

Geoff Boeing - volkanlabs test

Department of Urban Planning and Spatial Analysis
Sol Price School of Public Policy
University of Southern California

boeing@usc.edu
+1 213 740 2773
geoffboeing.com

EDUCATION

- Ph.D. City and Regional Planning, University of California, Berkeley, 2017
M.S. Information Management, Arizona State University, 2006
B.S. Computer Information Systems *summa cum laude*, Arizona State University, 2004

APPOINTMENTS

- 2019– University of Southern California
Assistant Professor, Department of Urban Planning and Spatial Analysis, 2019–
Faculty Affiliate, Spatial Sciences Institute, 2021–
2021– Brookings Institution
Nonresident Senior Fellow, Metropolitan Policy Program
2018–19 Northeastern University
Assistant Professor, School of Public Policy and Urban Affairs
Faculty Affiliate, Network Science Institute
Faculty Affiliate, Global Resilience Institute
2017–18 University of California, Berkeley
Postdoctoral Researcher, Department of City and Regional Planning

RESEARCH AREAS

Urban informatics and geospatial data science: computational statistics, visualization, and spatial analysis
Transportation planning: street network design, access, equity, and urban form
Housing: emerging technology platforms' impacts on markets, residential mobility, and segregation

PUBLICATIONS

Journal Articles

- 2021 Boeing, G. "Street Network Models and Indicators for Every Urban Area in the World." *Geographical Analysis*, published online ahead of print. doi:10.1111/gean.12281
2021 Boeing, G. "Off the Grid... and Back Again? The Recent Evolution of American Street Network Planning and Design." *Journal of the American Planning Association* 87 (1), 123–137. doi:10.1080/01944363.2020.1819382

- 2021 Boeing, G., M. Besbris, A. Schachter, and J. Kuk. "Housing Search in the Age of Big Data: Smarter Cities or the Same Old Blind Spots?" *Housing Policy Debate* 31 (1), 112–126. doi:10.1080/10511482.2019.1684336
- 2021 Boeing, G. "Spatial Information and the Legibility of Urban Form: Big Data in Urban Morphology." *International Journal of Information Management* 56, 102013. doi:10.1016/j.ijinfomgt.2019.09.009
- 2021 Boeing, G., M. Besbris, D. Wachsmuth, and J. Wegmann. "Tilted Platforms: Rental Housing Technology and the Rise of Urban Big Data Oligopolies." *Urban Transformations* 3, 6. doi:10.1186/s42854-021-00024-2
- 2021 Liu, S., C. Higgs, J. Arundel, G. Boeing, N. Cerdera, D. Moctezuma, E. Cerin, D. Adlakha, M. Lowe, and B. Giles-Corti. "A Generalized Framework for Measuring Pedestrian Accessibility around the World Using Open Data." *Geographical Analysis*, published online ahead of print. doi:10.1111/gean.12290
- 2020 Boeing, G., J. Wegmann, and J. Jiao. "Rental Housing Spot Markets: How Online Information Exchanges Can Supplement Transacted-Rents Data." *Journal of Planning Education and Research*, published online ahead of print. doi:10.1177/0739456X20904435
- 2020 Boeing, G. "Online Rental Housing Market Representation and the Digital Reproduction of Urban Inequality." *Environment and Planning A: Economy and Space* 52 (2), 449–468. doi:10.1177/0308518X19869678
- 2020 Boeing, G. "Planarity and Street Network Representation in Urban Form Analysis." *Environment and Planning B: Urban Analytics and City Science* 47 (5), 855–869. doi:10.1177/2399808318802941
- 2020 Boeing, G. "The Right Tools for the Job: The Case for Spatial Science Tool-Building." *Transactions in GIS* 24 (5), 1299–1314. doi:10.1111/tgis.12678
- 2020 Boeing, G. "A Multi-Scale Analysis of 27,000 Urban Street Networks: Every US City, Town, Urbanized Area, and Zillow Neighborhood." *Environment and Planning B: Urban Analytics and City Science* 47 (4), 590–608. doi:10.1177/2399808318784595
- 2020 Boeing, G. "Urban Street Network Analysis in a Computational Notebook." *Region: Journal of the European Regional Science Association* 6 (3), 39–51. doi:10.18335/region.v6i3.278
- 2019 Kang, W., T. Oshan, L. J. Wolf, G. Boeing, V. Frias-Martinez, S. Gao, A. Poorthuis, and W. Xu. "A Roundtable Discussion: Defining Urban Data Science." *Environment and Planning B: Urban Analytics and City Science* 46 (9), 1756–1768. doi:10.1177/2399808319882826
- 2019 Boeing, G. "Urban Spatial Order: Street Network Orientation, Configuration, and Entropy." *Applied Network Science* 4 (1), 67. doi:10.1007/s41109-019-0189-1
- 2019 Boeing, G. "Street Network Models and Measures for Every US City, County, Urbanized Area, Census Tract, and Zillow-Defined Neighborhood." *Urban Science* 3 (1), 28. doi:10.3390/urbansci3010028
- 2019 Padgham, M., G. Boeing, D. Cooley, N. Tierney, M. Sumner, T. Phan, and R. Beare. "An Introduction to Software Tools, Data, and Services for Geospatial Analysis of Stroke Services." *Frontiers in Neurology* 10, 743. doi:10.3389/fneur.2019.00743
- 2018 Boeing, G. "Measuring the Complexity of Urban Form and Design." *Urban Design International* 23 (4), 281–292. doi:10.1057/s41289-018-0072-1
- 2018 Boeing, G. "Estimating Local Daytime Population Density from Census and Payroll Data."

