

Chien-fei Chen, Ph.D.

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Current Position

Director of Education and Diversity Program & Research Associate Professor
National Science Foundation (NSF) and Department of Energy (DOE)- Engineering Research Center,
Center for Ultra-wide-area Resilient Electrical Energy Transmission Networks (CURENT)
Department of Electrical Engineering and Computer Science
University of Tennessee, Knoxville, UTK

Co-Director of Center for the Study of Social Justice
Adjunct Research Faculty
Department of Sociology, UTK

Education

Ph.D. 2009 Sociology, Washington State University
M.A. 1995 Mass Communication, Washington State University
B.A. 1992 Foreign Language and Literature
 National Cheng Kung University, Taiwan

Previous Academic Appointments

07/2018-present Research Associate Professor at CURENT, UTK
08/2011-06/2018 Research Assistant Professor at CURENT, UTK
08/2014-present Adjunct Research Faculty, Department of Sociology, UTK
2009-2010 Research Scientist, Dept. of Electrical Engineering & Computer Science,
 Virginia Tech
2008-2009 Lecturer, Dept. of Communication Studies, UTK

Television and Public Relation Industry Appointments

1998 - 2001 Producer & Program Planner, Public Television Service (PTS), Taipei, Taiwan
1998 News Writer & Program Planner, SET Television Station, Taipei, Taiwan
1997-1998 Campaign Manager, Vision Communication Public Relation Company,
 Taipei, Taiwan
1997 Producer and Program Planner, Chinese Television Station, Taipei, Taiwan
 Production Assistant, KCTS-Seattle Public Television, Seattle, WA
1996-1997 Producer & Director, Seattle Chinese Television Station, Seattle, WA

Research Focus

Environmental Sociology, Energy Justice and Policy, Interdisciplinary Research of Energy
Technology Adoption, Disaster Responses, Survey Design and Experimental Methodology

Book Chapters

1. Chen. C.-F., Schweiker, M. & Day, J. K. (2018). Ethics and privacy. In Andreas Wagner, William O'Brien and Bing Dong (eds.) Exploring occupant behavior in building: Methods and challenge (pp. 287-306). New York, NY: Springer Nature.

- Christine Horne, C.-F. Chen, Justin Berg, & Katie Evermann-Druffel. (2009). Metanorm expectations: determining what to sanction. In Shane R. Thye, Edward J. Lawler (eds.) *Altruism and prosocial behavior in groups (Advances in group processes, Volume 26)* (pp.199 – 223). Wales, UK: Emerald Group Publishing Limited.

Papers Under review

- Chen, C.-F., Li, J., Shuai, J., Nelson, H., Wlzem, A., and Cheng, J. (under revision, 2020). Linking social-psychological factors with policy expectation: using local voices to understand solar PV poverty alleviation in Wuhan, China. *Energy Policy*.
- Chen, C.-F., Nelson, H., Bonilla, G., Jones, N. and Xu, X. (under review, 2020). Beyond technology adoption: Examining home energy management systems, energy burdens and climate change perceptions across income groups. *Renewable and Sustainable Energy Reviews*.

Journal Publications

- Chen, C.-F., Yilmaz, S., Pisello, A. L. Kim, A., Simone, A., Hong, T., Bandurski, K., Bavaresco, M. V., Liu, P.-L., and Zhu, Y. (2020). The impacts of building characteristics, social-psychological and cultural factors on indoor environment quality productivity belief. *Building and Environment*, 185, 107189. <https://doi.org/10.1016/j.buildenv.2020.107189>
- Chen, C.-F., Zarazua De Rubens, G., Xu, X., & Li, J. (2020). Coronavirus comes home? Energy use, home energy management, and the social-psychological factors of COVID-19. *Energy Research and Social Science*, 68, 101688
- Fell, M., Pagel, L., Chen, C.-F., Goldberg, M. H., Herberz, M., Herberz, G. M., Sareen, S., & Hahnel, U. J.J. (2020). Validity of energy social research during and after COVID-19: challenges, considerations and responses. *Energy Research and Social Science*, 68, 101646. doi.org/10.1016/j.erss.2020.101646
- Chen, C.-F., Xu, X., Adams, J., Brannon, J., Li, F., & Walzem, A., (2020). When East meets West: understanding residents' home energy management system adoption and willingness to pay in Japan and in the United States. *Energy Research and Social Science*, 69, 101616. doi.org/10.1016/j.erss.2020.101616
- Yamaguchi, Y., Chen, C.-F., Shimoda, Y., Yagita, Y., Iwafune, Y., Ishii, H., & Hayashi, Y. (2020). An integrated approach of estimating demand response flexibility based on household heterogeneity and activities. *Energy Policy*, 142, 111467. doi.org/10.1016/j.enpol.2020.111467
- Sovacool, B. K., Xu, X., Zarazua De Rubens, G., & Chen, C.F. (2020) Social media and disasters: human security, environmental racism, and crisis communication in Hurricane Irma response. *Environmental Sociology*, 6, 3, 291-306, DOI: 10.1080/23251042.2020.1753310
- Xu, X., Chen, C.-F., Li, D. & Menassa, C. (2020). Energy saving at work: Exploring the role of social norms, perceived control and ascribed responsibility in different office layout. *Frontiers in Built Environment*, 6, 16, 1-12. [doi: 10.3389/fbuil.2020.00016](https://doi.org/10.3389/fbuil.2020.00016)
- Chen, C.-F., Zarazua de Rubens, G., Noel, L., Kester, J., & Sovacool, B. K. (2020). Assessing the Socio-demographic, technical, economic and behavioral factors of Nordic electric vehicle adoption and the influence of Vehicle-to-Grid preferences. *Renewable and Sustainable Energy Review*, 121, 109692. doi.org/10.1016/j.rser.2019.109692

