

## Thomas H. Bradley, Ph.D.

Woodward Professor of Systems Engineering  
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### EDUCATION:

Doctor of Philosophy, **Mechanical Engineering**,  
Georgia Institute of Technology, 2008  
Academic Advisors: David E. Parekh (ME), Thomas F. Fuller (ChBE), Dimitri N. Mavris (AE)

Master of Science, **Mechanical Engineering**,  
University of California at Davis, 2003  
Academic Advisor: Andrew A. Frank (MAE)

Bachelor of Science, **Mechanical Engineering**,  
University of California at Davis, 2000

### PROFESSIONAL POSITIONS:

7/19-present **Woodward Endowed Professor of Systems Engineering**  
**Head of Systems Engineering Department, Walter Scott, Jr., College of**  
**Engineering, Colorado State University**

Served as Woodward Foundation Endowed Professor and founding Department Head for the newest department at Colorado State University (founded 2019). Grew student enrollments and revenues at >13% per year, hired 7 new TT faculty and 7 CCA faculty, directed 18 faculty and 6 staff, grew the Department from 1.5 FTE to be the largest PhD program at CSU, and the largest (by students enrolled) civilian systems engineering graduate program in the USA.

7/19-present **Full Professor, Department of Systems Engineering**  
**Affiliate Professor, Department of Mechanical Engineering, Colorado State**  
**University**

- **Research on energy, environmental, economic and policy engineering** associated with the integration of new and advanced technologies in fields such as Automotive Engineering, Energy Systems, and Aerospace Systems. Development of advanced system design tools with experimental validation to advance the state of the art in practical, demonstrable systems.
- **Authored or coauthored ~100 peer reviewed archival papers**, including seminal contributions in the design and development of plug in hybrid electric vehicles, fuel cell powerplants for aircraft, and the lifecycle assessment of biofuels. Active member of the academic community as author of ~125 conference publications and academic reports.
- **Served as PI for \$12.7M of external funding, with \$32M in total awards (Co-PI and internal funding) since 8/2008.** Core research support is from US Department of Energy, the National Science Foundation, and the automotive industry with additional support from other industry, Department of Defense, and non-profit consortia. **PI, and Director for the CSU/USDOE/ARRA Vehicle Electrification Education and EcoCAR Programs**, a suite of research-integrated education programs that perform undergraduate and post graduate education, secondary school

curriculum development, and technician and first responder training, in the subjects of hybrid, electric and fuel cell vehicles.

- Taught a full load of courses in the subjects of systems engineering, system dynamics, energy storage and automotive engineering. Developed completely new courses in *Systems Requirements Engineering*, *System Dynamics*, *Design of Energy Storage Systems for Vehicles*, *Transportation Electrification*, *Computational HEV Design*, *HEV Powertrains*, *Renewable Energy Systems*, *Modeling Simulation and Experimentation*, *Systems Architecture*, *Leadership and Innovation in Systems Engineering*, and *Systems Engineering Research Methods*.
- Service to academic and local community through conference organization, committee membership, and extensive public outreach.
- Enabled, incented, and mentored for faculty and staff development within and across departments, colleges, CSU, and other Universities.
- Graduated 22 Doctoral students and 36 Master of Science students. Supervised 6 post-doctoral scholars. Currently advising 15 graduate students.

- 7/15-7/19 **Associate Director of Systems Engineering**, a cross-college program of the College of Engineering offering graduate degrees and certificates in modern Systems Engineering theory and practice. Grew program revenues and enrollment at >20%/yr, hired 6 tenure track (TT), 2 non-TT faculty, and 1 Admin Pro. to the program, and started a new CSU-system-wide professional degree type (the Professional Doctorate, D. Engr.)
- 7/13-7/19 **Associate Professor, Department of Mechanical Engineering, Colorado State University**
- 8/18-4/19 **Resident Researcher, Electric Power Research Institute** Contributed to updates to REGEN II, EV cost of manufacturing modeling, and technical insights.
- 8/08-7/13 **Assistant Professor, Department of Mechanical Engineering, Colorado State University** (Granted early tenure and promotion)
- 8/04-12/08 **Graduate Research Assistant, Georgia Institute of Technology, Woodruff School of Mechanical Engineering and Georgia Tech Research Institute.** Developed multidisciplinary tools for analysis, design and optimization of long-endurance fuel cell powered aircraft. Validated design methodology and tools through construction of the largest compressed hydrogen fuel cell aircraft developed to date. Designed, constructed and tested PEM fuel cells for aircraft application and published seminal results regarding fuel cell design tradeoffs for the aircraft powerplant application. Non-thesis research includes development of numerical optimization scheme for feed-forward control of flexible systems with non-linearities, modeling and control of plug-in hybrid electric vehicles, and physics-based propeller modeling with application to advanced design of unmanned aerial vehicles.
- 11/02-present **Independent Contractor.** Performed engineering analysis and system design for plug-in hybrid electric vehicles under contract to the Electric Transportation Division of the Electric Power Research Institute in Palo Alto, CA. Performed confidential dynamic simulation, control system design and fuel economy analysis for Ford Th!nk Research group regarding prototype Ford Escape hybrid vehicle. Worked with DaimlerChrysler KEN (Low Emissions Vehicle Group, Mannheim, Germany) to simulate, design, specify, and bring to production a proof-of-concept plug-in hybrid electric medium-duty truck. Partnered with DC engineers in Mannheim and EPRI engineers to design vehicle control algorithms and specify powertrain and energy system components. Contract Manager:

Dr. Mark Duvall (Electric Power Research Institute)

6/00-11/02 **Graduate Research Assistant, University of California at Davis, Department of Mechanical and Aeronautical Engineering.** Mechanical group leader of DARPA funded project to design and evaluate a prototype medium-duty automotive chain Continuously Variable Transmission (CVT). Performed mechanical and electrical design, construction, optimization, testing and evaluation of two design generations of a 240 Nm torque capacity custom servo-hydraulic controlled CVT. Mechanical group leader for design and construction of test stands designed to facilitate CVT controls development under contract to Visteon Corp. Wrote proposal, designed and conducted experiments to experimentally verify dynamic system response of servo-hydraulic CVT under contract to Nissan Motor Co., Ltd. Developed a multi-body model of CVT chain and friction dynamics in satisfaction of the requirements for Master of Science degree.

#### ARCHIVAL PUBLICATIONS:

1. Pope, J, Coburn, T., and **Bradley, T.H.** “Committed emissions reductions available from replacement of coal-fired power plants with nuclear plants” *Environmental Research: Energy*, 2024.
2. Fanas-Rojas, Johan, et al., “Automated Vehicle Lane Centering System Requirements Informed by Resilience Engineering and a Solution Using Infrastructure-Based Sensors,” *IEEE Access*, 2024 vol. 12, pp. 97605-97620, 2024, doi: 10.1109/ACCESS.2024.3422266
3. Rabinowitz, A., Smart, J., Coburn, T., and **Bradley, T.H.**, “A Geo-Spatial Method for Calculating BEV Charging Inconvenience using Publicly Available Data,” *INCOSE Insight*, 2024, Pages 27-38
4. Gregory, J., Sega, R., Kang, K., **Bradley, T.H.** “A Tailored Systems Engineering Process for Developing Student-Built CubeSat Class Satellites,” *IEEE Access*, 2024, vol. 12, pp. 73187-73195, 2024, doi: 10.1109/ACCESS.2024.3395632
5. Normand, A., **Bradley, T.H.**, “An experimental investigation of Lean Six Sigma philosophies in a high-mix low-volume manufacturing environment,” *PLOS One*, 2024, 19(5): e0299498.
6. Lunsford, I., **Bradley, T.H.**, “Evaluation of Unmanned Aerial Vehicle Swarm Design and Tactics through Metrics of Survivability, *AIAA Journal of Aircraft*, 2024.
7. Alvarado, J., and **Bradley, T.H.** “Developing Model-Based Flight Test Scenarios,” *International Test and Evaluation Association Journal*, December 2023, Volume 44, Issue 4.
8. Kleinwaks, H., Batchelor, A., and **Bradley, T.H.**, “Predicting the Dynamics of Earned Value Creation in the Presence of Technical Debt”, *IEEE Access*, 2023. 10.1109/ACCESS.2023.3331112
9. Kleinwaks, H., Batchelor, A., and **Bradley, T.H.**, “An Ontology for Technical Debt in Systems Engineering,” *IEEE Open Journal of Systems Engineering*, OJSE-23-0011.R1, 2023
10. Motellebi-Araghi, F., Rabinowitz, A., Chia Ang, C., Sharma, S., Kadav, P., Meyer, R., **Bradley, T.H.**, and Asher, A. “Identifying and assessing research gaps for energy efficient control of electrified autonomous vehicle Eco-Driving,” In: Kukkala, V., and Pasricha, S., Ed. Machine Learning and Optimization Techniques for Automotive Cyber-Physical Systems, Springer Verlag, 2023.
11. Kukkala, V., **Bradley, T.H.**, and Pasricha, S., “Reliable Real-Time Message Scheduling in Automotive Cyber-Physical Systems” In: Kukkala, V., and Pasricha, S., Ed. Machine Learning and Optimization Techniques for Automotive Cyber-Physical Systems, Springer Verlag, 2023.
12. White, S., Rabinowitz, A., Chia Ang, C., Trinko, D., and **Bradley, T.H.** “Machine Learning and Optimization Techniques for Automotive Cyber-Physical Systems: Predictive Control During Acceleration Events to Improve Fuel Economy,” In: Kukkala, V., and Pasricha, S., Ed. Machine

Learning and Optimization Techniques for Automotive Cyber-Physical Systems, Springer Verlag, 2023.

13. Kukkala, V., **Bradley, T.H.**, and Pasricha, S., “Security-Aware Design of Time-Critical Automotive Cyber-Physical Systems” In: Kukkala, V., and Pasricha, S., Ed. Machine Learning and Optimization Techniques for Automotive Cyber-Physical Systems, Springer Verlag, 2023.
14. Gilleon, S., Kurtz, J., **Bradley, T.H.**, “Hydrogen Station Prognostics and Health Monitoring Model,” *International Journal of Hydrogen Energy*, HE-D-23-04729R1, 2023
15. Rabinowitz, A. Ang, C.C., Mahmoud, Y.H., Motellebi-Araghi, F., Meyer, R., Kolmanovsky, I.V., Asher, Z., **Bradley, T.H.**, “Real Time Implementation Comparison of Urban Eco-Driving Controls” *IEEE Transactions on Control Systems Technology*, 2023
16. Ouren, F, Trinko, D., Coburn, T., Simske, S., **Bradley, T.H.**, “Developing a profile of medium- and heavy-duty electric vehicle fleet adopters with text mining and machine learning,” *Renewable Energy Focus*, Volume 46, 2023, Pages 303-312, ISSN 1755-0084, <https://doi.org/10.1016/j.ref.2023.07.004>
17. Birch, D., Miller, E., **Bradley, T.H.** “Human Reliability Analysis using a Human Factors Hazard Model,” *Journal of System Safety* 2023;58(2):7-29, <https://doi.org/10.56094/jss.v58i2.251>
18. Kleinwaks, H., Batchelor, A., **Bradley, T.H.** “Technical debt in systems engineering—A systematic literature review” *Systems Engineering*, 2023, DOI:10.1002/sys.21681
19. Rabinowitz, A., Smart, J., Coburn, T., and **Bradley, T.H.**, “Assessment of Factors in the Reduction of BEV Operational Inconvenience,” *IEEE Access*, 2023, DOI: 10.1109/ACCESS.2023.3255103
20. Trinko, D., Horesh, N., Porter, E., Dunkley, J., Miller, E., and **Bradley, T.H.**, “Transportation and electricity systems integration via electric vehicle charging-as-a-service: a review of techno-economic and societal benefits,” *Sustainable and Renewable Energy Reviews*, 2023 Volume 175, April 2023, 113180.
21. Birch, D., Narsinghani, J., Herber, D., and **Bradley, T.H.**, “Human Factors Hazard Modeling in the Systems Modeling Language,” *Systems Engineering*, 2023, DOI:10.1002/sys.21659
22. Ault, T., **Bradley, T.H.**, “Risk-based approach for managing obsolescence for automation systems in heavy industries.” *Systems Engineering*, 2022, 10.1002/sys.21635
23. Younse, P., Cameron, J., **Bradley, T.H.** “Comparative Analysis of Model-based and Traditional Systems Engineering Approaches for Simulating a Robotic Space System Architecture through Automatic Knowledge Processing”, *Systems Engineering*, 2022, 1–27.
24. Trinko, D., Horesh, N., Zane, R., Song, Z., Kamineni, A., Konstantinou, T., Gkritza, K., Quinn, C., **Bradley, T.H.**, Quinn, J., “Economic Feasibility of In-Motion Wireless Power Transfer In A High-Density Traffic Corridor,” *eTransportation*, 2022, 100154.
25. Sommers, M., Batan, L., Al-Alawi, B., **Bradley, T.H.**, “A Colorado-specific life cycle assessment model to support evaluation of low-carbon transportation fuels and policy,” *Environmental Research: Infrastructure and Sustainability*, 2022, 2 (1), 011001.
26. Robbins, C.A., Du, X., **Bradley, T.H.**, Quinn, J.C., Bandhauer, T.M., Conrad, S.A., Carlson, K.H., Tong, T., “Beyond treatment technology: Understanding motivations and barriers for wastewater treatment and reuse in unconventional energy production,” *Resources, Conservation and Recycling* 178, 106036, 2022.
27. Rabinowitz, A., Motellebi-Araghi, F., Gaikwad, T., Asher, Z., and **Bradley, T.H.**, “Development and Evaluation of Velocity Predictive Optimal Energy Management Strategies in Intelligent and Connected Hybrid Electric Vehicles,” *Energies*, 2021, 14(18), 5713.

