

Biographical Information of Chris T. Hendrickson

Chris Hendrickson is the Hamerschlag University Professor of Engineering Emeritus, Director of the Traffic 21 Institute at Carnegie Mellon University, member of the National Academy of Engineering, Editor-in-Chief of the ASCE Journal of Transportation Engineering and Chair of the Transportation Research Board Division Committee for the National Research Council.

His research, teaching and consulting are in the general area of engineering planning and management, including design for the environment, transportation systems, construction project management, finance and computer applications. He has co-authored eight books: 'Fundamentals of Infrastructure Management' (https://figshare.com/articles/Fundamentals_of_Infrastructure_Management/5334379/1), 'Life Cycle Assessment: Quantitative Approaches for Decisions That Matter' (www.lcatextbook.com), 'Environmental Life Cycle Assessment of Goods and Services: An Input-Output Approach' (Resources for the Future, 2006), 'Civil Systems Planning, Investment and Pricing' (<http://cspbook.ce.cmu.edu/>), 'Project Management for Construction' (Prentice-Hall, 1989, updated on the web at <http://www.ce.cmu.edu/PMBook/>), 'Transportation Investment and Pricing Principles' (John Wiley & Sons, 1984), 'Knowledge Based Process Planning for Construction and Manufacturing' (Academic Press, 1989) and 'Concurrent Computer Integrated Building Design' (Prentice-Hall, 1994). In addition, he has published numerous articles in the professional literature.

His education includes BS and MS degrees from Stanford University, a M.Philosophy degree in economics from Oxford University, and a Ph.D. from the Massachusetts Institute of Technology.

Prof. Hendrickson has been the recipient of the American Society of Civil Engineers Torrens Prize (2020), the Council of University Transportation Centers Lifetime Achievement Award (2020), American Road & Transportation Builders Steinburg Steinburg Award (2019), Elsevier Atlas Award (2016), Faculty Award of the Carnegie Mellon Alumni Association (2009), Turner Lecture Award of the American Society of Civil Engineers (2002), the Fenves Systems Research Award from the Institute of Complex Engineering Systems (2002), AT&T Industrial Ecology Fellowships (2000-2002), a Lucent/NSF Industrial Ecology Fellowship (1998), the ASCE Masters Transportation Engineering Award (1994), the Outstanding Professor of the Year Award of the ASCE Pittsburgh Section (1990), the ASCE Huber Civil Engineering Research Award (1989), the Richard Teare Teaching Award from the Carnegie Institute of Technology (1987) and a Rhodes Scholarship (1973). He is a Fellow of the American Association for the Advancement of Science (2007), a Distinguished Member of the American Society of Civil Engineers (2007), member of the National Academy of Construction (2014), and an Emeritus Member of the Transportation Research Board (2004).

His professional career includes research contributions in computer-aided engineering, transportation systems, construction project management and environmental systems. Central themes in his work are a systems wide perspective and a balance of engineering and management considerations. His doctoral work included the development of a travel distance formula for random stops still in use for home service planning (1978). He pioneered models of dynamic traffic equilibrium, including time-of-day departure demand models. He was an early contributor to the development of probabilistic network analysis for lifeline planning after seismic events. His work in construction project management emphasized the importance of the owner's viewpoint throughout the project lifecycle. With others at Carnegie Mellon's Engineering Design Research Center, he developed a pioneering building design system in the early 1990s that spanned initial concept through construction scheduling and animation. From 1994-2005, he concentrated on green sustainable design, exploring the environmental life cycle consequences of alternative product and process designs. He has contributed software tools and methods for sustainable construction, pollution prevention and environmental management, including life cycle analysis software (<http://www.eiolca.net>) and a widely cited analysis of the life cycle consequences of lead acid battery powered vehicles. Since 2005, he has focused on transportation systems, including policy for connected and automated vehicles and for alternative fuel vehicles.

Dr. Hendrickson has been active in several professional and civic organizations. He has received teaching awards, published extensively on engineering education, and led the very successful undergraduate engineering curriculum reform at Carnegie Mellon in 1989/90.

ADDRESS

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Website : <https://faculty.ce.cmu.edu/hendrickson/>

VITAL STATISTICS

Born: March 31, 1950; Oakland, California
Widower, three children

CURRENT AND PAST POSITIONS

2015-present	Hamerschlag University Professor Emeritus, Carnegie Mellon
2015-present	Faculty Director, Traffic21 Institute, Carnegie Mellon
2014-2015	Hamerschlag University Professor, Carnegie Mellon
2012-2014	Duquesne Light Company University Professor, Carnegie Mellon
1996-2012	Duquesne Light Company Professor of Engineering, Carnegie Mellon
1996-2006	Head, Dept of Civil and Environmental Engineering, Carnegie Mellon

1995-2014 Co-Director, Green Design Institute, Carnegie Mellon
 1991-1996 Assoc. Dean for Academic Affairs, Engineering (CIT), Carnegie Mellon
 1987-1996 Professor, Dept of Civil and Environmental Engineering, Carnegie Mellon
 1989-1996 Education Dir., Engineering Design Research Center, Carnegie Mellon
 1983-1987 Associate Professor, Dept of Civil Engineering, Carnegie Mellon
 1978-1983 Assistant Professor, Department of Civil Engineering, Carnegie Mellon

EDUCATION

Ph.D., Civil Engineering; Massachusetts Institute of Technology, 1978
 B. Phil. (now renamed Master of Philosophy), Economics; Oxford University, 1975
 MS, Civil Engineering; Stanford University, 1973
 BS, General Engineering (Resources Strategy); Stanford University, 1973

PROFESSIONAL HONORS

- American Society of Civil Engineers Torrens Award for Editing Service 2021
- Council of University Transportation Centers Lifetime Achievement Award, 2020.
- American Road & Transportation Builders Steinburg Award, 2019.
- Elsevier Atlas Award: Co-Authored paper selected from 1800 Elsevier Journals, 2016.
- Elected member National Academy of Construction, 2014.
- Elected member National Academy of Engineering, 2011.
- Faculty Service Award, Carnegie Mellon Alumni Association, 2009.
- Distinguished Member, American Society of Civil Engineers, 2007.
- Fellow, American Association for the Advancement of Science, 2007.
- Member Emeritus, Committee on Applications of Emerging Technology, Transportation Research Board, 2003.
- Turner Lecture Award, American Society of Civil Engineers, 2002.
- Steven Fenves Systems Engineering Research Award, Carnegie Mellon, 2002.
- AT&T Industrial Ecology Fellow – 2000, 2001
- Lucent and National Science Foundation Industrial Ecology Fellow - 1999
- Duquesne Light Company Professor of Engineering, Carnegie Mellon, 1997-
- EPA Regional Administrator's Environmental Excellence Award and the 1995 Texas Environmental News Award for Pollution Prevention Video Training, National Environmental Technology Network - Featured Participant
- Frank M. Masters Transportation Engineering Award, American Society of Civil Engineers, 1994
- Outstanding Paper of the Year, ASCE Journal of Transportation Engineering, 1992
- Outstanding Professor of the Year Award, ASCE Pittsburgh Section, 1990.
- Walter L. Huber Civil Engineering Research Prize, ASCE, 1989
- Benjamin Richard Teare Teaching Award, Carnegie Institute of Technology 1987
- Chi Epsilon 1986

- C.E. Ladd Research Award, Carnegie Institute of Technology 1979
- MIT Austin Fellowship 1976-1977
- Rhodes Scholar 1973-1975
- Phi Beta Kappa 1972
- Tau Beta Pi 1971

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science

American Economic Association

American Society of Civil Engineers

Transportation and Development Institute, Board of Directors, 2006-2010

Editor-in-Chief, Journal of Transportation Eng. Part A (Systems), 2007-present

Body of Knowledge Committee of the Task Committee on Academic

Prerequisites for Professional Practice, 2003-2004

Chairman, Department Head's Executive Committee, 2000-2002

Member, Department Head's Council, 1998-2002

Managing Editor, Journal of Transportation Engineering, 1992-2007

Member, Comm. on Social and Envir. Concerns in Construction, 2001-2006

Chairman, Urban Transportation Division Executive Committee, 1989-1990

Member, Urban Transportation Division Executive Committee, 1988-1991

Secretary, Urban Transportation Division Executive Committee, 1985-1988

Chairman, Urban Transportation Economics Committee, 1982-1985

Faculty Advisor, Carnegie Mellon University ASCE Student Chapter, 1981-1984

American Society of Engineering Education

Construction Industry Institute

Member, Advanced Technology Task Force, 1988-1991

Member, Technology Task Force, 1986-1988

INFORMS, Transportation Science Section Board, 1984-1987

International Society for Industrial Ecology

National Research Council, National Academies of Science, Engineering and Medicine:

- Transportation Research Board Division Committee, 2018-2025
- Report Review Committee, 2016-2019
- Committee on Accelerating Decarbonization in the United States, 2020-2022
- Federal Highway Administration Research Technology and Coordinating Committee, 2017-2020
- Renewing the National Commitment to the Interstate Highway System, 2016-2019.
- Committee on Pathways to Urban Sustainability 2015-2017
- Committee on Reinvesting in Inland Waterways: What Policymakers Need to Know, 2013-2015
- Committee to Evaluate Energy-Efficiency and Sustainability Standards Used by the Department of Defense for Military Construction and Repair, 2012-2013
- Comm. on Review of Federal Railroad Administration R, D & D, 2011-2012, 2013-2015

- Comm. on Underground Engineering for Sustainable Development, 2010-2013.
- Comm. on Assessing the Results of External Independent Reviews for US DOE Projects, 2006
- Comm. on Independent Scientific Review of Everglades Restoration Progress, 2005-2010
- Comm. on Review of Management Practices on the Boston Central Artery ('Big Dig') Project, 2004
- Comm. on Estimating Demand for the National Advanced Driving Simulator, 2000.

Transportation Research Part C, Associate Editor, 1993-1996

Transportation Research Board, National Research Council

Executive Committee, 2012-present

Chair, TRB Division Committee, 2018-present

Subcommittee on Planning and Policy Review 2014-2018

Group 5 Council, 2000-2004

Chairman, Committee A2H01, Applications of Emerging Technology, 1988-1995

University Representative, 1982-1988, 1999-2002

CIVIC AFFILIATIONS

Board of Trustees, St. Edmund's Academy, Pittsburgh, 1998-2004

Rhodes Scholarship Foundation

Secretary, PA State Selection Committee, 1996-2000

Secretary, District Selection Committee, 1996-1997

Member, PA and WV State Selection Committees, 1980-1995 (various)

Member, District IX Selection Committee, 2005, 2008

FIFA Certified Soccer Referee, 1996-2000

PATENTS AWARDED

#5,448,484 "A Neural Network-based Vehicle Detection System and Method,"
September 5, 1995 (with Darcy Bullock and Jim Garrett)

COURSES TAUGHT

Undergraduate:

Introduction to Civil and Environmental Engineering

Analysis, Synthesis and Evaluation

Benefit-Cost Analysis

Computer Aided Tools for Civil Engineers

Engineering Economics

Introduction to Computer Methods in Civil Engineering

Project Management for Construction

Systems Engineering I (Deterministic Models)

Systems Engineering II (Probabilistic Models)
Traffic Flow Theory and Operations

Graduate:

Advanced Project Management
Analysis of Network Based Systems
Civil Systems Investment and Planning
Computer-Aided Engineering Tools
Demand Analysis and Forecasting
Infrastructure Management
Industrial Ecology and Sustainable Engineering
Life Cycle Assessment and Green Design
Management Principles and Practices for Environmental Engineering
Probability and Estimation for Engineering Systems
Risk and Reliability Analysis
Special Topics in Engineering Planning and Management
Special Topics in Transportation Modeling and Simulation

Continuing (courses exceeding two days):

Green Engineering and Management (Tepper Business School Executive Education Program, CMU)
Design Project Management and Design for Disposal (Carnegie Bosch Institute)
Transportation Investment and Pricing (Transportation Research Institute, Carnegie Mellon University)
Construction Project Investment and Management (Engineering Advancement Association of Japan)

ADVISORY AND REVIEW BOARDS

Iowa State University, Dept. of Civil, Construction and Environmental Eng., 2019.
Purdue University, School of Civil Engineering, 2018.
University of California, Irvine, College of Engineering, 2016.
Northwestern University Transportation Center, 2015.
University of Texas, Austin, Architectural Engineering, 2015.
University of Toronto, Civil Engineering, 2012
MIT Civil and Environmental Engineering Corporation Visiting Committee 2011-2014
US Army Construction Engineering Research Laboratory, 2009.
Akron University, Department of Civil Engineering, 2009.
Cornell University, Department of Civil and Environmental Engineering, 2006
University of California at Berkeley, Dept. of Civil and Environmental Engineering, 2005
University of Waterloo, Department of Civil and Environmental Engineering, 2005
Rensselaer Polytechnic Institute, Civil Engineering, 2002-2004
Civil Engineering Research Foundation, Strategic Planning Task Force, 2001.
Stanford University, Dept. of Civil and Environmental Engineering, Co-Chair, 2001.
University of Maryland, Department of Civil Engineering 2000.
National Science Foundation, Civil and Mechanical Systems, 1999.