9. Chen, C.-F., Wang, Y., Adua, L., & Bai, H. (2020). Reducing household fossil fuel consumption by enabling technology and behavior. *Energy Research and Social Science*, 60, 101402. doi.org/10.1016/j.erss.2019.101402
10. Shi, Q., Chen, C.-F., Mammoli, A., & Li, F. (2020). Estimating the profile of incentive-based demand response (IBDR) by integrating technical models and social-behavioral factors. *IEEE Transactions on Smart Grid*, 11 (1), 171-183. doi: 10.1109/TSG.2019.2919601
11. Chen, C.- F. et al. (2020). Culture, conformity, and carbon? A multi-country analysis of heating and cooling practices in buildings. *Energy Research and Social Science*, 61, 101344. doi.org/10.1016/j.erss.2019.101344
12. Hong, T., Chen, C.-F., Wang, Z., & Xu, X. (2020). Linking human-building interactions in shared offices with personality traits. *Building and Environment*, 170, 106602. doi.org/10.1016/j.buildenv.2019.106602
13. Adua, L., Clark, B., York, R., & Chen, C. F. (2019). Modernizing our way out or digging ourselves in? Reconsidering the impacts of efficiency innovations and affluence on residential energy consumption, 2005-2015. *Journal of Environmental Management*, 252, 1096-59. doi.org/10.1016/j.jenvman.2019.109659
14. Mammoli, A., Robinson, M., Ayon, V., Martínez-Ramón, M., Chen, C.F., & Abreu, J. (2019). A behavior-centered framework for real-time control and load-shedding using aggregated residential energy resources in distribution microgrids. *Energy and Buildings*, 198, 275-290. doi.org/10.1016/j.enbuild.2019.06.021
15. Li, Da., Xu., X., Chen, C.F., & Menassa, C. (2019). Understanding energy-saving behaviors in the American workplace: A unified theory of motivation, opportunity, and ability. *Energy Research and Social Science*, 51, 198-209. doi.org/10.1016/j.erss.2019.01.020
16. Xu., X., & Chen, C.F. (2019). Energy efficiency and energy justice for US low-income households: An analysis of multi-facet challenges and potential. *Energy Policy*, 128, 763-774. doi.org/10.1016/j.enpol.2019.01.020
17. Arpan, L., Xu, X., Raney, A.A., Chen, C.-F., & Wang, Z. (2018). Politics, values, and morals: Assessing consumer responses to the framing of residential renewable energy in the United States. *Energy Research and Social Science*, 46, 321-331. doi.org/10.1016/j.erss.2018.08.007
18. Shuai, J., Chen, C.F., Cheng, J., Leng, Z., & Wang, Z. (2018). Are China's solar PV products competitive in the context of the Belt and Road Initiative? *Energy Policy*, 120, 559-568. doi.org/10.1016/j.enpol.2018.05.042
19. Xu, X., Chen, C.F., Zhu, X., & Hu, Q. (2018). Promoting acceptance of direct load control programs in the United States: Financial incentive versus control option. *Energy*, 147, 1278-1287. doi.org/10.1016/j.energy.2018.01.028
20. Asadinejad, A., Rahimpour, A., Tomsovic, K., Qi, H., & Chen, C.- F. (2018). Evaluation of residential customer elasticity for incentive-based demand response programs. *Electric Power Systems Research*, 158, 26-36. doi.org/10.1016/j.epsr.2017.12.017

21. Talele, S., Traylor, C., Arpan, L., Curley, C., Chen, C.-F., Day, J., Feiock, R., Hadzikadic, M., Ingman, S., Karaguzel, O.T., Lam, K.P., Menassa, C., Pevnitskaya, S., Spiegelhalter, T., Tolone, W.J., Yan, W., Yeatts, D., Zhu, Y., & Tao, Y. (2018). Energy modeling and data structure framework for sustainable human-building ecosystems (SHBE): A review. *Frontiers in Energy*, 1-19. doi.org/10.1007/s11708-017-0530
22. Chen, C.-F., Xu, X., & Arpan, L. (2017). Between the technology acceptance model and sustainable energy technology acceptance model: Investigating smart meter acceptance in the United States. *Energy Research and Social Science*, 25, 93-104. dx.doi.org/10.1016/j.erss.2016.12.011
23. Chen, C.-F., Xu, X., & Day, J. (2017). Thermal comfort or money saving? Exploring intentions to conserve energy among low-income households in the United States. *Energy Research and Social Science*, 26, 61-71. dx.doi.org/10.1016/j.erss.2017.01.009
24. D'Oca, S., Chen, C.-F., Hong, T., & Belafi, Z. (2017). Synthesizing building physics with social psychology: An interdisciplinary framework for context and occupant behavior in office buildings. *Energy Research and Social Science*, 34, 240-251. doi.org/10.1016/j.erss.2017.08.002
25. Xu, X., Maki, A., Chen, C.-F. Dong, B., & Day, J. (2017). Investigating willingness to save energy and communication about energy use in the American workplace with the attitude-behavior-context model. *Energy Research and Social Science*, 32, 13-22. dx.doi.org/10.1016/j.erss.2017.02.011
26. Cui, Y., Yan, D., & Chen, C.-F. (2017). Exploring the factors and motivations influencing heating behavioral patterns and future energy use intentions in the hot summer and cold winter climate zone of China. *Energy and Buildings*, 153, 99-110. dx.doi.org/10.1016/j.enbuild.2017.07.068
27. Yeatts, D. E., Auden, D., Cooksey, C., & Chen, C.-F. (2017). A systematic review of strategies for overcoming the barriers to energy-efficient technologies in buildings. *Energy Research and Social Science*, 32, 76-85. dx.doi.org/10.1016/j.erss.2017.03.010
28. Chen, C.-F. Xu, X. & Frey, R. S. (2016). Who wants solar water heaters and alternative fuel vehicles? Assessing social-psychological predictors of adoption intention and policy support in China. *Energy Research and Social Science*, 15, 1-11. dx.doi.org/10.1016/j.erss.2016.02.006
29. Hong, T., Yan, D., D'Oca, S., & Chen, C.-F. (2016). Ten questions concerning occupant behavior in buildings: The big picture. *Building and Environment*, 114, 518-530. dx.doi.org/10.1016/j.buildenv.2016.12.006
30. Xu, X., Arpan, L., & Chen, C.-F. (2015). The moderating role of individual differences in responses to benefit and temporal framing of messages promoting residential energy saving. *Journal of Environmental Psychology*, 44, 95-108. dx.doi.org/10.1016/j.jenvp.2015.09.004
31. Chen, C.-F. & Knight, K. (2014). Energy at work: social psychological factors affecting energy conservation intentions within Chinese electric power companies. *Energy Research and Social Science*, 4, 23-31. dx.doi.org/10.1016/j.erss.2014.08.004
32. Hu, Q., Li, F., & Chen, C.-F. (2014). A smart home test bed for undergraduate education to bridge the curriculum gap from traditional power systems to modernized smart grids. *IEEE Transactions on Education*, 58(1), 32-38. doi.org/10.1109/TE.2014.2321529

