

Steven Spears, Ph.D.

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EDUCATION

- PhD in Planning, Policy & Design** September, 2013
Department of Planning, Policy, and Design, University of California, Irvine
Specialization: Design-Behavior Research
Dissertation title: *The Perception-Intention-Adaptation (PIA) Model: a theoretical framework for examining the effect of behavioral intention and neighborhood perception on travel behavior.*
- Master of Urban and Regional Planning** May, 2008
Virginia Commonwealth University, Richmond, VA
- Postgraduate Diploma in Transport and Planning** June, 2007
School of City and Regional Planning, Cardiff University, Wales UK
- Atmospheric Science, University of North Dakota** August 1998-May 2000
32 credits (18 graduate / 14 undergraduate) GPA 4.00/4.00
- Bachelor of Science in Mechanical Engineering** December, 1991
Clemson University, Clemson, SC

PROFESSIONAL EXPERIENCE

August 2019 – present

Associate Professor of Instruction, School of Planning and Public Affairs, University of Iowa, Iowa City, Iowa

August 2014 – July 2019

Assistant Professor, School of Urban and Regional Planning, University of Iowa, Iowa City, Iowa

- Taught Masters level courses in transportation planning and geographic information systems.
- Served as principal investigator and managed multiple research projects related to public health and the built environment. (8 projects, approximate total value: \$300,000)
- Presented research findings at national and international conferences, as well as local and state government meetings.
- Served as faculty advisor for Masters student capstone projects as part of the Iowa Initiative for Sustainable Communities.
- Wrote grant proposals and secured funding for research projects
- Developed articles for publication in academic journals and other research outlets.
- Supervised research and teaching assistants as well as volunteer student researchers.
- Provided academic advising to students in the Masters in Urban and Regional Planning Program.
- Designed and constructed Arduino-based research instrumentation.
- Analyzed research data using GIS (ArcGIS, QGIS), statistical software (R, SPSS, MPlus), and a variety of other analytical software.
- Taught a variety of transportation and urban planning software, including Citilabs CUBE, Urban Footprint, Aequilibrae, and Envision Tomorrow.

PROFESSIONAL EXPERIENCE (cont.)

June 2018 – November 2018

Lead Analyst and Project Manager, Urban Design 4 Health

- Conducted statistical analysis and modeling of travel behavior, land use and related physical activity and health outcomes.
- Coordinated and planned project work with other staff.

May 2011 - June 2014

Assistant Project Scientist / Research Assistant, Neighborhood Travel and Activity Study (NTAS) – Institute for Transportation Studies, University of California, Irvine

- Managed all aspects of a three-year research program that examined the travel and physical activity effects of light rail service on minority and low-income neighborhoods in Los Angeles.
- Developed survey materials and protocols.
- Wrote grant proposals.
- Supervised field and office research personnel and conducted field research.
- Conducted advanced data analysis using ArcGIS and statistical software (SPSS, R, MPlus).
- Developed project website (Drupal) and integrated online data collection system (SurveyGizmo).
- Wrote technical reports for funding organizations and academic papers for publication in peer-reviewed journals.
- Presented study findings at academic conferences and university symposia.
- Conducted outreach presentations to neighborhood groups in the study area.

January 2010 – September 2010

Graduate Research Assistant – Institute for Transportation Studies, University of California, Irvine

- Conducted research on policies and practices for reducing greenhouse gas emissions from passenger vehicles for the California Air Resources Board.
- Reviewed and condensed scientific and academic literature into policy briefs for use as a tool by local governments, planning bodies, and the public.
- Was lead or contributing author on five policy briefs and associated technical background documents.

January 2006 - August 2006, October 2007 – August 2008

Policy and Planning Specialist II, Virginia Department of Transportation, Richmond, Virginia

- Served on agency-wide bicycle and pedestrian policy implementation team.
- Conducted field experiments to evaluate bicycle level of service (BLOS) measures.
- Assisted State Bicycle and Pedestrian Coordinator with scoping and contractor oversight for the VDOT State Bicycle Policy Plan.
- Analyzed census and transportation survey data for VTrans 2025 multimodal plan.

PROFESSIONAL EXPERIENCE (cont.)

