

Steve Hankey

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Academic Appointments

- 2014-present *Assistant Professor of Urban Affairs and Planning*, College of Architecture and Urban Studies, Virginia Polytechnic Institute and State University.
- 2016-present *Affiliate Faculty*, Civil and Environmental Engineering, College of Engineering, Virginia Polytechnic Institute and State University.
- 2018-present *Affiliate Faculty*, BioBuild Program, Interdisciplinary Graduate Education Program, Virginia Polytechnic Institute and State University.

Education

- 2014 *PhD*, Civil Engineering, University of Minnesota.
- 2012 *MURP*, Urban and Regional Planning, University of Minnesota, *Minor*: Public Health. *MS*, Civil Engineering, University of Minnesota.
- 2005 *BS*, Chemical Engineering, University of Wisconsin.

Teaching Experience

- 2014-present Land Use and Environment: Planning and Policy; Topics in Transport Policy: Planning for Cyclists and Pedestrians; Active Transportation for a Healthy, Sustainable Planet; Pollution Control Planning and Policy; Computer Applications in Urban Planning and Management; PhD Colloquium.

Awards and Honors

- 2018 *Certificate of Teaching Excellence*, College of Architecture and Urban Studies, VT.
- 2017 *Faculty of the Year*, Virginia American Planning Association.
- 2016 *Outstanding Paper*, Pedestrian Committee, Transportation Research Board.
- 2015 *People's Choice Award*, Best Poster, Save Our Towns Summit.
- 2013 *Sally Liu Outstanding Doctoral Student in Air Pollution Exposure Science Award*, Annual meeting of the International Society of Exposure Science.

Professional Experience

- 2006-2008 *Operations Manager*, Zipcar Inc. Responsible for the launch of 2 Zipcar markets (Toronto, ON and Vancouver, BC) and managing 5-10 employees per market.

Professional Organizations

Transportation Research Board (TRB); American Planning Association (APA); International Society of Environmental Epidemiology (ISEE); Association for Collegiate Schools of Planning (ACSP).

Peer Reviewed Publications

Note: An "*" represents a student under my supervision on a project where I am the PI. In my field it is common for the PI to be last author when a student is the lead author.

- Submitted Kim, S., Bechle, M., Hankey, S., Sheppard, L., et al., *Concentrations of criteria pollutants in the contiguous U.S., 1979-2015: Role of prediction model parsimony in integrated empirical geographic regression*. PLOS ONE. [Impact Factor (IF): 2.8]
- Le*, HTK, Buehler, R., Fan, Y., Hankey, S., *Expanding the positive utility of travel through weeklong tracking: Within-person and multi-environment variability of ideal travel time*. Journal of Transport Geography. [IF: 3.6]
- Yeganeh, A., Schenk, T., McCoy, A., Hankey, S., Reichard, G., *State adoption of green building incentives for affordable housing*. Sustainable Cities and Society. [IF: 4.6]