- Regional Studies, Regional Science* 5 (1), 179–182. doi:10.1080/21681376.2018.1455535
- 2018 Boeing, G. “The Effects of Inequality, Density, and Heterogeneous Residential Preferences on Urban Displacement and Metropolitan Structure: An Agent-Based Model.” *Urban Science* 2 (3), 76. doi:10.3390/urbansci2030076
- 2018 Boeing, G. “Pynamical: Model and Visualize Discrete Nonlinear Dynamical Systems, Chaos, and Fractals.” *Journal of Open Source Education* 1 (1), 15. doi:10.21105/jose.00015
- 2017 Boeing, G. “OSMnx: New Methods for Acquiring, Constructing, Analyzing, and Visualizing Complex Street Networks.” *Computers, Environment and Urban Systems* 65, 126–139. doi:10.1016/j.compenvurbsys.2017.05.004
- 2017 Boeing, G. and P. Waddell. “New Insights into Rental Housing Markets across the United States: Web Scraping and Analyzing Craigslist Rental Listings.” *Journal of Planning Education and Research* 37 (4), 457–476. doi:10.1177/0739456X16664789
- 2017 Boeing, G. “OSMnx: A Python Package to Work with Graph-Theoretic OpenStreetMap Street Networks.” *Journal of Open Source Software* 2 (12), 1. doi:10.21105/joss.00215
- 2016 Boeing, G. “Honolulu Rail Transit: International Lessons from Barcelona in Linking Urban Form, Design, and Transportation.” *Planext* 2, 28–47. doi:10.17418/planext.2016.3vol.02
- 2016 Boeing, G. “Visual Analysis of Nonlinear Dynamical Systems: Chaos, Fractals, Self-Similarity, and the Limits of Prediction.” *Systems* 4 (4), 37. doi:10.3390/systems4040037
- 2014 Boeing, G., D. Church, H. Hubbard, J. Mickens, and L. Rudis. “LEED-ND and Livability Revisited.” *Berkeley Planning Journal* 27 (1), 31–55. doi:10.5070/BP327124500