January 2001 - May 2005

Aeronautical Engineer/Mission Manager, DynCorp, NASA Wallops Flight Facility, Wallops Island, Virginia

- Project manager and lead installation engineer for complex domestic and international NASA airborne remote sensing projects.
- Defined mission requirements and configured research aircraft to ensure scientific mission success and compliance with aircraft operating limitations.
- Designed aircraft modifications and equipment mountings for scientific instruments.
- Developed cost estimates and budgets for engineering activities and field projects.
- Produced engineering drawings using AutoCAD and Pro/Engineer.
- Oversaw fabrication, testing, and installation of flight hardware.
- Developed mission hazard and risk analyses.
- Wrote engineering and technical reports and made presentations to review boards.
- Conducted logistics planning for complex international and domestic scientific missions.
- Developed engineering department ISO9001 standard operating and quality control procedures.

May 2000 - December 2000

Aviation Engineer / Planner, Talbert and Bright, Inc., Chesterfield, Virginia

- Managed projects and designed airport improvements in accordance with FAA requirements.
- Conducted airfield pavement condition surveys for use in airfield maintenance plans.
- Developed aircraft noise studies using the FAA Integrated Noise Model.
- Produced construction drawings and planning documents using AutoCAD and Microsoft Office.

July 1998 - May 2000

Research Assistant, Atmospheric Sciences Department, Univ. of North Dakota, Grand Forks

- Installed and operated experimental equipment and data systems on research aircraft for NASA's Tropical Rainfall Measuring Mission in Florida, Brazil and the Marshall Islands.
- Arranged logistics for transport of project equipment for international missions.
- Assisted in troubleshooting of aircraft and experimental systems.
- Analyzed cloud physics data obtained during field missions.
- Developed web pages to allow access to mission flight logs and experimental data.

April 1995 - July 1998

Airport Engineer, Talbert and Bright, Inc., Midlothian, Virginia

- Managed engineering design projects for airports throughout the Mid-Atlantic Region.
- Drafted construction plans using AutoCAD and wrote engineering specifications.
- Conducted design and construction meetings with state, federal, and local officials.
- Estimated project costs and tracked budgets.
- Developed airport feasibility and planning studies.
- Conducted airspace analysis in accordance with FAR Part 77.
- Created marketing and presentation materials.

PROFESSIONAL EXPERIENCE (cont.)

January 1993 - April 1995

Project Engineer II, Delta Airport Consultants, Richmond, Virginia

- Designed airport pavements, drainage, and lighting systems using AutoCAD and other engineering software.
- Performed quality control inspections of airport construction projects.
- Compiled contractor pay requests and verified installed quantities.
- Developed cost estimates.

AWARDS AND HONORS

Lincoln Land Inst./Assoc. of Collegiate Schools of Planning Curriculum Innovation Award - 2020

Association of Collegiate Schools of Planning Annual Conference Best Poster - 2017

University of Iowa Old Gold Fellowship - 2014

University of California Transportation Center Student of the Year - 2013

University of California Transportation Center Fellowship - 2009, 2011, 2013

UCI School of Social Ecology - Dean's Dissertation Writing Fellowship - 2012

Federal Highways Administration - Eisenhower Fellowship - 2010

UCI Dept. of Planning, Policy, and Design, Summer Research Fellowship - 2009

Univ. of North Dakota Atmospheric Science Dept., Outstanding Graduate Student 1999, 2000

Clemson University Presidential Alumni Scholarship - 1987-1989

TEACHING EXPERIENCE

University of Iowa, School of Planning and Public Policy

URP:6225 Applied GIS for Planners – Spring 2015-2022

URP:4262 Transportation Research Methods & Analysis – Spring 2015-2022

URP:6266 Transportation and Land Use Planning – Fall 2014-2021, Spring 2019

URP:6209/10 Field Problems in Planning I/II – Spring/Fall 2014-2021

URP:6265 Planning Sustainable Transportation – Fall 2019-2020

URP:4752 8 Generational Planning: Envisioning Cities – Spring 2020

URP:6260 Transportation Planning and Policy – Spring 2021-2022

University of California, Irvine, School of Social Ecology

Instructor – PPD 212 Transportation Planning (graduate) - Winter 2014

Guest Lecturer – PPD 107 Urban and Regional Planning (undergraduate) - Spring 2013, 2014

Teaching Assistant – SE 13 Statistical Analysis in Social Ecology (undergraduate) - Winter 2011

Teaching Assistant – PPD 202 History of Urban Planning (graduate) - Fall 2010

Guest Lecturer – PPD 231 Transportation and Environmental Health (graduate) - Winter 2010

Teaching Assistant – E8 Intro. to Env. Design and Analysis (undergraduate) - Winter 2009

PUBLICATIONS

Peer-reviewed Journal Articles

Hamann, Cara J. and Steven Spears. 2019. Parent-adolescent bicycling safety communication and bicycling behavior. *Accident Analysis & Prevention*, 131, pp.350-356. ISSN 0001-4575. <https://doi.org/10.1016/j.aap.2019.07.017>.

