John Paul Helveston, Ph.D.

Engineering Management and Systems Engineering
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Academic Appointments

2018 **George Washington University**, Washington, D.C.
Assistant Professor, Engineering Management and Systems Engineering

2016 **Boston University**, Boston, MA
Postdoctoral Fellow, Institute for Sustainable Energy

Education & Training

2016	Carnegie Mellon University, Pittsburgh, PA	Ph.D. Engineering and Public Policy
2015	Carnegie Mellon University, Pittsburgh, PA	M.S. Engineering and Public Policy
2010	Virginia Tech, Blacksburg, VA	B.S. Engineering Science and Mechanics

Doctoral Committee: Jeremy Michalek, Erica Fuchs, Elea McDonnell Feit, & Valerie Karplus

Mandarin Chinese Training

2010	National Taiwan University, Taipei, Taiwan	Business Chinese (Huayu Scholarship)
2009	Heilongjiang University, Harbin, China	Intensive Chinese (Critical Language Scholarship)
2008	Liaoning Normal University, Dalian, China	Independent Study (Horton Scholarship)

Research Interests

Market Analytics for Decision Making: Measure and model consumer preferences to assess policy and product design and simulate consumer choice behavior.

Sustainable Technology Change: Study how consumers, firms, markets, and policy affect the nature & pace of transitioning to sustainable energy and transportation technologies.

Electric Vehicles & Sustainable Transportation Technologies: Assess barriers and opportunities to accelerate the development & adoption of sustainable transportation technologies.

U.S.-China Climate Relationship: Study the critical relationship between the US and China in developing and mass producing low carbon energy technologies.

Teaching Interests

Programming & Data Analytics: Programming in R and Python; exploratory data analysis; data visualization; reproducibility.

Modeling: Discrete choice modeling; consumer preferences and choice behavior; conjoint analysis; design decisions.

Team Projects: Open-ended, team-based projects that emphasize critical thinking and real-world data collection and analysis.

Publications

Citations[1]: 368 • h-index: 4 • i10-index: 4 • ORCID: 0000-0002-2657-9191

A. Peer Reviewed Articles

1. Szajnfarber, Z., Groover, J.A., Wei, Z., Broniatowski, D.A., Chernicoff, W., & **Helveston, J.P.** (2021) Evolvability Analysis Framework: Adding Transition Path and Stakeholder Diversity to Infrastructure Investment Decisions. *Systems Engineering*, forthcoming.
2. Feinberg, F., Bruch, E., Braun, M., Hemenway Falk, B., Fefferman, N., Feit, E.M., **Helveston, J.P.**, Larremore, D., McShane, B.B., Patania, A., & Small, M.L. (2020). Choices in networks: a research framework. *Marketing Letters*. 31(4), 349-359. DOI: 10.1007/s11002-020-09541-9
3. Roberson, L.A. & **Helveston, J.P.** (2020). Electric vehicle adoption: can short experiences lead to big change?. *Environmental Research Letters*, 15(0940c3). DOI: 10.1088/1748-9326/aba715. Data and code available at 10.5281/zenodo.3962516
4. **Helveston, J.P.** & Nahm, J. (2019). China's key role in scaling low-carbon energy technologies. *Science*, 366(6467), 794-796. DOI: 10.1126/science.aaz1014.
5. **Helveston, J.P.**, Wang, Y., Karplus, V. J., & Fuchs, E.R. (2019). Institutional complementarities: The origins of experimentation in China's plug-in electric vehicle industry. *Research Policy*, 48(1), 206-222. DOI: 10.1016/j.respol.2018.08.006
6. **Helveston, J.P.**, Seki, S., Min, J., Fairman, E., Boni, A., Michalek, J.J., & Azevedo, I. (2019) Choice at the Pump: Measuring Preferences for Lower-Carbon Combustion Fuels. *Environmental Research Letters*. 14(8). DOI: 10.1088/1748-9326/ab2bd2
7. **Helveston, J.P.**, Feit, E.M., & Michalek, J.J. (2018) Pooling stated and revealed preference data in the presence of RP endogeneity, *Transportation Research Part B: Methodological*, 109, 70-89. DOI: 10.1016/j.trb.2018.01.010
8. **Helveston, J.P.**, Liu, Y., Feit, E.M., Fuchs, E.R., Klampfl, E., & Michalek, J.J. (2015). Will Subsidies Drive Electric Vehicle Adoption? Measuring Consumer Preferences in the U.S. and China. *Transportation Research Part A: Policy and Practice*, 73, 96-112. DOI: 10.1016/j.tra.2015.01.002. Data and code available at 10.5281/zenodo.4429656

