

Curriculum Vitae for Michael E. Webber

May 4, 2013

Michael Evan Webber

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Academic Positions And Professional Experience:

- *Associate Professor*, Mechanical Engineering, UT Austin, 2012–present
- *Assistant Professor*, Mechanical Engineering, UT Austin, 2007–2012
- *Deputy Director*, Energy Institute, UT Austin, 2013–present
- *Co-Director*, Clean Energy Incubator, UT Austin, 2009–present
- *Associate Director*, Center for International Energy & Environmental Policy, UT Austin, 2006–2012
- *Associate Engineer*, RAND Corporation, Santa Monica, CA, 2004–2006
- *Senior Scientist*, Pranalytica, Inc., Santa Monica, CA, 2000–2004
- *Graduate Research Assistant*, Mechanical Engineering, Stanford University, 1995–2000

Education:

- Ph.D., Mechanical Engineering (Ph.D. Minor, Electrical Engineering), 2001, Stanford University (Advisor: Professor Ron K. Hanson, NAE)
- M.S., Mechanical Engineering, 1996, Stanford University
- B.S. with High Honors, Aerospace Engineering, 1995, The University of Texas at Austin
- B.A. with High Honors & Special Honors, Plan II Liberal Arts, 1995, The University of Texas at Austin

Peer-Reviewed Journal Articles

These articles are listed in reverse chronological order. Papers in review or in press are noted as such (with parenthetical text). Papers that won awards or were ranked as highly-accessed are noted as such (with **bold** font). Webber's peer-reviewed journal articles have an average of 12 citations apiece (according to ISI's Web of Knowledge). He has an *h-index* of 12 (according to ISI's Web of Knowledge) and 21 (according to Google Scholar). His highest cited article has 99 citations (# 6, published in 2001). His highest cited article in the last 5 years has 86 citations (# 18, published in 2008).

51. A.S. Stillwell and **M.E. Webber**, "Evaluating power generation operations in response to changes in surface water reservoir storage," *Environmental Research Letters* **8** 025014 (15pp) (2013).
50. C.W. King, A.S. Stillwell, K.T. Sanders and **M.E. Webber**, "Coherence between water and energy policies," *Natural Resources Journal* (98pp) (2013).
49. K.T. Sanders, C.W. King, A.S. Stillwell, and **M.E. Webber**, "Clean Energy and Water: Assessment of Mexico for Improved Water Services and Renewable Energy," *Environment, Development and Sustainability* (19pp) (2013).
48. A.S. Stillwell and **M.E. Webber**, "A Novel Methodology for Evaluating Economic Feasibility of Low-Water Cooling Technology Retrofits at Power Plants," *Water Policy* **15** (18pp) (2013).
47. E.A. Grubert, F.C. Beach and **M.E. Webber**, "Can switching fuels save water? A life cycle quantification of freshwater consumption for Texas coal- and natural gas-fired electricity," *Environmental Research Letters* **7** 045801 (11pp) (2012).
46. K.T. Sanders and **M.E. Webber**, "Evaluating the energy intensity of water in the United States," *Environmental Research Letters* **7** 034033 (11pp) (2012).
45. C.B. Harris and **M.E. Webber**, "A temporal assessment of vehicle use patterns and their impact on the provision of vehicle-to-grid services," *Environmental Research Letters* **7** 034033 (9pp) (2012).
44. C.M. Beal, A.S. Stillwell, C.W. King, S.M. Cohen, H. Berberoglu, R.P. Bhattarai, R. Connelly, **M.E. Webber**, R.E. Hebner, "Energy Return on Investment for Algal Biofuel Production Coupled with Wastewater Treatment," *Water Environment Research*, Volume **84**, Number 9 (19pp) (2012).
43. C.M. Beal, R.E. Hebner, **M.E. Webber**, R.S. Ruoff, F. Seibert, and C.W. King, "Comprehensive Evaluation of Algal Biofuel Production: Experimental and Target Results," *Energies (Special Issue: Algal Fuel)* **5**(6) (39pp) (2012)
42. C.M. Beal, R.E. Hebner, **M.E. Webber**, "Thermodynamic Analysis of Algal Biocrude Production," *Energy*, Volume **44**, Issue 1 (19pp) (2012).
41. C.B. Harris, J.P. Meyers, and **M.E. Webber**, "A unit commitment study of the application of energy storage toward the integration of renewable generation," *Journal of Renewable and Sustainable Energy*, Volume **4**, Issue 1 (20pp) (2012).
40. A.K. Townsend and **M.E. Webber**, "An Integrated Analytical Framework for Quantifying the LCOE of Waste-to-Energy Facilities for a Range of Greenhouse Gas Emissions Policy and Technical Factors," *Waste Management* (12pp) (2012).

39. S.M. Cohen, G.T. Rochelle, and **M.E. Webber**, “Optimizing post-combustion CO₂ capture in response to volatile electricity prices,” *International Journal of Greenhouse Gas Control Technologies*, **8** (16pp) (2012).
38. A.S. Stillwell, K.M. Twomey, R. Osborne, D.M. Greene, D.W. Pedersen, and **M.E. Webber**, “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*, **Vol 1 No 4**, pp. 208–223 (15pp) (2011).
37. N.S. Alhajeri, P. Donohoo, A.S. Stillwell, C.W. King, M.D. Webster, **M.E. Webber**, and D.T. Allen, “Using Market-Based Dispatching With Environmental Price Signals to Reduce Emissions and Water Use at Power Plants in the Texas Grid,” *Environmental Research Letters* **6** (9pp) (2011) 044018.
36. J.D. Rhodes, B. Stephens, and **M.E. Webber**, “Using energy audits to investigate the impacts of common air-conditioning design and installation issues on peak power and energy consumption in Austin, Texas,” *Energy and Buildings*, **43** 3271–3278 (8pp) (2011).
35. A.S. Stillwell, M.E. Clayton, and **M.E. Webber**, “Technical analysis of a river basin-based model of advanced power plant cooling technologies for mitigating water management challenges,” *Environmental Research Letters* **6** 034015 (11pp) (2011). [**Selected for ERL’s Highlights 2011**]
34. C.M. Beal, R.E. Hebner, **M.E. Webber**, R.S. Ruoff, and F. Seibert, “The Energy Return on Investment for Algal Biocrude: Results for a Research Production Facility,” *Bioenergy Research* (5)2:341–362 (22pp) (2012). (Published online July 2011) [**Top Five Most-Downloaded Article, July 2011**].
33. J.B. Garrison and **M.E. Webber**, “An Integrated Energy Storage Scheme for a Dispatchable Solar and Wind Powered Energy System,” *Journal of Renewable and Sustainable Energy* **3** 043101 (12pp) (2011). [**Top 20 Most-Downloaded Article, July 2011–Feb 2012**]
32. T.M. Thompson, C.W. King, D.T. Allen, and **M.E. Webber**, “Air Quality Impacts of Plug-in Hybrid Electric Vehicles in Texas: Evaluating Three Battery Charging Scenarios,” *Environmental Research Letters* **6** 024004 (11pp) (2011). [**Selected for ERL’s Highlights 2011**]
31. S.M. Cohen, H.L. Chalmers, **M.E. Webber**, and C.W. King, “Comparing post-combustion CO₂ capture operation at retrofitted coal-fired power plants in the Texas and Great Britain electric grids,” *Environmental Research Letters* **6** 024001 (14pp) (2011). [**Selected for ERL’s Highlights 2011**]
30. S.M. Cohen, **M.E. Webber**, and G.T. Rochelle, “Utilizing Solar Thermal Energy for Post-Combustion CO₂ Capture,” *Journal of Energy and Power Engineering* (14pp) (2011).
29. A.S. Stillwell, C.W. King, **M.E. Webber**, I. J. Duncan and A. Hardberger, “The Energy-Water Nexus in Texas,” *Ecology and Society (Special Feature: The Energy-Water Nexus: Managing the Links between Energy and Water for a Sustainable Future)* **16** (1): 2 (20pp) (2011).
28. D.M. Wogan, **M.E. Webber**, and A.K. da Silva, “A Framework and Methodology for Reporting Geographically- and Temporally-Resolved Solar Data: A Case Study of Texas,” *Journal of Renewable and Sustainable Energy* (22pp) (2010). [**Top 20 Most-Downloaded Article**,

Jan–Feb 2011]

27. C.M. Beal, C.H. Smith, **M.E. Webber**, R.S. Ruoff, and R.E. Hebner, “A Framework to Report the Production of Renewable Diesel from Algae, *Bioenergy Research*, Vol 4, Issue 1 , p. 36 (25pp) (2011). [**Top Five Most-Downloaded Article, December 2010–August 2011**].
26. A.S. Stillwell, C.W. King, and **M.E. Webber**, “Desalination And Long-Haul Water Transfer as a Water Supply for Dallas, Texas: A Case Study Of The Energy-Water Nexus In Texas,” *Texas Water Journal*, Volume 1, Number 1, Pages 33-41 (8pp) September 2010.
25. A.D. Cuellar and **M.E. Webber**, “Wasted Food, Wasted Energy: The Embedded Energy in Food Waste in the United States,” *Environmental Science and Technology*, **44**(16) (6pp) July 21, 2010. (**2nd-Most Downloaded Paper in 2010; 3rd-Most Downloaded in 2011**)
24. S.M. Cohen, G.T. Rochelle, and **M.E. Webber**, “Turning CO₂ Capture On & Off In Response To Electric Grid Demand: A Baseline Analysis Of Emissions And Economics,” *ASME Journal of Energy Resources Technology*, Vol.132, Iss.2 (8pp) May 17, 2010.
23. A.S. Stillwell, D.C. Hoppock and **M.E. Webber**, “Energy Recovery from Wastewater Treatment Plants in the United States: A Case Study of the Energy-Water Nexus,” *Sustainability (special issue Energy Policy and Sustainability)* **2**(4) (18pp) (2010).
22. C.M. Beal, **M.E. Webber**, R.S. Ruoff and R.E. Hebner, “Lipid Analysis of *Neochloris oleoabundans* by Liquid State NMR,” *Biotechnology and Bioengineering* (11pp) (2010).
21. C.W. King, **M.E. Webber** and I. J. Duncan, “The Water Needs for LDV Transportation in the United States,” *Energy Policy*, Vol. 38 (2), pp 1157-1167 (11pp) (2010).
20. K.M. Twomey, A.S. Stillwell, and **M.E. Webber**, “The Unintended Energy Impacts of Increased Nitrate Contamination from Biofuels Production,” *Journal of Environmental Monitoring* **12** (7pp) (2010).
19. T.M. Thompson, **M.E. Webber**, and D.T. Allen, “Air Quality Impacts of Using Overnight Electricity Generation to Charge PHEVs for Daytime Use,” *Environmental Research Letters* **4** 014002 (12pp) January 2009. [**Top 30 Most-Downloaded Article, 2009**]
18. C.W. King and **M.E. Webber**, “Water Intensity of Transportation,” *Environmental Science and Technology*, **42**(21), pp 7866-7872 (7pp) (September 24, 2008).
17. A.D. Cuellar and **M.E. Webber**, “Cow Power: The Energy and Emissions Benefits of Converting Manure to Biogas,” *Environmental Research Letters*, **3** 034002 (8pp) July 2008. [**Second-Most downloaded paper in 2009**].
16. C.W. King and **M.E. Webber**, “The Water Intensity of the Plugged-in Automotive Economy,” *Environmental Science and Technology, Special Edition: World’s Water*, **42**, 4305–4311 (7pp) 20 Feb 2008 [**Most downloaded paper in Q1 2008**].
15. **M.E. Webber**, “The Water Intensity of the Transitional Hydrogen Economy,” *Environmental Research Letters* **2** 034007 (7pp) (2007).
14. S.L. Pfleeger, M. Libicki, and **M.E. Webber**, “Ill Buy That! Cybersecurity in the Internet Marketplace,” *IEEE Security and Privacy, special issue on Managing Organizational Security*, May/June 2007.
13. M.B. Pushkarsky, **M.E. Webber**, T. MacDonald, and C.K.N. Patel, “High Sensitivity, High-

- Selectivity Detection of Chemical Warfare Agents,” *Applied Physics Letters*, January 27, 2006.
12. **M.E. Webber**, T. MacDonald, M.B. Pushkarsky, C.K.N. Patel, Y. Zhao, N. Marcillac and F.M. Mitloehner, “Agricultural ammonia sensor using diode lasers and photoacoustic spectroscopy,” *Meas. Sci. Technol.* 16, pp. 15471553, 2005. (**Outstanding Paper award as MS&T’s best paper for 2005, measurement science category.**)
 11. **M.E. Webber**, M.B. Pushkarsky and C.K.N. Patel, “Optical Detection of Chemical Warfare Agents and Toxic Industrial Chemicals: Simulation,” *Journal of Applied Physics* 97(11), 2005.
 10. M.B. Pushkarsky, **M.E. Webber** and C.K.N. Patel, “Ultra-sensitive ambient ammonia detection using CO₂-laser-based photoacoustic spectroscopy,” *Appl. Phys. B* 77(4), pp. 381385, 2003.
 9. **M.E. Webber**, M.B. Pushkarsky, and C.K.N. Patel, “Fiber-amplifier enhanced photoacoustic spectroscopy using near-infrared tunable diode lasers,” *Applied Optics, LACEA Feature Issue*, 42(12), 2003.
 8. M.B. Pushkarsky, **M.E. Webber**, O. Baghdassarian, L.R. Narasimhan, and C.K.N. Patel, “Laser-based photoacoustic ammonia sensors for industrial applications,” *Applied Physics B*. 75(2-3), 2002.
 7. **M.E. Webber**, R. Claps, F.V. Englich, F.K. Tittel, J.B. Jeffries and R.K. Hanson, “Measurements of NH₃ and CO₂ with distributed-feedback diode lasers Near 2 μm in bioreactor vent gases,” *Applied Optics*, 40(24), 2001.
 6. **M.E. Webber**, D.S. Baer, and R.K. Hanson, “Ammonia Monitoring Near 1.5 μm with Diode Laser Absorption Sensors,” *Applied Optics*, 40(12), pp. 2031- 2042, 2001.
 5. **M.E. Webber**, S. Kim, S.T. Sanders, D.S. Baer, R.K. Hanson and Y. Ikeda, “In Situ Combustion Measurements of CO₂ Using a DFB Diode Laser Sensor at 2.0 μm,” *Applied Optics*, Vol. 40(6), 2001.
 4. **M.E. Webber**, J. Wang, S.T. Sanders, D.S. Baer and R.K. Hanson, “In Situ Combustion Measurements of CO, CO₂, H₂O and Temperature Using Diode Laser Absorption Sensors,” *Proceedings of the Combustion Institute*, 28, pp. 407-413, 2000.
 3. E.R. Furlong, R.M. Mihalcea, **M.E. Webber**, D.S. Baer and R.K. Hanson, “Diode-laser sensors for real-time control of pulsed combustion systems,” *AIAA Journal* 37(6), pp. 732–737, 1999.
 2. **M.E. Webber**, R.M. Mihalcea, D.S. Baer, R.K. Hanson, J. Segall, P.A. DeBarber, “Diode Laser Absorption Measurement of Hydrazine and Monomethylhydrazine,” *J. Quant. Spectrosc. Radiative Transfer*, 62(4), pp. 511-522 (1999).
 1. R.M. Mihalcea, **M.E. Webber**, D.S. Baer, R.K. Hanson, G.S. Feller, and W.B. Chapman, “Diode-Laser Absorption Measurements of CO₂, H₂O, N₂O and NH₃ near 2.0 μm,” *Applied Physics B*. 67(3), 1998

Peer-Reviewed Conference Proceedings

Since joining the UT faculty, Webber has authored or co-authored more than 75 articles that have been published (or are in review) in peer-reviewed conference proceedings. These conferences primarily include those organized by ASME (International Energy Sustainability (ES), International Mechanical Engineering Congress & Exposition (IMECE), and International Design Engineering Technical Conference (IDETC)), in addition to those organized by other professional organizations and trade associations. These articles are listed in reverse chronological order here. Papers that won awards are noted as such (with **bold** font).