West Virginia University, Dept. of Civil and Environmental Engineering, 1998-2004.
University of Minnesota, Department of Civil Engineering 1997.

BOOKS

1. Don Coffelt and Chris Hendrickson (2017), 'Fundamentals of Infrastructure Management,' <https://doi.org/10.1184/R1/5334379.v1>
2. Matthews, H. Scott, Chris Hendrickson and Deanna Matthews, 'Life Cycle Assessment: Quantitative Approaches for Decisions That Matter,' 2014, www.lcatextbook.com.
3. Hendrickson, C. and H. Scott Matthews, 'Civil Systems Planning, Investment and Pricing,' 2011, <http://cspbook.ce.cmu.edu/> (this is an updated and revised version of Wohl and Hendrickson 1984.)
4. Hendrickson, Chris T., Lester B. Lave, H. Scott Matthews, Arpad Horvath, Satish Joshi, Francis C. McMichael, Heather MacLean, Gyorgyi Cicas, Deanna Matthews and Joule Bergerson, 'Environmental Life Cycle Assessment of Goods and Services: An Input-Output Approach,' Resources for the Future, 2006.
5. Fenves, S., U. Flemming, C. Hendrickson, M. Maher, R. Quadrel, M. Terk, and R. Woodbury, Concurrent Computer-Integrated Building Design, Prentice-Hall, 1993. (Reviewed in ASCE J. of Architectural Engineering, Sept. 1995).
6. Hendrickson, C. and T. Au, Project Management for Construction, Prentice-Hall, New York, 1989. Other Editions and Authorized Translations:
 - a. Hendrickson, C.T., Project Management for Construction, (2nd edition), <http://www.ce.cmu.edu/PMBook/>, 2000.
 - b. Chinese Translation: Higher Education Press, 2005.
 - c. Farsi Translation: M.T. Bankie, 1995
 - d. Spanish Translation: Diego Arturo L. de Ortigosa, 1994.
7. Zozaya-Gorostiza, C., C. Hendrickson and D. Rehak, Knowledge Based Process Planning for Construction and Manufacturing, Academic Press, Cambridge, MA, 1989.
8. Wohl, M. and C. Hendrickson, Transportation Investment and Pricing Principles, John Wiley and Sons, New York, 1984.

EDITED VOLUMES

1. Crittenden, John, Chris Hendrickson, and Bill Wallace, "Creating Infrastructure for a Sustainable World," Proceedings of the 2014 International Conference on Sustainable Infrastructure, American Society of Civil Engineers, November 2014.
2. Hendrickson, C. and S.G. Ritchie, "Applications of Advanced Technologies in Transportation," ASCE Specialty Conference Proceedings, April, 1998.
3. Hendrickson, C. and K. Sinha, Pacific Rim TransTech Conference Proceedings, Volume I "Advanced Technologies," American Society of Civil Engineers, 1993.
4. Ritchie, S.G. and C. Hendrickson, International Conference on Artificial Intelligence Applications in Transportation Engineering, Conference Preprints,

- Engineering Foundation, San Buenaventura, CA, June, 1992.
5. Hendrickson, C. and K. Sinha, First International Conference on Applications of Advanced Technologies in Transportation Engineering, ASCE Specialty Conference, San Diego, CA, Feb. 1989.
 6. Gadsden, J. and C. Hendrickson, "Special Issue: Planning," International Journal for Artificial Intelligence in Engineering, Vol. 4, No. 2, April 1988.
 7. Bers, E. and C. Hendrickson, Managing Urban Transportation as a Business, Proceedings of an ASCE Specialty Conference, Orlando, Florida, 1987.
 8. Hendrickson, C. (ed.) "Transportation Systems and Logistics", Transportation Research, Special Issue, Vol. 19B, No. 5, Oct. 1985.
 9. Chatterjee, A. and C. Hendrickson (eds.) Innovative Strategies to Improve Urban Transportation Performance, Proc. of an ASCE Specialty Conference, Knoxville, TN, 1984.

ARTICLES AND OTHER PUBLISHED MATERIALS

1. Grahn, Rick, Sean Qian, and Chris Hendrickson. "Improving the performance of first-and last-mile mobility services through transit coordination, real-time demand prediction, advanced reservations, and trip prioritization." *Transportation Research Part C: Emerging Technologies* 133 (2021): 103430.
2. Hendrickson, Chris (2021), 'Transformative Opportunities in Transportation,' NAE Perspectives, <https://www.nationalacademies.org/news/2021/10/transformative-opportunities-in-transportation>, Oct. 29.
3. Caldwell, Stan, Chris Hendrickson, and Laurence R. Rilett. "It Is Time to Recognize Communications as a Mode of Transportation." (2021): 01821002.
4. National Academies of Sciences, Engineering, and Medicine. (2021). *Accelerating Decarbonization of the U.S. Energy System*, National Academies Press. doi: <https://doi.org/10.17226/25932>.
5. Grahn, R., Hendrickson, C., Matthews, H. S., Harper, C., & Qian, S. (2021). Travel Impacts of a Complete Street Project in a Mixed Urban Corridor. *ASCE J. of Infrastructure Systems* 27(2).
6. Hendrickson, Chris and Johanna Zmud (2020) 'Technology Revolutions: Bringing Tomorrow Here Today,' TR News, September-October 2020.
7. Caldwell, Stan and Chris Hendrickson (2020) 'Are We There Yet and Where is it We Need to Go? The Myths and Realities of Connected and Automated Vehicles,' pp. 47-66 in Pagano, Michael (2020) 'Are We There Yet? The Myths and Realities of Autonomous Vehicles,' University of Illinois Press, <https://doi.org/10.5406/j.ctv1ctgr55>
8. Grahn, R., Qian, S., Matthews, H. S., & Hendrickson, C. (2020). Are travelers substituting between transportation network companies (TNC) and public buses? A case study in Pittsburgh. *Transportation*, 1-29.
9. Hendrickson, Chris, and Laurence R. Rilett. "The COVID-19 Pandemic and Transportation Engineering." (2020). *ASCE Journal of Transportation Engineering (Part A: Systems)*, 01820001.

10. Grahn, R., Harper, C. D., Hendrickson, C., Qian, Z., & Matthews, H. S. (2019). Socioeconomic and usage characteristics of transportation network company (TNC) riders. *Transportation*, 1-21.
11. Hendrickson, C. and L. Rilett, (2019), 'What Papers Does the Journal of Transportation Engineering Want?', ASCE J. of Transportation Engineering Part A, 145(9).
12. National Academies of Sciences, Engineering and Medicine. 2019. The Vital Federal Role in Meeting the Highway Innovation Imperative. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25511>.
13. Khan, A., Harper, C. D., Hendrickson, C. T., & Samaras, C. (2019). Net-societal and net-private benefits of some existing vehicle crash avoidance technologies. *Accident Analysis & Prevention*, 125, 207-216.
14. National Academies of Sciences, Engineering and Medicine. 2018. Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25334>.
15. Vasebi, S., Hayeri, Y. M., Samaras, C., & Hendrickson, C. (2018). Low-level automated light-duty vehicle technologies provide opportunities to reduce fuel consumption. *Transportation Research Record*, 0361198118796401.
16. Harper, C. D., Hendrickson, C. T., & Samaras, C. (2018). Exploring the Economic, Environmental, and Travel Implications of Changes in Parking Choices due to Driverless Vehicles: An Agent-Based Simulation Approach. *Journal of Urban Planning and Development*, 144(4), 04018043.
17. Markolf, S. A., Matthews, H. S., Azevedo, I., & Hendrickson, C. T. (2018). The implications of scope and boundary choice on the establishment and success of metropolitan greenhouse gas reduction targets in the United States. *Environmental Research Letters* 13(12).
18. Glasgo B, Azevedo I, Hendrickson CT. (2018) Expert assessments on the future of direct current in buildings. *Environmental Research Letters*. Jun 5.
19. Hendrickson, C. (2017), Some Thoughts on the Future of Transportation Engineering, ASCE Journal of Transportation Engineering, Part A. <https://doi.org/10.1061/JTEPBS.0000092>
20. Hendrickson, C., & Rilett, L. (2017). Traffic Simulation and Transportation Engineering. ASCE Journal of Transportation Engineering, Part A. <https://doi.org/10.1061/JTEPBS.0000091>
21. F Tong, C Hendrickson, A Biehler, P Jaramillo, S Seki, (2017) Life cycle ownership cost and environmental externality of alternative fuel options for transit buses. *Transportation Research Part D: Transport and the Environment* , 57, 287-302.
22. Glasgo, Brock, Chris Hendrickson, and Inês Lima Azevedo. "Assessing the value of information in residential building simulation: Comparing simulated and actual building loads at the circuit level." *Applied Energy* 203 (2017): 348-363.
23. Glasgo, Brock, Chris Hendrickson, and Inês ML Azevedo Azevedo. "Using advanced metering infrastructure to characterize residential energy use." *The Electricity Journal* 30.3 (2017): 64-70.

24. Caldwell, Stan, Courtney Ehrlichman, Chris Hendrickson, Raj Rajkumar and Richard Stafford (2016), 'Western Pennsylvania Smart Transportation Deployments from Carnegie Mellon University,' *Pittsburgh Engineer*, Engineers Society of Western Pennsylvania, Winter, pp. 17-18.
25. Markolf, Samuel H., H Scott Matthews, Inês L Azevedo and Chris Hendrickson, (2017) 'An Integrated Approach for Estimating Greenhouse Gas Emissions for 100 US Metropolitan Areas,' *Environmental Research Letters*, 12(2), doi.org/10.1088/1748-9326/aa5731
26. Committee on Pathways to Urban Sustainability, (2016), 'Pathways to Urban Sustainability : Challenges and Opportunities for the United States,' National Academies Press, DOI 10.17226/23551.
27. Harper, C. D., Hendrickson, C. T., Mangones, S., & Samaras, C. (2016). Estimating potential increases in travel with autonomous vehicles for the non-driving, elderly and people with travel-restrictive medical conditions. *Transportation Research Part C: Emerging Technologies*, 72, 1-9.
28. Glasgo, Brock, Inês Lima Azevedo, and Chris Hendrickson. "How much electricity can we save by using direct current circuits in homes? Understanding the potential for electricity savings and assessing feasibility of a transition towards DC powered buildings." *Applied Energy* 180 (2016): 66-75.
29. Harper, Corey, Chris Hendrickson and Constantine Samaras, (2016), Cost and benefit estimates of partially-automated vehicle collision avoidance technologies, *Accident Analysis and Prevention*, 95, pp. 104-115,
30. Tugce Yuksel, Mili-Ann M Tamayao, Chris Hendrickson, Inês ML Azevedo, Jeremy J Michalek, (2016), Effect of regional grid mix, driving patterns and climate on the comparative carbon footprint of gasoline and plug-in electric vehicles in the United States, *Environmental Research Letters*, 11(4).
31. Michelle S Tom, Paul S Fischbeck, Chris T Hendrickson, (2016), Energy use, blue water footprint, and greenhouse gas emissions for current food consumption patterns and dietary recommendations in the US, *Environmental Systems and Decisions*. 36(1), 92-103.
32. Committee on Reinvesting in Inland Waterways, (2015), 'Funding and Managing the US Inland Waterways System: What Policymakers Need to Know,' Transportation Research Board Special Report 315.
33. RM Hoesly, HS Matthews, C Hendrickson, (2015) Energy and Emissions from US Population Shifts and Implications for Regional GHG Mitigation Planning, *Environmental Science & Technology*, 2015
34. MAM Tamayao, JJ Michalek, C Hendrickson (2015) Regional Variability and Uncertainty of Electric Vehicle Life Cycle CO2 Emissions across the United States, *Environmental Science & Technology*, 2015
35. Peck, Dana, HS Matthews, P Fischbeck, CT Hendrickson 'Failure rates and data driven policies for vehicle safety inspections in Pennsylvania, *Transportation Research Part A: Policy and Practice*, 2015.
36. Chester, Mikhail V., Josh Sperling, Eleanor Stokes, Braden Allenby, Kara Kockelman, Chris Kennedy, Larry Baker, James Keirstead, and Chris T. Hendrickson. "Positioning Infrastructure and Technologies for Low-carbon Urbanization." *Earth's Future* (2014).