33. Chen, C.-F., Tomsovic, K., & Aydeniz, M. (2014). Filling the pipeline: Power system curricula for middle school and high school students. *IEEE Transactions on Power Systems*, 29(24), 1874-1879. doi.org/10.1109/TPWRS.2013.2293752
34. Li, H., Song, J. B., Chen, C.-F., Lai, L., & Qiu, R. (2014). Behavior propagation in cognitive radio networks: A social network approach. *IEEE Transactions on Wireless Communications*, 13(2), 646-657. doi.org/10.1109/TW.2013.121813.121964
35. Worcester, A. C., Hickox, V. M., Klimaszewski, J. G., Wilches-Bernal, F., Chow, J. H., & Chen, C.-F. (2013). The sky's the limit: Designing wind farms: A hands-on STEM activity for high school students. *IEEE Power & Energy Magazine*, 11(1) 18-29. doi.org/10.1109/MPE.2012.2225213
36. Tang, L., & Chen, C.-F. (2013). Effectiveness of health messages to change women's thin-ideal and unhealthy weight control intentions: Connecting social norms and social networks approaches. *Asian Journal of Communication*, 23(5), 519-537. dx.doi.org/10.1080/01292986.2012.756045
37. Horne, C., Chen, C.-F., Berg, J., & Evermann-Druffel, K. (2009). Metanorm expectations: Determining what to sanction. *Advances in Group Processes*, 26, 199-223. doi.org/10.1108/S0882-6145(2009)0000026011
38. Pinkleton, B., Reagan, J., Aaronson, D., & Chen, C.-F. (1997). The role of individual motivations in information source use and knowledge concerning divergent topics. *Communication Research Reports*, 14(3), 291-301. dx.doi.org/10.1080/08824099709388672
39. Reagan, J., Pinkleton, B., Chen, C.-F., & Aaronson, D. (1995). How do technologies relate to the repertoire of information sources? *Telematics & Informatics*, 12(1), 21-27. dx.doi.org/10.1016/0736-5853(94)00035-R

Conference Publication

1. Chen, C. F., Xu, X., Adua, L., & Briggs, M. (August, 2020). Exploring an Energy Justice Issue by Analyzing Household Energy Use Intensity Across Income Groups. *The Annual Meeting of American Sociological Association (ASA)* (virtual).
2. Chow, J., H., Chen, C.-F., Skutnik, A. L., Xu, X., Herkenham, E., & Wang, M. (June 2019). Evolution of activities in a smart grid summer camp for high school STEM students. *The Annual Meeting of American Society for Engineering Education (ASEE)*, Tampa, Florida.
3. Chen, C. F. & Xu., X. (August, 2019). Energy justice: examining the challenges of affordability, accessorially and practices of energy efficiency among low-income households. *The Annual Meeting of American Sociological Association (ASA)*, New York.
4. Ju, W., Yao, R., Sun, K. & Chen, C. F (August 2019). Demand response to help mitigate cascading outages: A case study on the 2011 Tornado super outbreak. *The IEEE Power & Energy Society General Meeting*.
5. Aydeniz, M. Chen, C.F., & Skutnik, A. (March 2019). Exploring high-achieving high school students' understanding of the nature of engineering. *The National Association for Research in Science Teaching*, Baltimore, MD.