Book Chapters

- 2022 Boeing, G., M. Batty, S. Jiang, and L. Schweitzer. “Urban Analytics: History, Trajectory, and Critique.” In: *Handbook of Spatial Analysis in the Social Sciences*, edited by S. Rey and R. Franklin. Cheltenham, England: Edward Elgar. In press.
- 2021 Boeing, G. and D. Arribas-Bel. “GIS and Computational Notebooks.” In: *The Geographic Information Science & Technology Body of Knowledge*, edited by J. P. Wilson. Ithaca, NY: University Consortium for Geographic Information Science. doi:10.22224/gistbok/2021.1.2
- 2021 Boeing, G. “Exploring Urban Form Through OpenStreetMap Data: A Visual Introduction.” In: *Urban Experience and Design: Contemporary Perspectives on Improving the Public Realm* (pp. 167–184), edited by J. B. Hollander and A. Sussman. New York, NY: Routledge. doi:10.4324/9780367435585-15
- 2019 Boeing, G. “The Morphology and Circuity of Walkable and Drivable Street Networks.” In: *The Mathematics of Urban Morphology* (pp. 271–287), edited by L. D’Acci. Basel, Switzerland: Birkhäuser. doi:10.1007/978-3-030-12381-9_12
- 2017 Barajas, J. M., G. Boeing, and J. Wartell. “Neighborhood Change, One Pint at a Time: The Impact of Local Characteristics on Craft Breweries.” In: *Untapped: Exploring the Cultural Dimensions of Craft Beer* (pp. 155–176), edited by N. G. Chapman, J. S. Lellock, and C. D. Lippard. Morgantown, WV: West Virginia University Press. doi:10.31235/osf.io/v88hh

Conference Proceedings

- 2019 Boeing, G. “Street Network Patterns, Orientation, and Entropy around the World.” *Compendium of the Transportation Research Board 98th Annual Meeting*. Washington, DC: Transportation Research Board. <https://trid.trb.org/view/1573315>

- 2018 Abdelkader, A., G. Boeing, B. T. Fasy, and D. L. Millman. Topological Distance between Nonplanar Transportation Networks. *Proceedings of the 28th Fall Workshop on Computational Geometry*. New York, NY: City University of New York. <https://bit.ly/3lHhqAD>
- 2018 Boeing, G. “The Relative Circuity of Walkable and Drivable Urban Street Networks.” *Compendium of the Transportation Research Board 97th Annual Meeting*. Washington, DC: Transportation Research Board. <https://trid.trb.org/view/1495502>

Edited Articles and Reviews

- 2018 Boeing, G. “Automated Street Network Analysis for Urban Planners with OSMnx.” *Planning and Technology Today* 117 (Spring), 10–11. doi:10.31235/osf.io/mkbp3
- 2017 Boeing, G. “A Review of the Structure and Dynamics of Cities: Urban Data Analysis and Theoretical Modeling.” *Journal of the American Planning Association* 83 (4), 418. doi:10.1080/01944363.2017.1362306
- 2017 Boeing, G. “Understanding Cities through Networks and Flows.” *Berkeley Planning Journal* 28 (1), 118–123. doi:10.5070/BP328133862
- 2016 Boeing, G. “How Our Neighborhoods Lost Food, and How They Can Get It Back.” *Progressive Planning* 206 (Winter), 35–37. doi:10.31235/osf.io/a5e2q

Reports and Other Publications

- 2021 Boeing, G., Y. Lu, C. Pilgram, and P. Mannino. “Race, Class, and the Production of and Exposure to Vehicular Pollution in Los Angeles.” US Department of Transportation, Pacific Southwest Region UTC. Technical report. <https://bit.ly/3lRQjgM>
- 2020 Boeing, G. “How Much Does It Cost to Rent an Apartment, Anyway?” Planetizen’s Journal of Planning Education and Research Blog Series. Mar 10. <https://bit.ly/37SU4lf>
- 2018 Waddell, P., G. Boeing, M. Gardner, and E. Porter. “An Integrated Pipeline Architecture for Modeling Urban Land Use, Travel Demand, and Traffic Assignment.” US Department of Energy SMART Mobility Urban Science Pillar: Coupling Land Use Models and Network Flow Models. Technical report. doi:10.31235/osf.io/74zaw
- 2017 Boeing, G. “Making Street Network Analysis Easy for Planners with OpenStreetMap.” Association of Collegiate Schools of Planning Blog Series. Apr 11. <https://bit.ly/3n5ac9K>

Patents

- 2014 Beck, A. E., G. Boeing, and D. Shannon. *Systems and Methods for Analyzing Requirements*. United States patent US8650186B2, European patent EP2413256, Australian patent AU2011204935, Canadian patent CA2747481, Chinese patent CN102346763.