79. R.L. Fares and **M.E. Webber**, “Dynamic Modeling of Community Energy Storage for Lifetime Estimation during Islanding by Robert Fares, Michael Webber,” 223rd ECS Meeting in Toronto, Ontario, Canada (May 12-16, 2013).
78. S.M. Cohen, **M.E. Webber**, and G.T. Rochelle, “The Impact of Electricity Market Conditions on the Value of Flexible CO₂ Capture,” *ASME 2012 International Mechanical Engineering Congress & Exposition*, November 9–15, 2012, Houston, TX, USA.
77. M.E. Clayton and **M.E. Webber**, “Assessment of Embedded Water Needs at a Mixed-Use Facility in Palo Alto, CA,” *ASME 2012 International Mechanical Engineering Congress & Exposition*, November 9–15, 2012, Houston, TX, USA.
76. A.S. Stillwell and **M.E. Webber**, “Value of Reservoir Storage for Resilient Power Plant Cooling and Basin-Wide Water Availability,” *ASME 2012 International Mechanical Engineering Congress & Exposition*, November 9–15, 2012, Houston, TX, USA.
75. A.C. Breckel, J.R. Fyffe, and **M.E. Webber**, “Net Energy and CO₂ Emissions Analysis of Using MRF Residue as Solid Recovered Fuel at Coal Fired Power Plants,” *ASME 2012 International Mechanical Engineering Congress & Exposition*, November 9–15, 2012, Houston, TX, USA.
74. S.M. Cohen, G.T. Rochelle, and **M.E. Webber**, “Optimal CO₂ capture operation in an advanced electric grid,” *Energy Procedia* (2013), *Proceedings of the 11th International Conference on Greenhouse Gas Technologies (GHGT-11)*, Kyoto, Japan (2012).
73. N.H. Putnam, C.C. Seepersad and **M.E. Webber**, “Designing Sustainable Military Base Camps Under Uncertain Operational Conditions,” *Proceedings of the ASME 2012 International Design Engineering Technical Conferences*, August 12–15, 2012, Chicago, IL, US.
72. K. Nagasawa, C.R. Upshaw, J.D. Rhodes, C. Holcomb and **M.E. Webber**, “Data Management for a Large-Scale Smart Grid Demonstration Project in Austin, Texas,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
71. K.M. Twomey, S. Conover, and **M.E. Webber**, “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.
70. C.M. Meehan, **M.E. Webber**, and K. Nagasawa, “The Net Impact of Wind Energy Generation on Emissions of Carbon Dioxide in Texas,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.

69. J.D. Rhodes, K. Nagasawa, C.R. Upshaw, and **M.E. Webber**, “The Role of Small Distributed Natural Gas Fuel Cell Technologies in the Smart Energy Grid,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
68. A.S. Stillwell and **M.E. Webber**, “Reclaimed Water for Power Plant Cooling: What Do We Know and Where Could We Go?,” World Environmental and Water Resources Congress 2012, American Society of Civil Engineers, Albuquerque, NM, May 24-28, 2012.
67. J.D. Rhodes, B. Stephens, and **M.E. Webber**, “Energy Audit Analysis of Residential Air-Conditioning Systems In Austin, Texas,” ASHRAE 2012 Winter Conference, January 21-25, 2012, Chicago, IL, USA.
66. A.K. Townsend and **M.E. Webber**, “Energetic and Economic Performance of a Compressed Air Energy Storage Facility in Texas as a Function of Technical and Cost Parameters,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
65. J.R. Fyffe, M.E. Clayton, C.E. Grosvenor, and **M.E. Webber**, “Analysis of Large-Scale Ground Source Heat Pump Systems for Residential Heating and Cooling in Austin, TX,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
64. J.R. Fyffe, A.K. Townsend, and **M.E. Webber**, “Thermodynamic Analysis of End-of-Life Pathways for Recycling Residue,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
63. K.M. Twomey and **M.E. Webber**, “Evaluating The Carbon Embedded In The US Public Water Supply,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
62. M.E. Clayton, A.S. Stillwell, and **M.E. Webber**, “Implementation of Brackish Groundwater Desalination using Wind-Generated Electricity as a Proxy for Energy Storage: A Case Study of the Energy-Water Nexus in Texas,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
61. B.H. Gully, **M.E. Webber**, C.C. Seepersad, “Shaft Motor-Generator Design Assessment for Increased Operational Efficiency in Container Ships,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
60. C.R. Upshaw and **M.E. Webber**, “Integrated Thermal-Fluids System Modeling of an Ocean Thermal Energy Conversion Power Plant for Analysis and Optimization,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
59. C.E. Grosvenor, M.C. Lott and **M.E. Webber**, “A Methodology for Evaluating the Environmental Trade-Offs for Different Travel and Information Communication Technologies (ICT),” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
58. E.A. Grubert and **M.E. Webber**, “Water, Energy, And Land Use Planning On Maui Island, Hawaii: Estimating Surface Water Supply,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.

57. J.B. Garrison and **M.E. Webber**, “An Integrated Energy Storage Scheme For A Dispatchable Solar And Wind Powered Energy System And Analysis Of Dynamic Parameters,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
56. A.K. Townsend and **M.E. Webber**, “Optimization of Technical and Operational Characteristics of a CAES Facility in West Texas to Balance Intermittent Wind Power,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
55. J.R. Fyffe, S.M. Cohen and **M.E. Webber**, “Comparing Flexible CO₂ Capture In Gas- And Coal-Dominated Electricity Markets,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
54. K.M. Twomey and **M.E. Webber**, “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.
53. N.H. Putnam, **M.E. Webber**, C.C. Seepersad, “Trucks Off The Road: A Volumetric Framework For Evaluating Energy Technologies For Forward Operating Military Base Camps,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
52. A. Lozano and **M.E. Webber**, “Thermodynamic Analysis of a Novel Thermoelectric Generator in the Built Environment,” 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, 9th Annual International Energy Conversion Engineering Conference, San Diego, CA, July 2011.
51. E. Grubert and **M.E. Webber**, “Modeling Maui’s Freshwater System to Inform Water Resource Management,” World Environmental and Water Resources Congress 2011, American Society of Civil Engineers, Palm Springs, CA, May 22-26, 2011.
50. A. S. Stillwell, K.M. Twomey, **M.E. Webber**, R. Osborne, D.M. Greene, D.W. Pedersen, “An Integrated Energy, Carbon, and Economic Analysis of Reclaimed Water Use in Austin, Texas,” World Environmental and Water Resources Congress 2011, American Society of Civil Engineers, Palm Springs, CA, May 22-26, 2011.
49. M.E. Clayton, A.S. Stillwell and **M.E. Webber**, “A Model of Implementing Advanced Power Plant Cooling Technologies to Mitigate Water Management Challenges in Texas River Basins,” *ASME 2010 International Mechanical Engineering Congress & Exposition*, November 12–18, 2010, Vancouver, British Columbia, Canada.
48. B.H. Gully, **M.E. Webber** and C.C. Seepersad, “A Comparative Analysis Of Wind Propulsion Systems For Ocean-Going Vessels,” *ASME 2010 International Mechanical Engineering Congress & Exposition*, November 12–18, 2010, Vancouver, British Columbia, Canada.
47. C.M. Beal, R.E. Hebner, **M.E. Webber**, R.S. Ruoff, and A.F. Seibert, “The Energy Return On Investment For Algal Biocrude: Results For A Research Production Facility,” *ASME 2010 International Mechanical Engineering Congress & Exposition*, November 12–18, 2010, Vancouver, British Columbia, Canada.
46. A.S. Stillwell, M.E. Clayton, **M.E. Webber**, D.T. Allen, and M.D. Webster, “A River Basin-Based Model of Advanced Power Plant Cooling Technologies for Mitigating Water Manage-

- ment Challenges,” AIChE 2010 Annual Meeting, Salt Lake City, UT, 2010.
45. S.M. Cohen, G.T. Rochelle and **M.E. Webber**, “The Value of Flexible Post-Combustion CO₂ Capture in Response to Volatile Electricity Prices,” *Energy Procedia* (2011), *Proceedings of the 10th International Conference on Greenhouse Gas Technologies (GHGT-10)*, Amsterdam, The Netherlands (2010).
 44. J.B. Garrison and **M.E. Webber**, “An Integrated Energy Storage Scheme for a Dispatchable Solar and Wind Powered Energy System,” ECOS conference, June 2010.
 43. A.S. Stillwell and **M.E. Webber**, “Feasibility Of Wind Power For Brackish Groundwater Desalination: A Case Study Of The Energy-Water Nexus In Texas,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 42. M.C. Lott and **M.E. Webber**, “Evaluation of H.R. 2454s Potential Impacts on Texas Electricity Profile Using the Rosenfeld Effect as a Basis for Evaluation,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 41. A.K. Townsend and **M.E. Webber**, “Technical and Economic Analysis of a Waste-to-Energy Plant for Austin, TX Under a Range of Greenhouse Gas Emissions Prices,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 40. A.D. Cuellar and **M.E. Webber**, “An Updated Estimate for Energy Use in U.S. Food Production and Policy Implications,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 39. B.H. Gully, **M.E. Webber**, C.C. Seepersad and R.C. Thompson, “Integrating Renewable Energy Technologies to Reduce Large Ship Fuel Consumption,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 38. C.B. Harris, **M.E. Webber** and J.P. Meyers, “Electric Utility Operational Cost and Emissions Management with Grid-Scale Energy Storage,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 37. D.M. Wogan, **M.E. Webber**, and A.K. da Silva, “A Resource-Limited Approach to Estimating Algal Biomass Production with Geographical Fidelity,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 36. E.A. Grubert and **M.E. Webber**, “The Impact of the American Clean Energy and Security Act of 2009 on Texas Water Systems,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 35. J.B. Garrison and **M.E. Webber**, “Simulating the Dynamic and Steady State Response of a Rotor Resistive Controlled 1.5 MW Variable Speed Wind Turbine,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 34. J.R. Fyffe, S.M. Cohen, **M.E. Webber**, and G.T. Rochelle, “Analysis of Flexible CO₂ Capture Over An Investment Life Using A Dynamic Electric Grid Model,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
 33. K.M. Twomey and **M.E. Webber**, “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, US. [Best Student Paper Award]

32. S.M. Cohen, **M.E. Webber** and G.T. Rochelle, “Using Solar Thermal energy for Post-Combustion CO₂ Capture,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US.
31. A.S. Stillwell and **M.E. Webber**, “Water Conservation and Reuse: A Case Study of the Energy-Water Nexus in Texas,” World Environmental and Water Resources Congress 2010, Providence, Rhode Island, USA.
30. C. Telenko, C.C. Seepersad and **M.E. Webber**, “A Method for Developing Design for Environment Guidelines for Future Product Design,” *Proceedings of ASME IDETC/CIE 2009*, August 30–September 2, 2009, San Diego, CA.
29. B.H. Gully, **M.E. Webber**, C.C. Seepersad, and R.C. Thompson, “Energy Storage Analysis to Increase Large Ship Fuel Efficiency,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
28. C.M. Beal, C.H. Smith, **M.E. Webber** and R.S. Ruoff, “A Framework to Report the Production of Biodiesel from Algae,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
27. C.W. King and **M.E. Webber**, “Methodology for Calculating the Ability of Renewable Energy Systems to Manufacture Themselves,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
26. J.B. Garrison, M. Kapner and **M.E. Webber**, “A First Order Thermodynamic And Economic Analysis For Integrating Thermal And Compressed Air Energy Storage For A Dispatchable Wind And Solar Powered System,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
25. S.M. Cohen, J.R. Fyffe, G.T. Rochelle and **M.E. Webber**, “The Effect of Fossil Fuel Prices on Flexible CO₂ Capture Operation,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
24. A.D. Cuellar and **M.E. Webber**, “Policy Incentives, Barriers and Recommendations for Biogas Production,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
23. D.M. Wogan, A.K. da Silva, and **M.E. Webber**, “Assessing the Potential for Algal Biofuels Production in Texas,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
22. A.S. Stillwell, C.W. King and **M.E. Webber**, “Desalination And Long-Haul Water Transfer A Case Study Of The Energy-Water Nexus In Texas,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
21. K.M. Twomey, A.S. Stillwell, and **M.E. Webber**, “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.
20. M.C. Lott, C.W. King and **M.E. Webber**, “Analyzing Tradeoffs in Electricity Choices Using the Texas Interactive Power Simulator (TIPS),” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.