- 2019 Glasgow*, T., Le*, HTK, Geller, E., Fan, Y., Hankey, S., *How transport modes, the built and natural environments, and activities influence mood: A GPS smartphone app study*. *Journal of Environmental Psychology*, 66, 101345. [IF: 3.6]
- Yeganeh, A., McCoy, A., Hankey, S., *Green affordable housing: Cost-benefit analysis for zoning incentives*. *Sustainability*, 11(22), 6269. [IF: 2.6]
- Botello, B., Buehler, R., Hankey, S., Mondschein, A., Jiang, Z., *Planning for walking and cycling in an autonomous-vehicle future*. *Transportation Research Interdisciplinary Perspectives*, 1, 100012. [IF: N/A]
- Le*, HTK, Buehler, R., Hankey, S., *Have walking and cycling increased in the US? A 13-year longitudinal analysis of traffic counts from 13 metropolitan areas*. *Transportation Research Part D: Transport and Environment*, 69, 329-345. [IF: 3.4]
- Lu*, T., Lansing, J., Zhang, W., Bechle, M., Hankey, S., *Land Use Regression models for 60 volatile organic compounds: Comparing Google Point of Interest (POI) and city permit data*. *Science of the Total Environment*, 677, 131-141. [IF: 4.6]
- Hankey, S., Sforza, P., Pierson, M., *Using mobile monitoring to develop hourly empirical models of particulate air pollution*. *Environmental Science and Technology*, 53(8), 4305-4315. [IF: 6.7]
- Le*, HTK., West, A., Quinn, F., Hankey, S., *Advancing cycling among women: An exploratory study of North American cyclists*. *Journal of Transport and Land Use*, 12(1), 355-374. [IF: N/A]
- 2018 Glasgow*, T., Geller, S., Le*, HTK, Hankey, S., *Travel Mood Scale: Development and validation of a survey to measure mood during transportation*. *Transportation Research Part F: Traffic Psychology and Behaviour*, 59, 318-329. [IF: 1.9]
- Le*, HTK, Buehler, R., Hankey, S., *Correlates of the built environment and active travel: Evidence from 20 US metropolitan areas*. *Environmental Health Perspectives*, 126(07), 077011. [IF: 8.4]
- Lu*, T., Mondschein, A., Buehler, R., Hankey, S., *Adding temporal information to direct-demand models: Hourly estimation of bicycle and pedestrian traffic in Blacksburg, VA*. *Transportation Research Part D: Transport and Environment*, 63, 244-260. [IF: 3.4]
- Yeganeh*, A., Hall, R., Pearce, A., Hankey, S., *A social equity analysis of the U.S. public transportation system based on job accessibility*. *Journal of Transport and Land Use*. 11(1), 1039-1056. [IF: N/A]
- 2017 Hankey, S., Lu*, T., Mondschein, A., Buehler, R., *Spatial models of active travel in small communities: Merging the goals of traffic monitoring and direct-demand modeling*, *Journal of Transport and Health*, 7, 149-159. [IF: 2.8]
- Hankey, S., Marshall, J.D., *Urban form, air pollution, and health*. *Current Environmental Health Reports*, 4(4), 491-503. [IF: N/A]
- Lu*, T., Mondschein, A., Buehler, R., Hankey, S., *Designing a bicycle and pedestrian traffic monitoring program to estimate annual average daily traffic in a small rural college town*, *Transportation Research Part D: Transport and Environment*, 53, 193-204. [IF: 3.4]
- Hankey, S., Lindsey, G., Marshall, J.D., *Population-level exposure to particulate air pollution during active travel: Planning for low-exposure, health-promoting cities*. *Environmental Health Perspectives*, 125(4), 527-534. [IF: 8.4]
- 2016 Hankey, S., Lindsey, G., *Facility-demand models of peak-period pedestrian and bicycle traffic: A comparison of fully-specified and reduced-form models*. *Transportation Research Record*. 2586, 48-58. [IF: 0.7]

- Wang, J., Lindsey, G., Hankey, S., Wu, X., *Monitoring and modeling urban trail traffic: Validation of direct demand models in Minneapolis, MN and Columbus, OH.* Transportation Research Record, 2593, 47-59. [IF: 0.7]
- 2015 Hankey, S., Marshall, J.D., *On-bicycle exposure to particulate air pollution: particle number, black carbon, PM_{2.5}, and particle size.* Atmospheric Environment, 122, 65-73. [IF: 3.7]
- Hankey, S., Marshall, J.D., *Land use regression models of particulate air pollution (particle number, black carbon, PM_{2.5}, particle size) using mobile monitoring.* Environmental Science & Technology, 49(15), 9194-9202. [IF: 6.7]
- Hankey, S., Sullivan, K., Kinnick, A., Koskey, A., et al., *Using objective measures of stove use and indoor air quality to evaluate a cookstove intervention in rural Uganda.* Energy for Sustainable Development, 25, 67-74. [IF: 2.7]
- Dekoninck, L., Botteldooren, D., Int Panis, L., Hankey, S., et al., *Applicability of a noise-based model to estimate in-traffic exposure to black carbon and particle number concentrations in different cultures.* Environment International, 74, 89-98. [IF: 7.3]
- 2014 Hankey, S., Lindsey, G., Marshall, J.D., *Day-of-year scaling factors and design considerations for non-motorized traffic monitoring programs.* Transportation Research Record, 2468, 64-73. [IF: 0.7]
- Wang, X., Lindsey, G., Hankey, S., *Estimating mixed-mode urban trail traffic using negative binomial regression models.* Journal of Urban Planning and Development, 140(1), 1-9. [IF: N/A]
- 2012 Hankey, S., Lindsey, G., Wang, X., Borah, J., et al., *Estimating use of non-motorized infrastructure: models of bicycle and pedestrian traffic in Minneapolis, MN.* Landscape and Urban Planning, 107(3), 307-316. [IF: 5.0]
- Hankey, S., Marshall, J.D., Brauer, M., *Health impacts of the built environment: within-urban variability in physical inactivity, air pollution, and ischemic heart disease mortality.* Environmental Health Perspectives, 120(2), 247-253. [IF: 8.4]
- 2010 Hankey, S., Marshall, J.D., *Impacts of urban form on future U.S. passenger-vehicle greenhouse gas emissions.* Energy Policy, 38(9), 4880-4887. [IF: 4.0]
- 2009 Boies, A., Hankey, S., Kittelson, D., Marshall, J.D., et al., *Reducing motor vehicle greenhouse gas emissions in a non-California state: a case study of Minnesota.* Environmental Science & Technology, 43(23), 8721-8729. [IF: 6.7]