B. Full-length, Peer-Reviewed Conference Publications

1. Liang, Z., Li, D., Fu, X., Beltekian, D., **Helveston, J.P.** (2018) The Co-evolution of MNE R&D Strategies and China's National Innovation System: A Case Study on Siemens. *2018 IEEE International Symposium on Innovation and Entrepreneurship (TEMS-ISIE)*, Beijing. pp. 1-9, DOI: 10.1109/TEMS-ISIE.2018.8478558
2. **Helveston, J.P.**, Liu, Y., Feit, E.M., Fuchs, E.R., Klampfl, E., & Michalek, J.J. (2014) "Will Subsidies Drive Electric Vehicle Adoption? Measuring Consumer Preferences in the U.S. and China." *National Academies Transportation Research Board Annual Meeting*. Washington, D.C. Jan. 13. [slides]

C. Book Chapters

1. Ren, Z.J. & **Helveston, J.P.** (2019) Measuring Electric Vehicle Infrastructure Among Cities: A Multi-Dimensional Approach. in *Melting the ICE: Lessons from China and the West in the Transition from the Internal Combustion Engine to Electric Vehicles*. Ed. Fox-Penner, P., Ren, Z.J., & Jermain, D.O. *Harvard University Press*. [view online]

[1] Source: Google scholar

2. Hatch, J. & **Helveston, J.P.** (2019) Brookline, MA: A Small Town seeking to lead in a Broader EV Charging Network. in *Melting the ICE: Lessons from China and the West in the Transition from the Internal Combustion Engine to Electric Vehicles*. Ed. Fox-Penner, P., Ren, Z.J., & Jermain, D.O. *Harvard University Press*. [view online]

D. Magazine Publications

1. **Helveston, J.P.** (2021) Why the US Trails the World in Electric Vehicles, *Issues in Science and Technology* 37, no. 2 (Winter 2021). https://issues.org/china-norway-ev-tesla/
2. **Helveston, J.P.** (2017) Perspective: Navigating an Uncertain Future for US Roads, *Issues in Science and Technology* 34, no. 1 (Fall 2017). https://issues.org/perspective-navigating-an-uncertain-future-for-us-roads/

E. Reports, Articles for Non-Academic Audiences, and Other Publications

1. **Podcast**: GWU Professor John Helveston on EVs in China, *The Future Car: A Siemens Podcast* May 13, 2019. [view online]
2. **Helveston, J.P.** (2019) China's looser rules may usher in a new era for EV and AV companies, *Axios*. February 1, 2019. [view online]
3. Hatch, J. & **Helveston, J.P.** (2018) Will Autonomous Vehicles be Electric? *Institute for Sustainable Energy*. August 8, 2018. [view online]

F. Working Papers

1. Davidson, M.R., He, G., & **Helveston, J.P.** (2021) Quantifying the role of globalized solar photovoltaic supply chains in reaching climate targets. *Under review*
2. **Helveston, J.P.** (2021) Multinomial Logit Models with Willingness to Pay Space Utility Specifications in R: The *logitr* Package. *Under review*.
3. Murphree, M., **Helveston, J.P.**, Breznitz, D. Intellectual Property as a Production Input: Expanding Theories of Institutional Change and Profiting from Innovation. *Under review*.
4. **Helveston, J.P.**, Zhao, L., Pantha, S. Are we there yet? The significance of arrival time uncertainty in multi-modal trip choices. *Working paper*.

G. Theses

1. **Helveston, J.P.** (2016) Development and Adoption of Plug-in Electric Vehicles in China: Markets, Policy, and Innovation, Ph.D. Dissertation, Carnegie Mellon University, Pittsburgh, PA. [research gate] [cmu]

H. Software

1. **Helveston, J.P.** (aut, cre). *logitr*: Random utility logit models with preference and willingness to pay space parameterizations. R package version 0.3.0. (2021) https://jhelvy.github.io/logitr/
2. **Helveston, J.P.** (aut, cre) & Aden-Buie, Garrick (aut). *xaringanBuilder* Functions For Building Xaringan Slides To Different Outputs. R package version 0.0.9. (2021) https://jhelvy.github.io/xaringanBuilder/
3. **Helveston, J.P.** (aut, cre) *conjointTools* Tools For Designing Conjoint Survey Experiments. R package version 0.0.2. (2021) https://jhelvy.github.io/conjointTools/