19. M.C. Lott, C.W. King and **M.E. Webber**, “Using the Texas Interactive Power Simulator (TIPS) for Direct Instruction,” Proceedings of the ASEE Annual Meeting, Austin, TX, 2009.
18. A.S. Stillwell and **M.E. Webber**, “Energy and Water: Integration for Sustainable Policy,” APSA, Proceedings of the International Sustainability Conference, Villanova University, April 22-25, 2009.
17. M.C. Lott, C.W. King, **M.E. Webber** and K. Schmidt, “The Texas Interactive Power Simulator — An Analytical Tool for Direct Instruction & Informing the Public,” ASEE GSW Conference 2009, Waco, TX, March 2009.
16. S. Ziaii, S.M. Cohen, G.T. Rochelle, T.F. Edgar and **M.E. Webber**, “Dynamic operation of amine scrubbing in response to electricity demand and pricing,” *Energy Procedia*, Volume 1, Issue 1, February 2009, Pages 4047-4053, *Proceedings of the 9th International Conference on Greenhouse Gas Control Technologies (GHGT-9)*, Washington DC, USA (2008).
15. A.D. Cuellar and **M.E. Webber**, “Cow Power: The Energy And Air Quality Benefits Of Converting Manure To Biogas,” International Mechanical Engineering Congress & Exposition 2008, ASME: Boston, MA
14. E.M. Keys and M.E. Webber, An Assessment and Comparison of Installed Solar and Wind Capacity in Texas,” *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA.
13. S.M. Cohen, G.T. Rochelle and **M.E. Webber**, “Turning CO₂ Capture On & Off in Response to Electric Grid Demand in Texas: A Baseline Analysis of Emissions and Economics,” *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA.
12. C.W. King, **M.E. Webber**, and I.J. Duncan, “Water Intensity Of Transportation Fuels: Water Projections For Fuel Adoption Rates Of Light Duty Vehicles,” *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA.
11. C.H. Smith, D.M. Leahey, L.E. Miller, J.L. Ellzey and **M.E. Webber**, “Conversion of Wet Ethanol to Syngas and Hydrogen,” *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA. [**Best Student Paper Award**]
10. C. Telenko, C.C. Seepersad and **M.E. Webber**, “A Compilation Of Design For Environment Principles And Guidelines,” Proceedings of ASME IDETC/CIE 2008, August 3-6, 2008, New York, NY.
9. M.B. Pushkarsky, **M.E. Webber**, and C.K.N. Patel, “High-sensitivity high-selectivity detection of CWAs and TICs using tunable laser photoacoustic spectroscopy,” Proceedings of SPIE – Volume 5732, Quantum Sensing and Nanophotonic Devices II, Manijeh Razeghi, Gail J. Brown, Editors, March 2005, pp. 93-107.
8. **M.E. Webber**, M.B. Pushkarsky, and C.K.N. Patel, “Optical detection of chemical warfare agents and toxic industrial chemicals,” Proceedings of SPIE Vol. 5617, Optically Based Biological and Chemical Sensing for Defence, edited by John C. Carrano, Arturas Zukauskas (SPIE, Bellingham, WA, 2004).
7. M.B. Pushkarsky, **M.E. Webber**, Tyson MacDonald and C.K.N. Patel, “High sensitivity

- photoacoustic detection of chemical warfare agents,” Invited Paper, Proceedings of SPIE Vol. 5617, Optically Based Biological and Chemical Sensing for Defence, edited by John C. Carrano, Arturas Zukauskas (SPIE, Bellingham, WA, 2004).
6. **M.E. Webber**, M.B. Pushkarsky and C.K.N. Patel, “Agricultural ammonia sensor using diode lasers and photoacoustic spectroscopy,” Proceedings of the Laser Applications for Chemical and Environmental Analysis (LACEA) Topical Meeting, Optical Society of America, Annapolis, MD, February 911, 2004.
 5. M.B. Pushkarsky, **M.E. Webber** and C.K.N. Patel, “Ultra-sensitive ambient trace-gas sensor using CO₂ lasers and photoacoustic spectroscopy,” Proceedings of the Laser Applications for Chemical and Environmental Analysis (LACEA) Topical Meeting, Optical Society of America, Annapolis, MD, February 911, 2004.
 4. **M.E. Webber**, M.B. Pushkarsky, and C.K.N. Patel, “Ultra-Sensitive Gas Detection Using Diode Lasers and Resonant Photoacoustic Spectroscopy,” Proc. Of SPIE, vol. 4817 (2002), pp. 111122, SPIE’s International Symposium on Optical Science and Technology, Seattle, WA.
 3. **M.E. Webber**, M.B. Pushkarsky, O. Baghdassarian, L.R. Narasimhan, and C.K.N. Patel, “Ultra-sensitive ammonia detection for industrial applications using photoacoustic spectroscopy,” Proceedings of the Laser Applications for Chemical and Environmental Analysis (LACEA) Topical Meeting, Optical Society of America, Boulder, CO, February 911, 2002.
 2. **M.E. Webber**, S. Kim, D.S. Baer, and R.K. Hanson, “In Situ Combustion Diagnostics using Diode Laser Absorption Sensors,” Laser Applications to Chemical and Environmental Analysis (LACEA), Santa Fe, NM, Feb., 2000.
 1. E.R. Furlong, R.M. Mihalcea, **M.E. Webber**, D.S. Baer, and R.K. Hanson, “Diode-Laser Sensor System for Closed-Loop Control of a 50-kW Incinerator,” Proc. of SPIE, Vol. 3172, paper 33; presented at 42nd annual SPIE meeting, San Diego, July, 1997.

Contributed Papers, Posters and Presentations and Extended Abstracts

Since joining the UT faculty, Webber has authored or co-authored 50 contributed papers, posters or presentations (non peer-reviewed) for conferences. These conferences primarily include those organized by ASME, and are listed in reverse chronological order here.

50. D. Tuttle, R.L. Fares, **M.E. Webber** and R. Baldick, “Plug-In Vehicle to Home (V2H) Duration and Power Output Capability,” 2013 IEEE Transportation Electrification Conference and Expo (ITEC 2013), Detroit, Michigan, June 16–19, 2013.
49. J.D. Rhodes, K. Nagasawa, C.R. Upshaw, and **M.E. Webber**, “Residential solar PV installation optimization and lessons learned,” *ASME 2012 International Mechanical Engineering Congress & Exposition*, November 9–15, 2012, Houston, TX, USA.
48. K.T. Sanders, C.W. King, A.S. Stillwell, and **M.E. Webber**, “Clean Energy and Water: Assessment of Mexico for Improved Water Services with Renewable Energy,” *ASME 2012 International Mechanical Engineering Congress & Exposition*, November 9–15, 2012, Houston, TX, USA.
47. K.T. Sanders and **M.E. Webber**, “Evaluating Regional Variations in the Energy Intensity of US Water Systems,” *ASME 2012 International Mechanical Engineering Congress & Exposition*, November 9–15, 2012, Houston, TX, USA.
46. C.M. Meehan, C.W. King, and **M.E. Webber**, “The Total Impact of Wind Energy Variability on Fossil Fuel Emission Rates in Texas,” Proceedings of the 31st USAEE/IAEE North American Conference, Austin, TX, November 2012.
45. A.S. Stillwell and **M.E. Webber**, “Thermal Discharge Implications for Drought and Heat Wave Resiliency of Thermoelectric Power Plant,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
44. C.B. Harris and **M.E. Webber**, “A Temporally-Resolved Assessment of the Potential for Vehicle-to-Grid Storage in ERCOT,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
43. J.R. Fyffe, A.C. Breckel and **M.E. Webber**, “Thermoeconomic Analysis of Using Recycling Residue As Solid Recovery Fuel at Cement Kilns,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
42. M.A. Cook, C.W. King, A.S. Stillwell, and **M.E. Webber**, “Alternative Water Sources for Hydraulic Fracturing in Texas,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
41. M.E. Clayton and **M.E. Webber**, “Assessment of Embedded Water Needs at a Mixed-Use Facility in Palo Alto, California,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
40. S.M. Cohen and **M.E. Webber**, “Unit Commitment Modeling to Explore Intermittency, Flexibility, and Storage in the ERCOT Electric Grid,” *Proceedings of the ASME 6th International Conference on Energy Sustainability*, July 23–26, 2012, San Diego, CA, USA.
39. J.D. Rhodes and **M.E. Webber**, “Smart Grid in Texas, What’s Happening?” 2012 ASHRAE Annual Conference, San Antonio, TX, June 27, 2012

38. A.S. Stillwell and **M.E. Webber**, “Assessing the Economic Value of Drought Mitigation from Alternative Power Plant Cooling Technologies,” IWA-WCE 2012, Dublin, Ireland, May 13–18, 2012.
37. K.M. Twomey and **M.E. Webber**, “Evaluating the Energy Intensity of the US Water System,” IWA-WCE 2012, Dublin, Ireland, May 13–18, 2012.
36. C.W. King and **M.E. Webber**, “Modeling studies of water consumption for transportation fuel options: Hawaii, US-48,” American Geophysical Union (AGU) Annual Meeting, San Francisco, CA, December 5–9, 2011.
35. J.B. Garrison and **M.E. Webber**, “A Dynamic Model of an Integrated Energy Storage Scheme for a Dispatchable Solar and Wind Powered Energy System,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
34. J.D. Rhodes and **M.E. Webber**, “Smart Grid, Smart Water: Real-Time Water Use Data From a Community in Austin, Texas,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
33. A.S. Stillwell, K.M. Twomey, **M.E. Webber**, R. Osborne, D.M. Greene and D.W. Pedersen, “An Integrated Energy, Carbon, and Economic Analysis of Reclaimed Water Use in Austin, Texas,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
32. A.S. Stillwell, M.E. Clayton and **M.E. Webber**, “Technical Analysis of a River Basin-Based Model of Advanced Power Plant Cooling Technologies for Mitigating Water Management Challenges,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
31. E.A. Grubert, C.W. King and **M.E. Webber**, “Water for Biomass-based Energy on Maui, Hawaii,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA.
30. C.W. King, K.M. Twomey, and **M.E. Webber**, “Policies and Technologies of the Energy-Water Nexus,” Ground Water Protection Council, September 2011, Atlanta, GA.
29. C.B. Harris and **M.E. Webber**, “Unit commitment modeling with energy storage portfolio selection toward generic storage performance metrics,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
28. S.M. Cohen, **M.E. Webber** and G.T. Rochelle, “The Impact of Plant Design and Electricity Market Conditions on Optimal Flexible CO₂ Capture Operation,” *Proceedings of the ASME 5th International Conference on Energy Sustainability*, August 7–10, 2011, Washington, DC, USA.
27. S.M. Cohen, **M.E. Webber** and G.T. Rochelle, “Expediting CCS Commercialization Using Flexible CO₂ Capture,” 10th Annual Conference on Carbon Capture and Sequestration, Pittsburgh, PA, 2011.
26. C. E. Grosvenor, M. C. Lott, and **M.E. Webber**, “A Methodology for Analyzing Energy and Environmental Trade-offs For Different Travel And Information Communication Technologies Options,” IEEE, 2011 International Symposium on Sustainable Systems and Technology (ISSST).

25. A.S. Stillwell, M.E. Clayton, **M.E. Webber**, D.T. Allen and M.D. Webster, “A River Basin-Based Model of Advanced Power Plant Cooling Technologies for Mitigating Water Management Challenges,” AIChE Annual Meeting, Salt Lake City, UT, November 2010.
24. C.M. Beal, R.E. Hebner, **M.E. Webber**, R.S. Ruoff, and A.F. Seibert, “The Energy Return On Investment For Algal Biocrude: Results For A Research Production Facility,” Algal Biomass Summit, September 2010.
23. C.M. Beal, **M.E. Webber**, R.S. Ruoff, R.E. Hebner, D. Romanovicz, and R. Connelly, “Analytical Tools for Evaluating Algal Biodiesel Production,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
22. D.M. Wogan, **M.E. Webber** and A.K. da Silva, “Improved Methodology for Reporting Solar Radiation Data,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA.
21. S.M. Cohen, G. T. Rochelle, and **M.E. Webber**, “Using Process Flexibility to Improve the Economics of Post-Combustion CO₂ Capture,” 8th Annual Conference on Carbon Capture and Sequestration, Pittsburgh, PA, Exchange Monitor Publications & Forums (2009).
20. A.S. Holman, C.W. King and **M.E. Webber**, “Energy Water Nexus in Texas: Planning for Future Energy and Water Needs,” Texas Climate Change conference, April 28, 2009.
19. M.C. Lott and **M.E. Webber**, “Designing a Sustainable Energy Future through Environmental & Economic Tradeoff Analysis,” American Political Science Association International Sustainability Conference, April 2009.
18. MC. Lott and **M.E. Webber**, “Understanding the Environmental Impacts of Texas Electricity Generation Choices: An Analytical Approach,” IMECE2008-68919, International Mechanical Engineering Congress & Exposition 2008, ASME: Boston, MA, November 4, 2008.
17. C.W. King, **M.E. Webber**, and A.S. Holman, “Water-Energy Nexus: Fuels, Electricity, and Bureaucracy,” Gordon Research Conference: Industrial Ecology, August 2008.
16. A.D. Cuellar and **M.E. Webber**, “Cow Power: The Energy and Emissions Benefits of Converting Manure to Biogas,” *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA.
15. D. Hoppock and **M.E. Webber**, “Energy Use and Production in the Wastewater Treatment Sector,” *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA.
14. D. Kenski, M.B. Pushkarsky, **M.E. Webber**, C.K.N. Patel, and P. Dasgupta, “Field study: Intercomparison of Two Continuous Ammonia Monitors,” National Atmospheric Deposition Programs Ammonia Workshop, Washington, DC, October 2224, 2003.
13. R. Claps, D. Leleux, F.V. Englich, F.K. Tittel, **M.E. Webber**, J. Jeffries, R.K. Hanson, J.C. Graf, and L.M. Vega, “Infrared Overtone Spectroscopy Measurements of Ammonia and Carbon Dioxide in the Effluent of a Biological Water Processor,” 31st Inter. Conf. on Environmental Systems, Soc. Automotive Engineers, paper 190, Orlando, FL, July 2001.
12. **M.E. Webber**, J.B. Jeffries, and R.K. Hanson, “Vibration Overtone Spectroscopy of NH₃ for Industrial Sensors using DFB Diode Lasers,” at OSA Annual Meeting, Providence, RI,

Oct. 2000.

11. P. DeBarber, R.L. McKenzie, R.K. Hanson, J.B. Jeffries, and **M.E. Webber**, "Tunable Diode Laser Sensors for Industrial Combustion Monitoring," presented at 2000 American Flame Research Committee (AFRC) Int. Symp., Irvine, CA, Sept. 2000.
10. J. Wang, **M.E. Webber**, S.T. Sanders, D.S. Baer, J.B. Jeffries, and R.K. Hanson, "In Situ Measurements of CO, CO₂, H₂O Combustion Emissions with Diode Laser Sensors," E.P.A./ Air and Waste Management Association Symp., Research Triangle Park, NC, Sept. 12-14, 2000.
9. **M.E. Webber**, J. Wang, S.T. Sanders, D.S. Baer, J.B. Jeffries, R.K. Hanson, M. Maiorov, D.Z. Garbuzov, and J.C. Connolly, "Measurements of CO, CO₂ and H₂O Combustion Emissions and Flame Temperature using Diode Laser Sensors," ACS National Meeting, Envir. Chem. Symp., Washington, DC, Aug. 20-25, 2000.
8. **M.E. Webber**, S. Kim, D.S. Baer, and R.K. Hanson, "In Situ Combustion Measurements of CO₂ using Diode Laser Sensors Near 2.0 μm ," paper AIAA 2000-0775 at AIAA Aerospace Sciences Meeting, Reno, NV, Jan. 2000.
7. E.R. Furlong, D.S. Baer, R.M. Mihalcea, **M.E. Webber**, and R.K. Hanson, "Advanced Diode-Laser Absorption Sensors for Combustion Monitoring and Control," Proceedings of Joint Meeting of U.S. Combustion Institute Sections, pp. 865-869, Washington, DC, (1999).
6. R.M. Mihalcea, **M.E. Webber**, D.S. Baer, and R.K. Hanson, "Diode Laser Sensor for Combustion Emissions Monitoring," SPIE/VISJ, Yokohama, Dec. 7-9, 1998.
5. E.R. Furlong, R.M. Mihalcea, **M.E. Webber**, D.S. Baer, and R.K. Hanson, "Advanced Diode-Laser Sensors for Closed-Loop Control of a Forced-Vortex Combustor," 1998 OSA Annual Meeting, Oct., 1998, Baltimore, MD.
4. **M.E. Webber**, R.M. Mihalcea, D.S. Baer, R.K. Hanson, J. Segall, and P. DeBarber, "Diode Laser Absorption Measurements of Hydrazine and Monomethylhydrazine," paper AIAA-98-0400 at 36th Aerospace Sciences Meeting, Jan. 12-15, 1998, Reno, NV.
3. E.R. Furlong, R.M. Mihalcea, **M.E. Webber**, D.S. Baer, and R.K. Hanson, "Diode Laser Sensor System for Closed-Loop Control of a 50-kW Incinerator," paper AIAA-97-2833 at 33rd Joint Propulsion Conference, July 7-9, 1997, Seattle, WA.
2. E.R. Furlong, R.M. Mihalcea, **M.E. Webber**, D.S. Baer, and R.K. Hanson, "Combustion Sensing and Control using Wavelength-Multiplexed Diode-Lasers," paper AIAA-97-0320 at AIAA 35th Aerospace Sciences Meeting, Reno, Jan. 6-9, 1997.
1. E.R. Furlong, D.S. Baer, **M.E. Webber**, and R.K. Hanson, "Combustion Diagnostics and Control using a Multiplexed Diode Laser System," paper AIAA-96-2763 at 32nd AIAA Joint Prop. Conf., Lake Buena Vista, FL, July 1996.