37. DiPietro, Gwen Shepherd, H. Scott Matthews, and Chris T. Hendrickson. "Estimating economic and resilience consequences of potential navigation infrastructure failures: A case study of the Monongahela River." *Transportation Research Part A: Policy and Practice* 69 (2014): 142-164.
38. Mashayekh, Yeganeh, Chris T. Hendrickson, and H. Scott Matthews. "LEED-Certified Residential Brownfield Development as a Travel and Greenhouse Gas Emission Reduction Strategy." *ASCE Journal of Urban Planning and Development* (2014).
39. Jiang, Mohan, Xiaoju Chen, Farshad Rajabipour, and Chris T. Hendrickson. "Comparative Life Cycle Assessment of Conventional, Glass Powder, and Alkali-Activated Slag Concrete and Mortar." *ASCE Journal of Infrastructure Systems* (2014). [http://dx.doi.org/10.1061/\(ASCE\)IS.1943-555X.0000211](http://dx.doi.org/10.1061/(ASCE)IS.1943-555X.0000211)
40. Tom, Michelle, Paul Fischbeck, and Chris Hendrickson. "Excess passenger weight impacts on US transportation systems fuel use (1970–2010)." *Journal of Transport & Health* (2014) DOI: 10.1016/j.jth.2014.05.001
41. Magsino, Sammantha L., Paul H. Gilbert, Samuel T. Ariaratnam, Nancy Rutledge Connery, Gary English, Conrad W. Felice, Youssef Hashash et al. "Underground Engineering for Sustainable Urban Development." In *Geo-Congress 2014 Technical Papers@ sGeo-characterization and Modeling for Sustainability*, pp. 3861-3870. ASCE.
42. Jiang, Mohan, Chris Hendrickson, and Jeanne VanBriesen, (2014) 'Life Cycle Water Consumption and Wastewater Generation Impacts of a Marcellus Shale Gas Well,' *Environmental Science & Technology*, 48(3), 1911-1920, DOI: 10.1021/es4047654.
43. Traut, Elizabeth, TWC Cherng, Chris Hendrickson and Jeremy Michalek, (2013), 'US Residential Charging Potential for Electric Vehicles,' *Transportation Research Part D: Transportation and the Environment*, 25, 139-145.
44. Hendrickson, Chris, Deborah Lange, Yeganeh Mashayekh, Amy Nagengast and Shengnan Zhang, (2013) 'Estimation of Comparative Life Cycle Costs and Greenhouse Gas Emissions of Residential Brownfield and Greenfield Developments,' in Proc. of the 2nd Conf. on Green Streets, Highways and Development, ASCE, pp. 306-326.
45. Mashayekh, Yeganeh and Chris Hendrickson (2013), 'Benefits of Proactive Monitoring of Traffic Signal Timing Performance Measures - Case Study of a Rapidly Developing Network,' in Proc. of the Second Conf. on Green Streets, Highways and Development, ASCE, pp. 202-211.
46. Hendrickson, Chris (2013). 'Improving Transportation System Performance: Construction-Zone Capacity Bottleneck Example,' *ASCE J. Transportation Engineering*, 139(11), 1047.
47. Nagengast, Amy, Chris Hendrickson, and H. Scott Matthews. "Variations in photovoltaic performance due to climate and low-slope roof choice." *Energy and Buildings Vol. 64*, pp. 493-502, (September 2013).
48. National Research Council. *Underground Engineering for Sustainable Urban Development*. Washington, DC: The National Academies Press, 2013.
49. National Research Council. *Energy-Efficiency Standards and Green Building Certification Systems Used by the Department of Defense for Military*

- Construction and Major Renovations*. Washington, DC: The National Academies Press, 2013.
50. Traut, E., C. Hendrickson, E. Klampfl, Y. Liu and J. Michalek (2012). “Optimal Design and Allocation of Electrified Vehicles and Dedicated Charging Infrastructure for Minimum Life Cycle Greenhouse Gas Emissions and Cost,” *Energy Policy* 51(0), pp. 524–534.
 51. Heard, R., C. Hendrickson and FC McMichael, (2012) ‘Sustainable Development and Physical Infrastructure Materials,’ *MRS Bulletin* 37(04), 389-394.
 52. Nealer, R., HS Matthews and C. Hendrickson, (2012), ‘Assessing the Energy and Greenhouse Gas Emissions Mitigation Effectiveness of Potential US Modal Freight Policies,’ *Transportation Research Part A*, 46(3), 588-601.
 53. Mashayekh, Yeganeh, Chris Hendrickson and H. Scott Matthews (2012) The Role of Brownfield Developments in Reducing Household Vehicle Travel, *ASCE J. of Urban Planning and Development*, 138(3), 206-214. doi: 10.1061/(ASCE)UP.1943-5444.0000113
 54. Hendrickson, Chris, (2012), ‘Sustainable Energy Challenges for Civil Engineering Management,’ *ASCE J. of Management in Engineering*, 28(1), pp. 2-4, doi.org/10.1061/(ASCE)ME.1943-5479.0000074.
 55. Mashayekh, Yeganeh, Paulina Jaramillo, Costa Samaras, Chris Hendrickson, Michael Blackhurst, Heather L. MacLean and H. Scott Matthews, (2012), ‘Potentials for Sustainable Transportation in Cities to Alleviate Climate Change Impacts,’ *Environmental Science & Technology*, 46(5), 2529-2537, March 6, 2012, **DOI:** 10.1021/es203353q.
 56. Coffelt, Don and Chris Hendrickson (2011) ‘Case Study of Occupant Costs in Roof Management’, *ASCE J. of Architectural Engineering* doi: 10.1061/(ASCE)AE.1943-5568.0000080.
 57. Coffelt, Donald and Chris Hendrickson (2011), ‘Carnegie Mellon University Facilities as an Educational Laboratory,’ *ASCE AEI 2011: Building integrated solutions*, Proceedings of the AEI 2011 Conference, doi:10.1061/41168(399)5
 58. Nagengast, Amy, Chris Hendrickson, and Deborah Lange (2011), Commuting from U.S. Brownfield and Greenfield Residential Development Neighborhoods, *ASCE J. of Urban Planning and Development*, 137(3), pp. 298-304.
 59. Blackhurst, Michael, H. Scott Matthews, Aurora L. Sharrard, Chris T. Hendrickson, and Ines Lima Azevedo, (2011), ‘Preparing US Community Greenhouse Gas Inventories for Climate Action Plans,’ *Environmental Research Letters*, 6(3), p034003.
 60. Blackhurst, M., Azevedo, I.L., Matthews, H.S., Hendrickson, C.T. (2011) “Designing building energy efficiency programs for greenhouse gas reductions”. *Energy Policy*. 39(9), pp. 5269-5279.
 61. Jiang, Mohan, Mike Griffin, Chris Hendrickson, Paulina Jaramillo, Jeanne VanBriesen and Aranya Venkatesh, (2011), ‘Lifecycle Greenhouse Gas Emissions of Marcellus Shale Gas,’ *Environmental Research Letters*, 6(3), . doi:10.1088/1748-9326/6/3/034014.
 62. Apt, J., Chris T. Hendrickson, M. Granger Morgan, (2011) ‘Lester Lave: Visionary Economist,’ *Environ. Sci. Technol.*, **2011**, 45 (13), pp 5457–5458, **DOI:** 10.1021/es201635e.

63. Hendrickson, Chris, Sue McNeil, Gang-Len Chang and Anil Agrawal, (2011), 'Conference Papers and Prior Publications,' *Journal of Transportation Engineering*, Oct. 2011, 137(10).
64. Amekudzi, Adjo and Chris Hendrickson, (2011) 'Special Issue on Transportation, the Environment, and Sustainability,' *J. Transportation Eng.* 137(6), 371 (2011); doi:10.1061/(ASCE)TE.1943-5436.0000262
65. Cagan, Jonathon, Chris Hendrickson, and Jeremy Michalek, (2011), 'Using Economic Input-Output Life Cycle Assessment to Guide Sustainable Design,' ASME International Design Engineering Technical Conference.
66. Traut, E., C. Hendrickson, E. Klampfl, Y. Liu and J.J. Michalek (2011) "Optimal design and allocation of electrified vehicles and dedicated charging infrastructure for minimum greenhouse gas emissions," *Proceedings of the NAS Transportation Research Board Annual Meeting*, January 23-27, Washington D.C.
67. Bilec, Melissa, Chris T. Hendrickson, Amy Landis and H. Scott Matthews, (2011), 'Updating the Benchmark Sustainable Engineering Education Report – Trends from 2005 to 2010' ASEE Conference Proceedings.
68. Mashayekh, Yeganeh, Paulina Jaramillo, Mikhail Chester, Chris T. Hendrickson and Chris L. Weber, (2011), 'Costs of Automobile Air Emissions in U.S. Metropolitan Areas,' *Transportation Research Record*, Vol. 2233, pp. 120-127, DOI 10.3141/2233-14.
69. Nealer, Rachael, Christopher L. Weber, Chris Hendrickson and H. Scott Matthews (2011), 'Modal Freight Transport Required for Production of US Goods and Services,' *Transportation Research Part E*, 47(4), 474-489, DOI: 10.1016/j.tre.2010.11.015.
70. Shiau, Ching-Shin Norman, Nikhil Kaushal, Chris T. Hendrickson, Scott B. Peterson, Jay F. Whitacre and Jeremy J. Michalek, (2010), 'Optimal Plug-in Hybrid Electric Vehicle Design and Allocation for Minimum Life Cycle Cost, Petroleum Consumption, and Greenhouse Gas Emissions,' *ASME Journal of Mechanical Design*, September 132.
71. Marriott, Joe, H. Scott Matthews and Chris Hendrickson, (2010), 'Impact of Power Generation Mix on Life Cycle Assessment and Carbon Footprint Greenhouse Gas Results,' *Journal of Industrial Ecology*, 14(6), 919-928.
72. Committee on Independent Scientific Review of Everglades Restoration Progress, (2010), 'Progress Toward Restoring the Everglades: The Third Biennial Review,' National Research Council, National Academies Press.
73. Christopher L. Weber, Chris T. Hendrickson, H. Scott Matthews (2010), 'The Economic Input-Output Life Cycle Assessment (EIO-LCA) Model,' Chapter 10 in J. Murray and R. Wood, *Sustainability Practitioners Guide to Input-Output Analysis*, Common Ground Publishing, Urbana, Illinois.
74. Blackhurst, Michael, Chris Hendrickson, and H. Scott Matthews (2010), 'Cost-Effectiveness of Green Roofs,' *ASCE J. of Architectural Engineering*. [http://dx.doi.org/10.1061/\(ASCE\)AE.1943-5568.0000022](http://dx.doi.org/10.1061/(ASCE)AE.1943-5568.0000022)
75. Rehr, Amanda; Mitchell Small; H. Scott Matthews; and Chris Hendrickson, (2010), 'Economic Sources and Spatial Distribution of Airborne Chromium Risks in the United States,' *ES&T*, 44 (6), pp 2131–2137.
76. Davidson, Cliff; Chris Hendrickson; Scott Matthews; Michael Bridges; David