Manuscripts under Review

- 2022 Boeing, G. and W. Riggs. “Converting One-Way Streets to Two-Way Streets to Improve Transportation Network Efficiency and Reduce Vehicle Distance Traveled.” Under review.
- 2022 Boeing, G., Y. Lu, and C. Pilgram. “Local Inequities in the Relative Production of and Exposure to Vehicular Air Pollution in Los Angeles.” Under review.
- 2022 Boeing, G., C. Higgs, S. Liu, B. Giles-Corti, J. F. Sallis, E. Cerin, M. Lowe, D. Adlakha, E. Hinckson, A. V. Moudon, D. Salvo, M. A. Adams, L. V. Barrozo, T. Bozovic, G. V. Callejo, X. Delclòs-Alió, J. Dygrýn, S. Ferguson, K. Gebel, T. P. Ho, P. Lai, J. C. Martori, K. Nitvimol, A.

- Queralto, J. D. Roberts, G. H. Sambo, J. Schipperijn, D. Vale, V. Van de Weghe, and J. Arundel. "Using Open Data and Open-Source Software to Develop Spatial Indicators of Urban Design and Transport Features for Achieving Healthy and Sustainable Cities." Under review.
- 2022 B. Giles-Corti, A. V. Moudon, M. Lowe, D. Adlakha, E. Cerin, G. Boeing, C. Higgs, J. Arundel, S. Liu, E. Hinkson, D. Salvo, M. A. Adams, H. Badland, A. A. Florindo, K. Gebel, R. F. Hunter, J. Mitáš, A. L. Oyeyemi, A. Puig-Ribera, A. Queralto, M. P. Santos, J. Schipperijn, M. Stevenson, D. Van Dyck, G. V. Callejo, and J. F. Sallis. "Creating Healthy and Sustainable Cities: What Gets Measured Gets Done." Under review.
- 2022 M. Lowe, D. Adlakha, J. F. Sallis, D. Salvo, E. Cerin, A. V. Moudon, C. Higgs, E. Hinkson, J. Arundel, G. Boeing, S. Liu, P. Mansour, K. Gebel, A. Puig-Ribera, P. B. Mishra, T. Bozovic, J. Carson, J. Dygrýn, A. A. Florindo, T. P. Ho, H. Hook, R. F. Hunter, P. Lai, J. Molina-García, K. Nitvimol, A. L. Oyeyemi, C. D. G. Ramos, E. Resendiz, J. Troelsen, F. Witlox, and B. Giles-Corti. "City Planning Policies to Support Health and Sustainability: An International Comparison of Policy Indicators for 25 Cities." Under review.
- 2022 Cerin, E., J. F. Sallis, D. Salvo, E. Hinkson, T. L. Conway, N. Owen, D. Van Dyck, M. Lowe, C. Higgs, A. V. Moudon, M. A. Adams, K. L. Cain, L. B. Christiansen, R. Davey, J. Dygrýn, L. D. Frank, R. Reis, O. L. Sarmiento, D. Adlakha, G. Boeing, S. Liu, and B. Giles-Corti. "Determining Thresholds for Spatial Urban Design and Transport Features to Create Healthy and Sustainable Cities: Findings from the IPEN Adult Study." Under review.
- 2022 B. Giles-Corti, A. V. Moudon, M. Lowe, E. Cerin, G. Boeing, H. Frumkin, D. Salvo, S. Foster, A. Kleeman, S. Bekessy, T. Hérick de Sa, M. Nieuwenhuijsen, C. Higgs, E. Hinkson, D. Adlakha, J. Arundel, S. Liu, A. L. Oyeyemi, K. Nitvimol, and J. F. Sallis. "What Next? An Expanded View of City Planning and Global Health, and the Need for Evidence-Informed Policy to Be Implemented and Monitored." Under review.
- 2022 Higgs, C., J. Rozek, A. Alderton, B. Giles-Corti, H. Badland, C. De Gruyter, D. Adlakha, K. Simons, A. Both, G. Boeing, E. Cerin, A. De Livera, S. Liu, M. Chandrabose, J. F. Sallis, L. Gunn, and E. Hinkson. "Calculation of Policy Relevant Spatial Indicators of Urban Liveability: Case Studies of Scaling a Research Programme from Local to Global." Under review.

