

JOHN PAUL HELVESTON, PH.D.

ENGINEERING MANAGEMENT AND SYSTEMS ENGINEERING, GEORGE WASHINGTON UNIVERSITY
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ACADEMIC APPOINTMENTS

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

Aug. 2016 - Jun. 2018 **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

Technological Change: Understand how individual, firm, and national level factors affect the nature, pace, and extent of technological change, with an emphasis on clean energy transitions.

Design for Market Systems: Measure and predict consumer choice and firm behavior in the marketplace to assess product design for competitiveness or policy analysis.

Technology & Innovation: Study relationships between innovation, technology, policy, and the competitiveness of firms and nations.

Electric Vehicles & Sustainable Transportation: Assess how consumer preferences, economics, and policy affect the development & adoption of electric vehicles and sustainable transit solutions.

China: Examine the above topics in the context of one of the world's largest developing nations.

PUBLICATIONS

Papers in Refereed Journals

- 2018 **Helveston, J.P.**, Y. Wang, V. Karplus, & E. Fuchs "Institutional Complementarities: The Origins of Experimentation in China's Plug-in Electric Vehicle Industry." Forthcoming at *Research Policy*.
- 2018 **Helveston, J.P.**, E.M. Feit, and J.J. Michalek "Pooling stated and revealed preference data in the presence of RP endogeneity," *Transportation Research Part B: Methodological*, 109, pg. 70–89. [[view online](#)]
- 2015 **Helveston, J.P.**, Y. Liu, E.M. Feit, E. Fuchs, E. Klampfl, and J.J. Michalek. "Will Subsidies Drive Electric Vehicle Adoption? Measuring Consumer Preferences in the U.S. and China," *Transportation Research Part A: Policy and Practice*, 73, pg. 96–112. [[view online](#)]

Working Papers

- 2018 **Helveston, J.P.**, E. Fairman, S. Seki, J. Min, A. Boni, J.J. Michalek, and I. Azevedo. "Choice at the Pump: Understanding Emerging Fuel Choices for Personal Transportation." *Working paper*.

- 2018 Murphree, M., **Helveston, J.P.**, Breznitz, D. “Intellectual Property as a Production Input: Reconsidering Theories of Institutional Change and Profiting from Innovation.” *Working paper*.

Papers in Non-refereed Journals

- 2017 **Helveston, J.P.**. “Perspective: Navigating an Uncertain Future for US Roads,” *Issues in Science and Technology* 34, no. 1 (Fall 2017).

Theses

- 2016 **Helveston, J.P.**. “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](#)]

GRANTS

- 2014 National Science Foundation [East Asia Pacific Summer Institute Fellowship](#). “Environmental Implications of Consumer Preferences and Policy Incentives for Plug-in Vehicles in China.”

HONORS & AWARDS

Awards

- 2018 Finalist, 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.
2002 Eagle Scout Award, BSA Troop 11, Valrico, FL, July 7, 2002.

Fellowships

- 2014 [Link Energy Foundation Fellowship](#) (2014 - 2016).
2011 [NSEP Boren Fellowship](#) (Award Declined).

Scholarships

- 2010 Taiwan Huayu Mandarin Enrichment Scholarship (2010-2011).
2009 Department of State [Critical Language Scholarship](#) for Mandarin Chinese.
2007 [Horton Honors Scholarship](#) for 6-month independent study abroad in China (2008).
2005 Eleanor Davenport Leadership Scholarship, Virginia Tech: Full tuition and fees for 4 years in engineering (2005 - 2009).

PRESENTATIONS

- 2018 *Presenter*: “Intellectual Property as a Production Input: Reconsidering Theories of Institutional Change and Profiting from Innovation” Industry Studies Association Annual Conference, Seattle, WA.
2018 *Invited Presenter*: “Trends in Vehicle Electrification: China, Policy, & Car Sharing” Institute for Sustainable Energy Seminar Series. Boston, MA.
2018 *Presenter*: “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.
2017 *Presenter*: “The Institutional Origins of Domestic Experimentation in China’s Plug-in Electric Vehicle Industry” The Atlanta Conference on Science and Innovation Policy. Atlanta, GA.