Media Coverage

1. The Wire China, Quoted in, "The Competition Conundrum" May 30, 2021. (News article)
2. Interview w/Associated Press, "China's emissions drop amid coronavirus outbreak." Mar. 3, 2020. (TV)
3. NPR Climate Cast, "Trade dispute with China could slow transition to low-carbon power", Nov. 21, 2019. (Radio)
4. GW Today, "Collaboration with China Is Critical to Achieving Climate Goals" Nov. 15, 2019. (News article)
5. Xinhua News, "美能源专家呼吁美加强与中国合作以实现减排目标" Nov. 15, 2019. (News article)
6. Physics World, "US motorists prepared to pay more for fuel to lower emissions" Oct. 28, 2019. (News article)

External Grants

A. Principal Investigator

1. *Alfred P. Sloan Foundation Energy & Environment Program* "Identifying more efficient and equitable plug-in electric vehicle financial incentives through consumer-centric design" Sep. 2021 - Aug. 2022. $31,268.
2. *New Venture Fund Public Interest Technology University Network* "GW Coders Scholarship & Internship Program: Building Coding Capacity for Public Interest Technology Engagement" July 2021 - June 2022. $88,960.
3. *National Science Foundation East Asia Pacific Summer Institute Fellowship* "Environmental Implications of Consumer Preferences and Policy Incentives for Plug-in Vehicles in China." May 2014 - August 2014. $5,000.

B. Co-Principal Investigator

1. *Toyota Mobility Foundation* "Evolvability for Mobility Systems." With Zoe Szajnfarber (PI) and David Broniatowski (Co-PI). July 2019 - June 2021. $361,176.

C. Affiliated

1. National Science Foundation Graduate Research Fellowship "Planning for Technological Disruptions: The Case of Autonomous Vehicles" student: Leah Kaplan, 2020 - Present.

Internal Grants

1. PI: *GWU University Facilitating Fund* "Measuring Consumer Preferences for Used Alternative Fuel Vehicles." July 2021 - June 2022. $14,210.
2. PI: *GWU University Facilitating Fund* "Spatial and temporal mapping of technological progress in electric vehicle powertrain technologies." July 2019 - June 2020. $16,929.

Honors / Awards

A. Awards

- Finalist, 2018 Coase dissertation award, Society for Institutional & Organizational Economics.

- 2017 Best dissertation award, Industry Studies Association.
- 2016 Best paper in Innovation & Entrepreneurship Research, Industry Studies Association.
- 2013 Herbert Toor award for best Engineering and Public Policy qualifying examination paper.
- Eagle Scout Award, BSA Troop 11, Valrico, FL, July 7, 2002.

B. Fellowships / Scholarships

- Energy Innovation Policy and Management Scholar, Innovation and Information Technology Foundation, May 2019.
- 2014 Link Energy Foundation Fellowship.
- 2011 NSEP Boren Fellowship (Award Declined).
- 2010 Taiwan Huayu Mandarin Enrichment Scholarship.
- 2009 Department of State Critical Language Scholarship for Mandarin Chinese.
- 2007 Horton Honors Scholarship for 6-month independent study abroad in China.
- 2005 Eleanor Davenport Leadership Scholarship, Virginia Tech: Full tuition and fees (2005 - 2009).

Presentations / Conferences

A. Invited Speaker

1. "China's key role in scaling low-carbon energy technologies," with Barry Naughton. 2020 Fall Speaker Series on US-China Relations in the 21st Century. Confucius Institute at the University of Albany. Oct. 09, 2020. [view online]
2. "China's key role in scaling low-carbon energy technologies" Center for Security and Emerging Technology, Georgetown. Feb. 28, 2020.
3. "Development and Adoption of Plug-in Electric Vehicles in China" Center for Security and Emerging Technology, Georgetown. Dec. 02, 2019.
4. "Institutional Complementarities: The Origins of Experimentation in China's Plug-in Electric Vehicle Industry" Center for Global Sustainability, U. of Maryland School of Public Policy, College Park, MD. Oct. 7, 2019.
5. "Visualizing Information" Presentation for Engineering & Public Policy Department, Pittsburgh, PA. Apr. 12, 2019.
6. "Trends in Vehicle Electrification: China, Policy, & Car Sharing" Institute for Sustainable Energy Seminar Series. Boston, MA. Feb. 14, 2018.
7. "Vehicle Electrification in China: Preferences, Policy, and Technology Trajectories" Harvard Kennedy School Energy Policy Seminar Series. Cambridge, MA. Oct. 2, 2017.
8. "Development and Adoption of Plug-in Electric Vehicles in China." Center for International Environment and Resource Policy, The Fletcher School, Tufts. Medford, MA. Sept. 18, 2017.
9. "Development and Adoption of Plug-in Electric Vehicles in China: Markets, Policy, and Innovation." Tsinghua University Technology Policy Research Center (清华大学中国科技政策研究中心) (presented in mandarin). Beijing, China. May 12, 2017.
10. "Development and Adoption of Plug-in Electric Vehicles in China: Markets, Policy, and Innovation." State Information Center (国家信息中心) (presented in mandarin). Beijing, China. May 4, 2017.

