Angeles, CA.
13. Invited member to the LACI Women in Cleantech Focus Group, sponsored by the Los Angeles Clean Technology Incubator, July 27, 2016, Los Angeles, CA.
14. Invited participant at the COMPASS California's Water Future: An Advanced Communication Workshop, May 9-11, 2016, Santa Barbara, CA.
15. Invited participant at the 2015 Aspen Institute Clean Energy Innovation Forum, July 19-22, 2015, Aspen, CO.
16. Invited participant at the Global Diets and Climate Change US Stakeholder Roundtable hosted by the World Resources Institute, April 24, 2015, Washington DC.
17. Invited participant at the Water and Electric Utility Integrated Planning: Joint Utility Planning Tournament, Water Research Foundation, October 16-17, 2014, Denver, CO.
18. Invited participant at the 2014 Aspen Institute- Duke University's Nicholas Institute for Environmental Policy Solution Water Forum, May 28-31, 2014, Aspen, CO.
19. 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.
20. Invited participant at MIT's 2012 Clean Energy Education & Empowerment (C3E) Initiative Symposium, September 19-20, 2013, Cambridge, MA.
21. Facilitator at the 2014 Research Workshop on the Energy Water Nexus sponsored by the National Science Foundation, June 13-14, 2014, Washington, DC.
22. Invited participant at the EFRI-RESIN: Workshop on Energy, Transportation, and Water Infrastructure: Policy and Social Perspectives, July 17-19, 2013, Ames, Iowa.
23. Invited participant at Siemen's Future Influencers-Harvard Business Review Global Meeting, May 27-29, 2013, New York, NY.
24. Invited Participant at the Building Future Faculty Program at North Carolina State University, April 2-5, 2013, Raleigh, NC.
25. Invited participant at the 6th World Water Forum: Key Priority 2.3 Harmonize Energy and Water, September 29-30, 2011.
26. Invited participant at Managing Water-Related Energy Use in Cities: Opportunities, Needs and Barriers, April 29, 2011, Berkeley, CA.

PEER REVIEW ACTIVITIES

- *Proposal Reviewer for Federal Agencies*: National Science Foundation Review Panels (2014, 2015, 2016, 2017, 2019, 2020, 2021); AAAS Research Competitiveness Program (2014, 2015)
- *Manuscript Reviewer for Peer Reviewed Journals*: Nature Energy, Nature Sustainability, Environmental Science & Technology, Environmental Science & Technology Letters, Journal of Water Resources Planning and Management, Environmental Research Letters, Water Research, Environmental Management, AIChE Journal, Clean Technologies and Environmental Policy, Sustainable Cities and Society, Applied Energy, Journal of Cleaner Production, Transactions in GIS
- *Manuscript Reviewer for Peer Reviewed Conferences*: 2014- 2019 ASCE Environmental and Water Resources Institute Conference, 2019 International Conference on Sustainable Infrastructure, 2013 & 2014 ASME International Mechanical Engineering Congress

MEDIA HIGHLIGHTS

EXTERNAL INTERVIEWS

1. *Foreign Policy*, "Climate Change Demands More Air Conditioning." January 22, 2022.
2. *Wired Magazine*. “The Grid Isn’t Ready for the Renewable Revolution.” October 10, 2021.
3. *NPR’s Marketplace*. “Texas’ efforts to fix electrical grid may not be enough to prevent future blackouts.” Sept 13, 2021.
4. *E&E EnergyWire*. “4 issues to watch as heat disrupts the grid.” August 6, 2021.
5. *NBC News*. “As deadly heat waves spread, access to air-conditioning becomes a lifesaver.” August 20, 2021.
6. *LA Times*. “Ways to save water during the drought — and whether it’s worth doing at all.” August 9, 2021.
7. *ABC 7 News (Television)*. “California Dreaming: Historic offshore wind project will help bolster state's economy.” June 24, 2021.
8. *Vox*. “Why every state is vulnerable to a Texas-style power crisis.” March 11, 2021.
9. *NPR’s To the Point with Warren Olney*. “Texas blames blackouts on the Green New Deal, and Joe Biden says ‘America’s back’.” March 4, 2021.
10. *KCRW’s Press Play with Madeline Brand*. “Triple digit heat in LA this Labor Day weekend — what that means for the most vulnerable residents.” September 4, 2020.
11. *Resources Radio Podcast*. “AC/DC: Unequal Access to Air Conditioning with Kelly T. Sanders.” July 7, 2020.
12. *Popular Science.* “The latest summer forecast calls for deadly heat waves.” June 24, 2020.
13. *The Guardian.* “'A summer unlike any other': heatwaves and Covid-19 are a deadly combination.” May 30, 2020.
14. *Univision.* TV Interview on Univision 34 Los Angeles News. May 29, 2020.
15. *Los Angeles Times.* “Pandemic. Heat. And for the most vulnerable, no A/C.” May 28, 2020.
16. *Gizmodo.* “Coronavirus, Summer Heat, and Poverty Could Create a 'Triple Whammy'.” May 11, 2020.
17. *Los Angeles Times.* “Coronavirus could worsen death toll of summer heat waves, health officials warn.” May 5, 2020.
18. *Anthropocene Magazine*. “This is How Much Water it Takes to Produce Energy.” September 6, 2018.
19. *91.5 KRCC Southern Colorado’s NPR Station*. “Energy Sectors Use More Water Than Previously Thought.” August 31, 2018.
20. *The New York Times*. “The $3 Billion Plan to Turn Hoover Dam Into a Giant Battery.” July 24, 2018.