- Allen; Cynthia Murphy; Brad Allenby; John Crittenden; and Sharon Austin, (2010), 'Preparing Future Engineers for the Challenge of the 21st Century: Sustainable Engineering,' *Journal of Cleaner Production*, 18(7), 698-701,
77. Hendrickson, Chris; Deanna Matthews; Mary Ashe; Paulina Jaramillo and Francis McMichael, (2010), 'Reducing Environmental Burdens of Solid State Lighting Through End-of-Life Design,' *Environmental Research Letters* 5(1) doi: [10.1088/1748-9326/5/1/014016](https://doi.org/10.1088/1748-9326/5/1/014016)
 78. Blackhurst, Michael; Hendrickson, Chris; Sels i Vidal, Jordi, (2010), 'Direct and Indirect Water Withdrawals for US Industrial Sectors,' *ES&T*, 44 (6), pp 2126–2130.
 79. Coffelt, Donald P. and Chris T Hendrickson, (2010), 'Life Cycle Costs of Commercial Roof Systems,' *Journal of Architectural Engineering*, 16(1), 29-36, March..
 80. Coffelt, Donald P; Chris T Hendrickson; Sean T Healey, 2010, 'Inspection, Condition Assessment and Management Decisions for Commercial Roof Systems,' *ASCE J. of Architectural Engineering*, 16(3), 94-99.
 81. Shiau, Ching-Shin Norman, Jeremy J. Michalek, and Chris T. Hendrickson (2009), 'A Structural Analysis of Vehicle Design Responses to Corporate Average Fuel Economy Policy,' *Transportation Research Part A*.
 82. Ping Chen, Corinne Scown, H. Scott Matthews, James H. Garrett, Jr., and Chris Hendrickson, (2009), 'Managing Critical Infrastructure Interdependence through Economic Input-Output Methods,' *ASCE J. Infrastructure Systems*, 15(3), pp. 200-210
 83. Wakeley, H., C. Hendrickson, M. Griffin, H.S. Matthews, (2009), 'Economic and Environmental Transportation Effects of Large-Scale Ethanol Production and Distribution in the United States,' *ES&T* 43(7), 2228-2223, DOI: [10.1021/es8015827](https://doi.org/10.1021/es8015827)
 84. Committee on Independent Scientific Review of Everglades Restoration Progress, 'Progress Toward Restoring the Everglades: The Second Biennial Review,' National Research Council, National Academies Press, 2008.
 85. Hendrickson, Chris, (2008), 'Petroleum Prices and Transportation Engineering,' *ASCE Journal of Transportation Engineering*, 134(9), 359-360.
 86. Wakeley, Heather, Michael Griffin, Chris T Hendrickson and H Scott Matthews, (2008), 'Alternative Transportation Fuels: Distribution Infrastructure for Hydrogen and Ethanol in Iowa,' *ASCE J. of Infra. Systems*, 14(3); 262-271.
 87. Matthews, H. Scott, Christopher Weber and Chris T. Hendrickson, (2008), 'The Importance of Carbon Footprint Estimation Boundaries,' *ES&T* 42(16), 5839-5842.
 88. Cicas, Gyorgyi, Hendrickson, Chris T. and H. Scott Matthews, (2008), 'The Economic and Environmental Consequences of Reduced Air Transport Series in Pennsylvania: A Regional Input-Output Life Cycle Assessment Case Study', *The Dynamics of Regions and Networks in Industrial Ecosystems*, 2008.
 89. Hendrickson, Chris T. (2007), 'Sustainable Impact Matrices for Infrastructure and Construction,' *Proceedings of the ASCE Construction Research Congress*.

90. Cicas Gyorgyi; Hendrickson Chris T.; Horvath Arpad; Matthews H. Scott, 'A Regional Version of a US Economic Input-Output Life-Cycle Assessment Model,' *Int. J. Life Cycle Assessment*, '12(6), 367-374, (2007).
91. Cliff Davidson, Cynthia Murphy, Sharon Austin, Chris Hendrickson, H. Scott Matthews, Eric Williams, M. Bridges, Braden Allenby, John Crittenden, Yongsheng Chen, David Allen. (2007) Adding Sustainability to the Engineer's Toolbox: A Challenge for Engineering Educators. *Environmental Science & Technology*, 41 (14), pp 4847–4849 **DOI:** 10.1021/es072578f
92. Committee on Independent Scientific Review of Everglades Restoration Progress, 'Progress Toward Restoring the Everglades: The First Biennial Review,' National Research Council, National Academies Press, 2007.
93. Christini, Gwen, Montgomery Watson Harza, Deanna H. Matthews, and Chris Hendrickson, 'A Comparison of Environmental Management Systems Components and Practices,' in *Strategic Sustainability: The State of the Art in Corporate Environmental Management Systems*, Greenleaf Publishing, Sheffield, UK, 2007.
94. Hawkins, Troy, Chris Hendrickson, Cortney Higgins, H. Scott Matthews and Sangwon Suh, 'A Mixed-Unit Input-Output Model for Environmental Life-Cycle Assessment and Material Flow Analysis,' *ES&T*, 2007, <http://dx.doi.org/10.1021/es060871u>
95. Higgins, Cortney, H. Scott Matthews, Chris T. Hendrickson and Mitchell Small, 'Lead Demand of Future Vehicle Technologies,' *Transportation Research Part D*, 2007.
96. Hendrickson, Chris, H. Scott Matthews and Eric Williams, 'Experience with the Economic Input-Output Life-Cycle Assessment Website (www.eiolca.net)' Seventh International Conference on EcoBalance, Proceedings, Tsukuba, Japan, November, 2006.
97. Peters, Gibson, A.M. Digioia Jr., J. Apt, and Chris Hendrickson, 'Transmission Line Reliability: Climate Change and Extreme Weather,' *Proc. ASCE Electrical Transmission Line Conference*, 2006.
98. C. T. Hendrickson, H. S. Matthews, and G. Cicas: Analysis of Regional Supply Chain Economic and Environmental Effects of Expansion of the U.S. Freight-Rail System, *ASCE Proceedings of the Applications of Advanced Technology in Transportation Conference*, Chicago, IL, 2006.
99. C. T. Hendrickson, G. Cicas, and S. Matthews, "Transportation Sector and Supply Chain Performance and Sustainability", *Transportation Research Record No. 1983*, 2006.
100. Cliff Davidson, Chris Hendrickson, and H. Scott Matthews, "Sustainable Engineering: A Sequence of Courses at Carnegie Mellon", *International Journal of Engineering Education*, 23(2), 287-293, 2007.
101. Hendrickson, Chris, 'Florida University High School and Diploma Mills,' Letter to the Sports Editor, *New York Times*, January 8, 2006.
102. Hawkins, Troy, H. Scott Matthews and Chris Hendrickson, 'Closing the Loop on Cadmium: An Assessment of the Material Cycle of Cadmium in the U.S.,' *International Journal of Life Cycle Assessment*, 11(1), pp. 38-48, 2006

- (<http://www.scientificjournals.com/sj/lca/abstract/ArtikelId/7784?PHPSESSID=d363000c89e045c77239f370f4b5eca>).
103. Hendrickson, Chris and Deborah Lange, 'Falling gas prices mask a critical issue: Energy,' Op/Ed, Pittsburgh Post-Gazette, Sunday, December 4, 2005, p. c-2.
 104. Ochoa, Luis, Chris Hendrickson, Scott Matthews, and Robert Ries, 'Life Cycle Assessment of Residential Buildings,' Proc. ASCE Construction Research Congress, San Diego, 2005.
 105. Hendrickson, Chris, "Discussion of 'Is Construction Labor Productivity Really Declining?'" ASCE J. Construction Engineering and Management, February, 2005.
 106. Chester, Mikhail and Chris Hendrickson, "Cost Impacts, Scheduling Impacts and the Claims Process During Construction," ASCE J. Construction Engineering and Management, 131(1), pp. 102-107, January 2005.
 107. Sinha, Kumares C., Chris T. Hendrickson, Edward C. Sullivan, Eva Lerner-Lam and Louis F. Cohn, "Applications of Advanced Technologies in Transportation: Lessons Learned and Future Directions," Proc. Of the Eight International Conference on Application of Advanced Technologies in Transportation Engineering, ASCE, May, 2004.
 108. Hendrickson, Chris, "Applications of Advanced Technologies in Transportation Engineering," ASCE J. Transportation Engineering, 130(3), 272-273, May/June 2004.
 109. Body of Knowledge Committee of the Task Committee on Academic Prerequisites for Professional Practice, "Civil Engineering Body of Knowledge for the 21st Century," American Society of Civil Engineers, January, 2004.
 110. Matthews, Deanna H., Gwen C. Christini and Chris Hendrickson, 'Five elements for Organizational Decision-Making with an Environmental Management System,' Environmental Science and Technology, 39, 1927-1932, 2004.
 111. Akinci, Burcu, Mikhail Chester, Chris Hendrickson, H. Scott Matthews, and Kevin McCloskey, "Automated Photologging and Retrieval for a Digital Photograph Library," Proc. Of the Transportation Research Board Annual Meeting, 2003 (cd rom).
 112. Hendrickson, Chris, H. Scott Matthews, Jonathan Cagan and Francis C. McMichael, "Design Engineering," *Business Aspects of Closed-Loop Supply Chains*, Carnegie Mellon University Press, 2003.
 113. Matthews, H. Scott and Chris T. Hendrickson, "The Economic and Environmental Implications of Centralized Stock Keeping," J. Industrial Ecology, 6(2), pp. 71-81, Spring 2002.
 114. Hendrickson, Chris and Sue McNeil, "Project Selection from Alternatives," *Engineering Handbook, 2nd ed.*, CRC Press, 204(1-6), 2005.
 115. Hendrickson, Chris and Tung Au, "Depreciation and Corporate Taxes," *Engineering Handbook, 2nd ed.*, CRC Press, 205(1-9), 2005.
 116. Christini, Gwen, Michael Fetsko and Chris Hendrickson, 2004. "Environmental Management Systems and ISO 14001 Certification for

- Construction Firms,” ASCE J. Construction Eng. And Mgmt., 130(3), 330-336, May/June 2004.
117. Akinci, Burcu, Chris Hendrickson and Itir Karaesman, “Exploiting Motor Vehicle Information and Communications Technology for Transportation Engineering,” ASCE J. Transportation Engineering, 129(5), pp. 469-474, Sept/Oct. 2003.
 118. Ochoa, Luis, Chris Hendrickson, and H. Scott Matthews, “Economic Input-Output Life-cycle Assessment of U.S. Residential Buildings,” ASCE J. of Infrastructure Systems, 8(4), pp. 132-138, Dec. 2002.
 119. Latimer, DeWitt IV and Chris Hendrickson, “Digital Archival of Construction Project Information,” Proceedings of the International Symposium on Automation and Robotics for Construction, 2002.
 120. Sinha, Kumares C., D. Bullock, C.T. Hendrickson, H.S. Levinson, R.W. Lyles, A. E. Radwan and Z. Li, “Development of Transportation Engineering Research, Education and Practice in a Changing Civil Engineering World,” ASCE J. of Transportation Engineering, 128(4), 301-313, 2002.
 121. Borg, Robert F., J. Gambatese, K. Haines, Jr., C. Hendrickson, J. Hinze, A. Horvath, E. Koehn, S.L. Moritz, M. Mass and R.A. Haughney, “Rebuilding the World Trade Center,” ASCE Practice Periodical on Structural Design and Construction, (also available at www.constructioninst.org), 8(3), 137-145, August 2003.
 122. Matthews, H. S., Williams, E., Tagami, T., and Hendrickson, C. T. (2002). "Energy implications of online book retailing in the United States and Japan." Environmental Impact Assessment Review 22.5 (2002): 493-507.
 123. H. Scott Matthews, Chris T. Hendrickson, Hui Min Chong, and Woon Sien Loh, “Energy Impacts of Wired and Wireless Networks,” Intl. Symp. On Electronics and the Environment, IEEE, 2002.
 124. Hendrickson, Chris T., “Encouraging Multi-Disciplinary Education and Inter-disciplinary Research,” Civil Engineering Education Issues 2001, Proceedings of the Third National Congress, American Society of Civil Engineers, pp. 1-5, 2001.
 125. Kapila, Prashant and Chris T. Hendrickson, “Exchange Rate Risk Management in International Construction Ventures,” ASCE J. of Construction Engineering and Management, 17(4), 186-191, October 2001.
 126. Hendrickson, Chris T., A. Horvath, L.B. Lave and F.C. McMichael, “Industrial Ecology and Green Design,” Chapter 36 (457-466) in Ayres, R. and Ayres, L., “A Handbook of Industrial Ecology,” Edward Elgar Publishing, 2001.
 127. Conway-Schempf, Noelle and Chris Hendrickson, "Life Cycle Assessment: A Synopsis," Chapter 2 (pgs. 27-42) in Hundal, M.S. (ed.), Mechanical Life Cycle Handbook: Good Environmental Design and Manufacturing, Marcel Dekker, Inc, 2001.
 128. Januschkowetz, Antje, Chris T. Hendrickson and J.H. Garrett, Jr., "System Models for Combining Enterprise Resource Planning Systems and Life Cycle Assessment Software", EcoBalance 2000 - The Fourth International Conference on EcoBalance, October 31 - November 2, 2000, Epochal Tsubuka, Tsubuka, Japan.