Technical Reports

- 2018 Botello, B., Buehler, R., Hankey, S., Jiang, Z., Mondschein, A. "Planning for Walking and Cycling in an Autonomous-Vehicle Future." Mid-Atlantic Transportation Sustainability University Transportation Center, Charlottesville, VA.
- Griffen, G., Hankey, S., Simek, C., Le*, HTK, Buehler, R., "Street Noise Relationship to Vulnerable Road User Safety." Safe-D University Transportation Center, Blacksburg, VA.
- 2017 Le*, HTK, Buehler, R., Hankey, S., "Multi-City, National Scale Direct-Demand Models of Peak-Period Bicycle and Pedestrian Traffic." Mid-Atlantic Transportation Sustainability University Transportation Center, Charlottesville, VA.
- 2016 Hankey, S., Lu*, T., Mondschein, A., Buehler, B., "Designing a Bicycle and Pedestrian Traffic Count Program to Estimate Performance Measures on Streets and Sidewalks in Blacksburg, VA." Mid-Atlantic Transportation Sustainability University Transportation Center, Charlottesville, VA.

- 2015 Lindsey, G., Petesch, M., Hankey, S., “The Minnesota Bicycle and Pedestrian Counting Initiative: Implementation Study.” Minnesota Department of Transportation, Research Services Section, St. Paul, MN.
- 2013 Lindsey, G., Hankey, S., Wang, X., Chen, J., “The Minnesota Bicycle and Pedestrian Counting Initiative: Methodologies for Non-motorized Traffic Monitoring.” Minnesota Department of Transportation, Research Services Section, St. Paul, MN.
- Lindsey, G., Hankey, S., Wang, X., “Feasibility of Using GPS to Track Bicycle Lane Positioning.” Intelligent Transportation Systems Institute, Center for Transportation Studies, University of Minnesota, Minneapolis, MN.
- 2012 Lindsey, G., Hoff, K., Hankey, S., Wang, X., “Understanding Non-Motorized Transportation Facilities.” Intelligent Transportation Systems Institute, Center for Transportation Studies, University of Minnesota, Minneapolis, MN.

Conference or Invited Presentations

Note: Abbreviations are ISEE (International Society of Environmental Epidemiology), TRB (Transportation Research Board), ALR (Active Living Research), NATMEC (National Travel Monitoring Exposition and Conference), AERA (American Educational Research Association), ACSP (Association of Collegiate Schools of Planning), CTS (Center for Transportation Studies, U. of MN), TPAQ (Transportation Planning and Air Quality), AGU (American Geophysical Union).

- 2019 *Oral Presentation*, Co-author, “Community-level mapping of ambient air pollution in Louisville, KY,” AGU, December, San Francisco, CA.
- Oral Presentation*, Student lead author, “Using a community-based low-cost sensor network to validate and improve air quality models,” ACSP, October, Greenville, SC.
- Oral Presentation*, Co-author, “Travel mode choice and well-being revisited: Tackling mode self selection attitude and satisfaction with travel and activities using a smartphone survey,” ACSP, October, Greenville, SC.
- Oral Presentation*, Lead author (invited), “New empirical methods for modelling air pollution and active travel,” Plenary: Air Pollution in the Cloud, September, Toronto, CA.
- Oral Presentation*, Lead author, “Spatial predictions of active travel based on Google Street View imagery and Point of Interest data,” ISEE, August, Utrecht, Netherlands.
- Oral Presentation*, Student lead author, “External validation of national land use regression models for PM_{2.5} using a low-cost sensor network,” ISEE, August, Utrecht, Netherlands.
- Poster Presentation*, Student lead author, “How transport modes, the built and natural environment, and activities are associated with mood: A GPS smartphone app study,” ISEE, August, Utrecht, Netherlands.
- Poster Presentation*, Co-author, “Comparison between informative and random selection of geographic variables in national-scale air pollution prediction,” ISEE, August, Utrecht, Netherlands.
- Poster Presentation*, Co-author, “Air quality, asthma, and school absenteeism,” Society for Research in Child Development, March, Baltimore, MD.
- Poster Presentation*, Co-author, “Pedestrian and bicycle crashes in Minneapolis: An equity perspective,” ALR, February, Charleston, SC.
- Poster Presentation*, Co-author, “Exploring street noise and bicycle safety: Initial evidence from Austin, Texas, and the Washington, D.C., Capital area,” TRB, January, Washington, DC.
- Poster Presentation*, Co-author, “Planning for walking and cycling in an autonomous vehicle future,” TRB, January, Washington, DC.
- 2018 *Oral Presentation*, Lead author, “Leveraging Google POI data and machine learning to predict bicycle and pedestrian traffic volumes for the contiguous US,” ACSP, October, Buffalo, NY.