11. "Innovation in China's Plug-in Electric Vehicle Industry." Chinese Politics Research Workshop. Cambridge, MA. Mar. 8, 2017.
12. "Electric Vehicles in China: A Nexus of Consumer Preferences, Policy, Innovation, and the Environment." Shanghai Jiaotong University. Shanghai, China. June 15, 2015.
13. "Electric Vehicles in China: A Nexus of Consumer Preferences, Policy, Innovation, and the Environment." Beijing Energy Network. Beijing, China. Jun. 25, 2014. [slides]

B. Invited Panelist

1. "China's Impact on the Solar Industry: Lessons for the Future of Clean Energy" Information Technology and Innovation Foundation. Washington, DC. Oct. 30, 2019. [view online]
2. "Early Career Scholar Panel" Atlanta Conference on Science & Innovation Policy. Atlanta, GA. Oct. 16, 2019.
3. "Lessons from China: Rapid EV Adoption in a Dynamic Policy Landscape" GWU Law Transportation Electrification Conference, Washington, D.C. Apr. 3, 2019.

C. Conference Panel Organizer / Chair

1. *Conference Track Co-Organizer, w/Eric Hittinger*: "Special Session 11: Economics and Decision-making in the Transition to Electric Vehicles". 2020 IEEE Vehicular Power and Propulsion Conference (VPPC). Gijón, Spain. Oct. 26 - 29, 2020.
2. *Session Chair & Organizer*: "Accelerating plug-in electric vehicle adoption and achieving climate goals" Industry Studies Association Annual Conference, Apr. 04, 2020. Virtual Conference.
3. *Symposium Chair & Organizer*: "Innovation in China From an Individual, Firm, and National Perspective." Academy of Management Annual Meeting. Anaheim, CA. Aug. 5, 2016 [Submission 14779] [slides]
4. *Symposium Chair & Organizer*: "Tensions Between Government, Industrial Innovation, and Energy Efficiency in China." Academy of Management Annual Meeting. Philadelphia, PA. Aug. 5, 2014. [Submission 16754] [slides]

D. Conferences Presentations

1. **Helveston, J.P.** (2021) "Healthier & Happier Hands: Software and Hardware Solutions for More Ergonomic Typing" *useR! 2021: The R Conference*. July 06, 2021.
2. Murphree, M., **Helveston, J.P.**, & Breznitz, D. (2021) "Intellectual Property as a Production Input: Reconsidering Theories of Institutional Change & Profiting from Innovation" *Industry Studies Association Annual Conference*. Virtual Conference. June 04. *(Speaker: Michael Murphree)*.
3. **Helveston, J.P.** (2021) "Obtaining Willingness to Pay Estimates from Preference Space and Willingness to Pay Space Utility Models" *Sawtooth Software Conference Turbo Choice Modeling Seminar*. Apr. 20, 2021. [view recording] [view slides]
4. **Helveston, J.P.** (2021) "Using formr to create R-powered surveys with individualized feedback" *RStudio Global Conference*. Jan. 21, 2021. [view recording] [view slides]
5. Hittinger, E., Nealer, R., Dunckley, J, **Helveston, J.P.**, Berube, M. (2020) "Reflection on Government Subsidies for Clean Energy Technologies: The Case of Electric Vehicles." *2020 APPAM Fall Research Conference*. [view online]
6. Roberson, L. & **Helveston, J.P.** (2020) "Economic and Behavioral Dimensions of Urban Transport Policy - How Does Consumer Experience & Knowledge Affect Willingness to Adopt Plug-in Electric Vehicles?" *2020 APPAM Fall Research Conference*. [view online]