129. Matthews, H. Scott, Chris T. Hendrickson and Denise L. Soh, "Environmental and Economic Effects of E-Commerce: A Case Study of Book Publishing and Retail Logistics," *Transportation Research Record* 1763, pp. 6-12, 2001.
130. Matthews, H. Scott, Chris Hendrickson, and Arpad Horvath, "External Costs of Air Emissions from Transportation Equipment, Materials and Services Production," *ASCE J. of Infrastructure Systems*, 7(1), pp. 13-17, March 2001.
131. Lester Lave, Heather MacLean, Chris Hendrickson, and Rebecca Lankey, "Life-Cycle Analysis of Alternative Automobile Fuel/Propulsion Technologies," *Environmental Science & Technology*; 34(17); 3598-3605, 2000.
132. Matthews, H. Scott, Chris Hendrickson and Lester Lave, "Harry Potter and the Health of the Environment," *Spectrum*, 20-22, November 2000.
133. Klausner, Markus and Chris T. Hendrickson, "Reverse-Logistics Strategy for Product Take-Back," *Interfaces*, 30(3), pp. 156-165, May-June 2000.
134. Rosenblum, Jeffrey, Arpad Horvath and Chris Hendrickson, "Environmental Implications of Service Industries," *Environmental Science & Technology*; 34(22); 4669-4676, 2000. .
135. Januschkowitz, Antje and C.T. Hendrickson, "Use of Enterprise Resource Planning Systems for Life Cycle Assessment and Product Stewardship: State of the Art and Current Deficiencies," *Helsinki Symposium on Industrial Ecology and Material Flows (HelSIE)*, Helsinki, Finland, August, 2000.
136. Januschkowitz, Antje and Chris T. Hendrickson "Environmental Comparison by Industry Sector of United States and Germany," *SETAC 20th Annual Meeting*, Philadelphia, PA, November 14-18, 1999.
137. Hendrickson, Chris, N. Conway-Schempf, H. Scott Matthews, and F.C. McMichael, "Green Design Educational Modules and Case Studies," *Proceedings of the ASEE Conference*, St. Louis, 2000.
138. Lave, L. B., C. T. Hendrickson, N. Conway-Schempf, and F.C. McMichael, "Municipal Solid Waste Recycling Issues," *ASCE J. Environmental Engineering*, 125(10), pp. 944-949, October, 1999.
139. Kimoto, Kenji and C.T. Hendrickson, "The Application of Computer Aided Engineering for Construction Planning: Case Study for High-Rise Building Construction Project," *15th Symposium on Organization and Management of Building Construction*, Architectural Institute of Japan, (in Japanese), 1999.
140. Hendrickson, C.T. and A. Horvath, "Resource Use and Environmental Emissions of U.S. Construction Sectors," *ASCE J. of Construction Engineering and Management*, 126(1), pp. 38-44, Jan/Feb 2000.
141. Hendrickson, C. T., "Computing and Engineering Education," *Bridging the Generations: The Future of Computer-Aided Engineering*, Department of Civil and Environmental Engineering, Carnegie Mellon University, pp. 9-12, 1999.
142. Juarez O., Hendrickson C., Garrett J. "Visualization of Economic Input-Output Data," *Proc. Of the 1999 International Conference on Information Visualization Proceedings*, IEEE Computer Society, pp. 44-52, July 1999.

143. Juarez O., Hendrickson C., Garrett J. "Domain Analysis: A Technique to Design a User-Centered Visualization Framework," IEEE InfoVis 99 Proceedings, October 1999, San Francisco, California.
144. Juarez O., Hendrickson C., Garrett J. "Using Visualization for Teaching," Proceedings SPIE Electronic Imaging 2000, San Jose California, January 2000.
145. Horvath, A. and C. Hendrickson, "Steel vs. Steel-Reinforced Concrete Bridges: An Environmental Assessment," ASCE J. of Infrastructure Systems, 4(3), pp. 111-117, September, 1998.
146. McMichael, F.C. and C. Henderson (should be C. Hendrickson), "Recycling Batteries," IEEE Spectrum, pp. 35-42, Feb. 1998.
147. Klausner, M., W.M. Grimm, and C. Hendrickson, "Case Study on the Reuse of Electric Motors for Consumer Products," J. of Industrial Ecology, (2)1, 1998. See: http://mitpress.mit.edu/journals/JIEC/JIE2.2_Klausner.pdf
148. Klausner, M., W.M. Grimm, C. Hendrickson and A. Horvath, "Sensor-Based Data Recording of Use Conditions for Product Takeback," Proc. Of the IEEE Symposium on Electronics and the Environment, Chicago, IL, pp. 138-143, 1998.
149. Lave, L., C. Hendrickson, F.C. McMichael, S. Matthews and N. Conway-Schempf, "The Role of Social Pricing and Full Cost Accounting in Motivating Environmentally-Conscious Product and Process Design," Proc. Of the NSF Design and Manufacturing Grantees Conference, Monterrey, Mexico, pp. 601-603, January 1998.
150. Hendrickson C, Horvath A, Joshi S, Lave, L., '[Economic input-output models for environmental life-cycle assessment](#),' ENVIRONMENTAL SCIENCE & TECHNOLOGY, 32(7), 184A-191A, APR 1 1998.
151. Horvath, A. and C.T. Hendrickson, "A Comparison of the Environmental Implications of Asphalt and Steel-Reinforced Concrete Pavements," Transportation Research Record # 1626, pp. 105-113, 1998.
152. Hendrickson, C. and S. McNeil, "Project Selection from Alternatives," The Handbook of Technology Management, CRC Press, pp. 8-89/8-93, 1998.
153. Lave, L.B., C.T. Hendrickson, and F.C. McMichael, "Clean Recycling of Lead-Acid Batteries for Electric Vehicles – A Reply to Socolow and Thomas," Industrial Ecology, 1(2), 1997.
154. Juarez, Octavio, J. Garrett and C.T. Hendrickson, "A Software Tool for Economic Input Output Environmental Life Cycle Assessment," Proc. of the ASME Annual Conference, " Concurrent Product Design and Environmentally Conscious Manufacturing, pp. 215-224, 1997.
155. Hendrickson, C.T., A. Horvath, S. Joshi, M. Klausner, L.B. Lave and F.C. McMichael, "Comparing Two Life Cycle Assessment Approaches: A Process Model vs. Economic Input-Output Based Assessment," Proc. of the IEEE Intl. Sym. on Electronics and the Environment, San Francisco, CA, May 1997.
156. Garrett, J. Jr., C.T. Hendrickson, A. Horvath, S. Joshi, O. Juarez and F.C. McMichael, "General Purpose Computer-Aided Engineering Tools for Environmental Software Systems," Proc. of the Second Intl. Sym. on Environmental Software Systems, Whistler, British Columbia, April 1997.

157. Lave, L.B., E. Cobas-Flores, F.C. McMichael, C.T. Hendrickson, A. Horvath, and S. Joshi, "Measuring the Environmental Impacts and Sustainability of Automobiles," Sustainable Individual Mobility - Critical Choices for Government and Industry Conference, Zurich, Switzerland, Nov. 4-5, 1996.
158. Lave, L.B., A.G. Russell, C.T. Hendrickson and F.C. McMichael, "Battery-Powered Vehicles: Ozone Reduction versus Lead Discharges," Environmental Science and Technology, 30(9), pp. 402A-407A, September 1996. Reprinted in The Future of the Electric Vehicle, H. Kukuck (ed.), Amerika Haus, Frankfurt, Germany, 1996.
159. Hendrickson, C., A. Horvath, L. Lave and F. C. McMichael, "New Markets for Old Materials," TR News, pp. 32-35, May-June 1996.
160. Hendrickson, C., E. Cobas-Flores, L. Lave and F. McMichael, "Life-cycle Analysis of Batteries Using Economic Input-Output Analysis," 1996 IEEE International Symposium on Electronics and the Environment, Dallas, TX, May 1996.
161. Horvath, A., H. MacLean, Hendrickson, C., L. Lave and F. McMichael, "International Environmental Performance Measurement in the Electronics Industry," 1996 IEEE International Symposium on Electronics and the Environment, Dallas, TX, May 1996.
162. Ruff, Cynthia M., David A. Dzombak and Chris T. Hendrickson, "Owner-Contractor Relationships on Contaminated Site Remediation Projects," ASCE J. of Construction Engineering and Management, 122(4), p. 348-353, Dec. 1996.
163. McMichael, F.C., L.B. Lave and C.T. Hendrickson, "Electric Vehicles May Not Be Ready to Roll," TR News 181, p. 14, Nov-Dec. 1995.
164. McMichael, F.C., C.T. Hendrickson, and L.B. Lave, "Environmental Implications of Battery Powered Vehicles," Proc. of the Future of the Electric Vehicle Conference, Amerika Haus, Frankfurt, Germany, October 1996.
165. Director, Stephen W. and Chris Hendrickson, "An Assessment of the Carnegie Mellon Electrical and Computer Engineering Curriculum," The Interface, IEEE Education Society and ASEE Electrical Engineering Division, Vol. 3, pp. 1-4, November 1995.
166. Director, S., C. Hendrickson, R. Kail and P. Laughlin, "Undergraduate Curriculum Revision Assessment," Carnegie Mellon Engineering, Carnegie Institute of Technology, Technical Report, 1995.
167. Lave, L., E. Cobas-Flores, C. Hendrickson, and F. McMichael, "Generalizing Life-Cycle Analysis: Using Input-Output Analysis to Estimate Economy-Wide Discharges," Environmental Science & Technology, 29(9), 420A-426A, September 1995.
168. Horvath, A., C. Hendrickson, L. Lave and F. McMichael, "Performance Measurement for Environmentally-Conscious Manufacturing," ASME Manufacturing Science and Engineering Symposium, ASME Intl. Mechanical Engineering Congress and Exposition, Vol. 2, pp. 847-854, 1995.
169. Lave, L., C. Hendrickson, and F. McMichael, "Environmental Implications of Electric Vehicles," Science, pp. 993-995, May 19, 1995. Reprinted in The Future of the Electric Vehicle, H. Kukuck (ed.), Amerika Haus, Frankfurt, Germany, 1996.