INVITED TALKS

- 2021 "Urban Morphology and Street Network Science." University of Cincinnati, Department of Geography. Cincinnati, Ohio. Oct 15.
- 2021 "Street Network Science and New Urban Data." Cornell University, Tech Campus. Urban Data guest lecture. New York, New York. Oct 13.
- 2021 "Street Networks and the Evolving Urban Structure." CEMFI Empirical Microeconomics seminar series. Madrid, Spain. Apr 8.
- 2021 "Street Network Models and Indicators for Every Urban Area in the World." University of Bristol and Newcastle University Centre for Data. Spatial Analytics and Data seminar series. Newcastle upon Tyne, England. Jan 26.
- 2020 "Street Networks and the Evolving Urban Structure." University of Chicago, Center for Spatial Data Science and Mansueto Institute for Urban Innovation. Chicago, Illinois. Nov 18.
- 2020 "Street Network Models and Indicators for Every Urban Area in the World." Asian Institute of

- Management. The Science of Data seminar series. Makati, Philippines. Oct 26.
- 2020 “OSMnx for Urban Street Network Analysis.” University of California, Los Angeles, Department of Urban Planning. Introduction to GIS and Spatial Data Science, guest lecture. Los Angeles, California. Oct 26.
- 2020 “Introduction to Street Network Analysis with OSMnx.” Alan Turing Institute and University of Warwick. Data Science for Social Good lecture series. London, England. Aug 21.
- 2020 “Volunteered Geographic Information in Urban Analytics.” University of California, Berkeley, Department of City and Regional Planning. Introduction to Urban Data Analytics, guest lecture. Berkeley, California. Jun 17.
- 2020 “Modeling and Analyzing Urban Street Networks with OpenStreetMap Data.” Bird. Santa Monica, California. May 5 (postponed due to pandemic).
- 2020 “Modeling and Visualizing Urban Spatial Form.” California State University, Long Beach, Department of Mathematics and Statistics. Long Beach, California. Apr 24 (postponed due to pandemic).
- 2019 “Urban Data Science: Street Networks and Travel Behavior.” Evidation Health. Data Science Seminar Series. Santa Barbara, California. May 16.
- 2019 “Network Science for Urban Transportation Modeling and Long-Range Planning.” MIT Megacity Logistics Lab at the Center for Transportation and Logistics. Cambridge, Massachusetts. May 9.
- 2019 “Computational Modeling and Analysis in Transportation System Design.” Cornell University. Systems Engineering Seminar Series. Ithaca, New York. Apr 12.
- 2019 “Growth, Access, and Resilience as Urban Technology Paradigms Shift.” The World Bank, Global Facility for Disaster Reduction and Recovery. Washington, DC. Apr 3.
- 2018 “Computational Urban Street Network Analysis.” Virginia Tech. Urban Computing Seminar Series. Arlington, Virginia. Dec 4.
- 2018 “Urban Science and Street Networks.” Massachusetts Institute of Technology, Department of Urban Studies and Planning. Cambridge, Massachusetts. Nov 27.
- 2018 “Introduction to Street Network Analysis with OSMnx.” University of Helsinki, Digital Geography Lab. Helsinki, Finland. Nov 16.
- 2018 “Urban Street Network Science with OSMnx.” Tufts University, Department of Urban and Environmental Policy and Planning. Somerville, Massachusetts. Nov 15.
- 2018 “Free Data for Free Spaces: Democratizing and Disseminating Spatial Network Data and Models for Better Urban Planning.” Venice Biennale of Architecture. Venice, Italy. Oct 24.
- 2018 “Online Rental Housing Market Representation and the Digital Reproduction of Urban Inequality.” Harvard University, Joint Center for Housing Studies. Cambridge, Massachusetts. Sep 20.
- 2018 “Urban Street Network Science: Modeling, Simulating, and Visualizing Complex Transportation Systems.” Uber Technologies. San Francisco, California. Aug 20.
- 2018 “The Study of Street Networks in Urban Data Science.” NYU Center for Data Science. New York, New York. Apr 18.
- 2018 “Computational Street Network Analysis in Urban Form Studies.” Columbia University