6. Washizu, A., Nakano, S., Chen, C.F., Ishii, H., & Hayashi, Y. (October, 2018). Measurement of demand function for HEMS: comparison between Japan and the United States. *EcoBalance 2018*, Ryogoku, Japan.
7. Chen, C. F., Benjamin Sovacool, Andrew, Jorgenson, Christine Horne and Emily Kennedy. (August, 2018). Special panel for conceptual frameworks and new frontiers in energy justice: from macro to micro levels. The *Annual Meeting of American Sociological Association (ASA)*, Pennsylvania.
8. Chen, C.F., Xu, X., Duncan, T., Islam, F., Adams, J., & Gilooly, V. (August, 2018). Social order, environmental impacts, and crisis communication: Mining tweets for analysis of hurricane disaster response. The *Annual Meeting of American Sociological Association*, Pennsylvania.
9. Xu, X., Chen, C.F., Washizu, A., Ishii, H., & Yashiro, H. (August, 2018). Willingness to pay for home energy management system: A cross-country comparison. The *IEEE Power and Energy Society (PES) General Meeting, Portland, OR*.
10. Washizu, A., Nakano, S., Chen, C.F., Ishii, H., & Hayashi, Y. (March, 2018). Comparison of Consumer Acceptance to HEMS in the US and Japan: Based on Contingent Valuation Method. *The 13th Meeting of the Institute of Life Cycle Assessment*, Tokyo, Japan.
11. Washizu, A., Nakano, S., Chen, C.F., Ishii, H., & Hayashi, Y. (January, 2018). Comparison between willingness to pay for HEMS in Japan and the United States: based on the results of a large-scale Japan-US common questionnaire survey. *The 34th Energy System, Economic and Environmental Conference*, Tokyo, Japan.
12. Chen, C. F. (2017, December). The social-psychological factors affecting willingness to adopt smart meters and smart home energy management system in the United States. Presentation to the *World Congress on Sustainable Technologies (WCST)*, University of Cambridge, UK.
13. Chen, C. F. (2017, December). Promoting voluntary peak demand response behaviors in the United States: A special examination across income groups,” Presentation to the *World Congress on Sustainable Technologies (WCST)*, University of Cambridge, UK.
14. Chen, C. F. & Xu, X. (2017, July). Do poor people think differently from rich people? Investigating public acceptance of electricity demand response behaviors across income levels in the United States. Poster presented at the *NSF RCN: Energy Impacts Symposium for Fostering Cross Disciplinary Research on Energy Development*, Columbus, Ohio.
15. Chen, C.-F. (2017, June). An interdisciplinary framework and survey for investigating cross-country occupant behavior in buildings: Social-psychological analysis of demand response and smart home management system. Presentation at the *Annual American Society of Heating and Air-Conditioning Engineers (ASHRAE) Summer Conference*, Long Beach, CA.
16. Chen, C.-F., Xu, X., Arpan, L., & Loveday, A. (2017, August). Fuel poverty: The role of social-psychological factors affecting low-income households’ acceptance to demand response. Paper presented at the *Annual Meeting of American Sociological Association (ASA)*, Montreal, Canada.

17. Chen, C-F., Arpan L., & Xu, X. (2017, April). Predicting consumer interest in electricity demand response programs in the United States: A social-psychological approach. Poster presented at *The First International Conference on Energy Research & Social Science*, Melia Sitges, Spain.
18. Asadinejad, A., Tomsovic, K., Chen, C. F (2017, September). Sensitivity of incentive based demand response program to residential customer elasticity. Paper presented at the *IEEE North American Power Symposium (NAPS)*, Denver, Co.
19. Roetzel, A. & Chen, C.-F. (2016, December). Understanding qualitative and quantitative influences on occupant behavior in offices. Paper presented at the *International Conference of the Architectural Science Association*, Adelaide. Australia.
20. Asadinejad, A., Varzaneh, M. G., Tomsovic, K., Chen, C. F., & Sawhney, R. (2016, July). Residential customers' elasticity estimation and clustering based on their contribution at incentive-based demand response. Paper presented at the *IEEE Power and Energy Society (PES) General Meeting*, Boston, MA.
21. Chen, C.-F. (2016, January). Beyond technology: Improving occupants' energy efficiency behaviors through social-psychological analysis. Presentation at the *Annual American Society of Heating and Air-Conditioning Engineers (ASHRAE)*, Winter Conference, Orlando, FL.
22. Chen, C.-F. & Xu, X. (2015, August). Exploring social psychological factors and barriers affecting low-income residents' intentions to reduce energy use. Paper presented at the *Annual Meeting of American Sociological Association (ASA)*, Chicago, IL.
23. Hu, Q., Fang, X., Li, F., Xu, X., Chen, C. F., & Hu, H. (2015, July). An approach to assess the responsive residential demand to financial incentives (pp. 1-5). Paper presented at the *2015 IEEE Power & Energy Society General Meeting*, Denver, CO.
24. Xu, X. & Chen, C.-F. (2014, December). Investigating residents' responses to financial incentives and related customer segmentation for promoting demand responses. Poster at the *Annual Meeting of Behavior, Energy and Climate Change (BECC)*, Washington, D.C.
25. Chen, C.-F., Xu, X., Zhao, W., & Sun, J. (2014, August). Privacy concern, energy concern, or money consciousness? Examination of factors influencing residents' smart meter acceptance. Paper presented at the *Annual Meeting of American Sociological Association (ASA)*, San Francisco, CA.
26. Foy, J., Chen, C.-F. & Wills, E. (2014, June). Integrating assembly language programming into high school STEM education. *The 121st American Society of Engineering Education Annual Meeting (ASEE)*, Indianapolis, IN.
27. Chen, C.-F. & Xu, X. (2013, November). Do the right thing or stay comfortable? Exploring social-psychological factors affecting electricity saving among employees in Chinese electric power companies. *The Annual Meeting of BECC*, Sacramento, CA.
28. Xu, X., & Chen, C.-F. (2013, November). Saving energy for different reasons: Exploring the social-psychological drivers for electricity curtailment and recycling behaviors. Poster at the *Annual Meeting of BECC*, Sacramento, CA.