170. Lave, L., C. Hendrickson, and F. McMichael, "Environmental Implications of Electric Vehicles - Response to Letters," *Science*, pp. 744-745, August 11, 1995.
171. Cobas, E., C. Hendrickson, L. Lave and F. McMichael, "Economic Input/Output Analysis to Aid Life Cycle Assessment of Electronic Products," *Proc. IEEE International Symposium on Electronics and the Environment*, Orlando, Florida, pp. 273-278, May, 1995.
172. Hendrickson, C., L. Lave and F. McMichael, "Time to Dump Recycling?," *Issues in Science and Technology*, pp. 79-84, Spring 1995. Reprinted as "Reconsider Recycling," *Chemtech*, 25(8), pp. 56-60, August 1995.
173. Hendrickson, C., "Automation and Robotics: Past Present and Future," in *Automation and Robotics in Highway Design, Construction and Maintenance*, Special Issue TR News, No. 176, pp. 2-3, Jan/Feb 1995.
174. Committee for Assessment of Capacity and Demand for the National Advanced Driving Simulator, (1995), 'Estimating Demand for the National Advanced Driving Simulator,' *Transportation Research Board*.
175. Hendrickson, C. and S. McNeil, "Project Selection from Alternatives," *The Engineering Handbook*, CRC Press, pp. 1933-1937, 1996.
176. Horvath, A., C. Hendrickson, L. Lave, F. McMichael and T-S. Wu, "Toxic Emission Indices for Green Design and Inventory," *Environmental Science & Technology (ES&T)*, February, 1995.
177. Lave, L., T-S. Wu, C. Hendrickson and F. McMichael, "My Shopping Trip with Andre," *Technology Review*, 1995.
178. Hendrickson, C., "Transportation," *World Book Encyclopedia*, World Book Publishing, Vol. T, pp. 381-400, 1996.
179. Bullock, D. and C. Hendrickson, "Roadway Traffic Control Software," *IEEE Transactions on Control Systems Technology*, 2(3), pp. 255-264, September 1994.
180. Hendrickson, C., L. Lave, F. McMichael, D. Siewiorek, A. Smailagic, T-S. Wu, "Product Disposal and Re-Use Issues for Portable Computer Design," *Proc. Second IEEE Conference on Electronics and the Environment*, San Francisco, CA., May, 1994.
181. Hendrickson, C., "Computing and Engineering Education," *Proceedings of Bridging the Generations: An Intl. Workshop on the Future Directions of Computer-Aided Engineering*, Carnegie Mellon Univ., Pittsburgh, PA, June 1994.
182. Diaz-Calderon, A. and C. Hendrickson, "Comparison of Some Computer-Based Task Management Approaches," *AI EDAM*, 8(3), 1994.
183. Diaz-Calderon, A., S. Fenves, J. Garrett, and C. Hendrickson, "A Computer-Based Advisor for Environmentally Conscious, "Green" Product Design," *Proc. First Congress on Computing in Civil Engineering*, American Society of Civil Engineers, Washington D.C., 1994.
184. Lave, L., C. Hendrickson, and F.C. McMichael, "Recycling Decisions and Green Design," *Environmental Science & Technology (ES&T)*, Jan. 1994.
185. Bullock, D. and C. Hendrickson, "Software for Advanced Traffic Controllers," *Transportation Research Record #1408*, 116-124, 1993.

186. Oppenheim, I., C. Hendrickson, D. Rehak, and D. Siewiorek, "Physically Based Virtual Reality Computing for Construction," Proc. of the 3rd International Conference on Fossil Plant Construction, Electric Power Research Institute and Edison Electric Institute, October, 1993.
187. Hendrickson, C. and D.R. Rehak, "The Potential of a 'Virtual' Construction Site for Automation Planning and Analysis," Automation and Robotics in Construction X, Proc. of the 10th Intl. Symp. on Automation and Robotics in Construction (ISARC), Elsevier, pp. 511-518, 1993.
188. Hendrickson, C., "Informing Technology Potential for Transportation Research," Informing Technologies for Construction, Civil Engineering, and Transport, Proceedings of a SERC Conference, Brunel, London, UK, September 1993.
189. Demes, G., S. Fenves, I. Grossmann, C. Hendrickson, T. Mitchell, F. Prinz, D. Siewiorek, E. Subrahmanian, S. Talukdar and A. Westerberg, "The Engineering Design Research Center of Carnegie Mellon University," Proceedings of the IEEE, Vol. 81, No. 1, pp. 10-24, Jan. 1993.
190. Bullock, D., J. Garrett Jr. and C. Hendrickson, "A Neural Network for Image Based Vehicle Detection," Transportation Research Part C, Vol. 1, No. 2, pp. 235-247, 1993.
191. Haas, C., C. Hendrickson, S. McNeil and D. Bullock, "A Field Prototype of a Robotic Pavement Crack Sealing System," Proceedings of the 9th International Symposium on Automation and Robotics in Construction, June 3-5, 1992, Tokyo, Japan.
192. Fenves, S.J., U. Flemming, C. Hendrickson and M.L. Maher, "Performance Evaluation in an Integrated Software Environment for Building Design and Construction Planning," in Evaluating and Predicting Design Performance, Y.E. Kalay, ed., John Wiley & Sons, pp. 159-169, 1992.
193. Haas, C., C. Hendrickson, and S. McNeil, "A Field Prototype of a Robotic Pavement Crack Filling System," Proc. of the 9th International Symposium on Automation and Robotics in Construction, Tokyo, Japan, June, 1992.
194. Hendrickson, C. and F. McMichael, "Product Design for the Environment," Environmental Science & Technology, Guest Editorial, 26(5), p. 844, May 1992.
195. Adams, T., C. Hendrickson and P. Christiano, "Computer-Aided Rehabilitation Design," AI EDAM, 5(2), pp. 65-75, 1991.
196. Haas, C., C. Hendrickson and S. McNeil, "A Design for Automated Pavement Crack Sealing," Preparing for Construction in the 21st. Century, (L.-M. Chang, ed.), ASCE, 1991.
197. Haas, C. and C. Hendrickson, "Integration of Diverse Technologies for Pavement Sensing," Transportation Research Record # 1311, pgs. 92-102, 1991.
198. Bullock, D. and C. Hendrickson, "Advanced Software Design and Standards for Traffic Signal Control," ASCE J. of Transportation Engineering, 118(3), pp. 430-438, May/June 1992. (Shorter version appeared in Applications of Advanced Technologies in Transportation Engineering, ASCE, 1991.)
199. Hendrickson, C., S. McNeil, D. Bullock, C. Haas, D. Peters, D. Grove, K. Kenneally and S. Wichman, "Perception and Control for Automated Pavement

- Crack Sealing,” Applications of Advanced Technologies in Transportation Engineering, ASCE, 1991.
200. Haas, C., C. Hendrickson and D. Rehak, “Large Volume Planar Data Management,” Proc. Seventh Conf. on Computing in Civil Engineering and Symposium on Data Bases, ASCE, pp. 376-385, 1991.
 201. Haas, C., S. McNeil, C. Hendrickson and R. Haas, “A Pavement Surface Model for Integrating Management Data,” Pavement Management Implementation, ASTM STP 1121, (F.B. Holt and W.L. Gramling, eds), American Society for Testing and Materials, Philadelphia, 1991.
 202. Haas, C. and C. Hendrickson, “Computer-Based Model of Pavement Surfaces,” Transportation Research Record, #1260, pp. 91-98, 1990.
 203. Roth, S. and C. Hendrickson, “Computer Generated Explanations in Project Management Systems,” ASCE J. of Computing in Civil Engineering, 5(2), pp. 231-244, April 1991.
 204. Hendrickson, C., “The US Construction Industry at the Crossroads,” Design/Build: Issues for the 90’s and Beyond, American Bar Association, Forum on the Construction Industry, Part F, October, 1990.
 205. Skibniewski, M. and C. Hendrickson, “Automation and Robotics for Road Construction and Maintenance,” ASCE J. of Transportation Engineering, 116(3), pp. 261-272, May/June 1990.
 206. Zozaya, C., C. Hendrickson and D. Rehak, “Knowledge-Based Construction Project Planning,” Building and Environment), 1990.
 207. Au, T. and C. Hendrickson, “The Professional Education of Civil Engineers,” Proc. of the National Forum on Education and Continuing Development for the Civil Engineer, ASCE, Las Vegas, Nevada, pp. 764-770, April, 1990.
 208. Hendrickson, C. and M. Maher, “Issues in Computer Based Design/Construction Integration,” Excellence in the Constructed Project, ASCE, 1989, pp. 129-136.
 209. Zozaya-Gorostiza, C., C. Hendrickson and D. R. Rehak, “Knowledge-Based Construction Project Planning,” Excellence in the Constructed Project, ASCE, 1989, pp. 217-222.
 210. Au, T. and C. Hendrickson, “Construction at the Crossroads,” Civil Engineering, Dec. 1989, p. 6.
 211. Phelan, R.S., F. Radjy, C. Haas and C. Hendrickson, “Computer Aided Concrete Placement Optimization,” ASCE J. of Construction Engineering and Management, 116(1), pp. 172-187, March, 1990.
 212. Ciarico, A., T. Adams and C. Hendrickson, “A Cost Estimating Module to Aid Integrated, Knowledge-Based Design,” Proc. of the Sixth Conference on Computing in Civil Engineering, ASCE, Atlanta, GA, 1989.
 213. Fenves, S., U. Flemming, C. Hendrickson, M.L. Maher, and G. Schmitt, “An Integrated Software Environment for Building Design and Construction,” Computer-Aided Design, 22(1), pp. 27-36, January/February, 1990.
 214. Romero-Lois, H., C. Hendrickson, and D. Rehak, “A Strategic Planner for Robot Excavation,” Proc. 6th International Symposium on Automation and Robotics in Construction, San Francisco, CA, June 1989.

215. Rossi, T.F., S. McNeil and C. Hendrickson, "An Entropy Model for Consistent Impact Fee Assessment," *ASCE Journal of Urban Planning and Development*, Vol. 115, No. 2, pp. 51-63, September, 1989.
216. Adams, T.M., P. Christiano and C. Hendrickson, "Some Expert System Applications in Geotechnical Engineering," *Proc. ASCE Conference on Geotechnical Engineering*, Chicago, IL, 1989.
217. Hendrickson, C. and C. Zozaya-Gorostiza, "A Unified Activity Network Model," *ASCE Journal of Computing*, Vol. 3, No. 2, pp. 192-202, April, 1989.
218. Adams, T.M., C. Hendrickson and P. Christiano, "Expert System Architecture for Retaining Wall Design," *Transportation Research Record #1187*, Transportation Research Board, National Research Council, pp. 9-20, 1988.
219. Fenves, S.J., C.T. Hendrickson, M.L. Maher, D.R. Rehak, and C. Thewalt, "Two Undergraduate Courses in Computer-Aided Engineering," *Engineering Education*, Vol. 78, no. 10, pp. 122-126, Nov. 1988.
220. Skibniewski, M. and C. Hendrickson, "Analysis of Robotic Surface Finishing Work on Construction Site," *ASCE Journal of Construction Engineering and Management*, Vol. 114, No. 1, pp. 53-68, March 1988.
221. Fenves, S., U. Flemming, C. Hendrickson, M.L. Maher and G. Schmitt, "An Integrated Software Environment for Building Design and Construction," *Proc. Seventh Conference on Computing in Civil Engineering*, ASCE, March 1988. (Also in *Second International Symposium on Computer Aided Design in Architecture and Civil Engineering*, Barcelona, Spain, 1989).
222. Dudziak, W. and C. Hendrickson, "Simulation Game for Contract Negotiations," *ASCE Journal of Management in Engineering*, Vol. 4, No. 2, April 1988.
223. Sinha, K.C., L.F. Cohn, C. Hendrickson and Y. Stephenandes, "Role of Advanced Technologies in Transportation Engineering," *ASCE Journal of Transportation Engineering*, Vol. 114, No. 4, pp. 383-392, July 1987. (Reprinted in *Civil Engineering in the 21st Century*, ASCE, pp. 172-182, 1987.)
224. Hendrickson, C. and B. Janson, "Expert Systems and Pavement Management," *Proc. Second North American Conference on Management of Pavements*, Toronto, Ontario, Canada, pp. 2.255-2.267, 1987.
225. Hendrickson, C., Zozaya-Gorostiza, C., Rehak, D., Baracco-Miller, E. and P. Lim, "An Expert System for Construction Planning," *ASCE Journal of Computing in Civil Engineering*, 1(4), pp. 253-269, October 1987.
226. Hendrickson, C., Zozaya-Gorostiza, C., Rehak, D., Baracco-Miller, E. and P. Lim, "An Expert System Architecture for Construction Planning," *Knowledge Based Expert Systems in Engineering: Planning and Design*, Computational Mechanics Publications, Boston, MA, 1987.
227. Hendrickson, C., C. Zozaya-Gorostiza, and S. McNeil, "A Knowledge Based Expert System Architecture for Computer Aided Analysis and Design of Intersections," *Proc. Tenth Int'l. Sym. on Transportation and Traffic Flow Theory*, Boston, 1987.
228. Hendrickson, C., D. Martinelli, and T. Au, "Spreadsheet Aids for Financial Planning for Construction Projects," *Transportation Research Record*, # 1126, pp. 100-109, 1988.