Books and Book Chapters

8. **M.E. Webber**, ENERGY TECHNOLOGY & POLICY, Cambridge University Press (Full length textbook, under contract) (2014).
7. **M.E. Webber**, “The Nexus of Energy and Water in the United States,” in PHYSICS OF SUSTAINABLE ENERGY II: USING ENERGY EFFICIENTLY AND PRODUCING IT RENEWABLY, David W. Hafemeister, Daniel Kammen, Barbara G. Levi, and Peter Schwartz (Editors), American Institute of Physics Conference Proceedings (2011) (23pp).
6. **M.E. Webber**, “Energy Technologies of the Future,” in FUNDAMENTALS OF PETROLEUM (5TH EDITION), Petroleum Teaching Extension (PETEX), The University of Texas at Austin (2011) (20pp).
5. **M.E. Webber**, “The USA: The Key Global Driver,” in ENERGY AND THE TRANSFORMATION OF INTERNATIONAL SECURITY RELATIONS: TOWARD A NEW PRODUCER-CONSUMER FRAMEWORK, Oxford University Press (2009) (25pp).
4. **M.E. Webber**, CHANGING THE WAY AMERICA THINKS ABOUT ENERGY, Petroleum Teaching Extension (PETEX), The University of Texas at Austin (2009) (42pp).
3. C.W. King and **M.E. Webber**, “Energy from Water,” in TEXAS RENEWABLE ENERGY RESOURCE ASSESSMENT, Texas State Energy Conservation Office (December 2008) (20pp).
2. S.K. Cotton, Ulrich Petersohn, M. Dunigan, Q. Burkhart, M. Zander-Cotugno, E. O’Connell, and **M.E. Webber**, HIRED GUNS: VIEWS ABOUT ARMED CONTRACTORS IN OPERATION IRAQI FREEDOM, RAND (2010) (115pp).
1. **M.E. Webber**, “Erosion of the U.S. Defense Industrial Support Base,” in MANUFACTURING A BETTER FUTURE FOR AMERICA, The Alliance for American Manufacturing (Jan 2009) (35pp).

Technical Commentary, Op-Eds, Columns

Webber has authored or co-authored more than 50 popular columns including technical commentary and op-eds. A select list of those columns is listed here.

58. **M.E. Webber**, “Energy Tech That’s Made in America,” *Mechanical Engineering*, April 2013.
57. P. Schmandt, **M.E. Webber**, S. Smaha, L. Shaw and B. Bernfield, “Electric Utility commissioners: Austin Energy needs fixing,” *Austin American-Statesman*, March 24, 2013.
56. **M.E. Webber**, R.D. Duncan, and M.S. Gonzalez, “Four Fuels and Four Technologies: A Cautionary Tale About the Slow Pace of Energy Innovation,” *Issues in Science and Technology*, Winter 2013.
55. K.T. Sanders and **M.E. Webber**, “Quantifying the energy embedded in the US water system,” *Global Water Forum*, UNESCO, January 8, 2013.
54. **M.E. Webber**, “Moving Beyond Gridlock to Solve Our Energy Problems,” *Mechanical Engineering*, January 2013.
53. **M.E. Webber**, “The Bright Future for Natural Gas in the United States,” *Earth Magazine*, December 2012.
52. **M.E. Webber**, “Pricing Out Natural Gas: Given its complex relationships, can natural gas really be the fuel of the near future?,” *Earth Magazine*, December 2012.
51. **M.E. Webber**, “Garbage Could Be Sustainable Energy Source,” *Roll Call*, September 12, 2012.
50. A. Breckel, J.R. Fyffe, and **M.E. Webber**, “Trash to Treasure,” *Earth Magazine*, August, 2012.
49. **M.E. Webber**, “Will Drought Cause the Next Blackout?,” *New York Times*, July 23, 2012.
48. M. Strama and **M.E. Webber**, “Praying for rain not a water plan,” *Austin American-Statesman*, May 20, 2012.
47. S.R. Kirshenbaum and **M.E. Webber**, “The Giving Sea,” *Earth Magazine*, April 2012.
46. S.R. Kirshenbaum and **M.E. Webber**, “Time For Another Giant Leap For Mankind,” *Issues in Science and Technology*, Spring 2012.
45. K.M. Twomey, C.M. Beal, C.W. King, and **M.E. Webber**, “Biofuels: An Energy and Water Conundrum,” *World Energy Monitor*, Volume 3, Number 3, March 2012.
44. **M.E. Webber** and S.R. Kirshenbaum, “It’s Time to Shine the Spotlight on Energy Education,” *The Chronicle of Higher Education*, January 22, 2012.
43. **M.E. Webber**, “More Food, Less Energy,” *Scientific American*, January 2012.
42. C. Kennedy and **M.E. Webber**, “Where the Rubber Hits the Road: Lessons Learned From Taking a Natural Gas Vehicle for a Cross-Country Tour,” *Earth Magazine*, November 2011.
41. **M.E. Webber**, “Obama Deserves Credit for Strong Growth in Energy Industry,” *Houston Chronicle*, October 29, 2011.
40. S.R. Kirshenbaum and **M.E. Webber**, “Degree courses: Energy should form its own disci-

- pline,” *Nature*, October 6, 2011.
39. **M.E. Webber**, “Let’s back a clean version of Keystone XL pipeline,” *Houston Chronicle*, October 5, 2011.
 38. **M.E. Webber**, “Both energy security, environment important in Keystone pipeline debate,” *Austin American-Statesman*, October 3, 2011.
 37. S.R. Kirshenbaum and **M.E. Webber**, “Texas Must Stay True to Science,” *Austin American-Statesman*, May 8, 2011.
 36. F. Beach and **M.E. Webber**, “How Oil and Water Helped Win World War II,” *Earth Magazine*, March 2011.
 35. **M.E. Webber**, “A Dirty Secret—China’s Greatest Import: Carbon Emissions,” *Earth Magazine*, January 2011.
 34. S.R. Kirshenbaum and **M.E. Webber**, “A Tale of Two States: Offshore Wind in Texas and The Curious Case of Massachusetts,” *Earth Magazine*, December 2010.
 33. **M.E. Webber** and S.R. Kirshenbaum, “Energy and Immigration,” *Boston Globe*, November 26, 2010.
 32. **M.E. Webber** and D. Kammen, “The obsolescence of oil,” *Scientific American*, September 2010.
 31. S.R. Kirshenbaum and **M.E. Webber**, “Waste not, want less,” *New Scientist*, August 11, 2010.
 30. P. Powers and **M.E. Webber**, “Austin Energy should be hub of burgeoning global clean energy economy,” *Austin American-Statesman* July 15, 2010.
 29. G. Groves and **M.E. Webber**, “Greening the GDP,” *Earth Magazine*, April 2010.
 28. **M.E. Webber**, “Solar on the horizon,” *Austin American-Statesman*, March 21, 2010.
 27. **M.E. Webber**, “Redefining Humanity Through Energy Use,” *Earth Magazine*, March 2010.
 26. Schmandt, Herbert and **M.E. Webber**, “Why the Proposed Generation Plan is the Right Path Forward for Austin,” *Austin American-Statesman*, February 10, 2010.
 25. C.W. King and **M.E. Webber**, “Water versus Energy: How Solar Power Can Help,” *Solar Today* (January/February 2010).
 24. **M.E. Webber**, “A Fool’s Look Into the Future,” *Earth Magazine*, December 2009.
 23. **M.E. Webber**, “Breaking the Energy Barrier,” *Earth Magazine*, September 2009.
 22. **M.E. Webber**, “Don’t Dumb Down Texas,” *Austin American-Statesman*, Sept 15, 2009.
 21. **M.E. Webber**, “Three cheers for peak oil,” *Earth Magazine*, June 2009.
 20. **M.E. Webber**, “Green Star State,” *Texas Monthly*, May 2009.
 19. **M.E. Webber**, “Coal-to-liquids: The Good, Bad & Ugly,” *Earth Magazine*, April 2009.
 18. A.R. Broadfoot and **M.E. Webber**, “Oil Barrel Politics,” *Earth Magazine*, January 2009.
 17. **M.E. Webber**, “More energy research and development needed,” *Austin American-Statesman*, November 2, 2008.
 16. L. Bartlett and **M.E. Webber**, “The Thirsty Dragon And The Wealthy Bear: How China,

- Russia and High Oil Prices Influence Global Dynamics (Part 2)", *Earth Magazine*, November 2008.
15. L. Bartlett and **M.E. Webber**, "The Thirsty Dragon And The Wealthy Bear: How China, Russia And High Oil Prices Threaten To Erode U.S. Foreign Influence (Part 1)", *Earth Magazine*, October 2008.
 14. **M.E. Webber**, "Catch-22: Water vs. Energy," *Scientific American*, October 22, 2008.
 13. **M.E. Webber**, "Conflict between Russia and Georgia adds new twist to the energy war," *Austin American-Statesman*, 17 Aug 2008.
 12. B.A. Eisterhold and **M.E. Webber**, "Resource Nationalization: A Smaller Piece of the Pie," *Geotimes*, May 2008.
 11. Carey W. King, Ashlynn S. Holman, and **M.E. Webber**, "Thirst for Energy," *Nature Geoscience*, May 2008.
 10. **M.E. Webber**, "When it comes to energy policy, beggars can't be choosers," *Austin American-Statesman*, May 28, 2008.
 9. B.A. Eisterhold and **M.E. Webber**, "Oil: Is Now the Time to Fill the Strategic Petroleum Reserve?" *Geotimes*, March 2008.
 8. **M.E. Webber**, "Texas has what it takes to combat climate change," *Austin American-Statesman*, October 26, 2007.
 7. **M.E. Webber**, "Don't blame China for high energy prices," *Geotimes*, September 10, 2007.
 6. **M.E. Webber**, "If Texas leads in going green, rest of world will follow," *Houston Chronicle*, Sunday Edition, August 19, 2007.
 5. **M.E. Webber**, "China and the Oil Syndrome," *Fort Worth Star-Telegram*, June 26, 2007.
 4. **M.E. Webber**, "Webber: The U.S. lacks direction in climate change fight," *Austin American-Statesman*, June 6, 2007.
 3. **M.E. Webber**, "Scare tactics clouding Texas debate on coal: Campaigns on both sides appeal to our basest fears," *Houston Chronicle*, Sunday Edition, February 11, 2007.
 2. **M.E. Webber**, "Conservation can be America's oil weapon," *San Antonio Express-News*, January 11, 2007.
 1. **M.E. Webber**, "We have a new opportunity for sensible energy policy: Here's how Republicans and Democrats can come together," *Dallas Morning News*, November 27, 2006.

Select Technical Reports and White Papers

13. C.W. King, K.M. Twomey, A.S. Stillwell, and **M.E. Webber**, “Clean Energy and Water: Assessment of Mexico for improved water services with renewable energy,” Prepared for the International Development Research Centre, Ottawa, Ontario, Canada, December 2011. (In press)
12. **M.E. Webber**, “Water demand: What drives consumption?” for the United Nations World Water Development Report 4 (WWDR4), United Nations World Water Assessment Programme, Programme Office for Global Water Assessment, Division of Water Sciences, UNESCO, Colombella, Perugia, Italy, October 2011. (In press)
11. F.C. Beach, M. Shivers, J.C. Butler, **M.E. Webber**, “An Analysis of the Potential for Expanded Use of Natural Gas in Electrical Power Generation, Transportation, and Direct Use: Texas as a Case Study,” UT Austin, March 17, 2012.
10. C.W. King, A.S. Stillwell, K.M. Twomey, and **M.E. Webber**, “Coherence between water and energy policies,” Prepared for the OECD, Paris, France December 2010.
9. C.F. Murphy, M.J. O’donnell, E. McDonald-Buller, S. Strank, M.H-P. Liu, **M.E. Webber**, D.T. Allen, and R.E. Hebner, “Analysis of Innovative Feedstock Sources and Production Technologies for Renewable Fuels,” EPA Project Number XA-83379501-0, Final Report to EPA, 2010.
8. J.B. Garrison, C.R. Upshaw, and **M.E. Webber**, “Review of ‘The Preliminary Feasibility Study of Hydrogen Hubs’ authored by the Northwest Hydrogen Alliance,” April 2010.
7. M.C. Lott, A.S. Stillwell, S.M. Cohen, C.W. King, **M.E. Webber**, “Power Generation for the 21st Century,” Clean TX Forum, Austin, TX, May 20, 2009
6. “Energy Depletion Risks Task Force Report,” City of Austin, May 15, 2009.
5. D. Wogan, A.K. da Silva, **M.E. Webber**, and E. Stautberg, “Algae: Pond Powered Biofuels,” Clean TX Forum, Austin, TX, November 19, 2008.
4. C.W. King, I.J. Duncan and **M.E. Webber**, “Water Demand Projections for Power Generation in Texas,” prepared for the Texas Water Development Board, August 31, 2008.
3. **M.E. Webber**, D.T. Allen, K. Ferland, C.W. King, G. McGaughey, S.J. Goldman and Y. Kimura, “A Clean Energy Plan for Texas,” prepared for the Texas Commission on Environmental Quality, August 31, 2008.
2. C. Telenko, M. Nippert, C.C. Seepersad and **M.E. Webber**, “Symposium on Sustainable Design Greening the Technology Industry,” March 2008.
1. A.R. Broadfoot, A.D. Cuellar, M.J. O’Donnell, C.H. Smith, and **M.E. Webber**, “Next Generation Biofuels - Trends In Global Innovation and Finance: The Tools of Biotechnology Meet the World’s Energy Challenge,” October 2007.

Keynote and Plenary Lectures

33. "Global Energy Trends," U.S. Military Academy, West Point, NY, April 24, 2013.
32. "Energy Evolution," Teijin Aramid USA Annual Meeting, San Destin, FL, April 11, 2013.
31. "Fracking: Fact, Future and Fiction," Sit Investment Associates' 31st Annual Client Workshop, Scottsdale, Arizona from February 14–17, 2013.
30. "The Nexus of Food and Energy," Produce Manufacturer's Association Quarterly Meeting, Austin, TX, January 28, 2013.
29. "Global Energy Trends," Rockland Capital Annual Meeting, The Woodlands, TX, November 5, 2012.
28. "Digital Energy: The Convergence of Energy and Information," Energy Technology Summit, NI Week, Austin, TX, August 8, 2012.
27. "Consistency in Policy Making," Universities Council on Water Resources Annual Meeting, Santa Fe, NM, July 18, 2012.
26. "The Future of Energy," Tecnologico de Costa Rica, Cartago, Costa Rica, June 6, 2012.
25. "Global Energy Trends" U.S. Military Academy, West Point, NY, May 10, 2012.
24. "The Nexus of Food and Energy: How Society Has Evolved and What the Next 50 Years Will Hold," PIC Symposium, Nashville, TN, May 8, 2012.
23. "From Fracking to the Forty Acres: Energy Challenges for UT, Texas, and the World," Environmental Science Institute's Outreach Lecture Series: Hot Talks, Cool Science, The University of Texas at Austin, February 24, 2012.
22. "The Climate, Energy, Water Nexus," Center for Aquatic and Watershed Sciences, Miami University, Ohio, February 9, 2012.
21. "Energy in Texas," Western States Land Commissioners Association, Austin, TX, January 10, 2012.
20. "The Nexus of Energy and Water," Keynote Panel, ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, CO, November 14, 2011.
19. "The Nexus of Energy and Water," Plenary Panel, CATEE 2011 (Clean Air Through Energy Efficiency) Conference, November 9, 2011, Dallas, TX.
18. "Global Energy Trends," Thermoset Resin Formulators Association, Niagara Falls, NY, September 12, 2011.
17. "The Nexus of Energy and Water," USC Energy Institute, Los Angeles, CA, May 18, 2011.
16. "The Nexus of Energy and Water," UC Santa Barbara, Santa Barbara, CA, May 17, 2011.
15. "The Future of Energy," Bearing Specialists Association, Bastrop, TX, May 2, 2011.
14. "Global Energy Trends," *Financial Times Global Investment Series: Focus on Canada*, Houston, TX, February 23, 2011.
13. "Energy in Texas," UT Energy Forum, Austin, TX, February 3, 2011.
12. "The Nexus of Energy & Water," Deloitte Alternative Energy Conference, Dallas, Texas, October 1, 2010.