21. *LA Times*. “How the Staples Center and the Kings learned to make ice out of thin air.” July 5, 2018.
22. *CNBC*. “California moves closer to becoming the first state to mandate solar panels on new homes.” May 8, 2018.
23. *Aljazeera*. “What’s causing water shortages?” May 2, 2018.
24. *Alpheus Media.* “Thirst for Power.” April 27, 2018.
25. *Daily Ovation*. “Is Los Angeles next to run out of water?” February 20, 2018.
26. *Curbed Los Angeles*. “Cape Town is running out of water. Is Los Angeles Next?” February 6, 2018.
27. *Los Angeles Times*. “When it rains, Los Angeles sends billions of gallons of 'free liquid gold' down the drain.” March 8, 2017.
28. *Epoch Times*. “Unexpectedly Wet Winter Overwhelms Dry California.” February 21, 2017.
29. *Press-Enterprise*. “SoCalGas urges customers to conserve 'immediately' to avoid storm-related shortages.” January 23, 2017.
30. *San Gabriel Valley Tribute, “*SoCalGas urges customers to turn down the heat as temperatures drop.” December 19, 2016.
31. *The Desert Sun*, “Voter guide: Clinton and Trump on global warming, energy and the California drought.” October 13, 2016.
32. *Water Deeply*, “Twelve California Water Experts to Watch on Climate and Energy.” September 8, 2016.
33. *Water Deeply*, “Meet the Minds: Kelly Twomey Sanders on Water in a Changing Climate.” October 7, 2016.
34. *The Huffington Post*, “Why Clean Energy Is Center Stage on International Day of Peace.” September 22, 2016.
35. *KABCDT (ABC),* “Eyewitness News 3PM.” September 7, 2016.
36. *MIT Technology Review*, “35 Innovators Under 35.” August/September 2016 Issue.
37. *Inc.* “Most Impressive Young Innovators to Watch.” August 23, 2016.
38. *SPAN Magazine,* “Smart Urban Planning.” May/June 2016 Issue.
39. *USA Today,* “Lake Mead drops to lowest level in history.” May 20, 2016.
40. *The Desert Sun*, “One Nation: 'Start looking holistically at climate.” April 22, 2016.
41. *The Desert Sun*, “Meet the One Nation speaker who gets where water and energy connect.” April 22, 2016.
42. *National Geographic.* “Breakthrough (TV Series).” November 2015.
43. *Fox & Hounds.* “Drought: The New Normal.” October 28, 2015.
44. *Fox & Hounds.* “Future of Water: Learning to Backstroke.” October 23, 2015.
45. *Green Power Report Radio AM 590.* “The Energy-Water Nexus.” October 20, 2015.
46. *The Desert Sun*, “Felicia Marcus: No simple solutions on California water.” October 5, 2015.
47. *National Public Radio 89.3 KPCC*, “Future of Water: A trip to the water-wise California city of 2040?” September 16, 2015.
48. *International Business Times*, “US: William Shatner proposes pipeline to solve California drought.” April 22, 2015.
49. *The Desert Sun*, “Salton Sea on back burner as state confronts drought.” April 21, 2015.
50. *The Desert Sun*, “California's last resort: Drink the Pacific.” April 15, 2015.
51. *National Public Radio 89.3 KPCC*, “How much water are we using inside our homes?” April 9, 2015.
52. *Antelope Valley Press,* "Power OK even in 100-degree heat?". August 20, 2014. (Sanders quoted.)