29. Xu, X., Chen, C. F., Gao, W., & Li, H. (2013, August). Beyond classical economics: Exploring the impact of social-psychological factors on preference for speed over price and willingness to pay for a faster wireless service plan (pp. 55-60). Paper presented at the *2013 IEEE/CIC International Conference on Communications in China (ICCC)*, Xi'an, China.
30. Chen, C.-F. & Shelton, J. (2013, August). Exploring social-psychological factors of affecting electricity use and support of renewable energy policy. Paper presented at the *Annual Meeting of American Sociological Association (ASA)*, New York, NY.
31. Chen, C.-F., Li, Y., & Banerjee, D. (2012, August). Exploring social-psychological factors related to energy conservation behavior among Chinese employees. Paper presented at the *Annual Meeting of American Sociological Association (ASA)*, Denver, CO.
32. Mar, H., Chen, C.-F., & Li, H. (2012, July). Bayesian network structure learning for analyzing the impact of social networks on adolescent heavy drinking. *The Add Health Users Conference*, NIH Campus, Bethesda, MD.
33. Chen, C.-F. & Shen, X. (2012, May). Do fear-appeal media messages work in China? Effects of law enforcement, perceived consequences, and injunctive norms on drinking- and driving behavior among Chinese students. Paper presented at the *Annual Meeting of International Communication Association (ICA)*, Denver, CO.
34. Chen, C.-F. & Shen, X. (2011, October). Social and psychological factors of drinking and driving among Chinese college students. Paper presented at the *Proceedings of International Conference on Public Administration*, Dongsan City, China.
35. Chen, C.-F., Li, H., & Mar, H. (2011, August). Explaining mechanisms of norms and networks on heavy drinking and alcohol consequences among youth. Paper presented at the *Annual Meeting of American Sociological Association (ASA)*, Las Vegas, NV.
36. Chen, L., Markham, P., Chen, C. F., & Liu, Y. (2011, July). Analysis of societal event impacts on the power system frequency using FNET measurements (pp. 1-8). Paper presented at *2011 IEEE Power and Energy Society General Meeting*, Detroit, MI.
37. Li, H., Chen, C. F., & Lai, L. (2011, June). Propagation of spectrum preference in cognitive radio networks: A social network approach (pp. 1-5). Paper presented at the *2011 IEEE International Conference on Communications (ICC)*, Kyoto, Japan.
38. Chen, C.-F. (2010, August). Norm transmission, interpersonal communication and drinking decision. Paper presented at *The Annual Meeting of American Sociological Association (ASA)*, Chicago, IL.
39. Tang, L. & Chen, C.-F. (2010, June). Connecting social norms and social networks: A study of unhealthy weight control intentions and internalization of thin ideal in China. Paper presented at the *Annual Meeting of International Communication Association (ICA)*, Singapore.
40. Chen, C.-F. & Tang, L. (2009, May). Social norms and sanctioning through social networks: A theoretical study of body image. Paper presented at the *Annual Meeting of International Communication Association (ICA)*, Chicago, IL.

41. Chen, C.-F., Bolls, P., Bemker, V., Schmidt, N., and Harbor, A. (2004, May). The effects of audio-video redundancy and emotional valence on the allocation of attention to audio and visual processing. Paper presented at the *Annual Meeting of International Communication Association (ICA)*, New Orleans, LA.

Awards

1. The Tickle College of Engineering Outstanding Service in Outreach and Engagement Award 2020, University of Tennessee.
2. U.S. Fulbright Global Scholar Award, 2019-2020: 20 scholars across disciplines were selected. Proposal title, "When East Meets West: An Interdisciplinary and Cross-cultural Research on Energy Justice and Renewable Technology Adoption for Future Smart Communities." See news: <http://www.fulbright.org.uk/about-us/meet-our-fulbrighters/2019-20-us-uk-fulbright-award-grantees/2019-20-american-fulbright-scholar-award-grantees>; <http://www.eecs.utk.edu/chen-named-fulbright-global-scholar-for-2019-20/>
3. Outstanding Service Award for the International Energy Agency (IEA), Energy in Buildings and Communities (EBC) Annex 66, 2017.

Funding

1. Co-PI, "Alleviating Electric Grid Congestion: Understanding Consumer and Utilities Response to Infrastructure Investment in Distributed Solar Generation," NSF, CMMI 1901740, 09/01/2019-08/31/2021 (\$249,994).
2. Co-PI, "To Understand the Relationship between Customer Incentives to Invest in Distributed Solar Generation and Utility Incentives to Invest in New Resource and Transmission Assets," Alfred P. Sloan Foundation, 1/15,2019-1/14/2021 (\$237,415).
3. Co-PI, "Collaborative Research: CRISP Type 2: Revolution through Evolution: A Controls Approach to Improve How Society Interacts with Electricity," NSF, CNS 1541117 9/15/15-7/30/19 (\$2,499,801).
4. PI, Research Experience for Veterans Supplement Grant, NSF 08/1/2015-7/31/2018 (\$40,000).
5. Co-PI, "Collaborative Research: Design, Analysis and Implementation of Social Interactions in Cognitive Radio Networks," NSF CNS1247834, 10/01/2012-9/30/2015 (\$140,000).
6. PI for the Research Task of "Social-psychological Factors of Energy Saving, Public Acceptance of Smart Meter, Demand Response Programs and Renewable Energy Technology," NSF EEC-1041877: "Center for Ultra-Wide-Area Resilient Electric Energy Transmission Networks (CURENT), 08/15/2011-08/15/2019 (\$450,000).
7. Director of pre-college, university and REU programs, NSF EEC-1041877: "Center for Ultra-Wide-Area Resilient Electric Energy Transmission Networks (CURENT)," 08/15/2011 08/15/2018 (internal support from CURENT, \$1,897,390.8).
8. PI, "Persuasive Power in Norms: Under What Conditions Will Norms Work" Alcohol and Drug Abuse Research Program Pilot Grant (\$10,895), 2008-2009, WSU.
9. Gordon D. & Izola P. Morgan Graduate Fellowship, 2008, Sociology, WSU.