229. Hendrickson, C., D. Martinelli, and D. Rehak, "Hierarchical Rule-Based Activity Duration Estimation," *ASCE Journal of Construction Engineering and Management*, 113(2), pp. 288-301, June 1987.
230. Hendrickson, C., C. Zozaya-Gorostiza and S. McNeil, "Network Representation of Performance Analysis for Intersections," *Transportation Research Record # 1283*, pp. 176-188, Dec, 1990.
231. Hendrickson, C. "National Science Foundation Support for Civil Engineering Research," *ASCE Journal of Professional Issues in Engineering*, 113(2), pp. 130-138, April, 1987.
232. McNeil, S., C. Hendrickson and T. Rossi, "Impact Fee Assessment Using Highway Cost Allocation Methods," *Transportation Research Record #1107*, p. 73-80, 1988.
233. Skibniewski, M. and C. Hendrickson, "Economic Analysis of a Robotic Construction Sandblasting Process," *Proc. Tenth CIB Congress, International Council for Building Research, Studies and Documentation, Washington, D.C., 1986*.
234. Hendrickson, C., A. Pasquale, W. Robinson and M. Rossi-Velasco, "Some Applications of Computer Aided Instruction," *ASCE Journal of Engineering Issues*, 112(2), June 1986.
235. Skibniewski, M., P. Derrington and C. Hendrickson, "Cost and Design Impacts of Robotic Construction Finishing Work," *Proc. Intl. Joint Conf. on CAD and Robotics in Architecture and Construction, CRIRAM, Marseilles, France, June 1986*.
236. Au, T. and C. Hendrickson, "Profit Measures for Construction Projects," *ASCE Journal of Construction Engineering and Management*, 112(2), 273-286, June, 1986.
237. Zozayza-Gorostiza, C. and C. Hendrickson, "An Expert System for Traffic Signal Setting Assistance," *ASCE Journal of Transportation Engineering*, 113(2), pg. 108-126, March, 1987.
238. Au, T., C. Hendrickson and A. Pasquale, "Introduction of Relational Databases within a Cost Estimating System," *Transportation Research Record 1050*, pp. 57-62, 1986.
239. Janson, B.N., S.P.T. Thint and C.T. Hendrickson, "Validation and Use of Equilibrium Network Assignment for Urban Highway Reconstruction Planning," *Transportation Research A*, 20A, February, 1986.
240. Ciarico, A., T. Adams and C. Hendrickson, "A Cost Estimating Module to Aid Integrated, Knowledge-Based Design," *Proc. of the Sixth Conference on Computing in Civil Engineering, ASCE, Atlanta, GA, 1989*.
241. Hendrickson, C. "A Note on Trends in Transit Commuting in the United States Relating to Employment in the Central Business District," *Transportation Research A*, 20A, 33-37, February 1986.
242. Hendrickson, C., B. Janson and M. Rossi-Velasco, "Applications and Potential of Microcomputer-Aided Instruction," *Microcomputer Applications within the Urban Transportation Environment, ASCE*, pp. 116-125, 1985.
243. Hendrickson, C., "Research in Transportation System Characteristics and Operations," *Transportation Research, Vol. 19A(5/6)*, pp. 367-369, 1985.

244. Skibniewski, M.J. and C. Hendrickson, "Evaluation Method for Robotics Implementation: Application to Concrete Form Cleaning," Proc. Second Conference on Robotics in Construction, Carnegie-Mellon University, Pittsburgh, PA., 1985.
245. McGartland, M. and C. Hendrickson, "Expert Systems for Construction Project Monitoring," Journal of Construction Engineering and Management, ASCE, (111)3, 293-307, September 1985.
246. Hendrickson, C. and T. Au, "Private versus Public Ownership of Constructed Facilities," ASCE Journal of Engineering Management, (1)3, 119-131, July, 1985.
247. Au, T. and C. Hendrickson, "Education in Engineering Planning and Management," Proceedings of the ASCE Conference on Civil Engineering Education), Columbus, Ohio, 1985.
248. Hendrickson, C. and S. McNeil, "Estimation of Origin/Destination Matrices with Constrained Regression," Transportation Research Record 976, pp.25-32, 1985.
249. Hendrickson, C. and F. McMichael, "Controlling Contradictions Among Regulations: Comment," American Economic Review 75(4), pp. 876-877, Sept. 1985
250. Hendrickson, C. and S. McNeil, "A Note on Alternative Matrix Estimation Techniques," Transportation Research B, 19B(6), pp. 509-519, December, 1985.
251. McNeil, S. and C. Hendrickson, "A Regression Formulation of the Matrix Estimation Problem," Transportation Science, 19(3), pp. 278-292, Aug. 1985.
252. Rehak, D.E., Keriouz, W.T., Cendes, Z. and Hendrickson, C.T., "Evaluation of Alternative Finite Element System Architectures," Computers and Structures, 20(1-3), pp. 17-30, 1985.
253. Carey, M. and C. Hendrickson, "Bounds on Network Flow with Links Subject to Failure" Networks (14), pp. 439-456, 1984.
254. Hendrickson, C. and E. Plank, "The Flexibility of Departure Times for Work Trips," Transportation Research 18A(1), 25-36, 1984.
255. Hendrickson, C. and S. McNeil, "Matrix Entry Estimation Errors," Proceedings of the Ninth International Symposium on Transportation and Traffic Flow, Delft, The Netherlands: VNU Press, 1984.
256. Au, T. and C. Hendrickson, "Measuring the Overall Return of a Construction Project," Proceedings of the Fourth International Symposium on the Organization and Management of Construction, Waterloo, Ontario, Canada, 1984.
257. Hendrickson, C. and S. McNeil, "An Illustration of Allocated Costs for Turnpike Toll Design," Transportation Quarterly, 38, pp. 575-592, October 1984.
258. Hendrickson, C.T. and B.N. Janson, "A Common Network Flow Formulation to Several Civil Engineering Problems" Civil Engineering Systems 1(4), pp. 195-203, 1984.
259. Kocur, G. and C. Hendrickson, "A Model to Assess Cost and Fuel Savings from Ridesharing," Transportation Research B, 17B(4), pp. 305-318, 1983.
260. Hendrickson, C. and A. Kane, "Cost Allocation by Uniform Traffic Removal," Transportation Research B, 17B(4), pp. 265-274, 1983.

261. Hendrickson, C., "Financing Civil Works with User Fees," *Civil Engineering*, 53(2), February 1983.
262. Hendrickson, C., "Construction Project Management", *CIT Engineering News*, Carnegie-Mellon University, 1982.
263. DiPasquale, D. and C. Hendrickson, "Options for Financing a Regional Transit Authority," *Transportation Research Record #858*, 1982, pp. 29-35.
264. Hendrickson, C. and M. Wohl, "Efficient Prices for Roadways and Transit Service," *Transportation Quarterly*, July 1982.
265. Hendrickson, C., T. Dubyak, R. Carrier and R. Anderson, "Traveler Responses to Reconstruction of the Parkway East (I-376) in Pittsburgh, PA," *Transportation Research Record* 890, 1982 pp. 33-39.
266. McNeil, S. and C. Hendrickson, "A Statistical Model of Pavement Maintenance Expenditure," *Transportation Research Record #846*, 1982, pp. 71-76.
267. Kocur, G. and C. Hendrickson, "Design of Local Bus Service with Demand Equilibration," *Transportation Science* Vol. 16, No. 2, June 1982.
268. Pucher, J., C. Hendrickson and S. McNeil, "Socio-Economic Characteristics of Transit Riders: Some Recent Evidence," *Traffic Quarterly* 35(3), July 1981, 461-483.
269. Hendrickson, C., D. Nagin and E. Plank, "Characteristics of Travel Time and Dynamic User Equilibrium for Travel to Work," *Proceedings of the Eighth International Conference on Transportation and Traffic Theory*, Toronto: Univ. of Toronto Press, pp. 321-347, 1981.
270. Hendrickson, C., "Travel Time and Volume Relationships in Scheduled, Fixed-Route Public Transportation," *Transportation Research*, Vol. 15A, No. 2, pp. 173-182, March 1981.
271. Hendrickson, C. and G. Kocur, "Schedule Delay and Departure Time Decisions in a Deterministic Model," *Transportation Science*, Vol. 15, No. 1, pp. 62-77, February 1981.
272. Carey, M., C. Hendrickson and K. Siddharthan, "A Method for Estimation of Origin/Destination Trip Matrices," *Transportation Science*, Vol. 15, No. 1, pp. 32-49, February 1981.
273. Wohl, M. and C. Hendrickson, "Attribution of Roadway Costs to Vehicle Classes," *Proceedings of the Transportation Research Forum*, Vol. 21, October 1980, pp 223-229.
274. Hendrickson, C., I. Oppenheim and D. Kufert, "Water System Network Analysis Under Seismic Hazard," *Pressure Vessels and Piping Technology Conference*, San Francisco, CA, ASME Paper No. 80-C2/PVP-62, August 1980.
275. Hendrickson, C., I.J. Oppenheim and K. Siddharthan, "User Losses in Earthquake Damaged Roadway Networks," *Journal of the Technical Councils of ASCE*, Vol. 106, No. TC1, pp. 117-128, August 1980.
276. Wilson, N.M.H. and C. Hendrickson, "Performance Models of Flexibly Routed Transportation Services," *Transportation Research*, 14B (1/2), pp. 67-78, March/June, 1980.
277. Hendrickson, C. and J. Pucher, "Distribution of Costs: Who Pays the Public Costs of Urban Transportation?" *Proceedings of the ASCE Urban*

- Transportation Financing Specialty Conference, Bucknell University, pp. 81-99, 1979.
278. Hendrickson, C., “An Evaluation of Automated Dispatching for Flexibly Routed Paratransit Services,” Transportation Research Board Special Report #186, pp. 56-62, 1979.
279. Hendrickson, C., “Review of ‘Review and Compilation of Demand Forecasting Experiences: An Aggregation of Estimation Procedures,’” Transportation Research 12(432-434), 1978.
280. Daganzo, C.F., C. Hendrickson and N.M.H. Wilson, “An Approximate, Analytic Model of Many-to-One Demand Responsive Transportation Systems,” Proceedings of the Seventh International Conference on Transportation and Traffic Theory, Kyoto, Japan, 1977.

SELECTED FUNDED RESEARCH PROJECTS

1. ‘Mobility21’ National University Transportation Center, USDOT, Co-PI, 2018-2022.
2. ‘Understanding and improving energy efficiency of regional mobility systems leveraging system-level data,’ DOE, 2019-2022.
3. ‘Alternative Fuels for Port Authority Buses,’ Mellon Foundation, 2015-2016, \$ 100K.
4. ‘Traffic21 Institute Support’ Hillman Foundation, 2014-2018, \$ 2.5M
5. ‘Assessment of Liquid Fuels from National Gas,’ Fuel Freedom Foundation, 2014-2015.
6. ‘Connected and Autonomous Vehicles Vision 2040,’ PADOT, 2013-2014.
7. ‘Technologies for Safe and Efficient Transportation,’ (Faculty Associate), National University Transportation Center, USDOT 2012-2018.
8. ‘Congestion Management to Promote Environmental Sustainability,’ (with P. Jaramillo), NSF 2010-2012.
9. ‘Engineering and Life Cycle Assessment of Activated Recycled Glass-Based Concretes,’ (with C. Weber), NSF 2010-2012.
10. ‘Life Cycle and Carbon Footprinting Assessment for Brownfield Development.’ US EPA 2008-2011.
11. ‘Life Cycle Assessment of Solid State Lighting,’ (Faculty Associate), US DOE 2009.
12. MUSES: Material Resources and Environmental Impacts for Transportation Fuels Infrastructure (with M. Griffin, L. Lave, S. Matthews, and J. Michalek), NSF 2006, \$ 1,500,000.
13. Workshop on Frontier Research Directions and International Collaborations in Sustainability Engineering, NSF, 2007, \$ 68,200.
14. Models of Energy Futures and NETL’s Local/Regional Economic and Environmental Impact, (with D. Lange), NETL DOE, \$ 102,000.
15. MUSES: Tacking Heavy Metal Life Cycle Pathways with Input-Output Methods (with L. Lave, S. Matthews and M. Small), NSF, 2003, \$ 1,200,000.
16. Assessment Tool and Visualization for Regional Supply Chain Impacts (with S. Matthews), NSF/EPA, 2003, \$ 375,000.