28. Trinko, D., Porter, E., Dunkley, J., **Bradley, T.**, Coburn, T., “Combining Ad Hoc Text Mining and Descriptive Analytics to Investigate Public EV Charging Prices in the United States,” *Energies*, 2021, 14(17), 5240.
29. Younse, P., Cameron, J., **Bradley, T.H.** “Comparative Analysis of Model-based and Traditional Systems Engineering Approaches for Architecting a Robotic Space System through Automatic information transfer”, *IEEE Access*, 2021, DOI: 10.1109/ACCESS.2021.3096468.
30. Lunsford, I., and **Bradley, T.H.**, “Evaluation of Unmanned Aerial Vehicle Tactics through Metrics of Survivability,” *Journal of Defense Modeling and Simulation*, 2021  
<https://doi.org/10.1177/15485129211031672>
31. Younse, P., Cameron, J., **Bradley, T.H.** “Comparative Analysis of an MBSE Approach to a Traditional SE Approach for Architecting a Robotic Space System through Knowledge Categorization”, *Systems Engineering*, 2021, <https://doi.org/10.1002/sys.21573>.
32. Roberts, C.J., Burke J.C., Benson, M.H., Lubelczyk, J.T., **Bradley, T.H.**, Heckler, G.W., Hudiburg, J.J., “An Evaluation of Timely Communications Access Methods Using NASA Space Network, *AIAA Journal of Aerospace Information Systems*, 2021, <https://doi.org/10.2514/1.1010897>.
33. Coburn, T., **Bradley, T.H.**, Kutcher, C., “Perspectives on Expanding EV Charging Infrastructure in the United States,” *The Energy Journal* 30, 5-8, 2021.
34. Baral, N., Asher, Z., Trinko, D., Sproul, E., Quiroz-Arita, C., Quinn, J.C., and **Bradley, T.H.**, “Biomass feedstock transport using fuel cell and battery electric trucks improves lifecycle metrics of biofuel sustainability and economy”, *Journal of Cleaner Production*, Volume 279, 123593, 2021.
35. Kukkala, V., Pasricha, S., and **Bradley, T.H.**, “SEDAN: Security-Aware Design of Time-Critical Automotive Networks,” *IEEE Transactions on Vehicular Technology*, 2020, vol. 69, no. 8, pp. 9017-9030, Aug. 2020, doi: 10.1109/TVT.2020.2999533.
36. Quiroz-Arita, C., Blaylock, M.L, Gharagozloo, P.E., Bark, D., Dasi, L. P., **Bradley, T.H.**, “Pilot-scale open-channel raceways and flat-panel photobioreactors maintain well-mixed conditions under a wide range of mixing energy inputs,” *Biotechnology and Bioengineering*, Volume 117, Issue 4, April 2020 Pages 959-969.
37. Asher, Z., Trinko, D., Payne, J., Geller, B., **Bradley, T.H.**, “Real Time Implementation of Optimal Energy Management in Hybrid Electric Vehicles: Globally Optimal Control of Acceleration Events,” *ASME Journal of Journal of Dynamic Systems, Measurement and Control*, 142(8) February 2020.
38. Kurtz, J., Sprik, S., Peters, M., **Bradley, T.H.**, “Retail Hydrogen Station Reliability Status and Advances,” *Reliability Engineering and System Safety*, 10682, 2020.
39. Baral, N., Neupane, P., Ale, B., Quiroz Arita, C., Manandhar, S., **Bradley, T.H.**, “Stochastic economic and environmental footprints of biodiesel production from *Jatropha curcas* Linnaeus in the different federal states of Nepal,” *Sustainable and Renewable Energy Reviews*, Volume 120, March 2020, 109619.
40. Kurtz, J., Winkler, E., Gearhart, C., and **Bradley, T.H.**, “Predicting Demand for Hydrogen Station Fueling,” *International Journal of Hydrogen Energy*, 45(56) Pages 32298-32310, 2020, 10.1016/j.ijhydene.2019.10.014
41. Asher, Z., Patil, A., Wifvat, V., Samuelson, S., Frank, A.A., **Bradley, T.H.**, “Identification and Review of the Research Gaps Preventing a Realization of Optimal Energy Management Strategies in Vehicles,” *SAE International Journal of Alternative Powertrains*, 8(2):2019.
42. Kukkala, V., Pasricha, S., and **Bradley, T.H.**, “JAMS-SG: A framework for jitter-aware message scheduling for time-triggered automotive networks,” *ACM Transactions on Design Automation of*

*Electronic Systems (TODAES)* Volume 24 Issue 6, September 2019 Article No. 63, doi: 10.1145/3355392.

43. Kurtz, J., Sprik, S., and **Bradley, T. H.** “Review of transportation hydrogen infrastructure performance and reliability” *International Journal of Hydrogen Energy*. Volume 44, Issue 23, 3 May 2019, Pages 12010-12023
44. Quiroz-Arita, C., Sheehan, J., Hughes, A., Hodgson, B., Peers, G., Sharvelle, S., and **Bradley, T.H.**, “A Cyanobacterial Sidestream Nutrient Removal Process and its Life Cycle Implications,” *BioEnergy Research*, 2019, 12, pages 217–228.
45. Baral, N., Davis, R., and **Bradley, T.H.**, “Supply and value chain analysis of mixed biomass feedstock supply system for lignocellulosic sugar production,” *Biofuels, Bioproducts & Biorefining*, 2019, Volume13, Issue3 May/June 2019 Pages 635-659.
46. Baral, N., Quiroz-Arita, C., and **Bradley, T.H.**, “Probabilistic Lifecycle Assessment of Butanol Production from Corn Stover Using Different Pretreatment Methods,” *Environmental Science and Technology*, 2019, DOI: 10.1021/acs.est.8b05176.
47. Limb, B., Asher, Z., **Bradley, T.H.**, Sproul, E., Trinko, D., Crabb, B., Zane, R., and Quinn, J., “Economic Viability and Environmental Impact of In-Motion Wireless Power Transfer,” *IEEE Transactions on Vehicle Electrification*, 2019, 5(1).
48. Borky, J. M., and **Bradley, T.H.**, Effective Model-Based Systems Engineering, Springer Verlag, 2019, <https://www.springer.com/us/book/9783319956688>
49. Steven J. Davis, Nathan S. Lewis, Matthew Shaner, Sonia Aggarwal, Doug Arent, Inês L. Azevedo, Sally M. Benson, **Thomas Bradley**, Jack Brouwer, Yet-Ming Chiang, Christopher T. M. Clack, Armond Cohen, Stephen Doig, Jae Edmonds, Paul Fennell, Christopher B. Field, Bryan Hannegan, Bri Mathias Hodge, Martin I. Hoffert, Eric Ingersoll, Paulina Jaramillo, Klaus S. Lackner, Lee R. Lynd, Katharine J. Mach, Michael Mastrandrea, Joan Ogden, Per F. Peterson, Daniel L. Sanchez, Daniel Sperling, Joseph Stagner, Jessika E. Trancik, Chi-Jen Yang, and Ken Caldeira, “Providing energy services without net addition of carbon dioxide to the atmosphere,” *Science*, 360(6396) 2018.
50. Bucher, J.D., and **Bradley, T.H.**, “Modeling Operating Modes, Energy Consumptions, and Infrastructure Requirements of Fuel Cell Plug in Hybrid Electric Vehicles using Longitudinal Geographical Transportation Data,” *International Journal of Hydrogen Energy*, <https://doi.org/10.1016/j.ijhydene.2018.04.159>, 2018.
51. Asher, Z., Trinko, D., and **Bradley, T.H.**, “Increasing the Fuel Economy of Connected and Autonomous Lithium-Ion Electrified Vehicles,” in Behaviour of Lithium-Ion batteries in Electric Vehicles, Editors: Pistoia, G., Liaw, B., Springer, 2018.
52. Decker, T., Baumgardner, M., Prapas, J., **Bradley, T.H.** “A Mixed Computational and Experimental Approach to Improved Biogas Burner Flame Port Design,” *Energy for Sustainable Development*, Volume 44, June 2018, Pages 37–46.
53. Vore, S., Kosowski, M., Reid, M.L., Wilkins, Z., and **Bradley, T.H.**, “Measurement of Medium-duty Plug-in hybrid electric vehicle fuel economy sensitivity to ambient temperature,” *IEEE Transactions on Vehicle Electrification*, 2018, Volume: 4, Issue: 1, pp184-189.
54. Kukkala, V.K., Tunnel, J., Pasricha, S., and **Bradley, T.H.**, “A Survey of Advanced Driver Assistance Systems and Current Challenges,” *IEEE Consumer Electronics Magazine*, Volume: 7, Issue: 5, Sept. 2018.
55. Baral, N., Quiroz-Arita, C., and **Bradley, T.H.**, “Uncertainties in Corn Stover Feedstock Supply Logistics Cost and Life-cycle Greenhouse Gas Emissions for Butanol Production,” *Applied Energy*, Volume 208, 15 December 2017, Pages 1343-1356.

56. Asher, Z., Baker, D., and **Bradley, T.H.** “Prediction Error Applied to Hybrid Electric Vehicle Optimal Fuel Economy,” *IEEE Transactions on Control System Technology*, doi: 10.1109/TCST.2017.2747502, 2017.
57. Quiroz-Arita, C., Sheehan, J., and **Bradley, T.H.** “Life cycle net energy and greenhouse gas emissions of photosynthetic cyanobacterial biorefineries: Challenges for industrial production of biofuels,” *Algal Research, Sustainability Special Issue*, Volume 26, September 2017, Pages 445-452
58. Duthu, R., and **Bradley, T.H.**, “A Life-Cycle Comparison of Trucking and Pipeline Water Delivery Systems for Hydraulically Fractured Oil Field Development,” *PLOS One*, 2017, 12(7), e0180587
59. Borlase, S., Behboodi, S., **Bradley, T.H.**, Brandao, M., Chassin, D., Eslin, J., McCarthy, C., “Smart Energy Resources: Supply and Demand”, In: Stuart Borlase, Ed. Smart Grids: Infrastructure, Technology, and Solutions 2<sup>nd</sup> Ed., CRC Press, 2017.
60. Singh, H., and **Bradley, T.H.**, Pasricha, S. “Application of Systems Theoretic Process Analysis to a Lane Keeping Assist System”, *Reliability Engineering and Systems Safety*, 2017, 177–183.
61. Quiroz Arita, C., Yilmaz, Ö., Barlak, S., Catton, K.B., Quinn, J.C., and **Bradley, T.H.**, “A Geographical Assessment of Vegetation Carbon Stocks and Greenhouse Gas Emissions on Potential Microalgae-based Biofuel Facilities in the United States,” *Bioresource Technology* 221 (2016) pp 270-275.
62. Batan, L. Y., Graff, G. D., and **Bradley, T. H.** (2016). “Techno-economic and Monte Carlo Probabilistic Analysis of Microalgae Biofuel Production System,” *Bioresource Technology* 219 (2016) pp 45-52.
63. **Bradley, T.H.**, and Melby, C.L, “Discussion: “Temperature of Food and Drink Intake Matters” (ASME J. Energy Resour. Technol., 138(5), 054701)” *ASME Journal of Energy Resource Technology*, 2016, Vol. 139, 015501.
64. Nataf, K., and **Bradley, T.H.**, “An Economic Comparison of Battery Energy Storage to Conventional Energy Efficiency Technologies in Colorado Manufacturing Facilities,” *Applied Energy*, Volume 164, 15 February 2016, Pages 133–139.
65. Bell, C., Zimmerle, D., **Bradley, T.H.**, Olsen, D., and Young, P. “Scalable turbocharger performance maps for dynamic state-based engine models,” *International Journal of Engine Research*, September 2016 vol. 17 no. 7 Pages 705-712.
66. Malakoutirad, M., Hagen, C., and **Bradley, T.H.** “Design Considerations for an Engine-integral Reciprocating Natural Gas Compressor,” *Applied Energy* 2015, Volume 156, Pages 129–137.
67. Duthu, R., and **Bradley, T.H.** “An Evaluation of Customer-Optimized Distributed Generation in New England Utility and Real-Time Markets” *The Electricity Journal*. Volume 28, Issue 3, April 2015, Pages 70–85.
68. Geller, B., and **Bradley, T.H.**, “Analyzing Drive Cycles for Hybrid Electric Vehicle Simulation and Optimization” *ASME Journal of Mechanical Design* 2015; 137(4):041401-041401-14.
69. Quiroz Arita, C., Peebles, C., and **Bradley, T.H.**, “Scalability of combining microalgae-based biofuels with wastewater facilities: A review,” *Algal Research* 9 (2015) 160–169.
70. Kambly, K., and **Bradley, T.H.** “Geographical and Temporal Differences in Electric Vehicle Range due to Cabin Conditioning Energy Consumption,” *Journal of Power Sources* (2015), pp. 468-475.
71. Quinn, J.C., Hanif, A., Sharvelle S., and **Bradley, T.H.**, “Microalgae to Biofuels: Life Cycle Impacts of Methane Production of Anaerobically Digested Lipid Extracted Algae,” *Bioresource Technology*, Volume 171, November 2014, Pages 37–43.