- Graduate School of Architecture, Planning, and Preservation. New York, New York. Apr 17.
- 2018 “Scalable Methods for Acquiring, Analyzing, and Visualizing Urban Street Networks.” NYU Center for Urban Science and Progress, Applied Urban Science Group. Brooklyn, New York. Apr 16.
- 2018 “Studying Urban Form and Resilience through Large-Scale Street Network Analysis.” University of California, Santa Barbara, Department of Geography. Santa Barbara, California. Jan 30.
- 2018 “Seeing Cities through New Technologies and Big Data.” University of Oregon, School of Planning, Public Policy, and Management. Eugene, Oregon. Jan 25.
- 2018 “Urban Form, Sustainability, and Large-Scale Street Network Analysis.” Northeastern University, School of Public Policy and Urban Affairs. Boston, Massachusetts. Jan 18.
- 2018 “Understanding Urban Form and Circulation through Large-Scale Street Network Analysis.” Dartmouth College, Department of Geography. Hanover, New Hampshire. Jan 15.
- 2017 “Street Network Analyses of Urban Form Resilience and Equity.” University of Chicago, Mansueto Institute for Urban Innovation. Chicago, Illinois. Nov 2.
- 2017 “Measuring Urban Form Sustainability with Topological and Geometric Street Network Analysis.” Stanford University, Sustainable Urban Systems Initiative. Palo Alto, California. Oct 26.
- 2017 “Graph-Theoretic Representation and Analysis of Urban Street Networks.” Montana State University, Department of Computer Science. Bozeman, Montana. Oct 16.
- 2017 “OpenStreetMap Network Data for Transportation Planning.” Remix Transit Planning. San Francisco, California. Aug 16.
- 2017 “Street Networks: Urban Form and Resilience.” University of Florida, Department of Urban and Regional Planning. Gainesville, Florida. May 8.
- 2017 “Scalable Methods for Acquiring, Analyzing, and Visualizing Urban Street Networks.” The Santa Fe Institute. Santa Fe, New Mexico. Feb 2.
- 2016 “Urban Data Science for Studying Housing Affordability and Urban Form.” NYU Center for Urban Science and Progress. Brooklyn, New York. Dec 14.
- 2016 “New Insights into Rental Housing Markets: Web Scraping and Analyzing Craigslist Rental Listings.” City of Oakland. Oakland, California. May 12.
- 2016 “New Insights into Rental Housing Markets: Web Scraping and Analyzing Craigslist Rental Listings.” City of San Francisco, Citywide Planning Division. San Francisco, California. Apr 19.
- 2016 “Smart Cities, Technology, and Representation: Prospects and Challenges.” Adobe Systems. Sustainability Speaker Series. San Jose, California. Jan 28.

Campus Talks

- 2020 “Street Network Models and Indicators for Every Urban Area in the World.” METRANS University Transportation Center Speaker Series. Los Angeles, California. Oct 27.
- 2018 “Urban Street Network Science with OSMnx.” Northeastern University Seattle Campus. Seattle, Washington. Nov 28.
- 2018 “The Legibility of Urban Spatial Order in Computational Street Network Analysis.” NUVis:

- Northeastern University Visualization Consortium. Boston, Massachusetts. Oct 18.
- 2017 “Urban Street Network Analysis with OSMnx.” Geospatial Innovation Facility, College of Natural Resources, University of California, Berkeley. Berkeley, California. Oct 5.