- Oral Presentation*, Student lead author, “Using crowdsourcing, machine learning, and remote sensing to classify urban form: associations with urban air quality,” ACSP, October, Buffalo, NY.
- Oral Presentation*, Student lead author, “Exploring the role of travel satisfaction and travel liking attitude on mode choice,” ACSP, October, Buffalo, NY.
- Poster Presentation*, Student lead author, Travel-liking attitude revisited: Evidence from Washington, DC and Blacksburg, VA,” ACSP, October, Buffalo, NY.
- Oral Presentation*, Student lead author, “Leveraging Google POI data, crowdsourcing, and machine learning to predict US NO₂ concentrations,” ISEE, September, Ottawa, Canada.
- Oral Presentation*, Lead author, “Merging mobile measurements, traffic emissions models, and LUR towards real-time estimation of air pollution” ISEE, September, Ottawa, Canada.
- Oral Presentation*, Co-author, “A parsimonious approach to national prediction: Criteria pollutants in the contiguous US, 1979-2015,” ISEE, September, Ottawa, Canada.
- Poster Presentation*, Student lead author, “Exploring the utilitarian and non-utilitarian bicycling behaviours of north American women cyclists,” ISEE, September, Ottawa, Canada.
- Poster Presentation*, Student lead author, “Impact of the built environment on active travel: A longitudinal study of 12 US metropolitan areas,” ISEE, September, Ottawa, Canada.
- Oral Presentation*, Student lead author, “Adding temporal information to direct-demand models: Hourly estimation of bike and ped. traffic in Blacksburg, VA,” NATMEC, June, Irvine, CA.
- Oral Presentation*, Co-author, “Geographic and social mobility: The long-term effects of early childhood experiences,” AERA, April, New York, NY.
- Oral Presentation*, Lead author, “Mobile monitoring of air pollution for improved exposure assessment,” EWR Group CEE, Virginia Tech, February, Blacksburg, VA.
- Poster Presentation*, Co-author, “Exploring the relationship between street lighting levels and physical activity after dark: Results of a pilot study,” ALR, February, Banff, Canada.
- Poster Presentation*, Student lead author, “Towards generalizability in direct-demand modelling: Exploratory models from 20 US jurisdictions,” TRB, January, Washington DC.
- Poster Presentation*, Student lead author, “Affection for daily travel: Exploring satisfaction associated with travel modes and activity during trips,” TRB, January, Washington DC.
- 2017 *Oral Presentation*, Student lead author, “An equity analysis of the US public transportation system based on job accessibility,” ACSP, October, Denver, CO.
- Oral Presentation*, Lead author, “Impacts of the built environment on active travel: Evidence from 20 US metropolitan areas,” ACSP, October, Denver, CO.
- Oral Presentation*, Student lead author, “Exploring travel affinity associated with travel modes and multitasking,” ACSP, October, Denver, CO.
- Poster Presentation*, Lead author, “Using mobile sensing of air quality to design low-exposure bicycle routes,” ACSP, October, Denver, CO.
- Oral Presentation*, Student lead author, “Incorporating area emission sources in land use regression models of volatile organic compounds,” ISEE, September, Sydney, Australia.
- Oral Presentation*, Student lead author, “Assessing the impact of transport mode, trip purpose, and the built environment on mood using a smartphone app,” ISEE, Sept., Sydney, Australia.
- Oral Presentation*, Student lead author, “Impacts of the built environment on active travel: Evidence from 20 US metropolitan areas,” ISEE, September, Sydney, Australia.
- Oral Presentation*, Lead author, “Using mobile monitoring to develop hourly LUR models of particle number and black carbon concentrations,” ISEE, September, Sydney, Australia.