72. Salisbury, S., Smart, J., and **Bradley, T.H.** "Actual Versus Estimated Utility Factor of a Large Set of Privately Owned Chevrolet Volts," *SAE International Journal of Alternative Powertrains*, May 2014, 2014-01-1803.
73. Kambly, K., and **Bradley, T.H.**, "Estimating the HVAC Energy Consumption of Plug-in Electric Vehicles," *Journal of Power Sources* 259 (2014) 117-124.
74. Duthu, R., Zimmerle, D., Callahan, M., and **Bradley, T.H.** "Evaluation of Existing Customer-owned, On-site Distributed Generation Business Models," *The Electricity Journal*, Volume 27, Issue 1 (January - February, 2014), Pages 42-52.
75. Al-Alawi BM, and **Bradley TH.** "Analysis of Corporate Average Fuel Economy Regulation Compliance Scenarios Inclusive of Plug in Hybrid Vehicles." *Applied Energy*, Volume 113, January 2014, Pages 1323-1337.
76. Campbell, T., and **Bradley, TH.** "A model of the effects of automatic generation control signal characteristics on energy storage system reliability," *Journal of Power Sources*, Volume 247, 1 February 2014, Pages 594-604.
77. Stanton, K., and **Bradley TH.** "From Course Assessment to Redesign: A Hybrid Vehicle Course as a Case Illustration," *European Journal of Engineering Education*, 2013, Vol. 38, No. 6, Pages 687-699.
78. Al-Alawi, BM, and **Bradley TH.** "Total cost of ownership, payback, and consumer preference modeling of plug-in hybrid electric vehicles." *Applied Energy* Volume 103, March 2013, Pages 488--506
79. Quinn, J., Catton, K.B., Johnson, S., and **Bradley, T.H.**, "Geographical Assessment of Microalgae Biofuels Potential Incorporating Resource Availability" *Bioenergy Research*, 2013 June 2013, Volume 6, Issue 2, pp. 591-600.
80. Al-Alawi, B., and **Bradley, T.H.**, "Review of Hybrid, Plug-in Hybrid, and Electric Vehicle Market Modeling Studies," *Renewable and Sustainable Energy Reviews*, Volume 21, May 2013, Pages 190--203
81. Batan, L., Quinn, J., and **Bradley, T.H.**, "Analysis of water footprint of a photobioreactor microalgae biofuel production system from blue, green and lifecycle perspectives," *Algal Research* 2(2013), Pages 196-203
82. Davis, B.M., and **Bradley, T.H.**, "The Efficacy of Electric Vehicle Time-of-Use Rates in Guiding Plug-in Hybrid Electric Vehicle Charging Behavior," *IEEE Transactions on Smart Grid*, 2012, Vol. 3, No. 4, Pages 1679-86.
83. Renquist, J.V., Dickman, B., and **Bradley, T.H.**, "Economic analysis of fuel cell powered materials handling equipment," *International Journal of Hydrogen Energy*, Volume 37, Issue 17, September 2012, Pages 12054-12059.
84. Geller, B., and **Bradley, T.H.**, "Quantifying Uncertainty in Vehicle Simulation Studies," *SAE International Journal Passenger Cars – Mechanical Systems* 5(1):2012
85. Quinn, J., Yates, T., Douglas, N., Butler, J., **Bradley, T.H.**, and Lammers, P., "Nannochloropsis Production Metrics in a Scalable Outdoor Photobioreactor for Commercial Applications," *Bioresource Technology*, Volume 117, August 2012, Pages 164-171.
86. Quinn, C., Zimmerle, D., and **Bradley, T.H.**, "Impact of Electric Vehicle on Smart Grids", In: Stuart Borlase, Ed. *Smart Grids: Infrastructure, Technology, and Solutions*, CRC Press, 2012.
87. Quinn, J., Turner, C., and **Bradley, T.H.**, "Scale-up of Flat-plate Photobioreactors Considering Diffuse and Direct Light Characteristics," *Biotechnology and Bioengineering* (2012) Volume 109, Issue 2, pages 363–370.



88. Quinn, J., Catton, K., Wagner, N., and **Bradley, T.H.**, "Current US Biofuel Potential from Microalgae Cultivated in Large-Scale Photobioreactors," *Bioenergy Research*, 2012, 5(1) 49-60
89. Quinn, C., Zimmerle, D., and **Bradley, T.H.**, "An evaluation of state-of-charge limitations and actuation signal energy content on plug-in hybrid electric vehicle vehicle-to-grid reliability and economics," *IEEE Transactions on Smart Grid - Special Issue on Transportation Electrification and Vehicle-to-Grid Applications*, 2012, 3(1) 483 – 491.
90. Fagerstone, K., Quinn, J., **Bradley, T.H.**, Marchese, A. "Quantitative Measurement of Direct Nitrous Oxide Emissions from Microalgae Cultivation" *Environmental Science and Technology*, 2011, 45 (21), pp 9449–9456.
91. Wood, E., and **Bradley, T.H.**, "Investigation of Battery End- of- Life Conditions for Plug- in Hybrid Electric Vehicles," *Journal of Power Sources* 196 (2011) 5147-5154
92. Quinn, J., DeWinter, L., and **Bradley, T.H.**, "Microalgae Bulk Growth Model with Application to Industrial Scale Systems," *Bioresource Technology* 102 (2011) 5083-5092.
93. Batan, L., Quinn, J., Willson, B., and **Bradley, T.H.** "Net energy and greenhouse gas emissions evaluation of biodiesel derived from microalgae," *Environmental Science and Technology*, 2010, 44 (20), pp 7975–7980.
94. **Bradley, T.H.** and Quinn, C.W., "Analysis of plug-in hybrid electric vehicle utility factors," *Journal of Power Sources*, Volume 195, Issue 16, 2010, Pages 5399-5408.
95. Quinn, C., Zimmerle, D., and **Bradley, T.H.**, "The Effects of Aggregation on the Near-Term Economics and Scalability of Plug-in Hybrid Electric Vehicle to Grid Charging," *Journal of Power Sources*, Volume 195, Issue 5, 1 March 2010, Pages 1500-1509.
96. Geller, B., Quinn, C., and **Bradley, T.H.**, "Design and Demonstrations of Plug-in Hybrid Electric Vehicles," in G. Pistoia, Editor, *Electric and Hybrid Vehicles : Power Sources, Models, Sustainability, Infrastructure and the Market*, Elsevier, 2010.
97. **Bradley, T. H.**, Moffitt, B.A., Fuller, T.F., Parekh, D. E., and Mavris, D. "Comparison of Design Methods for Fuel Cell Powered Unmanned Aerial Vehicles," *AIAA Journal of Aircraft*, Volume 46, Number 6, 2009.
98. **Bradley, T. H.**, Moffitt, B.A., Fuller, T.F., Parekh, D. E., and Mavris, D. "Hardware in the Loop Performance Simulation for a Fuel Cell Unmanned Aerial Vehicle," *AIAA Journal of Propulsion and Power*, Volume 25, Number 6, 2009.
99. **Bradley, T.H.**, Moffitt, B.A., Mavris, D., Parekh, D.E. "Aviation: Fuel Cells." In: Juergen Garche, Chris Dyer, Patrick Moseley, Zempachi Ogumi, David Rand and Bruno Scrosati, editors. *Encyclopedia of Electrochemical Power Sources*, Vol 1. Amsterdam: Elsevier; 2009. pp. 186-192.
100. **Bradley, T. H.** and Frank, A. A. "Design, demonstrations and sustainability impact assessments for plug-in hybrid electric vehicles." *Sustainable and Renewable Energy Reviews*, Volume 13, Issue 1, January 2009, Pages 115-128.
101. **Bradley, T. H.**, Danielson, J., Lawrence, J., and Singhose, W. "Command Shaping Under Non-Symmetrical Acceleration and Braking Dynamics." *ASME Journal of Vibration and Acoustics*, October 2008, Vol. 130 / 054503 pp.1-5.
102. **Bradley, T. H.**, Moffitt, B., Parekh, D., and Mavris, D. "Development and experimental characterization of a fuel cell powered aircraft." *Journal of Power Sources*, 171(2007) 793-801.
103. **Bradley, T. H.**, Huff, B. R., and Frank, A. A. "Energy Consumption Test Methods and Results for Servo-Pump Continuously Variable Transmission Control System." *SAE Transactions Journal of Fuels and Lubricants*, 2005-01-3782, 2005.

**ARCHIVAL PUBLICATIONS IN SUBMISSION:**

1. Blond, K., Conrad, S., **Bradley, T.H.** “An Enterprise Analysis of KC-46A Maintenance Program Decision Making,” *MORS Journal*, 2024
2. Kingery, T., Sega, R., **Bradley, T.H.**, “Economic Modeling and Optimization of Low Quantity/High Variation Aircraft Operations,” *Journal of Air Transport Management (JATM)*, 2024.

**OTHER PUBLICATIONS AND PRESENTATIONS:**

1. Rabinowitz, A., Tal, G., and **Bradley, T.H.** “Quantifying the Costs of Charger Availability Uncertainty for Residents of Multi-Unit Dwellings,” *SAE Technical Paper*, 2024-01-2034.
2. USEPA, “External Peer Review of Cost and Technology Evaluation, Conventional Powertrain Vehicle Compared to an Electrified Powertrain Vehicle, Same Vehicle Class and OEM” 2023, [link](#)
3. Asher, Z., Baker, D., **Bradley, T.H.**, “Systems and methods for prediction windows for optimal powertrain control,” 2023, US Patent US11794757B2.
4. Analysis of Costs and Performance of Vehicles Fueled by Alternative Energy Carriers, EPRI, Palo Alto, CA: 2023, 3002028286.
5. Rabinowitz, A., Coburn, T., Smart, J., **Bradley, T.H.** A Geo-Spatial Method for Calculating BEV Charging Inconvenience using Publicly Available Data”, *INCOSE International Symposium*, Honolulu, HI, 2023.
6. Kleinwaks, H., Rich, M., Batchelor, A., **Bradley, T.H.**, Turner, J., “LEAP – A Process for Identifying Potential Technical Debt in Iterative System Development,” *INCOSE International Symposium*, Honolulu HI, 2023.
7. Kleinwaks, H., Batchelor, A., **Bradley, T.H.**, “An Empirical Survey on the Prevalence of Technical Debt in Systems Engineering,” *INCOSE International Symposium*, Honolulu HI, 2023.
8. Rabinowitz, A., Motallebiaraghi, F., Meyer, R., Asher, Z. et al., "An Ultra-Light Heuristic Algorithm for Autonomous Optimal Eco-Driving," *SAE Update Magazine*, April 2023, <https://www.nxtbook.com/msg/sae/23UPD04/index.php#/p/36>
9. Blonde, K., Clark, A., **Bradley, T.H.**, “A Decision-Making Framework for the KC-46A Maintenance Program,” *Reliability and Maintainability Symposium*, Orlando, FL, January 23-26, 2023.
10. Ouren, F., Trinko, D., **Bradley, T.**, Coburn, T., Simske, S., “Developing a Profile of Medium- and Heavy- Duty Electric Fleet Adopters with Text Mining and Machine Learning” *DOE CODA Conference*, Los Alamos National Lab, March 7-9, 2023.
11. Rabinowitz, A., Coburn, T.C., **Bradley, T.H.**, and Smart, J.G., 2022, Quantifying the (in)convenience of electric vehicle charging. *IAEE Energy Forum*, Fourth Quarter 2022, 57-60.
12. Rabinowitz, A., Motallebiaraghi, F., Meyer, R., Asher, Z. et al., "An Ultra-Light Heuristic Algorithm for Autonomous Optimal Eco-Driving," *SAE Technical Paper* 2023-01-0679, 2023.
13. Fanas Rojas, J., Kadav, P., Brown, N., Meyer, R. et al., "Quantitative Resilience Assessment of GPS, IMU, and LiDAR Sensor Fusion for Vehicle Localization Using Resilience Engineering Theory," *SAE Technical Paper* 2023-01-0576, 2023.
14. Motallebiaraghi, F., Rabinowitz, A., Fanas Rojas, J., Kadav, P. et al., "Autonomous Eco-Driving Evaluation of an Electric Vehicle on a Chassis Dynamometer," *SAE Technical Paper* 2023-01-0715, 2023.
15. JF Rojas, N Brown, J Rupp, **T Bradley**, ZD Asher, "Performance Evaluation of an Autonomous Vehicle Using Resilience Engineering" *SAE Technical Paper*, 2022, 2022-01-0067

16. F Motallebiaraghi, K Yao, A Rabinowitz, J Holden, E Wood, S Chen ... "Mobility Energy Productivity Evaluation of Prediction-based Vehicle Powertrain Control Combined with Optimal Traffic Management" *SAE Technical Paper*, 2022, 2022-01-0141
17. P Lobato, M Rayno, J Daily, **T Bradley**, "Quantifying Repeatability of Real-World On-Road Driving Using Dynamic Time Warping" *SAE Technical Paper*, 2022, 2022-01-0269
18. **Bradley, T.H.**, Coburn, T.C., "Colorado EV Battery Recycling Study," Colorado Department of Public Health and the Environment, 2021.
19. J Payne, H Stefanon, B Geller, T Aoki, **T Bradley**, Z Asher, D Trinko, "Systems and methods for determining engine start time during predicted acceleration events" 2021, US Patent 10,946,852.
20. Birch, D., **Bradley, T.H.**, "Development of a Human Factors Hazard Model Using HEP / FTA / ETA," *AIAA/INCOSE Utah Mini Conference*, 2021.
21. Tarun, S., and Asher, Z., Johnston, B., **Bradley, T. H.**, Anderson, C., Jathar, S. H., On the Use of Artificial Neural Networks to Model In-Use Fuel Consumption and Tailpipe Emissions from Light-Duty Vehicles. Available at SSRN: <https://ssrn.com/abstract=3969069> or <http://dx.doi.org/10.2139/ssrn.3969069>
22. Motellebiaraghi, F., Rabinowitz, A., Jathar, S., Fong, A., Asher, Z., **Bradley, T.H.**, "High-Fidelity Modeling of Light-Duty Vehicle Emissions and Fuel Economy Using Deep Neural Networks" *SAE Technical Paper*, 2021-01-0181.
23. Quinn, J.C., Horesh, N., Trinko, D., Limb, B., Quinn, C., **Bradley, T.H.**, Zane, R., 2020, "The future of transportation," *Institute for Science & Policy*, Denver Museum of Nature & Science.
24. Al-Alawi, B., Coburn, T., and **Bradley, T.H.** "Managing Global Transportation Energy Use and Emissions Through Technology, Policy and Collaborative Initiatives," *Think20 Policy Brief 17*, Saudi Arabia, 2020.
25. Rabinowitz, A., Gaikwad, T., White, S., **Bradley, T.H.**, Asher, Z., "Synchronous and Open, Real World, Vehicle, ADAS, and Infrastructure Data Streams for Automotive Machine Learning Algorithms Research," *SAE Technical Paper*, 2020-01-0736.
26. Gaikwad, T., Rabinowitz, A., Motallebiaraghi, F., **Bradley, T.H.**, Asher, Z., Hanson, L., Fong, A., "Vehicle Velocity Prediction Using Artificial Neural Network and Effect of Real World Signals on Prediction Window." *SAE Technical Paper* 2020-01-0729
27. Lunsford, I., **Bradley, T.H.** "Aircraft Survivability Modeling and Simulation Framework (AirSurF)," *AIAA Scitech 2020 Forum*, 1648.
28. Quiroz-Arita, C., and **Bradley, T.H.**, "2019 CRC Life Cycle Analysis of Transportation Fuels Workshop," Argonne National Laboratory, 2019.
29. Bowermaster, D., and **Bradley, T.**, "Renewable Ammonia Generation, Transport, and Utilization in the Transportation Sector," *EPRI Technology Insights*, 3002015353 February 2019.
30. Tarun, S., Asher, Z., **Bradley, T.**, Johnston, B., Anderson, C., and Jathar, S., "Artificial Neural Networks for Emissions Modeling and Environmental Routing for Light-Duty Passenger Vehicles," *CARTEEH* — February 18-20, 2019 — Austin, TX
31. Gabriel Christian DiDomenico, Jamison Bair, Vipin Kumar Kukkala, Jordan Tunnell, Marco Peyfuss, Michael Kraus, Joshua Ax, Jeremy Lazarri, Matthew Munin, Corey Cooke, Eric Christensen, Logan Peltz, Nathan Peterson, Logan Wolfe, Zach Vinski, Daniel Norris, Corrie Kaiser, Jacob Collier, Nick Schott, Yi Wang, **Thomas Bradley**, "Colorado State University EcoCAR 3 Final Technical Report," *SAE Technical Paper* 2019-01-0360, 2019.