CONFERENCE ACTIVITY

Keynote and Plenary Addresses

- 2021 “Urban Mobility and Street Network Science.” Regional Studies Association Winter Conference, Regional Studies Regional Science keynote lecture. Online. Nov 8.
- 2019 “Geographic Information, Spatial Networks, and the New Urban Science.” American Association of Geographers Annual Meeting, 8th annual *Transactions in GIS* plenary address. Washington, DC. Apr 3–7.
- 2018 “The Legible and the Illegible: Urban Science, City Design, and Human Circulation.” The Architect of the Future Conference, plenary address. Moscow, Russia. Sep 10–11.

Sessions Organized

- 2017 “Emerging Computational Methods in Urban Design.” Association of Collegiate Schools of Planning Annual Conference. Denver, Colorado. Oct 12–15.

Sessions Chaired

- 2021 “Big Data and Machine Learning for Urban Mobility.” Association of Collegiate Schools of Planning Annual Conference. Miami, Florida. Oct 21–23.
- 2019 “Machine Learning Methods.” Association of Collegiate Schools of Planning Annual Conference. Greenville, South Carolina. Oct 24–27.
- 2019 “Social Systems.” International Conference on Network Science. Burlington, Vermont. May 27–31.
- 2018 “Smart Cities Technologies for Transportation Systems.” Smart Cities: Critical Infrastructure Symposium. Seattle, Washington. Nov 29.

Invited Panelist

- 2022 “City Intelligence with Open Data.” Panelist with Jane Macfarlane and Sobhan Moosavi; chaired by Hua Wei. ACM International Conference on Web Search and Data Mining. Phoenix, Arizona. Feb 21–25.
- 2021 “Machine Learning in Public Health.” Panelist with Catherine D’Ignazio, Jing Gao, and Alykhan Mohamed; chaired by Rumi Chunara. Conference on Neural Information Processing Systems. Online. Dec 6–14.
- 2021 “Plenary Session: AI and Big Data in Real Estate and Urban Studies.” Panelist with Stephanie Sy, Thies Lindenthal, Man Cho, and Warren Wan; chaired by Tien Foo Sing. Joint Real Estate Conference of the American Real Estate and Urban Economics Association, Asian Real Estate Society, and Global Chinese Real Estate Congress. Singapore. Jul 18–21.
- 2020 “Nationwide Studies of Urban Form: Evolution, Innovation, and New Opportunities.” Panelist with Reid Ewing, Shima Hamidi, and Catherine Brinkley; chaired by Steven Richter. Association of Collegiate Schools of Planning Annual Conference. Toronto, Canada. Nov 5–8.

- 2020 “Urban Data Science Beyond the Hype: Understanding the Challenges and Opportunities of Incorporating Data Science into Urban Planning Pedagogy and Practice.” Panelist with Karen Chapple and Atul Pokharel; chaired by Abigail Cochran and Manuel Santana. Association of Collegiate Schools of Planning Annual Conference. Toronto, Canada. Nov 5–8.
- 2019 “Urban Data Science: Methods and Models for Our Changing Cities.” Panelist with Vanessa Frias-Martinez, Wenfei Xu, Song Gao, and Ate Poorthuis; chaired by Levi Wolf and Wei Kang. American Association of Geographers Annual Meeting. Washington, DC. Apr 3–7.
- 2018 “Big Ideas Session on Civic Analytics and Urban Science.” Panelist with Luis Bettencourt, Marta González, and Sarah Williams; chaired by Constantine Kontokosta. Association of Collegiate Schools of Planning Annual Conference. Buffalo, New York. Oct 25–28.
- 2018 “Who Benefits from ‘Smart City’ Technologies? How Can They Be a Piece of the Puzzle Toward Social and Environmental Justice?” Panelist with Lisa Schweitzer, Clint Andrews, and Tom Sanchez; chaired by Mehdi Heris. Association of Collegiate Schools of Planning Annual Conference. Buffalo, New York. Oct 25–28.
- 2017 “Public Communication Strategies for Planning Academics.” Panelist with Jennifer Dill, Yingling Fan, and Justin Hollander; chaired by Carissa Slotterback. Association of Collegiate Schools of Planning Annual Conference. Denver, Colorado. Oct 12–15.