11. "Green Star State," Keep Texas Beautiful Conference, Austin, TX, June 22, 2010.
10. "The Future of Energy," Five Star Chapter Real Estate Organizations, Austin, TX, May 14, 2010.
9. "The Global Nexus of Energy & Water," Columbus Council on World Affairs, Columbus, OH, February 8, 2010.
8. "The Global Nexus of Energy & Water," Dallas Water Association, Arlington, TX, November 10, 2009.
7. "The Nexus of Energy & Water," National Association of EHS management (NAEM), June 25, 2009, Columbus, OH.
6. "Energy & Water," Deloitte Energy Conference, Washington, DC, April 20, 2009.
5. "The Global Nexus of Energy & Water," Tennessee American Water Resources Association, Nashville, TN, April 15, 2009.
4. "Critical Energy Technologies of the Future," Manitoba Climate Change Conference, Winnipeg, Manitoba, Canada, April 23, 2008.
3. "Brazil and Ethanol," 5th Annual International Education Conference Global Issues: Economy, Energy, Environment, Lone Star College-Tomball, April 18, 2008.
2. "The Future of Energy," Environmental Science Institutes Outreach Lecture Series: Hot Talks, Cool Science, The University of Texas at Austin, February 22, 2008.
1. "College Education And the Journey of the Hero," Commencement Speech, Cockrell School of Engineering, The University of Texas at Austin, May 19, 2006.

Invited Talks, Seminars, Speeches and Presentations

Webber has given invited presentations, speeches, or lectures, or served as a moderator for panel discussions on more than 150 different instances since joining the faculty of UT Austin. A select list of those invited talks is included here.

89. "Global Energy Trends," ERDC-CASI/University of Illinois Sustainability Office Speaker Series, Urbana-Champaign, IL, April 26, 2013.
88. "Changing the Way Business Thinks About Energy," for Texas Enterprise Speaker Series, The University of Texas at Austin, Austin, TX, April 16, 2013.
87. "The Nexus of Energy and Water," ENI, Milan, Italy, March 26, 2013.
86. "Webinar: Critical Energy Technologies of the Future," Knowledge to Go, McCombs School of Business, The University of Texas at Austin, Austin, TX, March 19, 2013.
85. "Global Energy Trends—Impacts for Texas," State of Texas Comptroller's Investment Advisory Board, Austin, TX, March 5, 2013.
84. "Energy Water Nexus in Texas, Texas Economic Development Council Legislative Conference, Austin, TX, March 1, 2013.
83. "Renewables and Brackish Groundwater Desalination in Texas," Texas Water Development Board Roundtable, Austin, TX, February 28, 2013.
82. "Entrepreneurship In The Clean Energy Space," UT Energy Forum, The University of Texas at Austin, Austin, TX, February 21, 2013.
81. "Energy Research at UT Austin," UT El Paso, El Paso, TX, February 8, 2013.
80. "Panel: Food," Food, City and Innovation Conference, The University of Texas at Austin, Austin, TX, February 1, 2013.
79. "Changing The Way The World Thinks About Energy," for Chancellor's Council Meeting, The University of Texas System, Austin, TX, January 24, 2013.
78. "Global Energy Trends," Investor's Roundtable, Susquehanna Investment Group, New York City, NY, December 7, 2012.
77. "Sustainable and Resilient Energy Systems: Data and Technology Issues," Roundtable on Science and Technology for Sustainability, National Academy of Sciences and Engineering, Washington, DC, December 6, 2012.
76. "Energy Water Nexus," C2ES (Center Climate and Energy Solutions), Washington, DC, November 13, 2012.
75. "Energy Water Nexus," U.S. Department of Energy, Washington, DC, November 13, 2012.
74. "Panel: Solutions to the Texas Water Crisis," SXSW ECO, Austin, TX, October 5, 2012.
73. "Panel: Putting "Able" into Sustainable: What Works," SXSW ECO, Austin, TX, October 4, 2012.
72. "Panel: Can We Solve Our Electricity Problem," Texas Tribune Festival, Austin, TX, September 22, 2012.
71. "Panel: A Vision for UT Austin: Integrating Sustainability into Higher Education," 3rd

- Annual Sustainability Symposium, UT Austin, Austin, TX, September 21, 2012.
70. "Panel: Power Generation," NI Week, Austin, TX, August 8, 2012.
 69. "The Energy-Water Nexus," Energy Policy Forum, Aspen Institute, Aspen, CO, July 5, 2012.
 68. "Global Energy Trends," for *Subiendo: The Academy for Rising Leaders*, McCombs School of Business, The University of Texas at Austin, Austin, TX, June 18, 2012.
 67. "Panel: The New Energy Picture in Texas: Can Texas Move Beyond Oil & Coal?" Hosted by the Texas Observer, LBJ School of Public Affairs, The University of Texas at Austin, Austin, TX, June 14, 2012.
 66. "Impact of Natural Gas Supply on US Energy Markets," PREA Institute, McCombs School of Business, The University of Texas at Austin, Austin, TX, June 13, 2012.
 65. "Waste to Energy," Tecnologico de Costa Rica, Cartago, Costa Rica, June 7, 2012.
 64. "Panel: Technological, Economic and Legal Challenges to Realizing the Potential of New Water Sources," 2012 Texas Water Summit, The Academy of Medicine, Engineering and Science of Texas (TAMEST), Austin, TX, May 21, 2012.
 63. "Energy at the Movies," Live Pre-Screening at *KLRU*, Austin, TX, May 24, 2012.
 62. "The Natural Gas Transition," Leveraging Natural Gas to Reduce GHG Emissions (hosted by C2ES), Houston, TX, May 17, 2012
 61. "The Nexus of Energy and Water," Southwest Foundations, Dallas, TX, May 15, 2012.
 60. "Enabling Energy Solutions in a Changing World," The Marshall Forum on Transatlantic Affairs, German Marshall Fund, Dallas, Texas April 28, 2012.
 59. "The Nexus of Energy and Water in the Power, Water and Transportation Sectors," Nicholas School of the Environment, Duke University, April 26, 2012.
 58. "The Nexus of Energy and Water," Center for Aquatic and Watershed Sciences, Miami University, Ohio, February 10, 2012.
 57. "A National Energy Policy: The Search Continues..." Panelist, UT Energy Forum, UT Austin, TX, February 3, 2012.
 56. "Thirst for Power: The Nexus of Energy and Water," ASME Central Texas Chapter, Austin, TX, January 19, 2012.
 55. "Integrated Air Quality, Energy Markets and Water for Dispatching in the Texas grid," NSF EFRI Grantees Conference, The University of Illinois Urbana-Champaign, November 17, 2011.
 54. "Recap of the Energy-Water Nexus Track at the ASME IMECE 2011 Meeting," ASME Webinar, December 6, 2011.
 53. "Texas and China: Non-Obvious Energy and Environmental Bedfellows," SXSW ECO, Austin, TX, October 4, 2011.
 52. "The Nexus of Energy and Water," Los Alamos National Laboratory, Los Alamos, NM, September 26, 2011.
 51. "Is Clean Energy an Oxymoron?" Panel, Texas Tribune Festival, Austin, TX, September 24, 2011.

50. Plenary Panel, “The Low-Carbon Future,” ASME Summer Annual Meeting, Dallas, TX, June 13, 2011 (Moderator).
49. “The Nexus of Energy and Water,” Australian Academy of Sciences, Melbourne, Australia, June 2, 2011.
48. “The Nexus of Energy and Water,” Australian National University, Canberra, Australia, May 31, 2011
47. “The Energy Water Nexus in Texas,” Texas Water Day at the Capitol, Texas Legislature, Austin, TX, April 27, 2011.
46. “Energy and the Environment in Texas,” KUT Leadership Luncheon, Austin, TX, April 21, 2011.
45. “The Nexus of Energy and Water,” Physics of Sustainable Energy II: Using Energy Efficiently and Producing It Renewably, American Physical Society, UC Berkeley, March 5, 2011.
44. “Food, Energy and Water,” MIT Energy Conference, Boston, MA, March 4, 2011.
43. “The Nexus of Energy and Water,” National Renewable Energy Laboratory, Golden, CO, November 5, 2010.
42. “Future Trends for the Energy-Water Nexus,” Groundwater Protection Council Annual Meeting, Pittsburgh, PA, September 27, 2010.
41. “Global Energy Needs and Assessment,” World Energy Forum, **United Nations**, September 17, 2010.
40. “Energy-water Nexus,” OECD, Paris, France, June 8, 2010.
39. “American Energy Policy and Other Funny Stories,” Forum on Science Ethics and Policy, (www.fosep.org), University of Washington, Seattle, WA, April 26, 2010.
38. “Green Star State,” Texas Economic Development Council (TEDC) Spring Conference, Arlington, TX, April 23, 2010.
37. “Water Implications of Energy Policies,” Technology Leadership Panel, SAE Annual Meeting, Detroit, MI, April 14, 2010.
36. “Smart Grid, Smart Water,” Consequences of an Emerging U.S. Energy and Climate Policy on the Global Energy Market, Baker Institute, Abu Dhabi, United Arab Emirates, March 2, 2010.
35. “A Technoeconomic and Policy Framework for Algal Biofuels,” UC San Diego, February 17, 2010.
34. “The Smart Grid in Austin, Texas,” Baker Institute, Rice University, January 26, 2010.
33. “The Nexus of Energy & Water,” Sierra Club Lone Star Chapter, Living Waters Project, Houston, TX January 16, 2010.
32. “Impacts of Carbon Legislation on Texas,” Young Professionals of Energy, Houston, TX, November 10, 2009.
31. “The Smart Grid in Austin, Texas,” World Energy Engineering Congress, Washington, DC, November 4, 2009.
30. “Carbon Policy & The impact on Business and Consumers,” Women’s Global Leadership

- Conference in Energy & Technology, Houston, TX, November 3, 2009.
29. “Energy and Sustainability,” Meeting of the Minds Panel with the CEO of Wal-Mart, UT Austin, October 12, 2009.
 28. “The Nexus of Energy & Water,” Penn State University, September 29, 2009.
 27. “Global Energy Needs and Assessment,” World Energy Forum, **United Nations**, New York City, August 13, 2009.
 26. “The Nexus of energy & water,” Hewlett Packard Labs, Palo Alto, CA, July 24, 2009.
 25. “Sustainable Energy Education,” ASME 3rd International Conference on Energy Sustainability, San Francisco, CA, July 19, 2009 .
 24. “The Nexus of Energy & Water,” American Solar Energy Society, Buffalo, NY, May 15, 2009.
 23. “The Nexus of Energy and Water,” UC Santa Barbara, April 10, 2009.
 22. “Thirst for Power: The nexus of energy & water”, ExxonMobil Corporate Strategic Research, New Jersey, March 13, 2009.
 21. “Green Jobs,” Clean Power Forum, Texas State Capitol, February 18, 2009.
 20. “Thirst for Power: The nexus of energy & water,” University of Michigan, Ann Arbor, MI, February 2, 2009.
 19. Master of Ceremonies, Clean Energy Venture Summit, Austin, TX, December 3–4, 2008.
 18. “Coal-to-liquids: the good, the bad and the ugly,” ASPO-USA, Sacramento, CA, September 23, 2008.
 17. “Sustainable Biofuels”, 1^{er} Congreso Internacional de Biocombustibles, Guadalajara, Jalisco, Mexico, May 08, 2008.
 16. “Incorporating Environmental Activities into Your Bottom Line Case studies from companies that have integrated the environment into their processes,” TCEQ Environmental Trade Fair, Austin, TX, April 30, 2008.
 15. “International Perspectives on Alternative Energy: The Hype and the Hope,” ConocoPhillips, Corporate Briefing, Houston, TX, April 18, 2008.
 14. “Dont look now, but Texas Can Lead the Green Energy Transition,” USC, March 11, 2008.
 13. “A Thirst for Power: The Nexus of Energy & Water,” Massachusetts Institute of Technology, March 7, 2008.
 12. “A Critical Look at Green Transportation,” Johns Hopkins University, March 6, 2008
 11. Moderator: “What is the State of Clean Air and Energy Efficiency in Texas Today?” (with Senator Averitt, Representative Strauss), Clean Air Through Energy Efficiency (CATEE) 2007, San Antonio, Texas, December 18, 2007.
 10. “Opportunities for Texas-Serbian Collaboration on Biodiesel,” Energy Roundtable, Jefferson Institute, Belgrade, Serbia, October 29, 2007.
 9. “Energy Security in America,” ETH, Zurich, Switzerland, October 26, 2007.
 8. “Freedom from Oil,” (with David Sandalow), The University of Texas at Austin, October 22, 2007

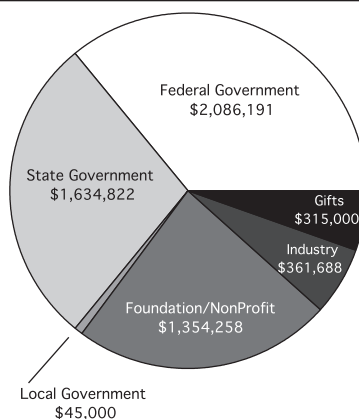
7. "A Close Look at Climate Change," German Marshall Fund, Forum on Transatlantic Affairs, Atlanta, GA, September 27-29, 2007.
6. "A Critical Look at Green Vehicles," Honda R&D Americas, Detroit, MI, August 2, 2007.
5. "American Energy and Environmental Policy: The View from Texas and Other Funny Perspectives," National Center for Atmospheric Research, June 20, 2007.
4. "Water, Power and Transportation: Our Next Great Heat Transfer Challenge," NSF Workshop on Frontiers in Transport Phenomena Research and Education, University of Connecticut, May 17, 2007.
3. "American Energy Policy: The View from Texas and Other Funny Perspectives," Imperial College, London, England, April 3, 2007.
2. "American Energy Policy: The View from Texas and Other Funny Perspectives," British Consulate, Houston, Texas, February 20, 2007.
1. "Perspectives on American Energy Policy," Panel with CEO of Shell USA, LBJ School of Public Affairs, September 20, 2006.