32. Asher, Zachary & Tragesser, Steven & Kneubel, Christian & Hudson, Jennifer & **Bradley, Thomas** & Kolmanovsky, Ilya. (2018). Space Debris Field Removal Using Tether Momentum Exchange. AAS/AIAA, Sep, 2018.
33. Asher, Z., Ramo, N., **Bradley, T.H.**, “The Use of Systems Engineering Principles to Improve Learning Outcomes in a Multidisciplinary Course,” *ASEE Annual Conference and Exposition*, 2018.
34. Baral, N., Quiroz-Arita, C., **Bradley, T.H.**, “A Comparative Techno- Economic Analysis Of Cyanobacterial And Cellulosic Ethanol,” *3rd Thermal and Fluids Engineering Conference*, Ft. Lauderdale, FL., March 6<sup>th</sup>, 2018.
35. Asher, Z., Tunnel, J.A., Baker, Fitzgerald, R.J., Banaei-Kashani, F., Pasricha, S., **Bradley, T.H.** “Enabling Prediction for Optimal Fuel Economy Vehicle Control.” *SAE Technical Paper* 2018-01-1015.
36. Trinko, D., Asher, Z., **Bradley, T.H.**, “Application of Pre-Computed Acceleration Event Control to Improve Fuel Economy in Hybrid Electric Vehicles,” *SAE Technical Paper* 2018-01-0997
37. Baker, D., Asher, Z.D. and **Bradley, T.**, 2018. “V2V communication based real-world velocity predictions for improved HEV fuel economy,” *SAE Technical Paper*, 2018-01-1000.
38. Trinko, D. A., Wendt, E. A., Asher, Z. D., Peyfuss, M., Volckens, J., Quinn, J. C., & **Bradley, T. H.** (2018, June). An Adaptive Green Zone Strategy for Hybrid Electric Vehicle Control. In 2018 IEEE Transportation Electrification Conference and Expo (ITEC) (pp. 939-943). IEEE.
39. Asher, Z.D., Galang, A., Briggs, W., Johnston, B., **Bradley, T.H.**, Jathar, S., “Economic and Efficient Hybrid Electric Vehicle Fuel Economy and Emissions Modeling Using an Artificial Neural Network,” *SAE Technical Paper* 2018-01-0315.
40. Tunnell, J., Asher, Z.D., Pasricha, S., **Bradley, T.H.**, “Towards Improving Vehicle Fuel Economy with ADAS,” *SAE Technical Paper* 2018-01-0593
41. Baker, D., Asher, Z., **Bradley, T.H.**, “Investigating the Impact of Real-World Prediction Error on HEV Fuel Economy,” *SAE Technical Paper* 2018-01-1000
42. Quiroz-Arita, C., Asher, Z., Baral, N., **Bradley, T.H.**, “Vehicle Electrification in Chile: A Life Cycle Assessment and Techno-economic Analysis Using Data Generated by Autonomie Vehicle Modeling Software,” *SAE Technical Paper* 2018-01-0660
43. Sproul, E., Trinko, D. A., Asher, Z. D., Limb, B., **Bradley, T. H.**, Quinn, J. C., & Zane, R. (2018, June). Electrification of class 8 trucking: Economic analysis of in-motion wireless power transfer compared to long-range batteries. In 2018 IEEE Transportation Electrification Conference and Expo (ITEC) (pp. 744-748). IEEE.
44. Kukkala, V. K., **Bradley, T. H.**, & Pasricha, S. “Uncertainty analysis and propagation for an Auxiliary Power Module.” *In Transportation Electrification Conference and Expo (ITEC)*, 2017 IEEE, pp. 164-168.
45. Roberts, C., Morgenstern, R.M., Israel, D.J., Borky, J.M., **Bradley, T.H.** “Preliminary Results from a Model-Driven Architecture Methodology for Development of an Event-Driven Space Communications Service Concept,” *5th Annual IEEE International Conference on Wireless for Space and Extreme Environments*, October 10 - 12, 2017 Montréal, QC
46. Carlos Quiroz-Arita Patricia E. Gharagozloo, Myra L. Blaylock, Ryan Davis, **Thomas H. Bradley**, Thomas Dempster, John McGowen, “Computational Study of Turbulence and Mixing in Algae Raceway Ponds: Implications of Fluid Mechanics in Algae-based biofuels Growth Models,” *2017 Rocky Mountain Fluid Mechanics Symposium*, August 11, 2017, Boulder, CO

47. Buckner, M., **Bradley, T.H.** "Automotive CO<sub>2</sub> Mitigation Via an Onboard Bosch Reactor System," *Carbon Management Technology Conference 2017: Global CCUS Innovation Nexus*, Houston, TX, July 17-20, 2017.
48. Evanoski-Cole A., Catton, K., Vermuelen, B., Bair J.T., and **Bradley, T.H.** "Confidence of Undecided First-Year Engineering Students in Choosing Their Major and Implications for Retention," *2017 ASEE Annual Conference & Exposition*, Columbus, OH, June 26 - 29, 2017.
49. Bair, J., and **Bradley, T.H.** "Introduction and Application of Lean Manufacturing Techniques in Mechanical Engineering Senior Design Practicum," *2017 ASEE Annual Conference & Exposition*, Columbus, OH, June 26 - 29, 2017.
50. Kukkala, V., **Bradley, T.H.**, and Pasricha, S., "JAMS: Jitter-Aware Message Scheduling for FlexRay Automotive Networks," *2017 IEEE 86th Vehicular Technology Conference*, 24–27 September 2017, Toronto, Canada.
51. Quann, C., and **Bradley, T.H.**, "Renewables Firming Using Grid Scale Battery Storage in a Real-Time Pricing Market," *30th International Conference on Efficiency, Cost, Optimisation, Simulation and Environmental Impact of Energy Systems*, July 2. - 6. 2017, San Diego, California
52. Quann, C., and **Bradley, T.H.**, "Renewables Firming Using Grid Scale Battery Storage in a Real-Time Pricing Market" *Eighth IEEE Conference on Innovative Smart Grid Technologies (ISGT 2017)*, April 23-26, 2017, Arlington, VA.
53. Baker, D., Asher, Z., and **Bradley, T.H.**, "Investigation of Vehicle Speed Prediction from Neural Network Fit of Real World Driving Data for Improved Engine On/Off Control of the EcoCAR3 Hybrid Camaro," *SAE Technical Paper 2017-01-1262*, 2017.
54. Asher, Z., Wifvat, V., Navarro, A., Samuelsen, S. et al., "The Importance of HEV Fuel Economy and Two Research Gaps Preventing Real World Implementation of Optimal Energy Management," *SAE Technical Paper 2017-26-0106*, 2017.
55. Carlos Quiroz-Arita, David Bark, Lakshmi Prasad Dasi, **Thomas H. Bradley**. " Optimization of Photobioreactors and Raceway Ponds by Fluid Dynamics Approaches: Mixing Strategies for Dark: Light Duty Cycles of Cyanobacteria Particles - Poster", *2016 Algae Biomass Summit*, October 23 - 26, Washington, DC
56. Carlos E. Quiroz Arita, John J. Sheehan , Sybil Sharvelle, **Thomas H. Bradley**. "Combined Photosynthetic Biorefineries based on Cyanobacteria and Wastewater Facilities Systems: Addressing Water Quality Criteria Established by the Environmental Protection Agency - Poster", *2016 Algae Biomass Summit*, October 23 - 26, Washington, DC
57. Carlos E. Quiroz-Arita, David Bark, Lakshmi Prasad Dasi, Jason C. Quinn, **Thomas H. Bradley**, Kenneth F. Reardon. "Scalability of Photobioreactors: Incorporating Langrangian Fluid Mechanics in Growth Models", *6th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 26-29, San Diego, CA
58. Carlos E. Quiroz Arita, John J. Sheehan , **Thomas H. Bradley**. "Life Cycle Net Energy and Greenhouse Gas Emissions of Photosynthetic Biorefineries Based on Cyanobacteria", *6th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 26-29, San Diego, CA
59. Carlos E. Quiroz Arita, John J. Sheehan , Sybil Sharvelle, **Thomas H. Bradley**. "Life Cycle Assessment of Combined Photosynthetic Biorefineries based on Cyanobacteria and Wastewater Facilities Systems", *6th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 26-29, San Diego, CA

60. Chase Fogus, Carlos Quiroz – Arita, **Thomas H. Bradley**. " Particle Tracking of Bench-Scale Photobioreactor for Optimization of Sparge Mixing of *Synechocystis* sp. PCC 6803 - Poster", *6th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 26-29, San Diego, CA
61. Matthew D. Knopf, Carlos Quiroz – Arita, **Thomas H. Bradley**. "Temporal and Spatial Radiation in Flat Photobioreactors Cultures of *Synechocystis* sp. PCC 6803 - Poster", *6th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 26-29, San Diego, CA
62. Carlos E. Quiroz-Arita, David Bark, Lakshmi Prasad Dasi, Jason C. Quinn, **Thomas H. Bradley**, Kenneth F. Reardon. "Scalability of Photobioreactors: Incorporating Lagrangian Fluid Mechanics in Growth Models", *12th Workshop on Cyanobacteria*, May 19 - 22, 2016. Arizona State University, Tempe, AZ.
63. **Bradley, T.H.**, "Evaluation of techniques for eliciting online interaction in Systems Engineering Courses," *2016 ASEE Annual Conference & Exposition*, New Orleans, LA, June 26 - 29, 2016.
64. Jambor, E., and **Bradley, T.H.**, "Weight Reduction through the Design and Manufacturing of Composite Half-Shafts for the EcoCAR 3," in *Society of Automotive Engineers World Congress*, Detroit, MI, April 12-14, 2016.
65. Asher, Z., Cummings, T., and **Bradley, T.H.**, "The Effect of Hill Planning and Route Type Identification Prediction Signal Quality on Hybrid Vehicle Fuel Economy," in *Society of Automotive Engineers World Congress*, Detroit, MI, April 12-14, 2016.
66. Vore, S., Wilkins, Z., Kosowski, M., and **Bradley, T.H.** "Data Management for Geographically and Temporally Rich Plug-in Hybrid Vehicle 'Big-Data'", *EVS29 Symposium*, Montréal, Québec, Canada, June 19-22, 2016.
67. Jambor, E., and **Bradley, T.H.** "Project Management and Implementation in EcoCAR 3," *ASME 2015 International Mechanical Engineering Congress and Exposition*, Houston, TX, November 13–19, 2015.
68. Stanton, K., and **Bradley, T.H.**, "Academic Needs Assessment to Inform Course and Program Design: A Hybrid Vehicle Engineering Program as a Case Study" *2015 ASEE Annual Conference and Exposition*, Seattle, WA, June 14-17, 2015.
69. Syed, Z., and **Bradley, T.H.**, "A Real-time Building HVAC Model Implemented as a Plug-in for Trimble(TM) Sketchup(TM)" *ASCE International Workshop on Computing in Civil Engineering*, Austin, TX, June 21-23, 2015.
70. Quinn, J. C., Limb, B. J., Pantic, Z., Barr, P., Zane, R., and **Bradley, T. H.** (2015). Feasibility of wireless power transfer for electrification of transportation: Techno-economics and life cycle assessment. In *Technologies for Sustainability (SusTech), 2015 IEEE Conference on* (pp. 245-249). IEEE.
71. Quiroz-Arita, C.E., Dasi, L.P., and **Bradley, T.H.** "Combined algae based biofuels and wastewater facilities systems modeled by computational fluid dynamics (CFD) approaches", *5th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 7-10, 2015, San Diego, CA
72. Jones, A., Quiroz-Arita, C.E., and **Bradley, T.H.** "Characterization of Sparge mixing for reducing the growth stage energy consumption of cyanobacteria photobioreactors - Poster", *5th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 7-10, 2015, San Diego, CA
73. Quinn, J.C., Hanif, A., Sharvelle, S., and **Bradley, T.H.**, "Characterization and lifecycle impact of methane yield from lipid extracted algae - Poster", *5th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 7-10, 2015, San Diego, CA
74. Quiroz-Arita, C.E., Yilmaz, O., Barlak, S., Catton, K., Quinn, J.C., and **Bradley, T.H.** "A geographical assessment of vegetation carbon stocks and net greenhouse gases on potential