53. *National Public Radio,* "How Wasted Gas From Drilling Could Save Millions of Gallons of Texas Water." June 18, 2014.
54. *WaterWorld*, "Maximizing Opportunities: Managing Our Water Resources to Shape the Next Century." June 3, 2014.
55. *Farming Online*, "Factoring in emissions could see beef prices rise 40 percent." May 20, 2014.
56. *Scientific American, "*Senate Bill Shines Light on Energy-Water Nexus." May 12, 2014.
57. *Atlantic Council, "*The Nexus of Energy and Water for US Sustainability and National Security." May 6, 2014.
58. *Forbes*, Sanders appears in Forbes' Magazine's "30 under 30: Today's disrupters and tomorrow's brightest stars" feature. Published December 2012.
59. *TechNewsDaily*, "How Droughts Can Cause Power Outages." F. Diep, November 16, 2012.
60. *US Water Alliance*, "Energy/Water Nexus." November 13, 2012.
61. *Wichita Falls' Times Record News*, "Report links energy consumption, water use." October 31, 2012.
62. *Energy Guardian*, "Study finds water uses more energy than lighting." October 31, 2012.
63. *Consumer Energy Report*, "Water Delivery Accounts for 12.6 Percent of U.S. Energy Consumption: Report." October 31, 2012.
64. *Western Sustainability and Pollution Prevention Project*, "Water takes more energy than lighting." October 31, 2012.
65. *Washington Post*, "13% of U.S.'s Energy Goes to Collect, Prepare Water, Study Shows." R. Hackley, October 30, 2012.
66. *Bloomberg and Bloomberg Businessweek*, "13% of U.S.'s Energy Goes to Collect, Prepare Water, Study Shows." R. Hackley, October 30, 2012.
67. *Houston Chronicle and San Antonio Express*, "Study: Water takes more electricity than lighting." M. Tresaugue, October 30, 2012.
68. *Water World*, "New UT report sheds light on nation's water-energy security goals." October 30, 2012.
69. *Texas Energy Report*, "Energy Burned for Water Uses Higher Than Some Realize." P. Hughs, October 30, 2012.
70. *The Chairman's Block*, "Energy use for water nearly 13%." October 30, 2012.
71. *Forbes*, "Study: The Best Way To Conserve Energy Is To Conserve Water." C. Helman, October 17, 2012.
72. *Environmental Leader: Environmental & Energy Management News*, "Water 'Directly Responsible' for 12.6% of US Energy Use." October 4, 2012.
73. *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.
74. *Environmental Research Web*, "Can using water wisely trump better lighting?" L. Kalaugher, IOP Publishing, September 25, 2012.
75. *Danish Broadcasting Corporation,* Interview with Lasse Engelbrecht Jensen, 2012.
76. *Huffingtonpost Green Blog*, "Who Says Oil and Water Don't Mix?" J. Lauria, September 8, 2011.
77. *EU's Science for Environmental Policy*, "Unintended energy impact from bioethanol production." European Union's Directorate-General of the Environment, March 4, 2012.

INTERNAL INTERVIEWS

1. *Daily Trojan.* "Research expedites renewable energy in LA." September 16, 2021.
2. *USC News.* "LA could be powered entirely by renewable energy in 25 years." March 24, 2021.
3. *USC Annenberg Media.* "LA's 100% Renewable Energy Plan." March 24, 2021.

4. *USC News.* “Urban heat waves imperil LA’s most vulnerable research.” March 24, 2021.
5. *USC Annenberg Media.* “Earth Day 2018 Feature.” April 19, 2018.
6. *USC Annenberg Media.* “What happens when a major city runs out of water?” February 20, 2018.
7. *Daily Trojan.* “USC researchers recognized for innovation.” August 23, 2016.
8. *USC Viterbi News.* “Kelly Sanders and Nora Ayanian are MIT Technology Review 35.” August 23, 2016.
9. *USC Viterbi Video Features.* “LA's Water Issue: Kelly Sanders.” March 22, 2016.
10. *USC’s Viterbi Voices Podcast.* “Water, Energy, Sustainability – it’s all connected.” November 24, 2015.
11. *Daily Trojan.* “Experts weigh in on California Drought.” October 6, 2015.
12. *USC News*. “Students, staff and faculty make sustainability a priority.” September 11, 2015.
13. *Daily Trojan.* “USC to expand construction of aquaponics systems.” September 10, 2015.
14. *USC Trojan Family Magazine*. “Can Technology Beat the California Drought.” Spring 2015.
15. *Annenberg Media Center’s Neon Tommy*. “Governor Brown Orders Historic Mandate On Water Restrictions.” April 1, 2015.
16. *Annenberg Media Center’s Neon Tommy*. “It May Be Raining, but The Drought's Not Over.” December 16, 2014.
17. *USC Viterbi Video Features.* “Los Angeles: The City That Shouldn't Exist.” April 22, 2016.
18. *USC Viterbi News*. “The Wars of the future will be fought over water.” March 7, 2014.