7. Murphree, M., **Helveston, J.P.**, & Breznitz, D. (2020) "Intellectual Property as a Production Input: Reconsidering Theories of Institutional Change & Profiting from Innovation" *International Conference on Re-Globalization and Innovation & Entrepreneurship Confirmation*. *(Speaker: Michael Murphree)*.
8. Roberson, L. & **Helveston, J.P.** (2020) "Influence of knowledge and direct experience on the willingness to consider purchasing an EV" *Industry Studies Association Annual Conference*. Virtual Conference. June 04. *(Speaker: Laura Roberson)*.
9. Roberson, L. & **Helveston, J.P.** (2020) "Influence of knowledge and direct experience on the willingness to consider purchasing an EV" International EV Policy Council Workshop at the National Academies Transportation Research Board Annual Meeting. Washington, D.C. Jan. 16. *(Speaker: Laura Roberson)*.
10. Roberson, L. & **Helveston, J.P.** (2019) "Influence of knowledge and direct experience on the willingness to consider purchasing an EV" Solar Power International Conference. Salt Lake City, UT. Sep. 23. *(Speaker: Laura Roberson)*.
11. **Helveston, J.P.** (2019) "China's EV Future: The Good, The Bad, and The Ugly" *International EV Policy Council Workshop at the National Academies Transportation Research Board Annual Meeting*. Washington, D.C. Jan. 17.
12. **Helveston, J.P.**, Wang, Y., Karplus, V. J., & Fuchs, E.R. (2018) "Institutional Complementarities: The Origins of Experimentation in China's Plug-in Electric Vehicle Industry" *Association for Public Policy Analysis and Management (APPAM) Annual Conference*, Washington, D.C. Nov. 8.
13. **Helveston, J.P.** & Murphree, M. (2018) "Intellectual Property as a Production Input: Expanding Theories of Institutional Change and Profiting from Innovation" *International Business, Economic Geography and Innovation (iBEGIN)*, Philadelphia, PA. Oct. 26.
14. **Helveston, J.P.** & Murphree, M. (2018) "The Institutional Origins of Experimentation in China's Plug-in Electric Vehicle Industry" *Frontiers in International Business Symposium*, The Darla Moore School of Business, University of South Carolina, Columbia, SC. Feb. 2, 2018.
15. **Helveston, J.P.** & Murphree, M. (2018) "Intellectual Property as a Production Input: Expanding Theories of Institutional Change and Profiting from Innovation" *Industry Studies Association Annual Conference*, Seattle, WA.
16. **Helveston, J.P.**, Wang, Y., Karplus, V. J., & Fuchs, E.R. (2017) "The Institutional Origins of Domestic Experimentation in China's Plug-in Electric Vehicle Industry" *The Atlanta Conference on Science and Innovation Policy*. Atlanta, GA. Oct. 10.
17. **Helveston, J.P.**, Wang, Y., Karplus, V. J., & Fuchs, E.R. (2017) "Innovating Up, Down, and Sideways: The (Unlikely) Institutional Origins of Experimentation inChina's Plug-in Electric Vehicle Industry." *Industry Studies Association Conference*. Washington,D.C. May 25.
18. **Helveston, J.P.** (2017) "Policy, Strategy, and the Emergence of Electric Car Sharing in China." *Industry Studies Association Conference*. Washington, D.C. May 25.
19. **Helveston, J.P.**, Wang, Y., Karplus, V. J., & Fuchs, E.R. (2016) "Up, Down, and Sideways: Innovation in China and the Case of Plug-in Electric Vehicles." *DRUID Annual Conference*. Copenhagen, Denmark. Jun. 10. [slides]
20. **Helveston, J.P.**, Wang, Y., Karplus, V. J., & Fuchs, E.R. (2016) "Up, Down, and Sideways: Innovation in China and the Case of Plug-in Electric Vehicles." *Consortium For Cooperation And Competition (CCC)*. Milan, Italy. Jun. 12. [slides]
21. **Helveston, J.P.**, Wang, Y., Karplus, V. J., & Fuchs, E.R. (2016) "Up, Down, and Sideways: Innovation in China and the Case of Plug-in Electric Vehicles." *Industry Studies Association Conference*. Minneapolis, MN. May 25. [slides]
22. **Helveston, J.P.**, Liu, Y., Feit, E.M., Fuchs, E.R., Klampfl, E., & Michalek, J.J. (2013) "Consumer Preferences for Hybrid and Electric Vehicles in China and the U.S." *INFORMS Annual Meeting*. Minneapolis, MN. Oct. 7. [slides]

23. **Helveston, J.P.**, Liu, Y., Feit, E.M., Fuchs, E.R., Klampfl, E., & Michalek, J.J. (2013) "Who is more willing to adopt electrified vehicle: China or the U.S.?" *Technology Management and Policy Consortium*. Boston, MA. Jun. 18. [slides]
24. **Helveston, J.P.**, Liu, Y., Feit, E.M., Fuchs, E.R., Klampfl, E., & Michalek, J.J. (2013) "Comparing Consumer Preferences for Electrified Vehicles in China and the U.S." *Industry Studies Association Annual Conference*. Kansas City, MO. May 30. [slides]
25. **Helveston, J.P.**, Liu, Y., Feit, E.M., Fuchs, E.R., Klampfl, E., & Michalek, J.J. (2013) "Consumer Preferences for Electrified Vehicles in China and the U.S." *Center for Climate and Energy Decision Making Annual Meeting*, Carnegie Mellon University. Pittsburgh, PA. May 21. [slides]