- microalgae based biofuel facilities in the United States - Poster", *5th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 7-10, 2015, San Diego, CA
75. Bennett, K., Quiroz-Arita, C.E., and **Bradley, T.H.** "Sensitivity analyses of Synechocystis lifecycle assessment models - Poster", *5th International Conference on Algal Biomass, Biofuels and Bioproducts*, June 7-10, 2015, San Diego, CA
76. Kukkala, V., Pasricha, S., and **Bradley, T.H.**, "Priority-based Multi-level Monitoring of Signal Integrity in a Distributed Powertrain Control System," *4th IFAC Workshop on Engine and Powertrain Control Simulation and Modeling (E-COSM 2015)*, Columbus, OH, USA, August 23-26, 2015
77. Knackstedt, C., and **Bradley, T.H.**, "EcoCAR 3: Architecture Selection Validation through Vehicle Modeling and Simulation for the Colorado State University Vehicle Innovation Team," *4th IFAC Workshop on Engine and Powertrain Control Simulation and Modeling (E-COSM 2015)*, Columbus, OH, USA, August 23-26, 2015
78. Cummings, T., and **Bradley, T.H.**, "The Effect of Trip Preview Prediction Signal Quality on Hybrid Vehicle Fuel Economy," *4th IFAC Workshop on Engine and Powertrain Control Simulation and Modeling (E-COSM 2015)*, Columbus, OH, USA, August 23-26, 2015
79. Gordon, E., K. Averyt, and **T. Bradley** (2015). Chapter 7--Energy Sector. In Colorado Climate Change Vulnerability Study, edited by Eric Gordon and Dennis Ojima. University of Colorado, Boulder, CO and Colorado State University, Fort Collins, CO.
80. Quinn, J., Hanif, A., Sharvelle, S., and **Bradley, T.H.**, "Experimental Evaluation of Methane Yield from Lipid Extracted Algae: Life Cycle Impacts," *Algae Biomass Summit*, Washington, DC September 30 - October 2, 2015.
81. Syed, Z., and **Bradley, T.H.**, "A Real-time Building HVAC Model Implemented as a Plug-in for Sketch-up(TM)," *2015 ASCE International Workshop on Computing in Civil Engineering*, Austin, TX, June 21-23, 2015.
82. Geller, B., Bucher, J. Salisbury, S., and **Bradley, T.H.**, "Validation and Analysis of the Fuel Cell Plug-in Hybrid Electric Vehicle Built by Colorado State University for the EcoCAR 2: Plugging into the Future Vehicle Competition," *SAE World Congress*, Detroit, MI, 2014-01-2910.
83. Duthu, R., and **Bradley, T.H.** "Evaluation of increased discretization of real time locational marginal prices on customer-optimized distributed generation" *ASME 2014 8th International Conference on Energy Sustainability*, June 30-July 2, 2014, Boston.
84. Wagner, J., and **Bradley, T.H.** "Analysis and Optimization of a Parallel Hydraulic Hybrid," *SAE World Congress*, Detroit, MI, 2014-01-1795.
85. Salisbury, S., Geller, B., Bucher, J., and **Bradley, T.H.**, "Detailed Analysis of a Fuel Cell Plug-in Hybrid Electric Vehicle Demonstration," *SAE World Congress*, Detroit, MI, 2014-01-1925.
86. Salisbury, S., Smart, J., and **Bradley, T.H.**, "Actual Versus Estimated Utility Factor of a Large Set of Privately Owned Chevrolet Volts," *SAE World Congress*, Detroit, MI, 2014-01-1803.
87. **Bradley, T.H.** "Fuel Cell Education-Invited Presentation," *Fuel Cell Seminar & Energy Exposition*, Los Angeles, CA, November 10-14, 2014
88. Geller, B., Bucher, J., Salisbury, S., and **Bradley, T.H.**, "Validation and Analysis of the Fuel Cell Plug-in Hybrid Electric Vehicle Built by Colorado State University for the EcoCAR 2: Plugging into the Future Vehicle Competition," *SAE International Powertrain, Fuels & Lubricants Meeting*, Birmingham, UK, 2014-01-2910.
89. **Bradley, T.H.**, "The Cutting Edge – A Look at the Next Era of Advanced Technologies," *Plug in 2013 Conference*, October 1-3, 2013, San Diego, CA.

90. Salisbury, S., Geller, B., Fox, M., and **Bradley, T.H.**, "Detailed Design of a Fuel Cell Plug-in Hybrid Electric Vehicle," *SAE World Congress*, Detroit, MI, 2013-01-0560.
91. Quinn, J., Butler, J., **Bradley, T.H.**, "Current Large-scale Microalgae Productivity Potential Including Resource Assessment," *2013 International Biomass Conference & Expo*, April 2013, Minneapolis, MN.
92. Shurtz, B., Batan, L., **Bradley, T.H.**, Wood, B., Quinn, J., "Potential Effects of the Integration of Microalgae with Wastewater: Water Footprint and Resource Requirements," *Solar 2013*, April 2013, Baltimore, MD.
93. Quinn, J., Catton, K., DeWinter, L., and **Bradley, T.H.**, "Critical Evaluation of Resource Demand and Biomass Productivity for Scale-up of Microalgae Biofuels," *World Renewable Energy Forum 2012*, May 13-17, 2012, Denver, CO.
94. Geller, B., Fox, M., Alvarado, C., Barrett, P., Habib, H., Koelling, Z., Malakoutirad, M., Miksch, J., Salisbury, S., Sewell, S., Shea, C., Zevenbergen, M., Quinn, J., and **Bradley, T.H.**, "Design of a Fuel Cell Plug-in Hybrid Electric Vehicle in a Range Extending Configuration by Colorado State University for the EcoCAR2 Competition," *SAE 2012 International Powertrains, Fuels Lubricants Meeting*, September 18-20, 2012, Malmo, Sweden.
95. Geller, B., Fox, M., **Bradley, T.H.**, Kalhammer, F., Kopf, B., and Panik, F., "Plug-in Fuel Cell Vehicle Technology and Value Analysis," *EVS26*, May 6-9 2012, Los Angeles, California.
96. Kambly, K., and **Bradley, T.H.**, "Geographical and Temporal Variations in Plug-in Electric Vehicle HVAC Loads," *ASME/SAE/AIAA 10th International Energy Conversion Engineering Conference*, July-August 2012, Atlanta, GA.
97. Fox, M., and **Bradley, T.H.** "Decision Support for Vehicle Technology Selection and Optimal Component Sizing: Colorado State University EcoCar2 Vehicle Design," *ASME/SAE/AIAA 10th International Energy Conversion Engineering Conference*, July-August 2012, Atlanta, GA.
98. *The Efficacy of Electric Vehicle Time-of-Use Rates in Guiding Plug-in Hybrid Electric Vehicle Charging Behavior*, EPRI, Palo Alto, CA: 2011, 1021741.
99. Quinn, J., Turner, C., and **Bradley, T.H.**, "Flat Plate Photobioreactor Scale-Up Incorporating Diffuse and Direct Light Growth Characteristics," *Algae Biomass Summit*, October 25-27, 2011, Minneapolis, MN.
100. Fagerstone, K., Quinn, J., **Bradley, T.H.**, Marchese, A., "Measurement of Direct Nitrous Oxide (N<sub>2</sub>O) Emissions from Microalgae Cultivation," *1st International Conference on Algal Biomass, Biofuels & Bioproducts*, July 18-20, 2011, St. Louis, MO.
101. Quinn, J., Catton, K., deWinter, L., Wagner, N., and **Bradley, T.H.** "Current Productivity Potential in the US Based on Microalgae Bulk Growth Modeling" *1st International Conference on Algal Biomass, Biofuels & Bioproducts*, July 18-20, 2011, St. Louis, MO.
102. Quinn, J., Turner, C., and **Bradley, T.H.** "Scale-Up of Flat Plate Photobioreactors Considering Diffuse and Direct Light Characteristics" *1st International Conference on Algal Biomass, Biofuels & Bioproducts*, July 18-20, 2011, St. Louis, MO.
103. Wagner, N., Taylor, B., Boland, S., Keen, D., Nelson, J., and **Bradley, T.H.** "Powerplant Design for Hand-Launched Long-Endurance UAVs", *ASME/SAE/AIAA 9th International Energy Conversion Engineering Conference*, July 2011, San Diego, CA, AIAA 2011-6689.
104. Bickley, E., Boley, M., Brown, S., Clark, S., Gindl, B., Hemenway, D., Miskulin, R., Beegles, R., Stanton, K., and **Bradley T.H.**, "Design and Testing of a Fuel Cell Powered Motorcycle,"



- ASME/SAE/AIAA 9th International Energy Conversion Engineering Conference*, July 2011, San Diego, CA.
105. Kustas, A., Jurgensmeyer, A., Williams, D., Dickman, B., **Bradley, T.H.**, Williams, J.D., Cote, T.B., Minor, B.D., and Lipsey, T.C. "High efficiency thermoelectric coolers for use in firefighter applications," *ASME International Mechanical Engineering Congress*, Nov. 11-17, 2011, Denver, Colorado, 2011.
  106. Jurgensmeyer, A., Kustas, A., Williams, J., Williams, D., **Bradley, T.H.**, "Superlattice-based thermoelectric materials fabricated using ion beam deposition," *ASME/SAE/AIAA 9th International Energy Conversion Engineering Conference*, July 2011, San Diego, CA.
  107. Rhoads, G., and **Bradley, T.H.** "Design space exploration for electrically powered vertical takeoff and landing unmanned aerial vehicles," *ASME/SAE/AIAA 9th International Energy Conversion Engineering Conference*, July 2011, San Diego, CA.
  108. Lutz, M., Zimmerle, D., Huff, B., and **Bradley, T.H.** "Design and Construction of a Grid-attached Storage Simulator," *ASME International Conference on Energy Sustainability*, Aug. 7-10 Washington, D.C., ESFuelCell2011-54541, 2011.
  109. Posly, A., Duff, W., and **Bradley, T.H.** "Stochastic Simulation of System Reliability as a Tool for Maintenance Strategy Optimization in a Cement Plant," *52nd IEEE-IAS/PCA Cement Industry Technical Conference*, May 22-26, St. Louis, MO, 2011.
  110. Davis, M., and **Bradley, T.H.** "Alternative Plug in Hybrid Electric Vehicle Utility Factors," *SAE World Congress*, April 12-14, 2011, Detroit, MI, SAE 11PFL-0825, 2011.
  111. Geller, B., and **Bradley, T.H.** "Objective Comparison of Hybrid Vehicles Through Simulation Optimization," *SAE World Congress*, April 12-14, 2011, Detroit, MI, SAE 11PFL-0829, 2011.
  112. Bradley, T.H., and Al-Alawi, B., "Low Carbon Fuel Standards and Other Game Changing Policies for PEVs," presented in *Plug in 2011 Conference*, July 19-21, 2011, Raleigh, NC.
  113. Quinn, J., Batan, L. and **Bradley, T.H.** "Net Energy and Greenhouse Gas Emission Evaluation of Biodiesel Derived from Microalgae," *Congreso Internacional de Ciencia y Tecnología de los Biocombustibles*, November 30 – December 3, 2010, Bucaramanga, Columbia.
  114. Quinn, J., and **Bradley, T.H.** "Microalgae Productivity Potential and Water Consumption," *2010 Pacific Rim Summit on Industrial Biotechnology and Bioenergy*, December 11-14, 2010, Honolulu, HI.
  115. *Economic and Environmental Analysis of Fuel Cell Powered Materials Handling Equipment*. EPRI, Palo Alto, CA: 2010. 1019928.
  116. **Bradley, T.H.**, "Lifecycle Sustainability Assessments for Microalgal Biofuel Production," *2010 Western Great Plains Sustainable Feedstock Conference*, September 14<sup>th</sup>, 2010, Fort Collins, CO.
  117. *Plug-in Fuel Cell Vehicle Technology and Value Analysis Phase 1: Preliminary Findings and Plan for Detailed Study*. EPRI, Palo Alto, CA: 2010. 1021482.
  118. **Bradley, T.H.**, Geller, B., Davis, B.M., Kalhammer, F., Kopf, B., Panik, F, and Huang, Y., "Plug in Fuel Cell Vehicle Technology and Value Analysis," invited presentation in *Plug in 2010 Conference*, July 26-29, 2010, Long Beach, California, USA.
  119. Al-Alawi, B., and **Bradley, T.H.**, "The value of plug-in hybrid electric vehicles within the framework of CAFE compliance," invited presentation in *ASME/SAE/AIAA 8<sup>th</sup> International Energy Conversion Engineering Conference*, July 2010, Nashville, TN.