- Poster Presentation*, Co-author, “Can street lighting promote physical activity after dark? An exploratory study,” Illuminating Engineering Society, August, Austin, TX.
- Poster Presentation*, Co-author, “Assessing barriers and motivators for trail use in a college town,” Southeast American College of Sports Medicine, February, Greenville, SC.
- Poster Presentation*, Co-author, “Monitoring shared-use paths: applying warrants for pedestrian hybrid beacons and traffic signals,” TRB, January, Washington, DC.
- Poster Presentation*, Lead author, “Merging traffic monitoring and direct-demand modeling to assess spatial patterns of AADB and AADP,” TRB, January, Washington, DC.
- Poster Presentation*, Co-author, “Exposure to risk and the built environment: empirical study of bicycle crashes in Minneapolis, MN,” TRB, January, Washington, DC.
- Poster Presentation*, Student lead author, “Designing a bicycle and pedestrian traffic monitoring program to estimate AADT in a small rural college town,” TRB, January, Washington, DC.
- 2016 *Poster Presentation*, Co-author, “Exposure to risk and the built environment, an empirical study of bicycle crashes in Minneapolis,” US DOT-UTC, December, Washington, DC.
- Poster Presentation*, Co-author, “Exposure to risk and the built environment, an empirical study of bicycle crashes in Minneapolis,” ACSP, November, Portland, OR.
- Oral Presentation*, Lead author (invited), “Designing Bicycle and Pedestrian Traffic Count Program to Estimate Performance Measures on Streets and Sidewalks in Blacksburg, VA,” Transportation Planning Research Advisory Committee VDOT, November, Charlottesville, VA.
- Poster Presentation*, Lead author, “Land use regression models for active travel: Spatial estimates of walking and biking for exposure assessment,” ISEE, September, Rome, Italy.
- Poster Presentation*, Lead author, “A real-time, mobile air quality monitoring platform for developing spatial models,” ISEE, September, Rome, Italy.
- Oral Presentation*, Lead author, “Active travel and exposure to air pollution: Implications for transportation and land use planning,” TPAQ, August, Minneapolis, MN.
- Oral Presentation*, Student lead author, “Designing a bicycle and pedestrian traffic count campaign in a small rural college town,” NATMEC, May, Miami, FL.
- Poster Presentation*, Lead author, “Using temporal patterns of bicycle and pedestrian traffic to define factor groups,” NATMEC, May, Miami, FL.
- Oral Presentation*, Lead author (invited), “Building clean, health-promoting cities: Making a case for active travel,” Olmsted Seminar, Georgia Tech, March, Atlanta, GA.
- Oral Presentation*, Lead author, “Facility-demand models of pedestrian and bicycle traffic: A comparison of fully-specified and reduced-form models,” TRB, January, Washington, DC.
- Poster Presentation*, Co-author, “Monitoring and modeling urban trail traffic: Validation of direct demand models in Minneapolis, MN and Columbus, OH,” TRB, January, Washington, DC.
- Oral Presentation*, Lead author (invited), “A bicycle and pedestrian count program in Blacksburg, VA,” MATS-UTC Webinar, January, Charlottesville, VA.
- 2015 *Oral Presentation*, Lead author, “Using facility-demand models to assess exposure to hazards: Non-motorized traffic, accidents, and air pollution,” ACSP, October, Houston, TX.
- Oral Presentation*, Lead author, “Active travel and exposure to air pollution: Implications for planning healthy cities,” ISEE, August, Sao Paulo, Brazil.
- Oral Presentation*, Lead author, “Land use regression models of particulate air pollution using mobile monitoring,” ISEE, August, Sao Paulo, Brazil.
- Poster Presentation*, Lead author, “Exposure to on-road particulate air pollution while cycling,” ISEE, August, Sao Paulo, Brazil.