E. Posters

1. **Helveston, J.P.**, Liu, Y., Feit, E.M., Fuchs, E.R., Klampfl, E., & Michalek, J.J. (2013) "Consumer Preferences for Electrified Vehicles in China and the U.S." *32nd Annual USAEE / IAEE North American Conference*. Anchorage, AK. Jul. 28. [view poster]

Teaching & Education

A. Courses Taught at George Washington University

Sem.	Course (*developed course)	Level	# Resp. / # Enrolled	Instr. FCE† / Dept. Mean
F21	*EMSE 6035: *Marketing Analytics for Design Decisions*	Grad	NA / NA	NA
S21	*EMSE 4575: *Exploratory Data Analysis*	Ugrad	13 / 22	5 / 4.4
F20	*EMSE 4574: *Intro. to Programming for Analytics*	Ugrad	9 / 18	4.8 / 4.3
S20	*EMSE 4197: *Exploratory Data Analysis*	Ugrad	NA / 21	NA
F19	*EMSE 6574: *Intro. to Programming for Analytics*	Ugrad	16 / 23	5 / 4.3
S19	*EMSE 6035: *Marketing of Technology*	Grad	13 / 18	5 / NA

†Faculty Course Evaluations (FCE) are scored by students (1 = worst, 5 = best).

B. Courses Served as Graduate Teaching Assistant

S15, S13 *19670: Quantitative Entrepreneurship*, Carnegie Mellon University.
Gave lectures on conjoint survey design, survey fielding techniques, discrete choice modeling, and process-based cost modeling; advised student teams; managed survey fielding; held office hours; graded assignments.

C. Guest Lectures

F19 "Preferences at the Pump: Are Consumers Willing to Pay for Low-Carbon Fuels?" Lecture for *EMSE 1001: Introduction to Systems Engineering*, George Washington University.

F18 "Preferences at the Pump: Are Consumers Willing to Pay for Low-Carbon Fuels?" Lecture for *EMSE 1001: Introduction to Systems Engineering*, George Washington University.

S18 "Vehicle Electrification in China: Preferences, Policy, and Technology Trajectories" Lecture for *Science-Based Business Initiative Seminar Series,* Harvard Business School.

F17 "Vehicle Electrification: Market Trends, Policy, and Business Models" Lecture for course *PL851: Sustainable Energy Business Models And Policies.* Boston University.

F17 "Emerging Automotive Trends: Chinese, Electric, and Shared." Lecture for course *UA 510: Sustainable Energy Planning.* Boston University.

Su17 "Types of Energy." Lecture for *BU Upward Bound* – a high school summer college prep program for low-income and potential first-generation college students.

S17 "Vehicle Electrification in China: Preferences, Policy, and Technology Trajectories." Online Lecture for *Global Education Connection*.

F16 "Emerging Automotive Trends: Chinese, Electric, and Shared." Lecture for course *PL851: Sustainable Energy Business Models And Policies.* Boston University.

S15 "Conjoint Analysis and Discrete Choice Modeling." Lecture for course *19702: Quantitative Methods for Policy Analysis*. Carnegie Mellon University. [slides]

F14 "Electric Vehicles in China: A Nexus of Consumer Preferences, Policy, Innovation, and the Environment." Lecture for course *19711: Global Competitiveness: Firms, Nations, and Technological Change*. Carnegie Mellon University. [slides]

F14 "Penalty and Barrier Functions." Lecture for course *24785: Engineering Optimization*. Carnegie Mellon University.

F13 "The Chinese Car Market: Development and Electrification." Lecture for course *China Today: Economy, Technology, and People*. University of Pittsburgh & Carnegie Mellon University. [slides]