120. Rhoads, G., and **Bradley, T.H.**, "Flight Test Results for a 24 Hour Fuel Cell Unmanned Aerial Vehicle", *ASME/SAE/AIAA 8<sup>th</sup> International Energy Conversion Engineering Conference*, July 2010, Nashville, TN, AIAA 2010-6690.
121. Quinn, J., and **Bradley, T.H.**, "Microalgae Biomass Production Potential in the US," *International Conference CO2 Summit: Technology and Opportunity*, June 6-10, 2010, Vail, Colorado, USA.
122. Batan, L., Quinn, J., and **Bradley, T.H.**, "Net energy and greenhouse gas emissions evaluation of biodiesel derived from microalgae," *International Conference CO2 Summit: Technology and Opportunity*, June 6-10, 2010, Vail, Colorado, USA.
123. **Bradley, T.H.**, "The Effects of Aggregation on the Near-Term Economics and Scalability of Plug-in Hybrid Electric Vehicle to Grid Charging," invited presentation in *Plug in 2009 Conference*, August 12-14, 2009, Long Beach, California, USA.
124. **Bradley, T.H.** Moffitt, B.A., Parekh, D.E., Fuller, T.F., and Mavris, D.N., "Energy Management for Fuel Cell Powered Hybrid-Electric Aircraft, *ASME/SAE/AIAA 7th International Energy Conversion Engineering Conference*, 2 - 5 August 2009, Denver, Colorado. AIAA 2009-4590.
125. **Bradley, T.H.** "Modeling, Design and Energy Management of Fuel Cell Systems for Aircraft," PhD Dissertation, Georgia Institute of Technology, Woodruff School of Mechanical Engineering, 2008.
126. Fuller, T. F., **Bradley, T. H.** "Methodology for Robust Design of Small Fuel Cell Systems: Application to Unmanned Aerial Vehicles," Invited presentation in *10<sup>th</sup> Annual International Conference on Small Fuel Cells*, April 30-May 2, 2008, Atlanta, Georgia, USA.
127. **Bradley, T. H.**, Moffitt, B. A., Parekh, D. E., and Mavris, D. "Design Studies for Hydrogen Fuel Cell Powered Unmanned Aerial Vehicles," *26<sup>th</sup> AIAA Applied Aerodynamics Conference*, August 18-21, 2008, Honolulu, Hawaii. AIAA 2008-6413.
128. **Bradley, T. H.** and Parekh D. E. "Design, Applications and Commercialization of Fuel Cell Powered Aircraft," *Proceedings of the National Hydrogen Conference*, March 30-April 3 2008, Sacramento, California.
129. Moffitt, B. A., **Bradley, T. H.**, Parekh, D. E., and Mavris, D. "Vortex Propeller Model Generation and Validation with Uncertainty Analysis for UAV Design." in *46th AIAA Aerospace Sciences Meeting and Exhibit*, January 7-10, 2008, Reno, Nevada. AIAA 2008-406.
130. *Description of a Basic Vehicle Control Strategy for a Plug-In Hybrid Electric Vehicle*, EPRI, Palo Alto, CA: 2007. 1012460.
131. Moffitt, B. A., **Bradley, T. H.**, Mavris, D. and Parekh, D. E., "Reducing design error of a fuel cell UAV through variable fidelity optimization." in *7th AIAA Aviation Technology, Integration and Operations Conference*, September 2007, Belfast, N. Ireland. AIAA 2007-7793.
132. **Bradley, T. H.**, Moffitt, B. A., Parekh, D. E., and Mavris, D. "Flight Testing Results for a Fuel Cell Unmanned Aerial Vehicle." in *45th AIAA Aerospace Sciences Meeting and Exhibit*, January 8-11, 2007, Reno, Nevada. AIAA 2007-0032.
133. **Bradley, T. H.**, Hall, T., Quilin, X., Singhose, W., and Lawrence, J. "Input shaping for nonlinear drive systems." in *ASME International Mechanical Engineering Congress and Exposition*, November 5-10, 2006, Chicago, Illinois. IMECE2006-14396.
134. **Bradley, T. H.**, Moffitt, B., Thomas, R., Parekh, D. E., and Mavris, D. "Test Results for a Fuel Cell-Powered Demonstration Aircraft." in *Society of Automotive Engineers Power System Conference*, November 7-9, 2006, New Orleans, Louisiana. 2006-01-3092.

135. Moffitt, B., **Bradley, T. H.**, Mavris, D., and Parekh D. E. “Design Space Exploration of Small-Scale PEM Fuel Cell Long Endurance Aircraft.” in *6th AIAA Aviation Technology, Integration and Operations Conference*, September 25-27, 2006, Wichita, Kansas. AIAA-2006-7701.
136. **Bradley, T. H.**, Moffitt, B. A., Parekh, D. E., and Mavris, D. “Validated Modeling and Synthesis of Medium-scale PEM Fuel Cell Aircraft.” in *4th International ASME Conference on Fuel Cell Science, Engineering and Technology*, June 18-21 2006, Irvine, California. FUELCELL2006-97233.
137. Moffitt, B. A., **Bradley, T. H.**, Parekh, D. E., and Mavris, D., “Design and Performance Validation of a Fuel Cell Unmanned Aerial Vehicle.” in *44th AIAA Aerospace Sciences Meeting and Exhibit*, January 9-12, 2006, Reno, Nevada. AIAA 2006-0823.
138. Graham, R., **Bradley, T. H.**, and Duvall, M. “Development of Plug-in Hybrid Electric Light- and Medium-duty Commercial Vehicles.” in *Electric Vehicle Symposium 20*, November 15-19, 2003, Long Beach, California.
139. *Development and Modeling of Plug-in Hybrid Electric Vehicle Architectures Based on the Ford U293 Platform*, EPRI, Palo Alto, CA: 2003.
140. *Test Profile Development for the Evaluation of Battery Cycle Life for Plug-In Hybrid Electric Vehicles*, EPRI, Palo Alto, CA: 2003. 1002228.
141. **Bradley, T. H.** *Simulation of Continuously Variable Transmission Chain Drives with Involute Inter-element Contact Surfaces*. MS Thesis, University of California – Davis, Department of Mechanical Engineering, 2003.
142. **Bradley, T. H.** and Frank, A. A. “CVT Servo-hydraulic Control System Performance and Evaluation.” in *Proceedings of the International Congress on Continuously Variable Power Transmission*, October 7-8, 2002, Munich, Germany, also published in *Verein Deutscher Ingenieure Berichte*, Nr. 1709, 2002, pp. 35-42.
143. Alexander, M., **Bradley, T. H.**, Huff, B., Hutchison, P., Kamisky, R., Loomis, G., McMahon, S., Meyr, N., Schurhoff, R. Vaughan, J., Duvall, M., and Frank, A., “Design and Development of the UC Davis FutureTruck.” *Society of Automotive Engineers SP-1617*, 2001.

#### **TEACHING EXPERIENCE:**

**Instructor**, SYSE 701 *Research Methods in Systems Engineering*, College of Engineering, Colorado State University (S-22, S-23, S-24)

**Co-instructor**, CIVE 580-A2 *Food Energy Water Systems*, College of Engineering, Colorado State University (S-20, S-21, S-22, S-23 with S. Sharvelle)

**Instructor**, ENGR 531 *Engineering Risk Analysis*, College of Engineering, Colorado State University (S-21, F-22)

**Instructor**, SYSE 701 *Leadership and Innovation in Systems Engineering*, Systems Engineering, Colorado State University (F-19, F-20, F-21, F-22)

**Co-instructor**, MECH 580-A2 *Systems Requirements Engineering*, College of Engineering, Colorado State University (F-17 with A. Batchelor)

**Instructor**, MECH 513 *Modeling, Simulation and Experimentation*, Mechanical Engineering, Colorado State University (S-16, S-17, S-18, S-20)

**Co-instructor**, MECH 200 *Introduction to Manufacturing Processes*, College of Engineering, Colorado State University (S-15, with S. Schaeffer)

**Co-instructor**, MECH 402 *Introduction to Statistics*, College of Engineering, Colorado State University (F-13, with K. Catton)

**Instructor**, ECE/ENGR 567 *Systems Architecture*, College of Engineering, Colorado State University (S-13, S-14)

**Instructor**, ENGR 580-A-4 *Hybrid Electric Vehicle Systems Design*, College of Engineering, Colorado State University (F-12)

**Instructor**, ENGR 680-A4 *Vehicle Electrification*, College of Engineering, Colorado State University (F-11, F-13)

**Instructor**, ENGR 523 *Design of Energy Storage Systems for Vehicles*, College of Engineering, Colorado State University (F-11)

**Instructor**, ENGR 527 *Hybrid Electric Vehicle Powertrains*, College of Engineering, Colorado State University (S-11, S-12, F-12, F-14, F-17)

**Instructor**, MECH 529 *Advanced Mechanical Systems*, College of Engineering, Colorado State University (S-09, S-10, S-13, F-15, F-16)

**Instructor**, MECH 324 *Dynamics of Machines*, College of Engineering, Colorado State University (F-08, F-09, F-10)

**Co-instructor**, AGRI/ENGR 681 *Bioenergy Policy, Economics, and Assessment*, College of Natural Sciences and College of Engineering, Colorado State University (S-10, S-11, with K. Reardon, and K. Paustian)

**Co-instructor**, ME 4823 *Renewable Energy Systems*, Woodruff School of Mechanical Engineering, Georgia Institute of Technology (S-07, with Comas L. Haynes)

**Guest Instructor**, Variety of Programs and Instances

- Guest lectured to REM 300 *Renewable Energy* (F-14, F-16, F-17 with K. Reardon and J. Sheehan)
- Guest lectured to ISYE 8803F *Energy Technology and Policy* (S-08, with V. Thomas)
- Guest lectured to ME 4823 *Fuel Cell Systems* (S-08, with C. L. Haynes)
- Guest lectured to ME 4813 *Fuel Cell Systems* (F-07, with C. L. Haynes)
- Guest lectured to Advanced Placement and Remedial Chemistry at Atlanta area high-school as part of the Georgia Intern-Fellowships for Teachers program (S-06, with C. L. Haynes)
- Guest lectured to numerous school groups as a component of informal Institute outreach efforts and the Georgia Tech Research Institute Foundations for the Future Program (S-06 to present, with C. L. Haynes)

**Academic Advisor**

- Colorado State University Senior Honors Thesis Advisor (~18 students) (2009-2018)
- McNair Scholars Program (for students of disadvantaged backgrounds) Advisor (May to August 2009)
- California Alliance for Minority Participation in Math, Science & Engineering (June 2001 to June 2002)

**Senior Design Advisor**

- Lightning eMotors EV Trailering Analysis (2021-2022) *Externally funded by Lightning eMotors*
- EcoCAR: Fuel Cell and Ethanol Hybrid Vehicle Design/Build (2011-2020) *Externally funded by US DOE and General Motors*
- Schneider Electric EVSE Cable Management, (2013-2018) *Externally funded by Schneider Electric*
- Air Force Office of Scientific Research University Engineering Design Challenge Program (2011-2014) *Externally funded by US Air Force Office of Scientific Research*

- Small Hybrid Propulsion System Demonstrator (2010-2014) *Externally funded by US Air Force Research Laboratory*
- Man-packable Unmanned Aerial Vehicle (2009-2010)
- Self-Contained Air Mobility Pack : Powered Air Purifying Respirator (2009-2010) *Externally funded by US Department of Homeland Security*

**ACTIVITIES AND AWARDS:**

Co-PI, with Israel, J., DOE Grid Deployment Office, “Scaling Vehicle-to-Grid (V2G) Integration Nationally (SVIN)” \$21,839,531 (2025-2030)

PI, National Science Foundation CO-WY ENGINE, “Sustainable Systems Engineering Workforce Development Activities,” \$200,000 (2024-2025)

Co-PI, with Freeman, M. Colorado Office of Economic Development and International Trade, “Opportunity Now – Workforce Development Program CO-WY ENGINE.” \$1,400,000 (2024-2025)

PI, USDOE Joint Office Energy and Transportation, “Colorado’s multi-network resilience plan for electrified transportation,” \$1,671,937 (2024-2027)

Co-PI with Simske, S., Lockheed Martin, “University Research Project Title: Supply Chain and Blockchain Framework” \$40,000 (2024-2025)

PI, Nikola Motors, Evaluation of EV Introduction and HV Training Course, \$3000 (2023)

Co-PI with Nylen, A., and Gallegos, E., Federal Transit Administration, “ADAS for Bustang Intercity and Regional Bus Transit,” \$2,169,012 (2023-2025).

PI, Colorado DOT Office of Innovative Technology, “ZEV Manufacturing and Engineering Workforce Development” \$100,000 (2023-2024).

PI, Woodward Inc., “Aero-actuation Research and Education Center, Phase 2” \$900,000 (2023-2026)

PI, Electric Power Research Institute Low Carbon Resource Initiative Analysis of costs and performance of vehicles fueled by alternative energy carriers,” \$150,000 (2022-2024)

PI, Electric Power Research Institute, “Light-duty and medium-duty electric vehicle data-driven insights,” \$144,122 (2022-2023)

PI, Lockheed Martin Sikorsky, “Fuel Cell Powered UAV Testing” \$174,714 (2021-2022)

PI, US Department of Energy, “Agent-Based, Bottom-Up Medium- and Heavy-duty Electric Vehicle Economics, Operation, Charging, and Adoption, \$292,541 (2021-2024)

PI, Colorado Department of Public Health and the Environment, “Battery End of Life for Electric Vehicles in Colorado,” \$25,000 (2020-2021).

PI, Toyota Engineering and Manufacturing Americas, “Phase VII of Prediction Signal Quality and Influences on Acceleration Event Scenario Control's Benefit to Hybrid Vehicle FE Improvements Fuel Economy for a Hybrid Vehicle,” \$68,854 (2020-2021).

PI, Electric Power Research Institute, “Demand-Side Electricity System Modeling” \$100,000 (2020-2021).

PI, Woodward Inc., “Aero-actuation Research and Education Center” \$900,000 (2020-2023).

Co-PI with Daily, J., Simske, S., DARPA, “Advanced Micro-patching” \$2,700,000 (2020-2024)

Co-PI with Quinn, J., Simske, S., Field, J., Kern, J., Beal, C., US Department of Energy, “Agent-based Modeling for the Multi-objective Optimization of Energy Production Pathways,” \$1,250,000 (2019-2022).

PI, Colorado Department of Transportation, “Autonomous Maintenance Technology Pooled Fund Management,” \$71,700 (2019-2021).

PI, US Department of Energy, “Mobility and energy improvements realized through prediction-based vehicle powertrain control and traffic management,” \$1,040,000 (2018-2021).

Co-Investigator, with Sharvelle, S., Reardon, K., Conant, R., Arabi, M., Shipianski, M., Malin, S., National Science Foundation “NRTINFEWS: Interdisciplinary Training, Education and Research for Food-Energy-Water Systems (InTERFEWS) in Semi-Arid Regions” \$2,999,981 (2018-2022).

PI, Electric Power Research Institute, “EPRI Resident Agreement” \$73,953 (2018-2019)

PI, USDOT Mountain Plains Consortium, “Experiments and Modeling for Infrastructure Data-Derived Fuel Economy and Safety Improvements” \$100,000 (2018-2019)

PI, Toyota Engineering and Manufacturing Americas, “Phase IV of Prediction Signal Quality and Influences on Acceleration Event Scenario Control's Benefit to Hybrid Vehicle FE Improvements Fuel Economy for a Hybrid Vehicle,” \$130,000 (2018-2019)

PI, Xcel Energy Foundation, “Veteran Student Support“, \$10,000 (2018)

PI, Woodward Inc. “Modeling and Simulation Short Course,” \$19,972, (2018)

PI, US Department of Energy and General Motors and Mathworks, “AVTC12” \$670,000 (>\$80M in-kind), (2018-2022)

PI, Sandia National Laboratory, “Advancement of a Computation Model of Algal Growth,” \$67,470 (2017-2018)

Co-PI, with Love, N., National Science Foundation, “ERC Planning Grant,” \$100,000, 2018.