Grants and Contracts: September 2007-September 2011

<i>Project Topic</i>	<i>Sponsoring Agency</i>	<i>Sponsor Type</i>	<i>Funding Amount</i>	<i>Webber Portion</i>	<i>Role</i>	<i>Project Period</i>
A Teaching Tool For Energy	UT, Cockrell School of Engineering, Academic Development Funds	State	\$15,000	\$15,000	PI	9/07-8/08
A Teaching Tool For Energy	UT Austin, Strauss Center	State	\$10,000	\$10,000	PI	9/07-8/08
The Nexus of Energy & Water in Texas	TX State Energy Conservation Office	State	\$25,000	\$25,000	PI	9/07-8/08
The Nexus of Energy & Water in Texas	Environmental Defense Fund	Non-Profit	\$110,000	\$110,000	PI	9/07-10/08
The Nexus of Energy & Water in Texas	Energy Foundation	Non-Profit	\$75,000	\$75,000	PI	9/07-11/08
TIPS: Texas Interactive Power Simulator	Power Across Texas and Industrial Partners	Industry	\$143,000	\$143,000	PI	9/07-5/09
Update of Texas Renewable Energy Assessment	TX State Energy Conservation Office	State	\$8,969	\$8,969	PI	9/07-12/07
Water Demand Projections for Power Generation in TX	TX Water Development Board	State	\$99,493	\$99,493	PI	9/07-8/08
Lifecycle Analysis of Renewable Fuels	U.S. Environmental Protection Agency	Federal	\$1,555,580	\$133,000	Sr. Personnel (PI: Hebner)	11/07-12/08
Geopolitics of Energy: Russia and China	UT Austin, Strauss Center	State	\$10,000	\$10,000	PI	1/08-12/08
Renewable energy plan for Texas	TX Commission on Enviro Quality	State	\$75,000	\$75,000	PI	2/08-8/08
Modeling water, waste and energy infrastructures	UT Austin, Summer Research Assignment	State	\$21,160	\$21,160	PI	6/08-7/08
Energy Security	Markle Foundation	Non-Profit	\$225,000	\$175,000	Co-PI (PI: Steinberg)	8/08-4/09
Algae Biofuels in Texas	UT Austin, Strauss Center	State	\$35,000	\$35,000	PI	8/08-12/09
Integrated Solar Thermal, Wind and CAES	Austin Energy	Local	\$35,000	\$35,000	PI	8/08-8/09
Modeling electricity, water and air quality in Texas	National Science Foundation	Federal	\$2,000,000	\$294,673	Co-PI (PI: Allen)	10/08-8/12
ABISSO: Design of an Energy Efficient Yacht	Private donor via CEM	Industry	\$49,684	\$24,842	Co-PI	1/09-12/09
Energy/Water Strategy	Energy Foundation	Non-Profit	\$13,000	\$13,000	PI	4/09-6/09
Tradeoffs of Info Comm Technologies	AT&T	Industry	\$25,000	\$25,000	PI	4/09-12/09
Algae Biofuels in Texas	Energy Foundation	Non-Profit	\$55,000	\$55,000	PI	9/09-12/10
Research Experiences for Undergraduates	National Science Foundation	Federal	\$18,000	\$9,000	Co-PI (PI: Allen)	10/09-8/12
Air Quality Impacts of PHEVs in Texas	Texas Air Research Center	State	\$40,200	\$40,200	PI	1/10-8/10
Thermoeconomic Model of 20% wind in ERCOT	U.S. Department of Energy	Federal	\$510,000	\$313,508	Co-PI (PI: Baldick)	1/10-2/12
Energy/Water Sustainability in Hawaii	Ulopono Initiative	Non-Profit	\$107,111	\$107,111	PI	2/10-5/11
Energy Internet at Mueller Redevelopment	U.S. Department of Energy (via Pecan Street Project)	Federal	\$2,100,000	\$410,056	Co-PI (PI: Edgar)	3/10-12/14
Algal Oil Production	OpenAlgae via CEM	Industry	\$43,180	\$43,180	Co-PI (PI: Hebner)	5/10-12/10
Energy/Water Grid Planning	U.S. Department of Energy	Federal	\$300,000	\$300,000	PI	09/10-08/13
National Natural Gas Roadmap	Energy Foundation	Non-Profit	\$295,000	\$135,000	PI	09/10-11/11

<i>Project Topic</i>	<i>Sponsoring Agency</i>	<i>Sponsor Type</i>	<i>Funding Amount</i>	<i>Webber Portion</i>	<i>Role</i>	<i>Project Period</i>
NSF IGERT: Smart Grids in the Built Environment	National Science Foundation	Federal	\$3,129,768	\$625,954	Co-PI (PI: Edgar)	09/10-08/15
Solar Installation at Manor Garage	TX State Energy Conservation Office	State	\$195,000	\$195,000	PI	09/10-10/11
Solar Installation at Manor Garage	UT Austin, PTS	State	\$125,000	\$125,000	PI	09/10-10/11
Water Impacts of Natural Gas Displacing Coal	Mitchell Foundation	Non-Profit	\$50,000	\$50,000	PI	09/10-11/11
Water Wedge: Embedded Energy and Carbon in Water	Energy Foundation	Non-Profit	\$71,800	\$71,800	PI	09/10-05/11
Thermoelectric Generators for the built environment	27 Ventures	Industry	\$40,000	\$40,000	PI	11/10-8/11
Water for Shale Gas Production in Texas	Environmental Defense Fund	Non-Profit	\$20,000	\$20,000	PI	11/10-12/10
Solid Recovery Fuel Alternatives	American Chemistry Council	Industry	\$69,000	\$69,000	PI	12/10-12/11
Smart Grid for ECAD homes	Doris Duke Foundation (via Pecan Street Project)	Non-Profit	\$189,347	\$189,347	PI	1/11-12/13
Integrated Renewable Energy & Data Centers	AMD	Industry	\$50,000	\$16,666	PI	2/11-12/11
Solar Installation at UT Facilities Building	TX State Energy Conservation Office	State	\$900,000	\$900,000	PI	4/11-12/11
Energy/Water Sustainability in Hawaii	Ulopono Initiative	Non-Profit	\$123,000	\$123,000	PI	7/11-8/12
Energy Education and Outreach	Austin Energy	Local	\$10,000	\$10,000	PI	7/11-8/11
Natural Gas Roadmap Year 2	Mitchell Foundation	Non-Profit	\$230,000	\$230,000	PI	9/11-11/12
Solar Installation at UT Facilities Building	UT Austin, Green Fee	State	\$75,000	\$75,000	PI	9/11-5/12
Discretionary Gifts from Various Sponsors/Supporters	Various Sponsors	Gifts	\$315,000	\$315,000	PI	N/A
Total			\$13,592,292	\$5,796,959		

Funding for Dr. Webber's Program (Sep 2007-Sep 2011)
Total: \$5,796,959



New Courses Developed and Taught

Webber has created seven new courses for a range of technical and non-technical students from freshmen to Ph.D. candidates. These are in addition to teaching duties for core engineering classes (described below). The new courses Webber created include:

1. **ENERGY TECHNOLOGY & POLICY**: a graduate level multidisciplinary, survey course for 66–113 students (a few slots are set aside for undergraduate engineers) that covers a wide range of technical, economic, policy, diplomatic, and cultural perspectives of energy. Topics include energy production (by fuel and technology), energy use (by sector and application), and the intersection of energy with water, food, waste, the environment, the economy, domestic policy, and international affairs. Each student is required to blog regularly, write a research paper, and create a multimedia podcast. Podcasts from this course were featured in the “Educational Technology” section of *ITunes* and a few select papers from this course have since been published.
2. **ENERGY & INFRASTRUCTURE SYSTEMS FIELD LABORATORY**: a multidisciplinary freshman signature course in seminar style, with 15–18 students that introduces non-engineers and engineers to the world of energy and infrastructure from a hands-on and engineering perspective. Rather than relying exclusively on lectures, this class conducts a weekly field lab that includes site visits to relevant energy and infrastructure sites such as: water and wastewater treatment plants; power plants (natural gas and coal); dams; solar panel manufacturing factory; coal mine; steel mill; nuclear reactor; UT algae library and experimental growth ponds; cement quarry and rotary kiln; semiconductor fab; wind turbine factory; large-scale data center; recycling facility. Because of the small-format, the class is very discussion-oriented and interactive. Assignments include written field reports and presentations, field trip videos, blogging, group composition (for a class handbook), and an exam.
3. **ENERGY AND SOCIETY (AKA ENERGY AT THE MOVIES)**: a discussion-oriented Tutorial Course in seminar-format for 15 upper-division Plan II Honors students. Topics focus on critically examining how energy is portrayed in popular culture, and students were each assigned a long individual research paper.
4. **WATER AND SOCIETY**: a discussion-oriented Tutorial Course in seminar-format for 15 upper-division Plan II Honors students and others admitted by permission. Topics focus on critically examining the role of water in society, including religion, popular culture, war, foreign policy, the economy and local government. Students will each write a long individual research paper.
5. **THE ENGINEERED WORLD: ENERGY**: a multidisciplinary freshman signature course in seminar style, with 15–18 students in an interactive, discussion-oriented format that includes project-oriented assignments, individual research papers and regular blogging. Topics cover the basics of energy production, use and impacts.
6. **ENERGY, ENVIRONMENT AND SOCIETY**: a multidisciplinary freshman signature course in large-format lecture style with 70–100 students and weekly discussion sections led by TAs. Topics cover the basics of energy production, use and impacts, and assignments include writing research papers and op-eds.
7. **HOW THINGS WORK**: a multidisciplinary freshman signature course in large-format lecture style with approximately 150 students and weekly discussion sections led by TAs. This course

is intended to serve as an introduction to mechanical engineering principles and concepts while also revealing how engineering fits into a modern, globalized society. The course will cover five main sections: 1) The language of engineering: *how things are described*; 2) Machines: *how things work*; 3) Manufacturing: *how things are made*; 4) Energy: *how things are powered*; and 5) Transportation: *how things move*. Lectures include an introduction to quantitative concepts in engineering, along with societal aspects such as culture, economics, and policy.

Core Engineering Courses Taught

In addition to the new courses Webber developed, he has also taught core engineering classes: undergraduate thermodynamics for sophomore engineers and thermal fluids systems for juniors. These are described below:

1. THERMODYNAMICS: An introduction to the fundamentals of thermodynamics with an emphasis on engineering applications for sophomore mechanical engineering students. Typical class size is 75–90 students, though it is sometimes offered in double-section up to 160 students. Topics include properties, first law, second law, and cycles.
2. THERMAL FLUIDS SYSTEMS: This course integrates thermodynamics, fluid mechanics and heat transfer with an emphasis on engineering applications for junior mechanical engineering students. It is a project-based course. Typical class size is 30–40 students.

Course Summary and Evaluations

<i>Course Title</i>	<i>Enrollment</i>	<i>Course Listing</i>	<i>Semester</i>	<i>Overall Course Rating</i>	<i>Overall Instructor Rating</i>
Thermodynamics	92	ME326	F07	4.0	4.0
Thermodynamics	97	ME326	F08	4.2	4.3
Thermodynamics	81	ME326	F09	4.0	4.2
Thermodynamics (double section)	155	ME326	F10	3.9	4.0
Thermal Fluid Systems	33	ME343	S12	3.9	4.2
The Engineered World—Energy	16	FS301	F07	4.1	4.6
The Engineered World—Energy	17	UGS302	F08	4.0	4.6
The Engineered World—Energy	15	UGS302	F09	4.4	4.7
The Engineered World—Energy	18	UGS302	F10	4.5	4.8
Energy & Infrastructure Systems Field Laboratory	14–17	UGS302	S13	TBD	TBD
Energy, Environment & Society	76	UGS303	S09	3.9	4.2
Energy, Environment & Society	91	UGS303	S10	3.9	4.3
How Things Work	90–100	UGS303	F13	TBD	TBD
Energy Technology & Policy	66	ME397, CHE, EER, PA, MAN	S08	4.4	4.6
Energy Technology & Policy	85	ME397, CHE, EER, PA, MAN	S09	4.6	4.7
Energy Technology & Policy	113	ME397, CHE, EER, PA, MAN	S10	4.2	4.4
Energy Technology & Policy	86	ME397, CHE, EER, PA, MAN	S12	4.4	4.6
Energy Technology & Policy	80–85	ME382Q, CHE, EER, PA, MAN	S13	TBD	TBD
Energy & Society	12	TC 357	S10	4.6	4.7
Energy & Society	15	TC 357	S11	4.2	4.5
Water & Society	14	TC 357	S12	4.6	4.7
	1185	Total Enrollment	Average	4.21	4.45

Student and Post-Doctoral Supervision

Webber has advised or co-advised dozens of undergraduate and graduate students since joining the faculty of UT Austin. These students are organized by those who have completed their degree and those who are in progress.

Doctoral and Post-Doctoral Placements

1. Dr. Ashlynn Stillwell, Civil, Architectural and Environmental Engineering, May 2013
 - Assistant Professor, Civil and Environmental Engineering, University of Illinois, Urbana-Champaign, IL
2. Dr. Aaron Townsend, Mechanical Engineering, January 2013.
 - National Renewable Energy Laboratory, Golden, CO
3. Dr. Ben Gully, Mechanical Engineering, August 2012,
 - Research Engineer, Det Norske Veritas (DNV) USA Inc, Columbus, OH
4. Dr. Stuart Cohen, Mechanical Engineering, August 2012
 - Post-Doctoral Fellow, National Renewable Energy Laboratory, Golden, CO
5. Dr. Nathan Putnam, Mechanical Engineering, August 2012
 - Research Industrial Engineer, Army Corps of Engineers, Urbana-Champaign, IL
6. Dr. Colin Beal, Mechanical Engineering, May 2011
 - Post-Doctoral Fellow, NASA Ames Research Laboratory, Mountain View, CA

Ph.D. Supervisions Completed

1. Advisor/Co-Advisor:
 - (a) Aaron Townsend, Mechanical Engineering, January 2013, “A Grid-Level Assessment of Compressed Air Energy Storage in ERCOT”
 - (b) Stuart Cohen, Mechanical Engineering, August 2012, “A Techno-economic Plant- and Grid-Level Assessment of Flexible CO₂ Capture” (Co-Advisor: Gary Rochelle)
 - (c) Nathan Putnam, Mechanical Engineering, August 2012, “Computer Tools for Designing Self-Sufficient Military Base Camps” (Co-Advisor: Carolyn Conner Seepersad)
 - (d) Ben Gully, Mechanical Engineering, August 2012, “Hybrid Powertrain Design for Naval and Commercial Ocean-Going Vessels” (Co-Advisor: Carolyn Conner Seepersad)
 - (e) Colin Beal, Mechanical Engineering, May 2011, “Evaluation of the Feasibility of Algal Biofuel Production” (Co-Advisors: Dr. Rod Ruoff, Dr. Bob Hebner)
2. Committee Member:
 - (a) Robert Crawford, Mechanical Engineering, Spring 2013
 - (b) Cassandra Telenko, Mechanical Engineering, Fall 2012
 - (c) Ian Partridge, LBJ School of Public Affairs, Fall 2012
 - (d) Nawaf Alhajeri, Civil Engineering, Summer 2012