Lee, Jeongwoo; Boarnet, Marlon; Houston, Douglas; Nixon, Hilary; Spears, Steven. 2017. "Changes in Service and Associated Ridership Impacts near a New Light Rail Transit Line." *Sustainability* 9, no. 10: 1827.

Spears, Steven, Marlon G Boarnet, and Douglas Houston. 2017. "Driving Reduction after the Introduction of Light Rail Transit: Evidence from an Experimental-Control Group Evaluation of the Los Angeles Expo Line." *Urban Studies*, July, 0042098016657261. doi:10.1177/0042098016657261.

Houston, Douglas, Marlon G. Boarnet, Gavin Ferguson, and Steven Spears. 2015. "Can Compact Rail Transit Corridors Transform the Automobile City? Planning for More Sustainable Travel in Los Angeles." *Urban Studies*, April, 0042098014529344. doi:10.1177/0042098014529344.

Spears, Steven, Douglas Houston, and Marlon G. Boarnet. 2013. "Illuminating the Unseen in Transit Use: A Framework for Examining the Effect of Attitudes and Perceptions on Travel Behavior." *Transportation Research Part A: Policy and Practice* 58 (December): 40–53. doi:10.1016/j.tra.2013.10.011.

Salon, Deborah, Marlon G. Boarnet, Susan Handy, Steven Spears, and Gil Tal. 2012. "How Do Local Actions Affect VMT? A Critical Review of the Empirical Evidence." *Transportation Research Part D: Transport and Environment* 17 (7): 495–508. doi:10.1016/j.trd.2012.05.006.

Book Chapters

Marlon G. Boarnet, Douglas Houston, Gavin Ferguson, and Steven Spears. 2011. "Land Use and Vehicle Miles of Travel in the Climate Change Debate: Getting Smarter than Your Average Bear" in *Climate Change and Land Policies*, edited by Yu-Hung Hong and Gregory Ingram, Cambridge, Massachusetts: Lincoln Institute of Land Policy. ISBN 978-1-55844-217.

CONFERENCE PAPERS

Yichen Ding, Xun Zhou, Han Bao, Yanhua Li, Cara Hamann, Steven Spears and Zhuoning Yuan. "Cycling-Net: A Deep Learning Approach to Predicting Cyclist Behaviors from Geo-Referenced Egocentric Video Data." SIGSPATIAL Conference, November 5, 2020.

Cara J Hamann, Steven Spears and Corine Peek-Asa. "Pedal Portal: A technological approach to capturing bicycling risk exposure." American Public Health Association Annual Meeting, Atlanta, GA. November 7, 2017.

Steven Spears, Douglas Houston, and Marlon Boarnet. "Do Travel Effects of New Light Rail Service Persist? An examination of longer-term impacts of Los Angeles' Expo Line on travel behavior." Association of Collegiate Schools of Planning Annual Conference, 2014.

CONFERENCE PAPERS (cont.)

Steven Spears, Douglas Houston, and Marlon Boarnet. "Illuminating the Unseen in Neighborhood Travel: A Framework for Examining the Influence of Attitudes, Norms, and Perceptions on Travel Behavior." Association of Collegiate Schools of Planning Annual Conference, 2012.

Douglas Houston, Marlon Boarnet, Wei Li, Steven Spears, and Dongwoo Yang. "How far to the bus? Transit proximity, bus ridership, and physical activity in a low income community." Association of Collegiate Schools of Planning Annual Conference, 2012.

PUBLIC SCHOLARSHIP AND RESEARCH REPORTS

Hamann, Cara and Steven Spears. *Non-Motorized Traffic Monitoring: Phase III*. Prepared for the Iowa Department of Transportation Traffic Safety Improvement Program. Iowa DOT Project Number 92-00-0000-451. July 31, 2021

Hamann, Cara and Steven Spears. *Non-Motorized Traffic Monitoring: Phase II*. Prepared for the Iowa Department of Transportation Traffic Safety Improvement Program. Iowa DOT Project Number 92-00-0000-441. July 31, 2019

Hamann, Cara and Steven Spears. *Non-Motorized Traffic Monitoring: Phase I*. Prepared for the Iowa Department of Transportation Traffic Safety Improvement Program. Iowa DOT Project Number 92-00-0000-425. July 31, 2018

Spears, Steven. *Investing in light rail can reduce how much people drive – but only for those close to stations*. London School of Economics and Political Science USApp – American Politics and Policy Blog. Blog Entry. September 7, 2016 <https://blogs.lse.ac.uk/usappblog/2016/09/07/investing-in-light-rail-can-reduce-how-much-people-drive-but-only-for-those-close-to-stations/>

Nixon, H., Boarnet, M. G., Houston, D., Spears, S., and Lee, J. *Changes in Transit Use and Service and Associated Changes in Driving Near a New Light Rail Transit Line*. MTI Report 12-44. Mineta Transportation Institute. May, 2015.