CSU Faculty Excellence Award, 2017, \$13,000.

PI, Lightning Hybrids, “Short course - HV Electrical Systems for Vehicles” \$5,000, 2017.

PI, National Science Foundation, “Veteran Research Support – EcoCAR 3”, \$20,000 (2017-2018)

PI, Toyota Engineering and Manufacturing Americas, “Phase III of Prediction Signal Quality and Influences on Acceleration Event Scenario Control's Benefit to Hybrid Vehicle FE Improvements Fuel Economy for a Hybrid Vehicle,” \$70,000 (2017-2018)

Co-PI, with Windom, B. and Marchese, A., Honda R&D Americas, “Onboard Refueling Vapor Recovery System Testbed and Simulation,” \$309,985 (2016-2018).

PI, Toyota Engineering and Manufacturing Americas, “Phase II of Prediction Signal Quality and Influences on Acceleration Event Scenario Control's Benefit to Hybrid Vehicle FE Improvements Fuel Economy for a Hybrid Vehicle,” \$60,000 (2016-2017)

PI, NREL CEMAC, “Economic Expertise to Support Development of CEMAC Benchmark Project”, \$20,000 (2016-2018)

PI, Lightning Hybrids, “Phase 3- Colorado State University Graduate Research for Lightning Hybrids Inc.,” \$17,965 (2016)

PI, Starbucks Coffee Company, “Heat Recovery and Mechanical Efficiency,” \$199,954 (2015-2016)

Fellow, US Department of Energy, “Applied Automotive Engineering Fellowship,” \$10,000 (2015-2016).

PI, Toyota Engineering and Manufacturing Americas, “Prediction Signal Quality and Influences on Acceleration Event Scenario Control's Benefit to Hybrid Vehicle FE Improvements Fuel Economy for a Hybrid,” \$82,000 (2015-2016)

Co-PI, with Reardon, K., National Science Foundation, “EFRI Supplement – REM and EFW,” \$249,220 (2015-2017)

PI, Toyota Engineering and Manufacturing Americas, “Study of Prediction Signal Quality and Controls Scenario Benefit Study for Hybrid Vehicle Fuel Economy Improvements,” \$61,112 (2014-2015)

PI, US Department of Energy and General Motors, “EcoCAR 3” \$964,851 (>\$80M in-kind), (2014-2018)

PI, Electric Power Research Institute, “Electrified Vehicle Data Analysis and Synthesis – Medium

Duty” \$50,223 (2013-2015)

PI, Electric Power Research Institute, “Electrified Vehicle Data Analysis and Synthesis – Light Duty” \$50,223 (2013-2015)

Co-PI, with Zimmerle, D., Platte River Power Authority, “Greenhouse Gas Impacts of Switching from Coal to Natural Gas Fuel Supply Associated with Fuel Production and Delivery,” \$5,000 (2014)

PI, Toyota Engineering and Manufacturing Americas, “Conceptual Design Comparisons Among Next-Next- Generation Toyota PEVs - Amendment 3,” \$13,000 (2013-2014)

Fellow, US Department of Energy, “Applied Automotive Engineering Fellowship,” \$10,000 (2013-2014).

PI, Lightning Hybrids, “Phase 2- Colorado State University Graduate Research for Lightning Hybrids Inc.,” \$16,871 (2013)

PI, Electric Power Research Institute, “Non-Road Electric Transportation Matrix” \$30,000 (2013-2014)

PI, Air Force Research Laboratory, “Take off Rotax Intercooler” \$15,000 (2013-2014)

Faculty Advisor, US Department of Transportation, “Dwight Dwight David Eisenhower Transportation Fellowship Program – Shawn Salisbury,” \$5000 (2013)

PI, National Science Foundation, “Outstanding Incoming Faculty Advisor Award, EcoCAR2,” \$10,000 (2013)

Co-PI, with Reardon, K., Peebles, C., Peers, G., and Dandy, D., National Science Foundation EFRI-Photosynthetic Biorefineries, “Manipulating photosynthesis and photobioreactor mixing dynamics for enhanced yields of novel commodity products in cyanobacteria,” \$1,999,991 (2013-2017)

Co-PI, with Paustian, K., Dunbar, B., Guggomos, A., France, R., and Anderson, C., National Science Foundation: Partnerships for Innovation: Building Innovation Capacity, “Carbon Footprint Metric in the Built Environment,” \$599,997 (2013-2015)

PI, Lightning Hybrids, “Phase 1- Colorado State University Graduate Research for Lightning Hybrids Inc.,” \$20,571 (2013)

PI, Toyota Engineering and Manufacturing Americas, “Conceptual Design Comparisons Among Next-Next-Generation Toyota PEVs,” \$59,800 (2013)

SAE International, Ralph R. Teeter Award for Excellence in Engineering Education (2013)

PI, Electric Power Research Institute, “Demonstration of a Plug in Hybrid Fuel Cell Vehicle,” \$5,000 (2013)

PI, American Public Power Association, “Demand Response for Plug in Hybrid Electric Vehicles” \$7,500 (2013).

Co-PI, with Carlson, K., and Catton, K., RPSEA-Research Partnership to Secure Energy for America, “Development of GIS-Based Tools for Optimized Fluid Management in Shale Gas Operations,” \$1,200,000 (2013-2015)

Co-PI, with Hagen, C., US Department of Energy - ARPAe, “Methane Opportunities in Vehicles,” \$1,000,000 (2012-2014)

PI, Air Force Research Laboratory, “Small Engine Propulsion System Demonstrator” \$10,000 (2012-2013)

PI, US Department of Energy, “CSU Industrial Assessment Center,” \$1,407,337 (2011-2016)

Co-PI, with S. DeLong, CSU School of Global and Environmental Sustainability, “Food, Energy, Waste Nexus,” \$15,000 (2011-2012)

Co-PI, with D. Radford, Stolle Manufacturing Company LLC., “Independent Energy Baseline Analysis and Senior Design of Stolle Standun Bodymaker,” \$120,000 (2011-2012)

- PI, Air Force Research Laboratory, “Small Hybrid Propulsion System Demonstrator, Follow-up” \$10,000 (2011-2012).
- PI, Electric Power Research Institute, “Real World Energy Use Modeling and Experiments for Conventional and Electrified Transportation, \$88,565 (2011-2012).
- PI, US Department of Energy and General Motors, “EcoCAR2” \$415,383 (>\$76M in-kind), (2011-2014)
- Co-PI, with Hagen, C., US Air Force Research Laboratory, “University Design Challenge,” \$60,000 (2011-2014)
- PI, US Department of Energy National Renewable Energy Laboratory – Joint Institute for Strategic Energy Analysis, “Financial Models for Utility Market Transformation,” \$44,925 (2010-2011)
- PI, University of California at Davis / California Energy Commission, “Bridge Study for Comparison of Costs and Benefits of Battery-to-Grid and Vehicle-to-Grid Systems,” \$48,000 (2010-2011)
- PI, Electric Power Research Institute, “Plug-In Hybrid Electric Vehicle Modeling and Decision Support – Follow-up,” \$100,000 (2010-2011).
- PI, Air Force Research Laboratory, “Small Hybrid Propulsion System Demonstrator,” \$35,000 (2010-2011).
- Faculty Advisor, US Department of Transportation, “Dwight Dwight David Eisenhower Transportation Fellowship Program – Eric Wood,” \$5000 (2010)
- PI, Electric Power Research Institute, “Economic and Environmental Analysis of Fuel Cell Powered Materials Handling Equipment,” \$20,000 (2010)
- Co-PI, with Zimmerle, D., Colorado State University Engineering Student Technology Committee Grant, “Electric Drivetrain Teaching Center,” \$24,950 (2010).
- Co-PI, with Williams, J., and Zimmerle, D., Colorado State University Clean Energy Supercluster, “Thin Film-based Thermoelectric Generators,” \$18,000 (2010-2011).
- PI, Electric Power Research Institute, “Plug-In Hybrid Fuel Cell Vehicle Evaluation Phase 0,” \$17,938 (2010)
- PI, University of Colorado Boulder - C2B2, “Lifecycle Sustainability Assessments for Microalgal Biofuel Production,” \$34,817 (2010)
- PI, Federal Emergency Management Agency, Fire Prevention and Safety Grant, “Development of an Integrated Super Critical Breathing Apparatus and Powered Air Purified Respirator,” \$916,923 (2009-2011).
- Author and Technical Lead, US Department of Energy, “ARRA - Advanced Electric Drive Vehicle Education Program,” \$5,136,101 (2009-2013), PI for CSU subcontract of \$750,000 (2009-2014).
- PI, United Technologies Research Center, “24 hour PEM Powered Fixed Wing Demonstration,” \$17,509 (2009-2010)
- PI, Electric Power Research Institute, “Plug-In Hybrid Electric Vehicle Modeling and Decision Support,” \$86,935 (2009)
- PI, Colorado State University Space Grant Consortium “24 hour PEM Powered Fixed Wing Demonstration,” \$8,000 (2009)
- Co-PI, with Troxell, W., Spirae, Inc. “Continuous Power Supply for Engineering Research Center” \$10,000 (2008)
- 1<sup>st</sup> Prize SAIC Georgia Tech Student Paper Competition (2007)
- Department of Energy Graduate Automotive Technology Education Fellowship Recipient (2001 to 2002)
- College of Engineering Outstanding Senior, University of California at Davis (2000)



National Merit Scholar Semifinalist (1995)

**ACADEMIC SERVICE:**

Professional Affiliations:

- Member, American Society of Mechanical Engineers (1995-present)
- Member, Society of Automotive Engineers (1999- present)
- Member, American Institute of Aeronautics and Astronautics (2005- present)
- Member, International Council on Systems Engineering (2016- present)
- Peer Reviewer, 2017 DOE Hydrogen & Fuel Cells Program and Vehicle Technologies Office Annual Merit Review and Peer Evaluation Meeting.
- Peer Reviewer, 2016,2018 NREL Strategic Energy Analysis and Transportation Research LDRD Peer Evaluation Meeting.
- Organizer and Instructor, “Energy, the Environment and Transportation: a Professional Development Workshop Series for Teachers,” CSU Vehicle Electrification Education Program (2012-2013)
- Technical Area Organizer, Energy Storage Systems and Technologies, ASME/SAE/AIAA International Energy Conversion Engineering Conference (2011-12)
- Member, CSU ME Faculty Search Committee (2009-2011, 2014-2016)
- Member, CSU SE Faculty Search Committee (2016-present)
- Faculty Member, Engineering Student Technology Committee (2008-2010), College of Engineering Executive Committee (2015-present)
- George W. Woodruff School of Mechanical Engineering Zeigler Outstanding Educator Award Committee (2008)
- Reviewer for *Journal of Hazardous Materials* (2014), *Transportation Research Part D: Emerging Technologies* (2014, 2017), *Journal of Engineering Research* (2013-2014), *Algal Research* (2013-2018), *Transportation Research Part C:Emerging Technologies* (2013-2015), *Disruptive Science and Technology* (2013), *Journal of Power Sources* (2009-2021), *International Journal of Hydrogen Energy* (2007- present), *Journal of Industrial Ecology* (2022-present), *Energies* (2010-present), *Proceedings of the IEEE* (2010), *Applied Energy* (2009-10), *Environmental Science and Technology* (2009- present), *Transportation Research Part C* (2010), *International Journal of Vehicle Design* (2009), *IEEE Transactions on Industrial Electronics* (2009), *Transportation Research Part A: Policy and Practice* (2007-2018), *IEEE Transactions on Control Systems Technology* (2017-2018), *Journal of Applied Phycology* (2017), *Journal of Defense Modeling and Simulation* (2021), *Environmental Research Letters* (2021- present), *Systems Engineering* (2021-present), *IEEE Transactions on Intelligent Transportation Systems* (2023)
- INCOSE International Symposium* (2021-present), *American Society of Engineering Education* (2015-2018), *Algal BBB Conference* (2012-2015), *SAE World Congress* (2011-present), *AIAA/SAE/ASME International Energy Conversion Engineering Conference* (2009-2012), *ASME Design, Engineering and Technology Conference* (2011), *ASME International Conference on Fuel Cell Science, Engineering and Technology* (2006)
- Speaker, CSU College of Engineering, Engineering Breakfast Series, (December 2009, November 2011, October 2013)
- Speaker, ASME Centennial Section, (November 2009, August 2011, May 2012, May 2013)
- Member, ASME Early Career Professor Task Force (October 2009)
- Technical Reviewer, “Electric Vehicles in Colorado,” Colorado State University Extension, Fact Sheet No. 10.630, 2012.
- Public Testimony “The Role of Plug-in HEVs as Precursors to FCHEVs and Full-function BEVs,” California Air Resource Board, March 27, 2003, Sacramento, California.