- (e) Todd Davidson, Mechanical Engineering, Spring 2012
- (f) Meryl Stoller, Mechanical Engineering, Fall 2011
- (g) Jason Albert, Mechanical Engineering, Spring 2011
- (h) Mariana Dionisio, Chemical Engineering, Spring 2010
- (i) Ross Dugas, Chemical Engineering, Fall 2009
- (j) Tammy Thompson, Chemical Engineering, Fall 2008
- (k) Taylor Green, Mechanical Engineering, Spring 2008

M.S./M.A./M.P.Aff/M.B.A. Supervisions Completed

1. Advisor:

- (a) Charlie Upshaw, Mechanical Engineering, May 2012, “Thermodynamic and Economic Feasibility Analysis of a 20 MW Ocean Thermal Energy Conversion (OTEC) Power Plant”
- (b) Adolfo Lozano, Mechanical Engineering, August 2011, “Analysis of a Novel Thermoelectric Generator in the Built Environment”
- (c) Castlen Kennedy, Energy & Earth Resources and LBJ School of Public Affairs, August 2011, “Assessing the Viability of Compressed Natural Gas as a Transportation Fuel for Light-Duty Vehicles in the United States”
- (d) Emily Grubert, Environmental Water Resource Engineering, May 2011, “Informing Land Use with a Water Model for Maui, Hawaii”
- (e) Melissa Lott, Mechanical Engineering and LBJ School of Public Affairs, December 2010, “Quantifying the Economic and Environmental Tradeoffs of Electricity Mixes in Texas, Including Energy Efficiency Potential Using the Rosenfeld Effect as a Basis for Evaluation”
- (f) Emily Grubert, Energy and Earth Resources, August 2010, “Maui’s Freshwater Status, Allocation, and Management for Sustainability”
- (g) Kelly Twomey, Mechanical Engineering, May 2010, “The Energy-Water Nexus: An Examination of the Water Quality Impacts of Biofuels”
- (h) Ashlynn Stillwell, Environmental & Water Resource Engineering and LBJ School of Public Affairs, May 2010, “The Energy-Water Nexus in Texas” [**Winner of the American Water Works Association’s (AWWA’s) Second Place Academic Achievement Award for the best Master’s Thesis**]
- (i) Michael O’Donnell, Mechanical Engineering, December 2009, “Barriers to a Biofuels Transition in the U.S. Liquid Fuels Sector”
- (j) Jared Garrison, Mechanical Engineering, December 2009, “An Integrated Energy Storage Scheme for a Dispatchable Wind and Solar Powered Energy System”
- (k) Ben Eisterhold, Energy & Earth Resources, May 2008, “The Geotechnical and Economic Constraints of the U.S. Strategic Petroleum Reserve”

2. Co-Advisor:

- (a) David Wogan, Mechanical Engineering and LBJ School of Public Affairs, December 2010, “An Integrated Resource and Biological Growth Model for Estimating Algal Biomass Production With Geographic Resolution” (Co-Advisor: Dr. Alex da Silva)
 - (b) Chioke Harris, Mechanical Engineering, August 2010, “A Mixed-Integer Model for Optimal Grid-Scale Energy Storage Allocation” (Co-Advisor: Dr. Jeremy Meyers)
 - (c) Cassandra Telenko, Mechanical Engineering, December 2009, “Developing Green Design Guidelines: A Formal Method and Case Study” (Co-Advisor: Dr. Carolyn Conner Seepersad)
 - (d) Stuart Cohen, Mechanical Engineering, May 2009, “The Implications of Flexible CO₂ Capture on the ERCOT Electric Grid” (Co-Advisor: Dr. Gary Rochelle)
 - (e) Colin Smith, Mechanical Engineering, May 2009, “Conversion of Wet Ethanol to Syngas via Filtration Combustion” (Co-Advisor: Dr. Janet Ellzey)
3. Committee Member or 2nd Reader:
- (a) Robert Fares, Mechanical Engineering, August 2012
 - (b) Constance McDaniel Wyman, Energy & Earth Resources, May 2011
 - (c) Claire Follete, Mechanical Engineering, May 2010
 - (d) Nate Lapierre, Energy & Earth Resources, May 2010
 - (e) Morayo Noibi, Chemical Engineering, August 2009
 - (f) Andrew Durkee, Energy & Earth Resources, May 2009
 - (g) Christopher Smith, LBJ School of Public Affairs, May 2009
 - (h) Susan Peterson, LBJ School of Public Affairs, May 2009
 - (i) Maura Nippert, Mechanical Engineering, December 2008
 - (j) Ross Johnson, Mechanical Engineering, August 2008
 - (k) Federico Pozo, Energy & Earth Resources, May 2008
 - (l) John Losinger, LBJ School of Public Affairs, May 2008
 - (m) Arash Nazhad, Energy & Earth Resources, May 2008
 - (n) In-Hul Chwang, Energy & Earth Resources, May 2008
 - (o) Cyrus Tashakorri, McCombs School of Business and LBJ School of Public Affairs, May 2008

Research Staff Supervisions:

1. Dr. Carey W. King, Research Associate and Post-Doctoral Fellow, February 2007 – present
2. Dr. Fred C. Beach, Research Associate and Post-Doctoral Fellow, September 2010 – present
3. Mr. Roger Duncan, Research Analyst, September 2011 – present
4. Ms. Marianne Shivers Gonzalez, Research Scientist, January 2011 – present
5. Dr. Colin M. Beal, Post-Doctoral Fellow, December 2012 – present
6. Dr. Ben H. Gully, Post-Doctoral Fellow, September 2012 – December 2012

7. Mr. Alex Breckel, Research Engineer, January 2012 – August 2012
8. Ms. Sheril R. Kirshenbaum, Research Scientist, January 2010 – February 2012
9. Ms. Melissa C. Lott, Research Scientist, January 2011 – October 2011
10. Ms. Amanda C. Cuellar, Research Engineer, May 2009 – August 2010

Ph.D. Supervisions In Progress:

1. Advisor:

- (a) Jared Garrison, Mechanical Engineering, Topic: Using Large-Scale Storage to Integrate Intermittent Renewables Into the Texas Grid
- (b) Chioke Harris, Mechanical Engineering, Topic: Grid Storage for Grid Optimization
- (c) Joshua Rhodes, Civil, Architectural and Environmental Engineering, Topic: Smart Energy in the Built Environment
- (d) Charles R. Upshaw, Mechanical Engineering, Topic: Smart Water
- (e) Robert Fares, Mechanical Engineering, Topic: Storage in the Smart Grid
- (f) Kelly Twomey Sanders, Civil, Architectural and Environmental Engineering, Topic: The Nexus of Food, Energy and Water

2. Committee Member:

- (a) Felix Gutierrez, Electrical and Computer Engineering
- (b) Jakub Felkl, Mechanical Engineering
- (c) Elena Nirlo, Civil, Architectural and Environmental Engineering
- (d) Marwa Zataari, Civil, Architectural and Environmental Engineering

M.S. Supervisions In Progress:

1. Advisor:

- (a) Mary Clayton, Mechanical Engineering, Topic: Embedded Water In the Commercial Sector
- (b) Margaret Cook, Environmental Water and Resource Engineering and LBJ School of Public Affairs, Topic: Energy-Water Nexus in Texas
- (c) Alisa Schackmann, LBJ School of Public Affairs, Topic: Underground Transmission
- (d) Colin M. Meehan, Energy and Earth Resources, Topic: Emissions Impacts of Intermittent Renewables in ERCOT
- (e) Yael Glazer, Environmental Water and Resource Engineering, Topic: Energy-Water Nexus
- (f) Jill Kjellsson, Environmental Water and Resource Engineering and LBJ School of Public Affairs, Topic: Integrating Renewable Energy and Water Treatment
- (g) Erin Keys, Mechanical Engineering, Topic: Smart Grid

2. Member

- (a) Julia Rourke, Mechanical Engineering and LBJ School of Public Affairs

Undergraduate Research Supervision:

1. Plan II Thesis Supervision

- (a) Advisor on Plan II Thesis:
 - i. Kevin Clegg, May 2013
 - ii. Austin Shires, May 2012
 - iii. Zach Ullah, May 2012
 - iv. James Newman, May 2012
 - v. Rob Taylor, May 2012
 - vi. Brad Parro, May 2011
 - vii. Will Johnson, May 2011
 - viii. Amanda Cuellar, May 2009
 - ix. Avi Wolfson, May 2008
 - x. Paolo Puccini, May 2009
 - xi. Nick Padon, December 2007
 - xii. Ben Branstetter, December 2007
- (b) Second Reader on Plan II Thesis:
 - i. Megan Stephens, May 2011
 - ii. Ashley Powell, May 2011
 - iii. Jim Coutre, May 2008

2. Undergraduate Research Assistants

- (a) Current
 - i. Vineet Raman, Electrical Engineering, Fall 2012 – present
 - ii. Blake Sandoval, Mechanical Engineering, Fall 2012 – present
 - iii. Zach Wilhoit, Mechanical Engineering, Fall 2012 – present
 - iv. Isaac Sanchez, Mechanical Engineering, Summer 2012 – present
 - v. Will Gorman, Chemical Engineering and Plan II, Spring 2012 – present
- (b) Former
 - i. Richard North, Mechanical Engineering, Fall 2011 – Fall 2012
 - ii. Susan Conover, Mechanical Engineering, Fall 2011 – Spring 2012
 - iii. Neil Barbaria, Electrical and Computer Engineering, Fall 2011
 - iv. James Newman, Mechanical Engineering and Plan II, Fall 2010 – May 2012
 - v. John Fyffe, Mechanical Engineering, Fall 2008 – Summer 2011
 - vi. Mary Clayton, Mechanical Engineering, Fall 2009 – May 2011
 - vii. Courtney Grosvenor, Mechanical Engineering, Summer 2010 – May 2011
 - viii. Veronica Pulido, Mechanical Engineering, Fall 2009 – Fall 2010
 - ix. Lauren Ayers, Liberal Arts, Spring 2010 – August 2010

- x. Charlie Upshaw, Mechanical Engineering, Fall 2009 – Spring 2010
- xi. Christopher Mayer, Mechanical Engineering, Summer 2010 – Fall 2010
- xii. Royce Chang, Mechanical Engineering and Plan II, Fall 2009
- xiii. Adam Petri, Mechanical Engineering, Fall 2009
- xiv. Alex Levy, Mechanical Engineering, Spring 2009
- xv. Tommy Browder, Mechanical Engineering, Summer 2008 – Fall 2008
- xvi. Alix Broadfoot, Civil Engineering, Spring 2007 – Spring 2009
- xvii. Amanda Cuellar, Chemical Engineering and Plan II, Spring 2007 – Spring 2009
- xviii. Scott McNally, Chemical Engineering, Summer 2008–Fall 2008
- xix. Andrew King, Mechanical Engineering, Spring 2008–Summer 2008
- xx. Alison Whitt, Mechanical Engineering, Spring 2008
- xxi. Erin Keys, Mechanical Engineering, Fall 2007–Spring 2008
- xxii. Afolabi Ogunnaike, Chemical Engineering, Fall 2007–Spring 2008
- xxiii. Avi Wolfson, Mechanical Engineering and Plan II, Fall 2007–Spring 2008
- xxiv. Henri Kjellberg, Aerospace Engineering, Spring 2007 – Summer 2007
- xxv. Andrea Pearlman, Mechanical Engineering, Spring 2007

University Committee Assignments:

- University
 - Deputy Director, Energy Institute (April 2013–present)
 - Associate Director, Center for International Energy & Environmental Policy (2006–2012)
 - Co-Director, Clean Energy Incubator (2009–present)
 - Member, Regents’ Outstanding Teaching Awards (ROTA) committee for tenure-track faculty (Spring 2013)
 - Member, Working Group on Energy and Water Systems of the President’s Task Force on Sustainability (Summer 2008)
- College
 - Member, Graduate Studies Committee, Mechanical Engineering (Fall 2007–present)
 - Member, Graduate Studies Committee, Civil, Architectural and Environmental Engineering (Fall 2010–present)
 - Member, Graduate Studies Committee, Energy and Earth Resources (Fall 2007–present)
 - Member, Graduate Studies Committee, LBJ School of Public Affairs (Spring 2009 – present)
 - Member, Engineering Public Affairs Advisory Committee, Cockrell School of Engineering (Fall 2007–Fall 2008)
 - Faculty panel for the Bridging Disciplines Program (BDP) in International Studies (Fall 2007–Spring 2009)
 - Member, OYEG Selection Committee, Cockrell School of Engineering (March 2008)
- Departmental
 - Member, Faculty Search Committee on manufacturing and materials, Mechanical Engineering (Fall 2011–Spring 2012)
 - Member, Quads Committee, Mechanical Engineering (Jan 2007–Spring 2009)

Active Memberships in Professional and Honorary Societies: Includes publishing, presenting and attending conferences.

- American Society of Mechanical Engineers (ASME)
- American Association for the Advancement of Science (AAAS)
- American Chemical Society (ACS)
- National Honor Society Tau Beta Pi
- National Honor Society Phi Beta Kappa

Professional, Industrial and Governmental Committee Participation:

- Member, Committee on Transitions to Alternative Vehicles and Fuels, National Research Council, National Academies of Sciences & Engineering (2011–2012)
- Member, Roundtable on Science and Technology for Sustainability, The National Academies (2012–present)
- Vice-Chair, Energy-Water Nexus Interdisciplinary Council, American Society of Mechanical Engineers (ASME) (2010–present)
- Member, Electric Utility Commission, City of Austin (Spring 2008–present)
- Board of Advisers, *Scientific American* (2009–present)
- Editor in Chief, Current Sustainable/Renewable Energy Reports, Springer (2013–2014)
- Editorial Board Member, *Environmental Research Letters* (2008–present)
- Contributing Editor, *Earth Magazine* (2007–present)
- Board Member, Houston Advanced Research Center (HARC), (2013–present)
- Member, AT&T Sustainability Advisory Council (Fall 2009–2012)
- Scientific Advisory Committee, Energy & Water in a Warming World, Union of Concerned Scientists (2011–2013)
- Judge, Platt’s Energy Industry Awards (2010–2011)
- Founding Board Member, CleanTX Foundation, Austin, Texas (2008–2012)
- Mentor, Science in Action Award (with *Scientific American* and *Google Science Fair*), 2012
- Book Reviewer: UT Press (2012)
- Manuscript Reviewer: *Science*, *Nature Climate Change*, *Proceedings of the National Academy of Sciences*, *Environmental Research Letters*, *Environmental Science and Technology*, *Bioenergy Research*, *Environmental Monitoring and Assessment*, *Environmental Management*, *Bioenergy and Biotechnology*, *Ecology and Society*, *Journal of Animal Science*, *Journal of Dairy Science*, *Water Resources Research*, and *ASME Journal of Energy Resource Technology*.
- Proposal Reviewer: National Science Foundation (Sustainable Energy Program Panels, CREST Program) (2008, 2009, 2011), Department of Energy (2009), NJ Sustainable Energy Program (2010), USDA SBIR (2011, 2012), Austrian Science Fund (2012)
- Steering Committee Member, Power Across Texas, a 501(c)3 non-profit (2007–present)

- Executive Committee, Clean Energy Venture Summit (2008–2011), Austin, Texas
- Member of the Renewable & Sustainable Energy Team with the Texas Workforce Commission as a part of Gov. Perry’s Industry Cluster Initiative (2006–2007)
- Board Member, Hope Street Group, a national 501(c)3 non-profit (2004–2006)

Conference, Symposium and Short Course Organizing:

Webber has been an active organizer, session chair and track chair for a variety of conferences, symposia, workshops, and short courses. A select sample of that organizing effort is listed here.