- Poster Presentation*, Lead author, “Designing bicycle and pedestrian count programs,” MATS University Transportation Center Annual Meeting, August, Wilmington, DE.
- Oral Presentation*, Co-author, “Physical Activity and Air Quality: a transdisciplinary research opportunity,” Moving Active Transportation to Higher Ground, April, Washington DC.
- Poster Presentation*, Lead author, “Exposure to particulate air pollution while cycling,” TRB, January, Washington, DC.
- 2014 *Oral Presentation*, Lead author, “Describing spatial patterns of non-motorized traffic: Models of bicycle and pedestrian traffic for use in practice,” ACSP, October, Philadelphia, PA.
- Oral Presentation*, Lead author, “Modeling spatial patterns of bicycle and pedestrian traffic to estimate exposure to hazards,” ISEE, August, Seattle, WA.
- Oral Presentation*, Co-author, “Air pollution and physical activity: what we need to know to inform public health decision making,” ISEE, August, Seattle, WA.
- Poster Presentation*, Lead author, “Using objective measures of stove use and indoor air quality to evaluate a cookstove intervention in Uganda,” ISEE, August, Seattle, WA.
- Oral Presentation*, Lead author, “Performance measures for urban trails: Minneapolis, MN,” CTS, May, St. Paul, MN.
- Poster Presentation*, Lead author, “Measuring particulate air pollution exposure using a mobile bicycle-based platform,” ALR, March, San Diego, CA.
- Oral Presentation*, Lead author, “Day-of-year scaling factors and design considerations for non-motorized traffic monitoring programs,” TRB, January, Washington, DC.
- Oral Presentation*, Co-author, “Performance measures for urban trails: Minneapolis, MN,” ACSP, October, Philadelphia, PA.
- 2013 *Oral Presentation*, Lead author, “Comparing spatial patterns of non-motorized traffic and particulate air pollution in Minneapolis, MN,” ISEE, August, Basel, Switzerland.
- Oral Presentation*, Lead author, “Neighborhood walkability and air pollution exposure,” ISEE, August, Basel, Switzerland.
- Poster Presentation*, Lead author, “Measuring and modeling particulate air pollution using a mobile, bicycle-based platform,” ISEE, August, Basel, Switzerland.
- Poster Presentation*, Lead author, “Measuring particulate air pollution by bicycle,” Bicycle Urbanism Symposium, June, Seattle, WA.
- Oral Presentation*, Lead author, “Measuring particulate air pollution using a mobile, bicycle-based platform: Implications for cyclists’ and pedestrians’ exposure to urban air pollution,” ECTRI-FERSI Young Researcher Seminar, June, Lyon, France.
- Oral Presentation*, Lead author, “Measuring particulate air pollution using a mobile, bicycle-based platform,” CTS, May, St. Paul, MN.
- 2012 *Poster Presentation*, Lead author, “Estimating use of non-motorized infrastructure: Models of pedestrian and bicycle traffic in Minneapolis,” ALR, March, San Diego, CA.
- Oral Presentation*, Lead author, “Evaluating non-motorized transportation infrastructure in Minneapolis,” CTS, May, St. Paul, MN.
- 2011 *Poster Presentation*, Lead author, “Health impacts of the built environment: within-urban variability in physical inactivity, air pollution, and heart disease,” ISEE, Sept., Barcelona, Spain.
- 2010 *Oral Presentation*, Lead author, “Health impacts of the built environment: physical inactivity, air pollution, and ischemic heart disease in Los Angeles,” ISEE, August, Seoul, Korea.
- 2009 *Oral Presentation*, Lead author, “Rural water supply in Masaka, Uganda,” Central States Water Environment Association Annual Conference, May, Chicago, IL.

Oral Presentation, Lead author, "Future passenger-vehicle CO₂ emissions: Application of an urban scaling rule," TPAQ, July, Denver, CO.

2008 *Oral Presentation*, Lead author, "Reducing greenhouse gas emissions from transportation sources in Minnesota," Minnesota Public Transit Association, September, St. Paul, MN.

Media appearances and coverage

- 2018 Environmental Health Perspectives. "Active travel for all? The surge in public bike-sharing programs." August 3. <https://ehp.niehs.nih.gov/doi/full/10.1289/EHP3754>
- WSLS news. "New bike share program to launch this summer in the NRV." June 25. <https://www.wsls.com/news/virginia/new-river-valley/new-bike-share-program-to-launch-this-summer-in-the-nrv>
- 2017 Artsenkrant, "Doordachte stadsplanning tegen luchtvervuiling (translation: Thoughtful city planning against pollution)."
- 2016 Environmental Monitor. "Weather bikes stand out in urban studies, advance science dialogue." Nov. 3. <http://www.fondriest.com/news/weather-bikes-stand-urban-studies-advance-science-dialogue.htm>
- 2013 Star Tribune. "His work may lead to cleaner cycling routes." July 25. <http://www.startribune.com/local/blogs/216949181.html>
- 2012 WCCO news. "Grad Student Researches Pollution Effects on Cyclists." September 26. <http://minnesota.cbslocal.com/2012/09/26/u-of-m-grad-student-researches-pollution-effects-on-cyclists/>