- Advisor, McNair Scholars Program (for students of disadvantaged backgrounds) Advisor (May to August 2009)
- Advisor, California Alliance for Minority Participation in Math, Science & Engineering (June 2001 to June 2002)
- Member, Reimagine RTD Advisory Committee, (2020-2022)
- Technical Advisory Board Member, Colorado Energy Office Hydrogen Roadmap, (2019-2021)
- Technical Advisory Board Member, Colorado Energy Office Low Carbon Fuels Standard Feasibility Study (2019-2021)
- Joint Appointee, National Renewable Energy Laboratory, Mechanical and Thermal Systems Group (2020-present)
- Co-Chair, Strong Plug in Hybrid Electric Vehicle Coalition (2020-present)
- Technical Reviewer, Environmental Partners, "Xcel Energy Alamosa to Antonito Transmission Routing Study." 2023
- Technical Reviewer, ERG/USEPA, "EPA's Heavy-Duty Technology Resource Use Case Scenario (HD TRUCS) tool." 2023
- Technical Reviewer, ERG/USEPA, "Cost and Technology Evaluation, Conventional Powertrain Vehicle Compared to an Electrified Powertrain Vehicle, Same Vehicle Class and OEM prepared by FEV." 2023
- General Public Outreach Participation: Northern Colorado Clean Cities Coalition (Attended 2011), High School Exploration Days (Attended 2010-2011), Denver Auto Show (Lab Group Attended 2012), Colorado Electric Vehicle Day (Lab Group Attended 2012), Green Energy Summit (Lab Group Attended 2012), Peace in the Park (Lab Group Attended 2012), Bixbo (Lab Group Attended 2012), Colorado Global Climate Conference (2013), Girls Exploring Science Technology Engineering & Math (GESTEM) (Lab Group Attended, 2013, 2014), Ride & Drive at American Society of Mechanical Engineers (Attended 2013), Fort Collins Rotary Club (Attended 2013), Nelsen's Old Town Car Show (Attended 2013), Fossil Ridge High School (Attended 2013), CSU Powerhouse Energy Campus (Attended 2013), Blevins Middle School (Lab Group Attended 2013), Drive Electric Northern Colorado Events (Attended 2013-2014), EcoCAR2 send off outreach event (2014), College of Engineering Advisory Board Meeting/Luncheon (2014), Denver Auto Show (2014), NREL Professional Outreach (2014), Powerhouse Campus Grand Opening(2014), Fort Collins Earth Day Fair(2014), CSU Earth Week Festival(2014), Greeley High School(2014), Northern Colorado Clean Cities (2014), CSU Engineering Days(2014), Presentation to CSU Board of Governors at Powerhouse Energy Campus(2014), CSU/Siemens Joint Event(2014), Arrow Electronics/CSU Joint Event(2014), PLI-Innovation Presentation (2014), Odyssey Alternative Fuel Day (2014-2018), PLI-Ethics Lecture(2014, 2015), Blevins Middle School Clean Energy Workshop (2014, 2015), National Drive Electric Week (2014), Preston Middle School (2015), Spark! (2015), Timnath STEM Festival (2015), NoCo Clean Cities (2015, 2016), Sheperdson Elementary STEM Night (2015, 2016), Range View High School (2016), NGC CyberSTEM Summer Program (2017,2018), Congressman Polis Listening Session (2018), CSU Energy Club Youth Outreach (2018), Colorado Energy Research Collaboratory 2020 Webinars (2020) Northern Colorado Clean Cities' and Xcel Energy's Partners EV Planning Workshop 4 (2021), North Front Range Metropolitan Planning Organization (2021), Connected & Autonomous Vehicles Energy & Mobility Improvements (Denver Metro Clean Cities, 2021), DRCOG Advanced Mobility Partnership (AMP) Working Group (2021), 21st Century Energy Transition Symposium (2021), She's in Power (2021), Colorado Department of Public Health and the Environment Pollution Prevention Board (2021), EPRI Electrification Conference, Charlotte, NC (2022), Colorado Environmental Management Society (CEMS) (2022), Power Magazine Conference Denver, CO

(2022), Colorado Bar Association (2022), Lockheed Martin Sikorsky Lunch and Learn (2022, 2023), DARPA Risers Reviewer (2022), Testimony CARB ACCII (2022), DHS CISA Table Top Exercise (2023), AIAA RM ATS Organizing Committee and Moderator (2023)

Teaching and Learning Professional Development - Chair/Head Institute for Inclusive Excellence (2022)

#### **GRADUATE STUDENTS ADVISED:**

**Primary Advisor**, Expected Graduation Date (Current Affiliation, F 2023) *Dissertation/Thesis Title*

1. Paul Okokhere, PhD, 2027 (Northrop Grumman Corporation)
2. Ry Horsey, PhD, 2028 (NREL)
3. Adam Ebersole, PhD, 2027 (Autodesk)
4. Jason Pope, PhD., 2024 (IAEA)
5. Dan Johnston, D.Eng., 2024 (General Atomics)
6. Jeremiah Gayle, D.Eng., 2024 (NASA JPL)
7. Hugh Nguyen, D.Eng., 2024 (NAVSEA)
8. Edan Sanchez, PhD., 2024 (Peraton)
9. Kent Lambert, D.Eng., 2024 (BlockFrame LLC)
10. Todd Spierling, PhD., 2024 (Collins Aviation)
11. Sarah Shaw, PhD, 2024, (Aerospace Corporation)
12. José R. Vázquez, D. Eng., 2025 (Raytheon)
13. Felix Kuklinski, MS, 2026
14. Nicole Halpin, MS, 2025
15. Andre Dickson, MS, 2026
16. Randall DeGeering, PhD, 2026

#### **Graduated**

1. Dallas Rosson, D. Eng., 2024 (US Navy, University of Washington) *Merging Systems Engineering Methodologies with the Agile scrum framework for Department of Defense software projects*
2. Jose Alvarado, Ph.D., 2024 (AFOTEC) *Enhancing flight testing leveraging software testing techniques implemented in model-based systems engineering*
3. Eric Herbert, PhD 2024, (PSU Applied Research Lab) *Managing Risk in Commercial Off-The-Shelf-Based Space Hardware Systems*
4. Fletcher Ouren, MS 2024 (Electric Power Engineers) *Advancing Electric Vehicle Adoption Models with Novel Natural Language Processing Metrics*
5. Alexander Lynch, MS 2024 (SOLV Energy) *An Analysis of the Costs and Performance of Vehicles Fueled by Alternative Energy Carriers*
6. Howard Kleinwaks, D.Eng., 2023 (Space Development Agency) *Avoiding technical bankruptcy in system development: a process to reduce the risk of accumulating technical debt.*

7. Kyle Blond, D.Eng., 2023 (GTRI) *An enterprise systems engineering analysis of KC-46 maintenance program decision-making*
8. Amanda Normand, D.Eng., 2023 (Darley, Inc. / University of Wisconsin, Stout) *Systems Engineering assessments and experimental evaluation of quality paradigms in high-mix low-volume manufacturing environments.*
9. David Trinko, PhD 2023 (EPRI) *Modeling and simulation to investigate the electrification potential of medium and heavy-duty vehicle fleets*, MS 2019 *Dataset Processing and Control Type Classification for Acceleration Events*
10. Aaron Rabinowitz, PhD 2023 (University of California Davis) *Systems and Operational Modeling and Simulation to Address Research Gaps in Transportation Electrification*, MS 2020 *Towards Enabling predictive optimal energy management system with real-world considerations*
11. Samantha White, MS 2022 (Lightning E Motors) *Physical validation of predictive acceleration control on a parallel hybrid electric vehicle.*
12. Chon Ang Chia, MS 2022 (Keysight Technologies) *Sensing and data fusion to characterize vehicle behavior surrounding autonomous vehicles.*
13. Christopher Roberts, PhD 2022 (NASA Goddard), *Space Communications Responsive to Events Across Missions (SCREAM): An Investigation of Network Solutions for Transient Science Space Systems*
14. Dustin Birch, PhD 2021 (Weber State University) *Development of human factors hazard model for use in systems safety analysis*
15. Trevor Ault, PhD 2021 (Chevron), *Modernizing automation in industrial control/cyber physical systems through the systems engineering lifecycle*
16. Ian Lunsford, PhD 2021 (CACI), *Aircraft survivability modeling, evaluation and optimization for multi-UAV operational scenarios*
17. Gregory Marzolf, PhD 2021 (Colorado State University), *Systems Engineering Analysis and Application to the Emergency Management System*
18. Clinton Knackstedt, MS 2021 (General Electric), *System Identification of GM 8L65 8 Speed Automatic Transmission*
19. Derek Adelman, MS 2021 (United Launch Alliance), *Post transmission parallel hybrid vehicle design and validation for predictive acceleration event energy management strategies*
20. Paulo Younse, PhD 2021 (NASA JPL) *Comparative analysis of model-based systems engineering and traditional systems engineering approaches for architecting robotics space systems through knowledge categorization automatic information transfer, and automatic knowledge processing measures*
21. Ben McKenney, MS 2021 (Wolf Robotics) *Comparison of design and implementation of hybrid systems in prototype vehicles*
22. Gabriel DiDomenico, MS 2019 (General Motors) *In vehicle validation of energy consumption modeling and simulation*
23. Matthew Knopf, MS 2019 (Ball Aerospace), *Comprehensive concept phase system safety analysis for hybrid electric vehicles utilizing automated driving functions*
24. Jennifer Kurtz, PhD 2019 (National Renewable Energy Laboratory), *Innovative Hydrogen Station Operation Strategies to Increase Availability and Decrease Cost*

25. Carlos Quiroz-Arita, PhD 2018 (Sandia National Laboratory), *Sustainability tradeoffs within photoautotrophic cultivation systems: integrating physical and lifecycle modeling for design and optimization.*
26. Bao Nguyen, MS., 2018 (Lockheed Martin) *Low Work Function Filament Cathodes for Electron Beam Additive Manufacturing*
27. Zach Asher, PhD 2018 (Western Michigan University) *Prediction and Sensing Algorithms for HEV fuel economy improvement*
28. David Baker, MS, 2018 (Lightning Systems), *Development of Predictive Energy Management Strategies for Hybrid Electric Vehicles*
29. Charlie Quann, MS, 2017 (Antea Group), *Renewables Firming Using Grid-Scale Battery Storage in a Real-Time Pricing Market*
30. Thomas Decker, MS, 2017 (FactorE) *A Modeling Tool for Household Biogas Burner Flame Port Design*
31. Cody Pickering, MS, 2016 (Purestream Services) *Methane emissions from gathering pipeline networks, distribution systems, agriculture, waste management and natural sources.*
32. Eric Jambor, MS 2016 (Janicki Industries), *Manufacturing and testing of spline geometry using carbon reinforced composite*
33. Spencer Vore, MS 2016 (Booz Allan), *Acquisition and Analysis of Charging and Driving Behavior Data for a Fleet of PHEVs*
34. Christopher Anderson, MS, 2017 (LBNL), *Investigation of indirect (secondary loop) refrigeration systems in commercial food service buildings.*
35. Clay Bell, PhD 2015 (CSU), *State-based engine models for transient applications with a scalable approach to turbocharging*
36. Ray Duthu, PhD 2015 (Quantitative Scientific Solutions) *Financial and environmental impact of new technologies in the energy sector*
37. Zaker Syed, MS 2015 (Caterpillar) *A real-time building HVAC model implemented as a tool for decision making in early stages of design*
38. Jake Bucher, MS 2014 (Rivian Automotive, Inc.) *Analyzing the Real World Integration of Fuel Cell Plug-in Hybrid Electric Vehicles and their Effect on Hydrogen Refueling Locations*
39. Mohammad Malakoutirad, MS 2014 (Ford Motor Company) *Design Considerations for an Engine-Integrated Natural Gas Compressor*
40. Shawn Salisbury, MS 2014 (Idaho National Laboratory), *Understanding Fuel Cell Plug-in Hybrid Electric Vehicle Use, Design, and Functionality.*
41. Justin Wagner, MS 2014 (Boeing), *Evaluation of Power Assist Hydraulic and Electric Hybrids for Medium and Heavy Duty Vehicle Applications*
42. Benjamin Geller, MS 2010, PhD 2014 (Toyota Motor Engineering & Manufacturing North America), *Objective Comparison of Hybrid Vehicles through Simulation Optimization*
43. Liaw Batan, PhD 2014 (National Renewable Energy Laboratory), *Life Cycle and Technoeconomic Analysis of Microalgae-based Biofuels*
44. Kiran Kambly, PhD 2014 (NextEnergy), *Real World Energy Use for Conventional and Electrified Transportation*

45. Kristina Armstrong, MS 2013 (Oak Ridge National Laboratory), *Analysis of Lifecycle Assessment of Food/Energy/Waste Systems and Development and Analysis of Microalgae Cultivation/Wastewater Treatment Inclusive System.*
46. Matthew Fox, MS 2013 (Tesla Motors), *Assessment, Design and Control Strategy Development of a Plug-in Fuel Cell Hybrid Electric Vehicle for CSU's EcoCAR2*
47. Jacob Renquist, MS 2013 (Canoo), *Economic and Environmental Analysis of Fuel Cell Powered Materials Handling Equipment*
48. Nicholas Wagner, MS 2012 (Amazon Robotics) *Servo blower control for powered air purifying respirators*
49. Brian Johnston, MS 2012 (Lightning E-Motors), *Assessment of V2G for Department of Defense Applications.*
50. Nicholas Echter, MS 2012 (CZero) *Design of Hydraulic Accumulator Systems to Improve Fuel Economy in Industrial-Vehicle Hydraulic Work Circuits.*
51. Baha Al-Alawi, PhD 2012 (CalStart), *Decision support tools for policy development to support market penetration of plug-in vehicles*
52. Timothy Campbell, MS 2012 (Lightning E-Motors), *Dynamic Modeling and Control of Battery-to-Grid Energy Storage Systems*
53. Casey Quinn, MS 2011 (Idaho National Lab) *State of Charge Resolved Modeling of Vehicle to Grid Systems*
54. Jason Quinn, PhD 2011 (Colorado State University), *Experimental and theoretical models of the microalgae-to-biofuels process for geographic and climactic optimization of bioreactor design*
55. Markus Lutz, MS 2011 (BMW Munich), *Development of an Electric-drive Powertrain Test Stand and Battery-to-Grid Storage Test Stand*
56. Eric Wood, MS 2011 (National Renewable Energy Laboratory), *Investigation of Battery End-of-Life Conditions for Plug-in Hybrid Electric Vehicles*
57. Barbara Morgan Davis, MS 2010 (Pacific Gas and Electric Company), *Understanding the Effects and Infrastructure Needs of Plug-in Electric Vehicle (PEV) Charging*

**Thesis Committee Member**

Committee Member for 53 additional M.S., Ph.D. and M.E students.

**POST-DOCTORAL FELLOWS:**

1. Liaw Batan, PhD. 2020-2022, NREL
2. Nawa Baral, PhD. 2017-2018, Lawrence Berkeley National Laboratory
3. Brian Dickman, PhD. 2010-2011, Associate Professor, West Virginia University – Institute of Technology
4. Jason Quinn, PhD. 2011-2012, Professor, Department of Mechanical Engineering, Colorado State University
5. Kenneth Stanton, PhD. 2010-2012, Dean of Academic and Student Affairs, Dr. Kiran C. Patel High School, Institute for Innovation, Tampa, FL
6. Baha Al-Alawi, PhD. 2012, CalStart, Boulder, CO