Teaching Experience

2011-2019	Co-instructor of Graduate Advance Research Seminar: Ultra-Wide-Area Resilient Electric Energy Transmission Networks, Department of Electrical Engineering and Computer Science, UTK (team taught across multi-disciplines among four campuses including Tuskegee, Northeastern University, Rensselaer Polytechnic Institute and UTK).
2011-2019	Co-instructor of Power and Energy System Seminar EE691/EE496 (focusing on research, professional development and entrepreneur).
2008	Lecturer, Department of Communication Studies, UTK
2007	Teaching Assistant, Department of Sociology, WSU Course: Introduction to Sociology
2003-2005	Teaching Assistant, Department of Sociology, WSU Course: Introduction to Statistical Analysis

Invited Presentations

- Impacts of COVID-19 on Residential Building Energy Usage (with Emily Kawka, Kristen Cetin). Presented for Virtual Workshop on COVID-19 and the Built Environment, NSF RCN-SEES: Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE), October 9th, 2020.
- Discover an energy justice issue: How do income influence people's energy efficiency practices and technology acceptance? Presented for NSF RCN-SEES-SHBE. Workshop Theme: Urban Sustainability: Social Actors, Policy and Governance, Florida State University, April 15th-16th, 2019.
- Interdisciplinary Research between Social Science and Engineering: Evidences and Benefits. Presented at the NSF Broadening Participation Conference, University of Washington, April 3rd-6th, 2019.
- Examining energy efficiency and justice now and future: Analyzing social-psychological and contextual factors, invited talk at the 5th International Symposium on Occupant Behavior & 2nd Expert Meeting of Energy Behavior Community (EBC) Annex 79, the University of Texas at San Antonio, March 13th-15th, 2019.
- How do people think differently about energy usage and acceptance of technology? Analyzing social-psychological and contextual factors affecting energy behaviors, invited talk at the department of urban and environmental engineering, Osaka University, February 1st, 2019.
- An interdisciplinary approach in examining energy justice: Analyzing social-psychological and contextual factors affecting low-income households, invited talk at the department of electrical engineering and computer science, National Sun Yat-Sen University, Taiwan, January 3rd, 2019.
- Understanding Residential and Commercial Customers: Social-psychological and Contextual Factors Affecting Low-income Households' Energy Practices- An Interdisciplinary Approach of Examining Energy Justice. *Electrification*, August, 2018, International Conference and Exposition in Long Beach, California.
- Will People Cooperate? Exploring Social Dilemma Issue and Cooperative Energy Behaviors During Extreme Events. Presented for NSF RCN-SHBE Workshop: Integration of the Human Dimension in Product and Process Modeling in the Creation of Resilient and Sustainable Human-Building Ecosystem, Carnegie Mellon University, May 17th-18, 2018
- Is Technology Enough: Social-psychological Analysis of Demand Response Behaviors and Home Management System. Lawrence Berkeley National Lab, January 5th 2018.

- Social-psychological Analysis of Demand Response, Energy Behaviors and Smart Home Management System. Presented for NSF-National Natural Science Foundation of China's International Workshop on Smart Cities, Human Behavior and Sustainable Development: Opportunities and Challenges for Infrastructure Development, Beijing, September 27-30th, 2017.
- Interdisciplinary Approach to Investigate Demand Response and Energy Behaviors: Integration of Social-psychology and Power Systems. Presented for Department of Electrical Engineering, Tsinghua University, China, June 5th, 2017;
- Integration of Social-psychology and Power Systems. Presented for Department of Electrical Engineering, Tsinghua University, China, June 5th, 2017; & School of Economics and Management, North China Electric Power University, June 2nd, 2017.
- Social-Psychological Analysis of Demand Response and Energy Behaviors and Smart Home Management Systems in the U.S., Presented for Department of Civil Engineering, National Taiwan University, May 8th, 2017 and Department of Electrical Engineering, Sun Yat-Sen University, Taiwan, May 11th, 2017.
- Keynote: Technology is not Enough: Social-Psychological Analysis of Demand Response and Energy Behaviors. Presented for School of Mechanical Engineering, Tongji University, China, May 17th, 2017'
- Social-psychological Modeling and Analysis for Residential Energy Behaviors. Presented for NARI School of Electrical and Automation Engineering, Nanjing Normal University, China, May 22nd, 2017; Department of Electrical Engineering, Zhejiang University, China, May 26th, 2017; and Department of Electrical Engineering at Xi'an Jiaotong University, China and Xi'an University of Technology, May 31st, 2017.
- The Value of Social Psychology for Improving Building Modeling. Presented for NSF RCN-SEES: Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE). Workshop Theme IV: Enhancing Interdisciplinary Education and Diversity in Education, Knoxville, TN, September 20th-October 1st, 2016.
- An International Occupant Behavior Survey Effort. Presented for the 4th Experts' Meeting in Working Phase of IEA EBC Annex 66 Meeting, Ottawa, Canada, August 3-5th, 2016.
- Social-Psychological Factors in the Interdisciplinary Research of Demand Response and Renewable Energy Technology. Presented for GEIRI North America (part of State Grid, China), July 28th, 2016.
- Beyond Technology: Why Social-Psychological Factors are Important in the Interdisciplinary Research of Energy and Technology. Presented for ACROSS Research Center, Waseda University, Japan, April 25th, 2016,
- Considering Social-psychology in the Interdisciplinary Research and Energy Use and Technology Acceptance. Presented for the Department of Electrical Engineering at National Sun Yet Sen University, May 3rd, 2016, Taiwan, Department of Electrical Engineering at Southeast University, China, May 13th, 2016 and NARI, Nanjing, China, May 16th, 2016.
- The Importance of Environmental Sociology and Survey Methodology to Occupant Behavior Research. Department of Building Science, Tsinghua University, China, May 18th, 2016.
- Exploring the Relationship between Social-psychological Factors and Residential Demand Response Programs, invited talk at the Center of iNnovation and Synergy for Intelligent Home and living Technology (INSIGHT), Taiwan University, May 5th, 2016.
- Integration of Social Psychological Factors and Group Dynamic Analysis of Occupant Behavior in Buildings, invited talk for the 3rd Expert Meeting in Working Phase of EBC Annex 66 Meeting, Vienna, Austria, March 31st, 2016.
- Social Psychological Approaches to Analyze Demand Response and Promote Energy Efficiency. Keynote speaker for the joint workshop of US NSF CURENT and Japan ACROSS on Distributed Energy Management System, Waseda University, Japan, December 10th, 2015.