Advising and Mentoring

Current advising load

PhD chair or co-chair: 3; PhD committee: 4

Undergraduate Independent Research Study

Complete

- Ross Zelenske (Public and Urban Affairs). Topic: Estimating bicycle centrality for Blacksburg, VA. Job after graduation: Planner I, City of Hickory, NC.
- Henry Cohen (Geography). Topic: Lidar data for measuring urban form. Job after graduation: Master's student, Urban and Regional Planning, University of Virginia.

Master's Student Advisees (Thesis only)

Complete

- Joe Niland (Chair; Urban and Regional Planning). Topic: Ecological Urban Revitalization; Baltimore, Maryland Case Study. Job after graduation: Associate of Landscape Architecture, Design Resource Group.
- Armin Yeganeh (Chair; Urban and Regional Planning). Topic: Accessibility, Equity, and the US Public Transit System. Job after Graduation: PhD student, VT.
- Tianjun Lu (Chair; Urban and Regional Planning). Topic: Designing a non-motorized traffic count campaign in a small rural college town. Job after Graduation: PhD student, VT.

Doctoral Student Advisees

Complete

- Huyen Le (Co-chair; Planning, Governance, and Globalization). Topic: Spatiotemporal models of bicycle and pedestrian traffic; Travel affinity, mood, and mode choice. Job after graduation: Assistant Professor, Ohio State University.

Current

- Tianjun Lu (Chair; Planning, Governance, and Globalization). Topic: Urban form and air quality; national LUR models of air quality.
- Meng Qi (Chair; Planning, Governance, and Globalization). Topic: Land Use Regression models of urban air quality using mobile monitoring.
- Asmaa Al-Azmi (Co-chair; Civil and Environmental Engineering). Topic: Real-time Land Use Regression models.

University, Department, and Professional Service

- 2019-present Associate Chair – Urban Affairs and Planning program: Support UAP program chair including degree administration, faculty affairs, and university governance.
- 2018-present Director of PhD program – UEDP track: Responsible for coordinating admissions and funding for the UEDP track of the Planning, Governance, and Globalization degree.
- 2017-present Member, Editorial Review Board for *Environmental Health Perspectives*: Review articles submitted to EHP and report to Associate Editors on review process and outcomes.
- 2015-present Member, Town of Blacksburg “Corridor” Committee: Attend regular meetings focused on bicycling and walking. Incorporate committee in my courses and research agenda.
- 2015-present Member, Watershed Management Minor Committee: Teach a core course in the minor. Participate in committee activities to ensure curriculum for the minor is current.
- 2014-present Faculty Co-advisor, Engineers Without Borders: Advise EWB officer group on how to engage funders and manage large organizations. Current EWB projects are in Guatemala, Uganda, and Blacksburg. My tasks include: (1) attend officer meetings (~1 per month), (2) provide guidance on fundraising, and (3) give general advice on project management and travel in developing countries.
- 2016-2019 Member, College of Architecture and Urban Studies Honorifics Committee: Attend meetings of this committee to select awardees for alumni, student, and faculty awards.
- 2014-2018 Internship Coordinator, Urban Affairs and Planning: Organize internship activities in Urban Affairs and Planning: (1) distribute internship opportunities, (2) develop projects with students and sponsor organizations, and (3) ensure students are integrated into significant activities at sponsor organizations.
- 2014-2016 Chair, Master of Urban and Regional Planning Curriculum Committee: Tasks include regular meetings with faculty members to map course and program learning objectives and determine consensus on a new degree structure.

Journal Reviewer: *American Journal of Preventive Medicine, Atmosphere, Atmospheric Environment, Canadian Journal of Civil Engineering, Energy for Sustainable Development, Environment Development and Sustainability, Environment International, Environmental Health, Environmental Health Perspectives, Environmental Pollution, Environmental Research, Environmental Science and Technology, International Journal of Environmental Research and Public Health, Journal of Transport Geography, Journal of Transport and Health, Journal of Transport and Land Use, Journal of Transportation Engineering, Journal of Urban Planning and Development, Science of the Total Environment, Sustainable Cities and Society, Transactions on Intelligent Transportation Systems, Transportation, Transportation Research Part A: Policy and Practice, Transportation Research Part D: Transport and Environment, Transportation Research Record, and Urban Climate.*

Grant Reviewer: Environmental Protection Agency. Total funds disbursed: ~\$4.5 million.