D. Educational Contributions

1. Courses developed at GWU
   (a) **EMSE 4571: Intro to Programming for Analytics** (*first offered Fall 2019 as EMSE 6574 Section 11*). Developed new open source introductory level programming course that provides a foundation in programming for data analytics using the R programming language with a comparison to Python.
   (b) **EMSE 4572: Exploratory Data Analysis** (*first offered Spring 2020 as EMSE 4197*). Developed new open source course that provides a foundation in exploring data using the R programming language, including how to source, manage, wrangle, explore, and visualize a wide variety of data types. All analyses are reproducible from raw data to results using RMarkdown. Students demonstrate mastery of these skills through a semester-long research project of their own design, culminating in a reproducible final report and a 10-minute presentation of their findings.
   (c) **EMSE 6035: Marketing Analytics for Design Decisions** (*first offered Spring 2019 as "Marketing of Technology"*). Developed a new course that introduces data analysis techniques to inform design decisions in an uncertain, competitive market. Over the course of the semester, students learn and apply theory and methods to a team project to assess the market competitiveness of an emerging product or technology. Students learn how to design and field conjoint surveys as well as how to source, manage, and visualize data and modeling results using the R programming language. Students demonstrate mastery of these skills through a semester-long research project of their own design, culminating in a final report and a 10-minute presentation of their design insights.
2. Course websites / tools
   (a) Developed autograder software for *EMSE 4571: Intro to Programming for Analytics*. Students can test and receive automated feedback on their programming assignments.
   (b) Course website: http://p4a.seas.gwu.edu/, for *EMSE 4571: Intro to Programming for Analytics*. Open source lessons on the fundamentals of programming for data analytics in R with a comparison to Python.
   (c) Course website: http://eda.seas.gwu.edu/, for *EMSE 4572: Exploratory Data Analysis*. Open source lessons on sourcing, managing, transforming, and exploring a wide variety of data types in R.
   (d) Course website: http://madd.seas.gwu.edu/, for *EMSE 6035: Marketing Analytics for Design Decisions*. Open source lessons on designing conjoint surveys and choice modeling in R.
3. Course video lecture series

(a) Six-lecture series on conjoint survey theory and practice for *EMSE 6035: Marketing of Technology*. [View on youtube]

Advising

A. Student Research Projects

1. Ph.D. Students
   (a) Leah Kaplan, *Lead advisor*. 2020 - Present.
   (b) Lujin Zhao, *Lead advisor*. 2020 - Present.
   (c) Laura Roberson, "Accelerating Electric Vehicle Adoption in the United States: The Impact of Experience, Knowledge, and Financial Incentives" *Lead advisor*. 2018 - Present. Employment: Senior Powertrain Strategy Specialist at Volkswagen of America, Inc. (2014 - Present).
2. Masters Students
   (a) Saurav Pantha, *Lead advisor*. 2020 - 2021.
   (b) Lujin Zhao, "Estimating Consumer WTP for Hybrid Vehicles", *Co-advisor*. Capstone for EMSE 6577: Data Driven Policy, Spring 2019.
3. Undergraduate Students
   (a) Eliese Ottinger, *Undergraduate research project advisor*. Fall 2021.
   (b) Kazi Ashrafi, *Undergraduate research project advisor*. Fall 2021.
   (c) Amelia Jacquat, *Undergraduate research advisor*. Fall 2020 - Present.
   (d) Helena Rowe, *Undergraduate research advisor*. Fall 2020 - Present.
4. High School Students
   (a) Charles Melchior-Fisher, "Senior Project: Electric Vehicles" *School Without Walls* program (2019-2020).

B. Ph.D. Committee

1. Rao, Vikram, Ph.D. Candidate in Systems Engineering, Engineering Management & Systems Engineering, The George Washington University [chair: Royce Francis]. Successfully defended dissertation defense on Nov. 23, 2020.
2. Mazzocco, Ilaria, "Electric Dreams: Industrial Policy, New Energy Vehicles, and the Persistent Role of Local Government in China", Ph.D. China Studies, School of Advanced International Studies, Johns Hopkins University, 2005 [chair: Carla Freeman].

C. Non-thesis Advising

Semester	Advising		Independent Studies	
	Undergraduate	Graduate	Undergraduate	Graduate
F20	2	1	0	0
S20	2	3	0	0
F19	0	3	0	0
S19	0	0	0	0
F18	0	0	0	0

Service to Academic Field

A. Service to Conferences / Associations

1. *Virtual Conference Organizing Committee Member*, Industry Studies Association Annual Conference, 2020 & 2021. Virtual Conferences.
2. *Dissertation Award Committee*, Industry Studies Association: Chair (2021, 2020), Member (2018, 2019).
3. *Conference Organizing Committee Member*, Technology, Management, & Policy Consortium, hosted by the EMSE Dept. at the George Washington University, June, 2019.

B. Reviewer

1. Journals
    - Climate Policy
    - Energies
    - Energy Policy
    - Environmental Research Letters
    - Journal of International Business
    - Journal of Systems Science and Systems Engineering
    - Nature Energy
    - Research Policy
    - Science Advances
    - Technovation
    - Transport Policy
    - Transportation Research Part A: Policy and Practice
    - Transportation Research Part D: Transport and Environment
2. Conferences
    - 2020 IEEE Vehicular Power and Propulsion Conference
    - 2019 18th annual Systems and Information Engineering Design Symposium (SIEDS)
    - 2019 ASME International Design Engineering Conference
    - 2019 National Academies Transportation Research Board
3. Funding Reviews
    - 2021 Dept. of Energy Vehicle Technology Office Annual Merit Review
    - 2020 Dept. of Energy Vehicle Technology Office Annual Merit Review
    - 2019 National Center for Sustainable Transportation RFP
    - 2019-20 UC Davis Institute of Transportation Studies USDOT Research Grants
    - 2019 UCLA Institute of Transportation Studies RFP

C. University Service (GWU)

- 2021 - present: SEAS Strategic Research Planning Committee.
- 2020 - present: SEAS Computing Committee Member.
- 2020 - present: EMSE Department, Chair of Engineering & Technology Management curriculum.
- 2020 - present: EMSE Department, Member of undergraduate curriculum committee.
- 2019 EMSE Department Doctoral Qualifying Exam Committee Member.