17. Automated Archiving and Retrieval of Construction Site Photographs (with B. Akinci), PITA, \$ 37,308.
18. Analyzing Critical Infrastructure Dependencies: Security and Survivability Effects in the Service Sector (with J. Garrett), NSF, \$ 149,000.
19. "Exploiting Motor Vehicle Information for Social Benefit," NSF/DOT (with B. Akinci), 2002, \$ 100,000.
20. "Environmental Management Systems: Informing Organizational Decisions," EPA (with L. Lave), 2001-2003, \$ 350,000.
21. "Computer-Aided Hybrid Models for Environmental and Economic Life Cycle Assessment," EPA, (with A. Horvath and S. Matthews), 2001-2003, \$ 305,000.
22. "Life Cycle Product Information Systems for Scalable and Sustainable Enterprises," NSF, 2001, \$ 100,000.
23. "The Net Effect: Environmental Implications of E-Commerce," AT&T Foundation, 1999-2001, \$ 75,000.
24. "Life Cycle Assessment in the Service Industries," Lucent and National Science Foundation Industrial Ecology Fellowship (Co-PI with Arpad Horvath and Lester Lave), 1998-2000, \$ 100,000.
25. "Economic Input-Output for Life Cycle Assessment," Environmental Protection Agency and National Science Foundation Environmental Technology Program, 1998-99, \$ 290,000.
26. "Motivating Environmentally Conscious Products and Processes: The Role of Social Pricing and Full Cost Accounting," National Science Foundation, 1996-1999, Co-Principal Investigator with Noellete Conway-Schempf and Lester Lave. \$ 475,000.
27. "Environmental Life Cycle Analysis of Construction Materials," National Science Foundation, 1997-1999, Principal Investigator, \$ 250,000.
28. "Curriculum and Educational Materials for Environmentally Conscious, Green Products and Processes," National Science Foundation, \$ 250,000, 1997-2000.
29. "Life Cycle Assessment using Economic Input-Output Models," Department of Energy, 1996-1998, Co-Principal Investigator with Noellete Conway-Schempf and Lester Lave. \$ 250,000.
30. "Informing the Product Designer About the Environmental Implications of Design Choices," National Science Foundation, 1993-96, Co-Principal Investigator with Linda Argote, Lester Lave and Francis McMichael.
31. "Evaluation of Owner-Contractor Organization Integration for Site Remediation Projects," Construction Industry Institute, 1993-94, Co-Principal Investigator with Dave Dzombak.
32. "Development of Software Standards for Advanced Transportation Control Systems," California Department of Transportation (with U. California at Irvine), 1991-1993.
33. "Investigation of an Automated Pavement Crack Filler," Strategic Highway Research Program, National Academy of Sciences, 1989-1991, Co-Principal Investigator with Sue McNeil.
34. "Design of Computer-Based Facilities Management System," Duquesne Light, 1989-1990, Co-Principal Investigator with Sue McNeil.

35. "Economic Optimization Module for Concrete Placement," Western Pennsylvania Advanced Technology Center and Digital Site Systems, 1987-1989.
36. "Prototype Integrated Design Environment," Carnegie-Mellon Engineering Design Research Center, 1986-1991, Co-Principal Investigator with S. Fenves and M. Maher.
37. "Research in Cognitive Excavation Automation," National Science Foundation, 1986-1988, Faculty Associate.
38. "Knowledge Based Expert Systems for Retaining Wall Rehabilitation Design and Cost Estimation," National Science Foundation, 1986-1988, Principal Investigator.
39. "Innovative Financial Strategies During Facility Construction," Urban Mass Transportation Administration, 1985-1986, Co-Principal Investigator with Tung Au.
40. "Knowledge Based Expert Systems Aids for Construction Project Planning," National Science Foundation, 1985-1987, Co-Principal Investigator with Daniel R. Rehak.
41. "Instructional Software for Construction Project Planning and Management," Mellon-Stuart Company, Inc., 1984-85, Principal Investigator.
42. "Investigation of an Optimization Method to Estimate, Update or Expand Matrices," National Science Foundation, 1982-84, Principal Investigator.
43. "User Response to Time of Day Variations in Transit Service Level and Reliability," Urban Mass Transportation Administration, 1980-81; Co-Principal Investigator with Daniel Nagin (1980-81); Principal Investigator (1981-82).
44. "Study of Alternative Transportation Strategies for the Parkway East (I-376-1(37)5) Reconstruction", Pennsylvania Department of Transportation (under sub-contract to GAI Consultants, Inc.), 1981-82, Principal Investigator.
45. "Equity in Transit Financing," Urban Mass Transportation Administration (under sub-contract to Rutgers University), 1980-81, Co-Principal Investigator with J. Pucher (Rutgers University).

EXAMPLE CONSULTING ASSIGNMENTS

- Pre Consultants, Life Cycle Assessment Review, 2012.
- Construction Industry Institute, 'Stochastic Scheduling,' 2010-2012.
- External Panel Review, Upper Ohio Navigation Study, US Army Corps of Engineers, 2007-2008.
- Program Assessments, SEI and NSF, 1996-2002.
- Construction Productivity Analysis, Michael Baker Corporation, 1996.
- Statistical Analysis of Task Productivity Differences, Statistical and Total Project Quality Control (Pittsburgh Corning Corporation, 1986-1989).
- Investment Financing Alternatives for the Pittsburgh Airport Expressway (GAI Consultants for Pennsylvania Department of Transportation, 1985).
- Investigation of Port Authority of Allegheny County Operating Efficiency (Pennsylvania House of Representatives, 1985).
- Cost Allocation for Rail Rate Setting (Connecticut Department of Transportation, 1984).

- Public Transportation Database and Decision Making Support (NOVA Consulting, 1982).
- Economic Impact of Rail Short Line Abandonment (CONSAD for US Rail Administration, 1981).

GRADUATE STUDENT THESIS SUPERVISION

Doctoral Students

1. Grahn, Rick, (2021), Evaluating and Optimizing Shared Mobility Services to Improve Public Transit Efficiency, Accessibility and Reliability (Co-advised with Sean Qian).
2. Harper, Corey, (2017), Transitioning to a Connected and Automated Vehicle Environment: Opportunities for Improving Transportation (co-advised with Constantine Samaras).
3. Seki, Stephanie, Evaluating the economic, environmental and policy impacts of ethanol as a transportation fuel in Pennsylvania, (2016), (co-advised with Michael Griffin).
4. Peck, Dana, 'Data-Driven Analyses and Implications in the Transportation World: A focus on Pennsylvania,' (2015) (co-advised with Scott Matthews and Paul Fischbeck).
5. Markolf, Samuel, 'Climate Change Decision Making at the Metropolitan Level: Current Estimates and Future Drivers of Greenhouse Gas Emissions in US Metropolitan Areas, (2015) (co-advised with Ines Azevedo and Scott Matthews).
6. Tom, Michelle, 'Impacts of the Overweight and Obese on the US Food Supply and Transportation Systems,' (2015) (co-advised with Paul Fischbeck).
7. DiPietro, Gwen, 'Economic Value, Resiliency, and Efficiency of Inland Waterway Freight Transport in the Ohio River Basin,' 2014 (co-advised with Scott Matthews), (SAIC consulting).
8. Tamayo, Mili-Ann, 'Regional Greenhouse Gas Emission Effects of Electric Vehicles,' 2014 (co-advised with Scott Matthews and Jeremy Michalek), (Asst. Prof., Univ. of the Phillipines).
9. Hoesley, Rachel, 'Implication of Mobility, Population Shifts and Growth for Metropolitan Energy and Greenhouse Gas Emissions Planning,' 2014 (co-advised with Scott Matthews), (CMU Post-Doc).
10. Traut, Elizabeth, 'Life Cycle Cost and Environmental Implications of US Electric Vehicle and Charging Infrastructure Scenarios,' 2013, (co-advised with Jeremy Michalek), (CMU Post-Doc).
11. Jiang, Mohan, 'Integrating Water Use and Water Quality into Environmental Life Cycle Assessment,' 2013, (DOE Post-doc).
12. Mashayekh, Yeganeh, 'Land Use and Congestion Management Strategies to Promote Urban Environmental Sustainability,' 2013, (co-advised with Paulina Jaramillo), (U.Penn. Post-Doc).

13. Nagengast, Amy, 'Energy Performance Impacts from Competing Low-Slope Roofing Choices and Photovoltaic Technologies,' 2013, (co-advised with Scott Matthews), (Confluence Consulting).
14. Nealer, Rachel, 'Supporting Sustainable Transportation Decision-Making,' 2012, (co-advised with Scott Matthews), (US EPA)
15. Coffelt, Don, 'Roof Management Decision Making Improvement,' 2008. (VP, Facilities Management, Carnegie Mellon).
16. Healey (Wakeley), Heather, 'Alternative Transportation Fuels: Infrastructure Requirements and Environmental Impacts for Ethanol and Hydrogen,' 2008. TRC Energy Services.
17. Higgins, Cortney, "Quantifying and Assessing the Impacts of Heavy Metal Flows: Fate, Transport, and Impacts of Lead Use in U.S. Product Manufacturing.", 2007 (employed by CBO).
18. Hawkins, Troy, 'A Mixed Unit Model for Life Cycle Assessment,' PhD 2007 (Co-advised by Scott Matthews, US EPA).
19. Aguirre, Jose Luis, Technology Change and Environmental Management for Cement Manufacturing: The Cement Industry in the United States (2000-2050), 2005
20. Bergerson, Joule, Future Electricity Generation: An Economic and Environmental Life Cycle Perspective on Near-, Mid- and Long-Term Technology Options and Policy Implications, (Advisors: Chris Hendrickson and Lester Lave), 2005 (U. Calgary)
21. Cicas, Gyorgyi, 'Regional Economics Input-Output Analysis Based Life Cycle Assessment,' PhD 2005.
22. Ochoa Franco, Luis, "Life Cycle Assessment of Residential Buildings," PhD 2005, (employed by Universidad Michoacana, UMSNH, Mexico).
23. Reyna-Caamano, Ruth, "Comparing the Performance of Manufacturing Plants in Mexico and the United States," PhD 2002, (co-advised by Lester Lave, employed by ITESM, Monterrey, Mexico).
24. Januschkowitz, Antje, "Use of Enterprise Resource Planning Systems for Life Cycle Assessment and Product Stewardship," Ph.D. 2002, (employed by Robert Bosch GmBh).
25. Matthews, Deanna, "Assessment and Design of Industrial Environment Management Systems," Ph.D. 2001 (awarded the 2001 Carnegie Mellon William Cooper Award for the Best Dissertation in Management or Management Science) (CMU)
26. Juarez-Espinosa, Octavio Hector, "Development of User Centered Environmental Software Systems," Ph.D. 1999 (co-advised with James Garrett, Jr., employed by Carnegie Mellon, Robotics Institute)
27. Matthews, H. Scott, "External Air Pollution Costs of Industrial Production," Ph.D. 1999 (co-advised with Lester Lave) (CMU)
28. Klausner, Markus, "A Framework for Product Takeback Systems," Ph.D., 1998 (employed by Robert Bosch GmBh).
29. Horvath, Arpad, "Estimation of the Environmental Implications of Construction Materials and Designs using Life Cycle Assessment Techniques," Ph.D., 1997 (employed by U. CA Berkeley)

30. Cobas-Flores, E. Elisa, "Life Cycle Assessment Using Input-Output Analysis," Ph.D., 1996. (co-advised with Lester Lave, employed by ITESM, Monterrey, Mexico.)
31. Hussain, Mansur, "Constraint-Based Project Scheduling," Ph.D., 1993. (employed by Indonesian Ministry of Transport)
32. Bullock, Darcy, "A Model for Roadway Traffic Control Software," Ph.D., 1992. (employed by Purdue University)
33. Morse, David, "Communication in Automated Interactive Engineering Design," Ph.D. 1990 (employed by IBM)
34. Haas, Carl, "A Model of Pavement Surfaces", Ph.D., 1990 (employed by U. Waterloo)
35. Adams, Teresa, "RETAIN: An Integrated Knowledge Based System for Retaining Wall Rehabilitation Design", Ph.D., 1989 (employed by Univ. Wisconsin, Madison).
36. Zozaya-Gorostiza, Carlos, "Knowledge-Based Planning for Construction Projects," Ph.D., 1988 (employed by INAM, Mexico City).
37. Skibniewski, Miroslaw, "Engineering and Economic Analysis of Robotics Application Potential in Selected Construction Operations," Ph.D., 1986 (employed by University of Maryland)
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