Current Research Support

Characterizing urban- and finer-scale spatiotemporal variability for select VOC Superfund compounds, NIH, 2017-2022, co-Investigator; VT Lead. Total budget: \$6.6 million; share to VT: \$69,291.

Research objective: Employ mobile monitoring to assess the spatial variability of select VOC compounds in Louisville, KY. VOC concentrations will be compared with urinary metabolite samples to assess health impacts.

Center for Air, Climate, and Energy Solutions, US EPA, 2016-2021, co-Investigator; VT Lead. Total budget: \$10 million; share to VT: \$278,629.

Research objective: Use mechanistic and statistical modeling approaches to detect regional differences for multiple pollutants in the continental US. Focus on developing tools to disseminate information on air quality and policy decisions that can reduce human exposure.

Seeing the forest for the trees: Developing Google street view-based metrics of nature and the influence on health, NIH, 2019-2021, Co-Investigator. Total budget: \$200,000; share to VT: \$8,100.

Research objective: Develop deep learning models to estimate features of nature from street level imagery; apply these nature metrics to several cohorts of school age children.

Past Research Support

Towards real-time air quality models: adding temporal precision to empirical models of air quality, ICTAS (VT), 2017-2019, Principle Investigator. Total budget (and share to VT): \$79,820.

Research objective: Add temporal precision to LUR models developed from mobile measurements using spatiotemporal traffic emissions estimates.

Air quality, asthma, and school absenteeism in Roanoke City public schools, Adaptive Brain DA, Virginia Tech, 2017-2018, co-Investigator. Total budget (and share to VT): \$8,000.

Research objective: Determine association among elevated ozone concentrations, asthma, and school absenteeism for all students in Roanoke City schools over a 3 year period.

Data science to develop urban form metrics using machine learning and longitudinal landsat imagery, Microsoft, 2018-2019, co-Investigator. Total budget (and share to VT): \$20,000 (in computing credits).

Research objective: Develop feasibility study of using landsat satellite imagery to predict urban form for the contiguous US.

Street noise relationship to vulnerable road user safety, Safe-D UTC, 2017-2018, co-Principal Investigator. Total budget: \$54,066; share to VT: \$20,352.

Research objective: Explore use of a publicly available phone application to record noise levels by bicycle. Assess feasibility of using noise as a predictor of bicycle-vehicle crashes.

Planning for walking and cycling in an autonomous vehicle future, MATS-UTC, 2017-2018, co-Investigator. Total budget: \$101,152; share to VT: \$91,250.

Research objective: Develop a structured interview protocol to survey practitioners regarding integration of cycling and walking in future transportation systems with autonomous vehicles.

Developing VOC land use regression models in Minneapolis, MN, City of Minneapolis, 2017-2018, Principal Investigator. Total budget (and share to VT): \$6,300.

Research objective: Investigate feasibility of developing LUR models for 60 VOCs from a community-led monitoring effort.

Multi-city, national-scale, direct-demand models of peak-period bicycle and pedestrian traffic, MATS-UTC, 2016-2017, Principal Investigator. Total budget (and share to VT): \$89,232.

Research objective: Compile a multi-city, national-scale database of bicycle and pedestrian traffic counts. Then, for the first time, use a national-scale dataset to develop direct-demand models of bicycle and pedestrian traffic volumes.

Mood state in transport environments: Assessing the impact of mode, purpose, and the built environment, ISCE (VT), 2016-2017, Principal Investigator. Total budget (and share to VT): \$12,630.

Research objective: Adapt a phone app (Daynamica) to assess mood state after completion of trips by participants and explore impact of transport mode and the built environment.

Designing a bicycle and pedestrian traffic count program to estimate performance measures on streets and sidewalks in Blacksburg, VA, MATS-UTC, 2014-2016, Principal Investigator. Total budget: \$147,218; share to VT: \$135,878.

Research objective: Design a non-motorized traffic count campaign in Blacksburg, VA that adapts current DOT protocols for motor vehicles to estimate standard traffic engineering performance measures for bicycles and pedestrians.