Memberships in Professional Organizations

- Industry Studies Association
- Transportation Research Board

- Academy of Management
- INFORMS
- U.S. Association for Energy Economics (USAEE / IAEE)
- Tau Beta Pi
- Phi Beta Kappa
- Beijing Energy Network

Industry Experience

S11	Intern, Electric Vehicle Charging Policy. **Innovation Center for Energy & Transportation (iCET)**, Beijing, China.
F08	Engineering Intern, Wind Power Advanced Technology Operations. **General Electric Company**, Shanghai, China.
Su07	Engineering Intern, Wind Power Advanced Technology Operations. **General Electric Company**, Greenville, SC.

Skills

Language:	Mandarin Chinese (speaking: *fluent*, reading / writing: *intermediate*).
Analysis / Modeling:	Discrete Choice Modeling, Conjoint Analysis, Survey Design, Consumer Preference Modeling, Qualitative Interviews, Process-based Cost Modeling, Decision Analysis, Quantitative Policy Analysis, Monte Carlo Simulation, Optimization, Regression.
Programming / Software:	R, Python, Git, MatLab, LaTeX, Shiny, Stata, Mathematica, HTML, Wordpress, Adobe Photoshop, Adobe Illustrator, Microsoft Office, Analytica.

Leadership, Volunteer, and Community Activities

2020-present	*Founding Member*: GW Coders: Informal study group to apply computational and data analytics skills in research.
2016-2018	*Analyst & Committee Member*: Boston University Climate Action Plan Task Force.
2011-2015	*Violinist*: Carnegie Mellon All University Orchestra, 1st Violin Section.
2011-2015	*Dance Instructor*: Tartan Swing (CMU Swing Dance Club).
2007 - 2010	*Head Dance Instructor, Webmaster*: Solely Swing (Virginia Tech Swing Dance Club).
2005 - 2010	*Concert Master*: New River Valley Symphony Orchestra.
2006 - 2009	*Volunteer*: Virginia Tech Alternative Breaks Service Programs for Tau Beta Pi, Appalachia Service Project, & Presbyterian Campus Ministries.

Dance Awards

A. Lindy Hop

- **1st Place:** 2016 Advanced Jack & Jill w/Banban, *China Lindy Hop Championships*, Beijing, China.
- **3rd Place:** 2013 Open Jack & Jill, *Rocktober*, Columbus, OH.
- **5th Place:** 2012 Open Jack & Jill, *Boston Tea Party*, Boston, MA.
- **2nd Place:** 2012 Open Jack & Jill w/Akemi Kinukawa, *Babble*, New York, NY.

- **1st Place:** 2011 Open Strictly Lindy w/Annabel Truesdell Quisao, *International Lindy Hop Championships*, Washington, D.C.
- **Finals:** 2011 Open Jack & Jill, *Lindy Focus X*, Asheville, NC.
- **Finals:** 2011 Open Jack & Jill, *International Lindy Hop Championships*, Washington, D.C.

B. Solo Jazz / Charleston

- **1st Place:** 2012 Solo Jazz, *Sparx*, Cleveland, OH.
- **3rd Place:** 2012 Solo Charleston, *Stompology*, Rochester, NY.

C. Balboa

- **Finals:** 2014 Strictly Balboa w/Jennifer Lee, *International Lindy Hop Championships*, Washington, D.C.
- **3rd Place:** 2013 Amateur Strictly Balboa w/Annabel Truesdell Quisao, *All Balboa Weekend*, Independence, OH.
- **4th Place:** 2013 Amateur Jack & Jill, *All Balboa Weekend*, Independence, OH.
- **Finals:** 2012 Amateur Jack & Jill w/Nina Galicheva, *All Balboa Weekend*, Independence, OH.

D. Blues

- **Finals:** 2013 Solo Riffin' Competition, *Steel City Blues*, Pittsburgh, PA.
- **1st Place:** 2012 Solo Riffin' Competition, *Steel City Blues*, Pittsburgh, PA.
- **Finals:** 2010 Open Jack & Jill, *Steel City Blues*, Pittsburgh, PA.

References

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