- Social-psychological Analysis of Residential Energy Behaviors and Customer Segmentation. Presented to the Center of iNnovation and Synergy for Intelligent Home and living Technology (INSIGHT), Taiwan University, July 21st, 2015.
- Environmental Psychology and Improving Energy Efficiency through Social-Psychological Approaches. Presented to Department of Electrical Engineering and Computer Science and School of Architecture, Tsinghua University, Beijing, July 6th, 2015; and the Department of Mechanical Engineering and Environmental Science, Nanjing Normal University July 7th, 2015 and the Department of Electrical Engineering, Southeast University, Nanjing, China, July 8th, 2015.
- Beyond Technology: Enhancing Energy Efficiency through Social Psychological Approaches in Public Domain. Presented to the International Energy Agency (IEA), Energy in Buildings and Communities (EBC) Annex 66, Lawrence Berkeley National Laboratory, March 30th, 2015.
- Social-psychological Approaches to Energy Saving. Presented to the NSF RCN-SEES: Predictive Modeling Network for Sustainable Human-Building Ecosystems, May 26th, 2014.
- NSF Engineering Research Center (ERC) University Education Programs. Panelist at the NSF Division of Engineering Education and Centers, Engineering Directorate, Engineering Education PI Awardees' Meeting, September 29-30th, 2014.
- Social-psychological Factors Relating to the Acceptance of Smart Meters. Presented to Vanderbilt Institute for Energy & Environment, Vanderbilt University, October 30th, 2013
- Collaborative Research: Design, Analysis and Implementation of Social Interactions in Cognitive Radio Networks. Presented to the NSF Enhancing Access to the Radio Spectrum (ERAS) Program Workshop, October 6th, 2013.
- Promoting Engineering Education to Women. Presented to Federal Bureau of Investigation (FBI), Knoxville, April 3rd, 2013.
- Approaches to University Education Diversity Programs. Presented to the NSF Engineering Research Center Annual Meeting, October 20th, 2013.
- Social-psychological Factors and Energy Issues. Presented to the Department of Electrical Engineering, Southeast University, Nanjing, China, May 20th, 2013.

Professional and Education Services

- Drive Electric TN - Workplace EV Policy Committee, 2020
- Committee of diversity and inclusion plan, the Tickle College of Engineering, UTK, 2020
- Workshop Chair of the NSF RCN (Research Coordination Network) SEES (Science, Engineering and Education for Sustainability) SHBE (Predictive Modeling Network for Sustainable Human-building Ecosystems) Program Workshop: *Putting Sustainability into Convergence: Connecting Data, People, and Systems*, 1/28-29, 2019, National University of Singapore
- Workshop Committee for the NSF RCN-SEES-SHBE Program Workshop: Integration of the Human Dimension in Product and Process Modeling in the Creation of Resilient and Sustainable Human-Building Ecosystem, Carnegie Mellon University, May 17th-18, 2018
- Workshop Chair of the NSF-SEES-SHBE program ““Enhancing Interdisciplinary Education and Diversity, University of Tennessee, September 30th-October 1st, 2016
- Steering committee and lead for sustainability education program for NSF RCN-SEES: Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE) since 2014
- Electrical Engineering and Computer Science Department Reviewer for the Institutional Review Board (IRB) since 2015
- Organizer of the summer REU STEM Symposium at UTK in 2015 and 2016
- Reviewer for NSF Science Technology Center Proposal Red Team at UTK in 2015

- Co-lead on social-psychological modeling task and international occupant behavior survey for the International Energy Agency (IEA), Energy in Buildings and Communities (EBC) Annex 66: Definition and Simulation of Occupant Behavior in Buildings from 2014-2017.
- Voting committee of the interdisciplinary research task of occupant behavior model for the American Society of Heating and Air-Conditioning Engineers (ASHRAE) since 2016
- NSF reverse site visit reviewer for the Partnership International Research and Education (PIRE) Program, 2014
- Invited panelist for NSF Panel of the Engineering Education Awardee's Meeting: Testing Regimes and Engineering Formation in K-12 setting in 2014
- Co-moderator for the Education and Diversity Program Orientation, NSF Engineering Research Center Annual Meeting, November 14-16th, 2012
- Search committee for assistant professors from the Department of Teaching and Learning, UTK, 2012
- Led a group of undergraduate and graduate students from the department of EECS, UTK on research and academic exchange visit to Tsinghua, Southeast, and North Electric Power Universities and several utility companies in China in 2103 and 2017
- Supervisor of the CURENT student leadership council since 2011
- Responsible for various university and K-12 engineering education and diversity outreach, curriculum design, and proposal writing at CURENT, including: supervising research experience for undergraduate program (REU), designing education assessment strategies, and professional trainings for university students; design and supervise middle school engineering programs, girl-only summer STEM program (*Adventure in STEM*), young scholar program (for high school students), research experiences for teachers (RET), Family Engineering Night, and STEM education curriculum development at local k-12 schools to encourage community's broader involvement in STEM education, particularly in the areas schools with economic disadvantages.

Advising Experience

- Post-doctoral researcher, serving as a major adviser
Dr. Xiaojing Xu, research projects relating to demand response, energy behaviors, and public acceptance of renewable technology, "Social Impact of Power Grid Technology and Energy Conservation Behaviors" (2012-2020).
- M.S. and Ph.D. students serving as adviser for NSF-funded research projects for the departments of sociology and psychology, UTK
 1. Wenna Zhao. Energy saving behaviors and environmental impact (2012-2014)
 2. Summer Liu. Assessment for engineering education (2012-2014)
 3. Julie Shelton. Energy conservation behaviors, climate change and public acceptance of renewable energy technology (2013)
 4. Yifan Jiang. Public acceptance of communication and grid technology (2013)
- M.S. and Ph.D. students serving as major supervisor or committee member for the department of EECS and computer science, UTK
 1. Gerald Jones (Computer Science): Solar energy and adoption potential among low-income households (August, 2019 – present)
 2. Kirsten Drew (Summer 2018). Spatial temporal data in real world. (Chair: Jian Huang)
 3. Drew Maters (Spring 2017). Demand response, smart meter and energy behavioral analysis (Chair: Audris Mockus)
 4. Jiahui Guo. (July 2016). Data analytics and application developments based on synchrophasor, measurements (Chair: Yilu Liu)
 5. Jidong Chai. (June 2016). Wide-area measurement-based applications for power system monitoring and dynamic modeling (Chair: Yilu Liu)