Houston, D., M. G. Boarnet, and S. Spears. *Evaluating the Benefits of Light Rail Transit*. Prepared for the California Air Resources Board and the California Environmental Protection Agency. Contract Number 12-313. February, 2015.

Marlon G. Boarnet, Steven Spears and Susan Handy. *Impacts of Road User Pricing on Passenger Vehicle Use and Greenhouse Gas Emissions*. Policy Brief and Technical Background Document. California Air Resources Board. September 30, 2014.

Steven Spears, Marlon G. Boarnet and Susan Handy. *Impact of Parking Pricing and Parking Management on Passenger Vehicle Use and Greenhouse Gas Emissions*. Policy Brief and Technical Background Document. California Air Resources Board. September 30, 2014.

Steven Spears, Marlon G. Boarnet, Susan Handy and Caroline Rodier. *Impacts of Land-Use Mix on Passenger Vehicle Use and Greenhouse Gas Emissions*. Policy Brief and Technical Background Document. California Air Resources Board. September 30, 2014.

PUBLIC SCHOLARSHIP AND RESEARCH REPORTS (cont.)

Boarnet, M. G., Hong, A., Lee, J., Wang, X., Wang, W., Houston, D., & Spears, S. *The Exposition Light Rail Line Study: a Before and After Study of the Impact of New Light Rail Transit Service*. Prepared for the Haynes Foundation, 2013.

Marlon Boarnet, Douglas Houston, and Steven Spears. *The Exposition Light Rail Line Study “Before-After” Opening Travel Impacts and New Resident Sample Preliminary Analysis*. Prepared for the Lincoln Institute of Land Policy, June 2013.

Susan Handy, Kristin Lovejoy, Marlon G. Boarnet and Steven Spears. *Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions*. Policy Brief and Technical Background Document. California Air Resources Board. October 8, 2013.

Steven Spears, Marlon G. Boarnet and Susan Handy. *Impacts of Voluntary Travel Behavior Change Programs*. Policy Brief and Technical Background Document. California Air Resources Board. December 3, 2013.

Marlon G. Boarnet, Douglas Houston, and Steven Spears. *The Exposition Light Rail Line Study “Before-Opening” Data Collection and Preliminary Analysis Report*. Prepared for the Lincoln Institute of Land Policy, June 2012.

PRESENTATIONS AND INVITED TALKS

Road Safety and Simulation Conference 2019. Development of a non-motorized traffic monitoring program to inform policy and prevention efforts. Steven Spears, Cara Hamann and Fernando de Carvalho Oliveira Neto. Iowa City, IA, October 15, 2019.

Road Safety and Simulation Conference 2019. A Naturalistic Data Driven Study Assessing the Impact of Daytime Running Lights on Cyclists' Stress. Archana Venkatachalapathy, Cara Hamann and Steven Spears. Iowa City, IA October 16, 2019.

Iowa DOT MPO/RPA Quarterly Meeting. “Development of a State-wide Bicycle and Pedestrian Counting Program to Evaluate Crash Exposure in Iowa” Ames, Iowa. September 23, 2019.

7th International Cycling Safety Conference. “Development of a State-wide Bicycle and Pedestrian Counting Program to Evaluate Crash Exposure in Iowa, USA.” Barcelona, Spain. October 10, 2018.

Des Moines Area MPO. “Bicycle Safety Research Highlights.” Des Moines, Iowa. May 4, 2017

5th International Cycling Safety Conference. “Route Choice of 10-15-Year-Old Cyclists to School: Implications for Safe Routes Infrastructure.” Bologna, Italy. November 3, 2016

“Pedal Portal Naturalistic Bicycling Studies.” Bologna, Italy. November 2, 2016. (co-presenter with Cara Hamann)

Iowa DOT Statewide Traffic Records Coordinating Committee Meeting. “Bicycling to School: Route choice and parent communication”. North Liberty, Iowa. September 15, 2016.