- 2017 *Invited Presenter*: “Vehicle Electrification in China: Preferences, Policy, and Technology Trajectories” Harvard Kennedy School Energy Policy Seminar Series. Cambridge, MA.
- 2017 *Invited Presenter*: “Development and Adoption of Plug-in Electric Vehicles in China.” Center for International Environment and Resource Policy, The Fletcher School, Tufts. Medford, MA.
- 2017 *Presenter for best dissertation award*: “Development and Adoption of Plug-in Electric Vehicles in China: Markets, Policy, and Innovation.” Industry Studies Association Conference. Washington, D.C.
- 2017 *Presenter*: “Innovating Up, Down, and Sideways: The (Unlikely) Institutional Origins of Experimentation in China’s Plug-in Electric Vehicle Industry.” Industry Studies Association Conference. Washington, D.C.
- 2017 *Presenter*: “Policy, Strategy, and the Emergence of Electric Car Sharing in China.” Industry Studies Association Conference. Washington, D.C.
- 2017 *Invited Presenter*: “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.
- 2017 *Invited Presenter*: “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.
- 2017 *Invited Presenter*: “Innovation in China’s Plug-in Electric Vehicle Industry.” Chinese Politics Research Workshop. Cambridge, MA.
- 2016 *Symposium Chair & Organizer*: “Innovation in China From an Individual, Firm, and National Perspective.” Academy of Management Annual Meeting. Anaheim, CA. [[Submission 14779](#)]
- 2016 *Presenter*: “Up, Down, and Sideways: Innovation in China and the Case of Plug-in Electric Vehicles.” Academy of Management Annual Meeting. Anaheim, CA. [[slides](#)]
- 2016 *Presenter*: “Up, Down, and Sideways: Innovation in China and the Case of Plug-in Electric Vehicles.” DRUID Annual Conference. Copenhagen, Denmark. [[slides](#)]
- 2016 *Presenter*: “Up, Down, and Sideways: Innovation in China and the Case of Plug-in Electric Vehicles.” Consortium For Cooperation And Competition (CCC). Milan, Italy. [[slides](#)]
- 2016 *Presenter*: “Up, Down, and Sideways: Innovation in China and the Case of Plug-in Electric Vehicles.” Industry Studies Association Conference. Minneapolis, MN. [[slides](#)]
- 2015 *Invited Presenter*: “Electric Vehicles in China: A Nexus of Consumer Preferences, Policy, Innovation, and the Environment.” Shanghai Jiaotong University. Shanghai, China.
- 2014 *Symposium Chair & Organizer*: “Tensions Between Government, Industrial Innovation, and Energy Efficiency in China.” Academy of Management Annual Meeting. Philadelphia, PA. [[Submission 16754](#)]
- 2014 *Presenter*: “Will Subsidies Drive Electric Vehicle Adoption? Measuring Consumer Preferences in the U.S. and China.” Academy of Management Annual Meeting. Philadelphia, PA. [[slides](#)]
- 2014 *Invited Presenter*: “Electric Vehicles in China: A Nexus of Consumer Preferences, Policy, Innovation, and the Environment.” Beijing Energy Network. Beijing, China. [[slides](#)]
- 2014 *Presenter*: “Will Subsidies Drive Electric Vehicle Adoption? Measuring Consumer Preferences in the U.S. and China.” Transportation Review Board Annual Meeting. Washington, D.C. [[slides](#)]
- 2013 *Presenter*: “Consumer Preferences for Hybrid and Electric Vehicles in China and the U.S.” INFORMS Annual Meeting. Minneapolis, MN. [[slides](#)]
- 2013 *Poster*: “Consumer Preferences for Electrified Vehicles in China and the U.S.” 32nd Annual USAEE / IAEE North American Conference. Anchorage, AK. [[slides](#)]
- 2013 *Presenter*: “Who is more willing to adopt electrified vehicle: China or the U.S.?” Technology Management and Policy Consortium. Boston, MA. [[slides](#)]

- 2013 *Presenter*: “Comparing Consumer Preferences for Electrified Vehicles in China and the U.S.” Industry Studies Association Conference. Kansas City, MO. [\[slides\]](#)
- 2013 *Presenter*: “Consumer Preferences for Electrified Vehicles in China and the U.S.” Center for Climate and Energy Decision Making, Carnegie Mellon University. Pittsburgh, PA. [\[slides\]](#)

TEACHING EXPERIENCE

Graduate Teaching Assistant

- SPRING 2015 *19670: Quantitative Entrepreneurship*, Carnegie Mellon University.
- SPRING 2013 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.