6. Yin Lei. (August 2015). Wide-Area synchrophasor measurement applications and power system dynamic modeling (Chair: Yilu Liu)
 7. Qinran Hu. (July 2015). Incentive based residential load aggression (Chair: Fran Li).
 8. Lingwei Zhan. (June 2014). Accuracy and stability improvement of synchrophasor measurements (Chair: Yilu Liu)
- Undergraduate students in social science fields, serving as adviser for NSF funded projects:
 1. Sweet, Levi (Environmental Studies): The Impacts of COVID-19 on clean energy industry.
 2. Bonilla, Gregory (Environmental Studies): Mining Tweets to analyze human responses to infrastructure, social and disaster issues; Social-economic factors influencing solar panel adoption (January 2020 -present)
 3. Paige Greene (Sociology): Using social media (Tweets) to analyze human responses to infrastructure, social and disaster issues (January 2020 -present)
 4. Hannah Nelson (Sociology): Solar energy adoption in rural areas and low-income household energy issues (September 2019 – present)
 5. Nick Jones (Psychology): Mining Tweets to analyze human responses to infrastructure, social and disaster issues; Social-economic factors influencing solar panel adoption (September 2019 - present)
 6. Bailey Edwards (Neuroscience, communication and psychology): Renewable energy adoption and social psychological factors (May 2018- May, 2019)
 7. Nesto Rivas (Psychology): Reducing poverty using solar penal in rural areas of China (Jan. 2018- July 2018)
 8. Victoria Gilooly (Psychology): Social-psychological analysis of disasters, power grid infrastructure and social inequality issues (November 2017- May 2018)
 9. Taylor Duncan (Psychology): Social-psychological factors affecting demand response and energy behavior among underserve communities (August 2017-May 2019)
 10. James Brannon (Statistics): Public acceptance of smart home management system (May 2016-present)
 11. Jacqueline Adams (Psychology): Occupant behavior and energy saving in commercial building in multi-country context (August 2015- August 2018)
 12. Alyssa Loveday (Psychology): Social-psychological factors affecting smart home management system and demand response, a cross-country comparison (August 2016-September 2017)
 13. Jackson Lanier (Sociology): Energy behaviors, public good and occupant behaviors in commercial buildings (August 2015-August 2016)
 14. Erica Davis (Sociology): Energy demand response and social psychological factors (August 2015-August 2016)
 15. Luke Waring (Sociology): Power transmission infrastructure and environmental impact at the community level (2013)
 16. Kayla Stover (Sociology): Survey methodology and energy saving behaviors (2012)
 - Undergraduate students in engineering and computer science fields serving as research adviser:
 1. Ahmed Aklouk (Industrial Engineering): Integrated method of data mining on COVID-19 tweets (October, 2020-present)
 2. Amir Salem (Industrial Engineering): Analysis of COVID-19 impacts on low-income households (August, 2020-present).
 3. Jonathan Shields (Electrical Engineering): Acceptance of EV, social behaviors and infrastructure design. (October 2018-present)
 4. Gerald Jones (Computer Science): Assessing solar panel adoption by analyzing social behavioral and economic factors (May, 2019-August, 2019).
 5. Christine Garcia (Electrical Engineering): Residential energy consumption behaviors (July 2018-July, 2019)

6. Manny Bhidya and Sydney Shelby (Computer Science): Data mining Tweets and machine learning to analyze human responses to infrastructure, social and disaster issues (September 2018-May 2019).
7. Julian Ball, Nicholas West (Computer Science): Data mining Tweets and machine learning to analyze human responses to infrastructure, social and disaster issue (June, 2018 to present)
8. Zach McMichael (Computer Science): Data mining Tweets and machine learning to analyze human responses to infrastructure, social and disaster issue (June, 2018 to January, 2020).
9. Alexa Tipton (Computer Science): Data mining Tweets and machine learning to analyze human responses to infrastructure, social and disaster issue (June 1st 2018 -December 10, 2019)
10. Jeffery Dong (Computer Science): Integrating statistical modeling with simulation to investigate social psychological analysis of demand response behaviors (August 2017- May 2018)
11. Roy Tan, Brian Lundell, and Natalie Bogda: Data mining Tweets to analyze human responses to infrastructure, social and disaster issues (January 2017-July 2018)
12. Faiza Islam (Industrial Engineering): Social-psychological factors and residential demand response programs (September 2016-present)
13. James Bates (Electrical Engineering): Analysis of behavioral patterns using Residential Household Energy Consumption Data and American Time Use Survey (August 2016- May 2018)
14. Sean Indelicato (Electrical Engineering): Incentive based demand response (January – December 2017)
15. Taylor Woodward (Industrial Engineering) and Diane Garcia (Electrical Engineering): Public acceptance of smart home management system (Spring 2016-May 2017)
16. Adam Foshie (Electrical Engineering): Data acquisition and analysis for residential probabilistic demand response modeling (May-August 2016)
17. Candice Patton (Electrical Engineering): incentives and demand response programs (Fall 2013-Summer 2014)

Media Interview

- Who Is More Likely to Conserve Energy? Social Psychology Could Lead to Increased Energy Efficiency. Interviewed and research featured by American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Journal newsletter published on September, 16, 2017. https://contentsharing.net/actions/email_web_version.cfm?recipient_id=3218364118&message_id=14689399&user_id=ASHRAE&group_id=3963397&jobid=38608859.

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