Kohn Colloquium Series, University of Iowa Department of Geographical and Sustainability Studies, “Can Public Transportation Investment Change Minds as Well as Behavior? A Look at LA’s Expo Line Light Rail”. Iowa City, Iowa. February 13, 2015.

PRESENTATIONS AND INVITED TALKS (cont.)

Association of Collegiate Schools of Planning Annual Conference, Paper Presentation, “Do Travel Effects of New Light Rail Service Persist? An examination of longer-term impacts of Los Angeles’ Expo Line on travel behavior.” Philadelphia, Pennsylvania. October 29, 2014

METRANS Transportation Center, University of Southern California, “Which matters more for transit use, access or attitudes? Insights from data from the Exposition light rail corridor.” Los Angeles, California. October 24, 2012.

Association of Collegiate Schools of Planning Annual Conference, Paper Presentation, “Illuminating the Unseen in Neighborhood Travel: A Framework for Examining the Influence of Attitudes, Norms, and Perceptions on Travel Behavior.” Cincinnati, Ohio. November 2, 2012.

RESEARCH GRANTS

National Institutes for Health

PI: Cara Hamann, Co-Is: Cori Peek-Asa, Jodie Plumert, Steven Spears, Joe Cavanaugh
Proposal Title: A Cluster Randomized Trial to Improve Adolescent Bicycling Safety
Funded Budget: \$1,950,000 Duration: July 2021 – March 2026

Mental Health/Disability Services of the East Central Region
Co-PIs: Steven Spears, Cara Hamann, Travis Kraus, Ryan Dusil
Proposal Title: Transportation Gap Analysis
Funded Budget: \$39,732 Duration: January-July 2022

Iowa DOT Traffic Safety Improvement Program
Co-PIs: Cara Hamann, Steven Spears, Sam Sturtz
Proposal Title: Non-motorized Traffic Monitoring, Phase IV.
Funded budget: \$40,000. Duration: July 2020-June 2022.

SAFER-SIM Pilot Grant

PI(s): Xun Zhou, Cara J Hamann, Steven Spears
Understanding Bicyclists’ Behaviors Through Learning from Big Trip Data.
Funded budget: \$30,000 Duration: June 2019-May 2021

Iowa DOT Traffic Safety Improvement Program
Co-PIs: Cara Hamann, Steven Spears, Sam Sturtz
Proposal Title: Non-motorized Traffic Monitoring, Phase III.
Funded budget: \$50,000. Duration: July 2019-June 2021.

Iowa DOT Traffic Safety Improvement Program
Co-PIs: Cara Hamann, Steven Spears, Sam Sturtz
Proposal Title: Non-motorized Traffic Monitoring, Phase II.
Funded budget: \$60,000. Duration: July 2018-June 2019.

RESEARCH GRANTS (cont.)

University of Iowa Injury Prevention Research Center

PI: Steven Spears, Co-Investigator: Cara Hamann

Proposal title: Advanced bicycle safety system effects on bicyclist behavior, stress, and vehicle lateral passing distance.

Funded amount: \$22,484. Duration: July 2017-June 2018.

Iowa DOT Traffic Safety Improvement Program

Co-PIs: Cara Hamann, Steven Spears, Sam Sturtz

Proposal Title: Non-motorized Traffic Monitoring, Phase I.

Funded budget: \$50,000. Duration: July 2017-June 2018.

University of Iowa Institute for Clinical and Translational Science

Co-PIs: Helena Laroche, Steven Spears, Mark Berg

Proposal title: The Social and Physical Ecology of Physical Activity, Dietary Patterns, and Body Mass

Index: A Multilevel Examination of Obesity among Low Income Midwestern Families

Funded budget: \$45,000. Duration: July 2016-June 2017.

University of Iowa Injury Prevention Research Center

Co-PIs: Cara Hamann, Steven Spears

Proposal title: Bicycling to School: Route and School Siting Safety Effects

Funded budget: \$22,357. Duration: July 2015-June 2016.

COMMUNITY SERVICE

Iowa Advisory Council on Automated Transportation, Member January 2022 - present

I-380 Corridor Commuter Transportation Steering Committee and Express Bus Service Subcommittee

Member, January 2015 - March 2017

Accomack County, Virginia - Airport Commission Chair - 2005

Accomack County, Virginia - Airport Commission Member - 2002-2005

LICENSES AND ASSOCIATIONS

FAA Private Pilot - single engine land, glider

FAA Remote Pilot - small unmanned aerial systems

American Planning Association - Member

PERSONAL

Birthplace: Harrogate, England

Nationality: UK/US