Guest Lecturer

- SPRING 2018 “Vehicle Electrification in China: Preferences, Policy, and Technology Trajectories” Lecture for *Science-Based Business Initiative Seminar Series*, Harvard Business School.
- FALL 2017 “Vehicle Electrification: Market Trends, Policy, and Business Models” Lecture for course *PL851: Sustainable Energy Business Models And Policies*. Boston University.
- FALL 2017 “Emerging Automotive Trends: Chinese, Electric, and Shared.” Lecture for course *UA 510: Sustainable Energy Planning*. Boston University.
- SUMMER 2017 “Vehicle Electrification in China: Preferences, Policy, and Technology Trajectories.” On-line Lecture for *Global Education Connection*.
- FALL 2016 “Emerging Automotive Trends: Chinese, Electric, and Shared.” Lecture for course *PL851: Sustainable Energy Business Models And Policies*. Boston University.
- SPRING 2015 “Conjoint Analysis and Discrete Choice Modeling.” Lecture for course *19702: Quantitative Methods for Policy Analysis*. Carnegie Mellon University. [\[slides\]](#)
- FALL 2014 “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. [\[slides\]](#)
- FALL 2014 “Penalty and Barrier Functions.” Lecture for course *24785: Engineering Optimization*. Carnegie Mellon University.
- FALL 2013 “The Chinese Car Market: Development and Electrification.” Lecture for course *China Today: Economy, Technology, and People*. University of Pittsburgh & Carnegie Mellon University. [\[slides\]](#)

Course Instructor

- FALL 2009 *First Year Excellence Seminar (F-YES)*. Virginia Tech.
Gave weekly lectures; advised freshmen honors students on self-examination and life/career planning.

OTHER PROJECTS

- FALL 2013 *Graduate Course Project*: Optimal plug-in electric vehicle subsidies to minimize GHG emissions.
- FALL 2013 *Graduate Course Project*: Python-based program using monotonicity analysis to solve well-bounded optimization problems. [\[video summary\]](#)
- SPRING 2013 *Graduate Course Project*: Process-based cost model to model manufacturing cost of lithium-ion battery pack for electric vehicles.
- SPRING 2013 *USAAE Case Competition*: Strategies for managing increasing peak electricity loads from electric vehicle charging. [\[view report\]](#)
- 2010 - 2011 *Undergraduate Senior Design Project*: Designed, built, & tested passive cooling system for power electronics.

- SPRING 2007 *Materials Response Lab*: Stress relaxation testing of fuel cell membranes. Advisor: Dr. David Dillard.
- SPRING 2006 *Undergraduate Senior Design Project*: Designed structure for Space Elevator Design Team. Advisor: Dr. Jack Lesko.

WORK EXPERIENCE

- SPRING 2011 **Innovation Center for Energy & Transportation (iCET)**, Beijing, China: Intern in Electric Vehicle Charging Policy.
- FALL 2008 **General Electric Company**, Shanghai, China: Intern in Wind Power Advanced Technology Operations.
- SUMMER 2007 **General Electric Company**, Greenville, SC: Intern in Wind Power Advanced Technology Operations.

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, MatLab, LaTeX, Shiny, Stata, Mathematica, HTML, Wordpress, Adobe Photoshop, Adobe Illustrator, Microsoft Office, Analytica, @Risk DecisionTools.

LEADERSHIP, VOLUNTEER, AND COMMUNITY ACTIVITIES

- 2016 - 2018 *Analyst & Committee Member*: Boston University Climate Action Plan Task Force.
- SUMMER 2017 “Types of Energy.” Lecture for *BU Upward Bound*, a high school summer college prep program for low-income and potential first-generation college students.
- SPRING 2013 *Red Team Judge*: Undergraduate Mechanical Engineering Senior Design Team.
- 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.

PROFESSIONAL ACTIVITIES

Ad-hoc reviewer for: Transportation Research Parts A: Policy and Practice, Transportation Research Parts D: Transport and Environment, Nature Energy, Research Policy, Energy Policy, Technovation, Environmental Research Letters, Transportation Review Board Annual Conference, Journal of Systems Science and Systems Engineering.

Member of: [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](#), [Vehicle Electrification Group](#), [Global Competitiveness Laboratory](#), [Center for Climate and Energy Decision Making \(CEDM\)](#).

DANCE COMPETITION AWARDS

Lindy Hop

- 2016 **1st Place:** Advanced Jack & Jill w/Banban, *China Lindy Hop Championships*, Beijing, China.
2013 **3rd Place:** Open Jack & Jill, *Rocktober 2013*, Columbus, OH.
2012 **5th Place:** Open Jack & Jill, *Boston Tea Party*, Boston, MA.
2012 **2nd Place:** Open Jack & Jill w/Akemi Kinukawa, *Babble*, New York, NY.
2011 **1st Place:** Open Strictly Lindy w/Annabel Truesdell Quisao, *International Lindy Hop Championships*, Washington, D.C.
2011 **Finals:** Open Jack & Jill, *Lindy Focus X*, Asheville, NC.
2011 **Finals:** Open Jack & Jill, *International Lindy Hop Championships*, Washington, D.C.

Solo Jazz / Charleston

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

Balboa

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

Blues

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

REFERENCES

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