1. National Science Foundation Workshop, Energy-Water Nexus, Washington, DC, June 10–11, 2013.
2. American Association for the Advancement of Science (AAAS) Annual Meetings
 - Symposium Organizer, “Waste as the World’s Most Abundant Renewable Resource,” AAAS Annual Meeting, Washington, DC, February 20, 2011.
 - Symposium Organizer, “Algae for Feed, Food, Fuel, Freshwater and Fiber,” AAAS Annual Meeting, February 19, 2010.
 - Symposium Organizer, “Hunger for Power: The Global Nexus of Food and Energy,” AAAS Annual Meeting, Chicago, IL, February 14, 2009.
 - Symposium Organizer, “Thirst for Power: The Global Nexus of Energy and Water,” AAAS Annual Meeting, Boston, MA, February 15, 2008.
3. American Society of Mechanical Engineers (ASME)
 - Keynote Panel, “Energy and Water Nexus,” *ASME 2011 International Mechanical Engineering Congress & Exposition*, November 11–17, 2011, Denver, CO, USA (Co-Organizer).
 - Plenary Panel, “The Low-Carbon Future,” ASME Summer Annual Meeting, Dallas, TX, June 13, 2011 (Moderator).
 - Track Chair/Session Organizer, “Climate Control and the Environment,” *Proceedings of the ASME 4th International Conference on Energy Sustainability*, May 17–22, 2010, Phoenix, AZ, US
 - Track Chair/Session Organizer, “Climate, Emissions and Environment,” *Proceedings of the ASME 3rd International Conference on Energy Sustainability*, July 19–23, 2009, San Francisco, CA, USA
 - Track Chair/Session Organizer, Emerging Policy Issues, *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA
 - Track Chair/Session Organizer, Energy, Emissions and Environment, *Proceedings of the ASME 2nd International Conference on Energy Sustainability*, August 10–14, 2008, Jacksonville, FL, USA
4. Short Courses and Executive Education
 - “Energy Technology & Policy,” 1-day course with the UT McCombs Exec Education, Houston, December 6, 2013.
 - “Water Technology & Policy,” 2-day course with the UT Center for Lifelong Engineering Education at UT Austin, Austin, October 22–23, 2013.
 - “Energy Technology & Policy,” 1-day course with the UT McCombs Exec Education, Houston, June 1, 2013.
 - “The Future of Energy,” 3-day course with CleanTX Foundation, Austin, TX, April 8,

15, and 29, 2013 (organized with Roger Duncan).

- “Energy Technology & Policy,” 6-day course with the Duke University Executive MBA Program, Durham, NC, September 23–28, 2012.
- “Water Technology & Policy,” 1-day course with the UT Center for Lifelong Engineering Education at UT Austin, Austin, August 9, 2012.
- “Smart.Clean.Energy,” 5-day course with the Austin Technology Incubator and Pecan Street, UT Austin, May 21–25, 2012.
- “Energy Technology & Policy,” 1-day course with the UT McCombs Exec Education, Houston, May 5, 2012.
- “Energy Technology & Policy,” 4-day course with the UT McCombs Exec Education, Austin, (March and May 2012).
- “Smart.Clean.Energy,” 5-day course with the Austin Technology Incubator and Pecan Street, UT Austin, August 15–19, 2011.
- “Energy Technology & Policy,” 1-day course, with the UT McCombs Exec Education Program, Houston, June 18, 2011.
- “Energy Technology & Policy,” 1-day course, with the UT McCombs Exec Education Program, Austin, February 24, 2011.
- “Energy Technology & Policy,” 3-day course, with the UT Center for Lifelong Engineering Education at UT Austin, Austin, August 17–19, 2010.
- “Energy Technology & Policy,” 1-day course, with the UT McCombs Exec Education Program, Houston, August 14, 2010.
- “Energy Technology & Policy,” 3-day course, with the UT Center for Lifelong Engineering Education at UT Austin, Austin, January 12–14, 2010.
- “Energy Technology & Policy,” 3-day course, with the UT Center for Lifelong Engineering Education at UT Austin, Austin, August 18–20, 2009.
- “Energy Technology & Policy,” 2-day course, with the UT Center for Lifelong Engineering Education at UT Austin, Austin, December 9–10, 2008.
- “Energy Technology & Policy,” 2-day course, with the UT Center for Lifelong Engineering Education at UT Austin, Austin, July 15–16, 2008.
- “Energy Technology & Policy,” 2-day course, with the UT Center for Lifelong Engineering Education at UT Austin, Austin, December 11–12, 2007.

5. Other Conferences

- “Comparative Energy Policies and Technologies in France and the USA,” Sponsored by the French Embassy, UT Austin, December 17, 2012 (Organizer).
- “TAMEST Water Summit,” UT Austin, May 20–21, 2012 (Program Committee).
- “Climate Change and Electricity,” UT Austin, April 4–5, 2012 (Co-Organizer).
- “Natural Gas Use in Texas and Unconventional Hydrocarbons,” UT Austin, October, 19, 2011 (Co-Organizer).
- “Overcoming Barriers to Smart Grids and New Energy Services”, UT Austin, April 7–8,

2011 (Co-Organizer).

- *Haynesville* Movie Screening and Q&A, UT Austin, October 26, 2010 (Organizer).
- “Energy Water Workshop,” Energy-Water Funders Meeting, April 6–7, 2009, UT Austin (Co-Organizer).
- “Technology as a Solution to Environmental Issues,” Energy Policy and Technology in France and the EU: Some Implications for the United States, UT Austin, September 29, 2008 (Session Organizer).
- Program Committee Member, 2004 & 2006 Optical Society of America LACSEA meeting.

6. CleanTX Foundation

- CleanTX Forums
 - Organizer/Moderator, “Smart Grid: Customer Side of the Meter,” CleanTX Forum, UT Austin, April 7, 2011.
 - Organizer/Moderator, “Natural Gas and Renewable Energy: Friends or Foes?,” CleanTX Forum, City Hall, Austin, TX, August 12, 2010
 - Organizer/Moderator, “Blue Gold: Water and Clean Energy,” CleanTX Forum, UT Austin, June 1, 2010.
 - Organizer/Moderator, “Power Generation for the 21st Century,” CleanTX Forum, UT Austin, May 20, 2009.
 - Organizer/Moderator, “Algae: Pond Powered Biofuels,” CleanTX Forum, City Hall, Austin, TX, November 19, 2008.
 - Organizer/Moderator, “The Thirst for Power: The Nexus of Energy and Water,” Clean TX Forum, UT Austin, May 14, 2008.
- Clean Energy Venture Summits
 - Executive Committee, Clean Energy Venture Summit 2011, City Hall and UT Austin, Austin, TX, September 28–29, 2011.
 - Welcoming Remarks and Executive Committee, Clean Energy Venture Summit 2010, City Hall and UT Austin, Austin, TX, September 29–30, 2010.
 - Master of Ceremonies, Welcoming Remarks, and Executive Committee, Clean Energy Venture Summit 2009, City Hall and UT Austin, Austin, TX, October 14–15, 2009.
 - Master of Ceremonies and Executive Committee, Clean Energy Venture Summit 2008, UT Austin, Austin, TX, December 3-4, 2008.

Honors, Awards, and Fellowships

14. Josey Centennial Fellow in Energy Resources (endowed position), UT Austin (2012–present)
13. Harrington Fellowship, UT Austin (2014).
12. Senior Fellow, Energy and Climate Partnership of the Americas, Science & Technology Advisers Office, US State Department (2011–2013) (1 of 5 people selected nationally)
11. American Water Works Association’s (AWWA’s) Second Place Academic Achievement Award for the best Master’s Thesis (for supervising Ashlynn Stillwell’s EWRE thesis) (2011)
10. Regents’ Outstanding Teaching Award, UT System (2011–2012)
9. Cockrell School of Engineering Award for Outstanding Teaching by an Assistant Professor (2011–2012)
8. Dad’s Association Centennial Teaching Fellowship, UT Austin (2010–2011)
7. Environmental Forum Scholar, Aspen Institute (2010)
6. APEX Award for Publication Excellence in the Green Writing category (2010)
5. Finalist, White House Fellowship (2009)
4. AT&T Industrial Ecology Fellow (2009)
3. Marshall Memorial Fellow, German Marshall Fund (2007)
2. Outstanding Young Engineering Graduate, UT-Austin (2005)
1. National Science Foundation Graduate Research Fellowship (1995–1998)

Paper Awards and Recognition

7. Honorable Mention, *Transformative Research Along Multi-Disciplinary Boundaries* poster session, ASME 2011 International Mechanical Engineering Congress & Exposition (2011) (Garrison & Webber, “A Dynamic Model of an Energy Storage Scheme for Solar & Wind”)
6. Best Student Paper Award, ASME 4th International Conference on Energy Sustainability (2010) (Twomey & Webber, “The Cost of Food in a Carbon Constrained Economy”)
5. Best Student Paper Award, ASME 2nd International Conference on Energy Sustainability (2008) (Smith, *et al.*, “Conversion of Wet Ethanol to Syngas and Hydrogen”)
4. Outstanding Paper Award for the best paper of the year (measurement science category) in *Measurement Science & Technology* (2005) (Webber, *et al.*, “Agricultural ammonia sensor using diode lasers and photoacoustic spectroscopy”)
3. Highlights of 2011 from *Environmental Research Letters* (2011) (Stillwell, Clayton and Webber, “Technical analysis of a river basin-based model of advanced power plant cooling technologies for mitigating water management challenges”)
2. Highlights of 2011 from *Environmental Research Letters* (2011) (Cohen, Chalmers, Webber and King, “Comparing post-combustion CO₂ capture operation at retrofitted coal-fired power plants in the Texas and Great Britain electric grids”)
1. Highlights of 2011 from *Environmental Research Letters* (2011) (Thompson, King, Allen and Webber, “Air quality impacts of plug-in hybrid electric vehicles in Texas: evaluating three

battery charging scenarios”)

Patents

4. System and Method for High Sensitivity Optical Detection of Gases, #7,502,115 (2009)
3. Method of Analyzing Components of Alveolar Breath, #7,473,229 (2009)
2. Amplifier-Enhanced Optical Analysis System and Method, #7,064,329 (2006)
1. Gas Sensor for Ammonia, Carbon Dioxide and Water, Patent #6,787,776 (2004)

Legislative and Governmental Testimony by Dr. Webber

12. "Effect of Drought on the Energy Sector," **M.E. Webber**, Senate Energy & Natural Resources Committee Hearing, U.S. Congress, April 25, 2013.
11. "Some Thoughts On Texas Economic Impacts From Drought and Economic Opportunities In A Carbon-Constrained World," **M.E. Webber**, Committee on International Trade and Intergovernmental Affairs, Texas House of Representatives, April 22, 2013.
10. "Drought Impacts on Electricity Generation in Texas: Challenges and Opportunities," **M.E. Webber**, Senate Business & Commerce Committee Hearing, Texas Senate, January 10, 2012.
9. "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.
8. "The Good News and Bad News about Electric Vehicles in Texas," **M.E. Webber**, Business and Commerce Committee, Texas Senate, August 24, 2010
7. "The Nexus of Energy & Water," **M.E. Webber**, LCRA Board of Directors, Austin, TX, February 16, 2010.
6. "The Nexus of Energy & Water," **M.E. Webber**, Hearing of the Great Lakes Commission, Erie, PA, September 30, 2009.
5. "The Impacts of Carbon Legislation on Texas," **M.E. Webber**, Carbon Summit (A Joint Hearing of the Public Utilities Commission, Railroad Commission, and Commission on Environmental Quality), Texas State Capitol, September 22, 2009.
4. "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.
3. "The Energy-Water Nexus," **M.E. Webber**, Senate Natural Resources Committee Hearing, Texas Legislature, September 30, 2008.
2. "The Nexus of Energy and Water in Texas," **M.E. Webber**, Joint Interim Hearing Senate Committee on Business and Commerce and Senate Committee on Natural Resources, Texas Legislature, April 15, 2008.
1. "High Performance Buildings," **M.E. Webber**, Senate Committee on Government Organization, Texas Legislature, Austin, TX, April 24, 2008.

Legislative and Governmental Testimony by Dr. Webber's Staff and Students

4. "The Energy-Water Nexus in Texas," Dr. Carey King, House Natural Resources Committee Hearing, Texas Legislature, June 28, 2012.
3. "The Energy-Water Nexus," Ashlynn Stillwell, Senate Natural Resources Committee Hearing, Texas Legislature, September 30, 2008.
2. "Water and Nuclear Power," Ashlynn (Holman) Stillwell, Brazos River Authority Public Meeting, June 4, 2008.
1. "An Assessment and Comparison of Installed Solar and Wind Capacity in Texas: A Regional Case Study," Erin Keys, Senate Committee on Government Organization, Texas Legislature, Austin, TX, April 24, 2008.

Legislative and Governmental Briefings by Dr. Webber

6. "From Chemistry to Energy," **M.E. Webber**, American Chemistry Council Briefing for Congress, Washington, DC, June 28, 2012.
5. "The Nexus of Energy & Water," **M.E. Webber**, ACS Briefings for Congress (House Science and Technology Committee), Washington, DC, December 8, 2009.
4. "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.
3. "Energy Tradeoffs for Texas," **M.E. Webber**, Texas Legislative Energy Staffers, Fall 2008
2. "Energy Policy," **M.E. Webber**, Texas Legislative Energy Staffers, Spring 2008
1. "Energy & National Security," **M.E. Webber**, Asst. to the Secretary of Defense, June 2006.

Consulting

- UNESCO, United Nations, Colombella, Perugia, Italy, October 2012–May 2013
- 27 Ventures, Aspen, CO, February–July 2012
- UNESCO, United Nations, Colombella, Perugia, Italy, July–December 2011
- International Research and Development Centre, Ottawa, Canada, February–December 2011
- Power Across Texas, Austin, Texas, September – December 2010
- Organization for Economic Cooperation and Development (OECD), Paris, France, May–December 2010
- Northwest Hydrogen Alliance, Seattle, Washington, February–May 2010
- ExxonMobil Corporate Strategic Research, Clinton, NJ, March–June 2010
- Tikkun Investing, Chattanooga, TN, June–December 2005
- Ferrazzi Greenlight, Los Angeles, CA, March–September 2004

Media Appearances

Webber has made more than 150 media appearances featuring his research, analysis, expertise, or perspective since joining UT Austin in outlets such as the *Wall Street Journal*, *New York Times*, *San Francisco Chronicle*, *USA Today*, *NPR* (including local affiliates and Science Friday), *PBS* (including local affiliates and the weekly newsmagazine *NOW*), *The Daily Telegraph*, *BBC*, *ABC*, *CBS*, *Discovery*, *Popular Mechanics*, *New Scientist*, *MSNBC*, *History Channel*, *Austin American-Statesman*, and the *Houston Chronicle*. Those outlets span most major media, including print, TV, radio, and web.

Webber's Televised Lectures

2. "Energy at the Movies," syndicated nationally on PBS via NETA, beginning March 29, 2013.
1. "From Fracking to the Forty Acres: Energy Challenges for UT, Texas, and the World," filmed live at KLRU's studios in Austin, TX as part of Environmental Science Institute's Outreach Lecture Series for *Gamechangers* on ESPN's Longhorn Network, July 9, 2012.