Symposia

- 2021 The Intersection of Smart Cities with Housing and Community Development. Co-hosted by *Housing Policy Debate* and Virginia Tech. Online. Feb 15.
- 2019 Spatial Data Science Symposium: Setting the Spatial Data Science Agenda. Hosted by the University of California, Santa Barbara. Santa Barbara, California. Dec 9–11.

Conference Papers Presented¹

- 2022 Boeing, G., *Y. Lu*,* C. Pilgram,* and P. Mannino.* “Race, Class, and the Production of and Exposure to Vehicular Pollution in Los Angeles.” Association for Public Policy Analysis & Management Fall Conference. Austin, Texas. Mar 27–29.
- 2022 Boeing, G., Y. Lu,* C. Pilgram,* and P. Mannino.* “Local Inequities in the Relative Production of and Exposure to Vehicular Air Pollution in Los Angeles.” American Association of Geographers Annual Meeting. New York, NY. Feb 25–Mar 1.
- 2022 Boeing, G., *Y. Lu*,* C. Pilgram,* and P. Mannino.* “Local Inequities in the Relative Production of and Exposure to Vehicular Air Pollution in Los Angeles.” Transportation Research Board Annual Meeting. Washington, DC. Jan 9–13.
- 2021 Jamal, S., E. Desjardins, G. Boeing, R. Lovelace, and A. Paez. “Using R to Develop Open Source Course Packages with Computational Notebooks: An Example of Transportation Geography.” Innovations in Education Conference. Hamilton, Canada. Dec 9–10.
- 2021 Higgs, C., J. Rozek, A. Alderton, B. Giles-Corti, H. Badland, C. De Gruyter, D. Adlakha, K. Simons, A. Both, G. Boeing, E. Cerin, A. De Livera, S. Liu,* M. Chandrabose, J. F. Sallis, L. Gunn, and E. Hinckson. “Calculation of Policy-Relevant Spatial Indicators of Urban Liveability: Experiences of Scaling a Research Programme from Local to Global.” State of Australasian Cities Conference. Melbourne, Australia. Dec 1–3.

¹Presenting author *italicized* if other than first author. * indicates supervised student coauthor.

- 2021 Boeing, G., *Y. Lu*,* C. Pilgram,* and P. Mannino.* “Race, Class, and the Production of and Exposure to Vehicular Pollution in Los Angeles.” Association of Collegiate Schools of Planning Annual Conference. Miami, Florida. Oct 21–23.
- 2021 Liu, S.,* C. Higgs, J. Arundel, G. Boeing, N. Cerdera,* and D. Moctezuma.* “A Generalized Framework for Measuring Pedestrian Accessibility around the World Using Open Data.” Association of Collegiate Schools of Planning Annual Conference. Miami, Florida. Oct 21–23.
- 2021 Boeing, G. “Street Network Models and Indicators for Every Urban Area in the World.” Transportation Research Board Annual Meeting. Online. Jan 25–29.
- 2020 Boeing, G. “Street Network Models, Indicators, and Relationships with Vehicular Emissions for Every Metropolitan Area in the World.” Association of Collegiate Schools of Planning Annual Conference. Online. Nov 5–8.
- 2020 Higgs, C., S. Liu,* G. Boeing, J. Arundel, M. Lowe, J. Sallis, E. Cerin, A. V. Moudon, E. Hinckson, D. Adlakha, and B. Giles-Corti. “Using Open Data to Measure Policy-Relevant Geospatial Indicators of Healthy, Active Urban Environments in 25 Global Cities.” International Society of Behavioral Nutrition and Physical Activity Annual Meeting. Auckland, New Zealand. Jun 17–20 (postponed due to pandemic).
- 2020 Giles-Corti, B., A. V. Moudon, M. Lowe, M. Stevenson, D. Adlakha, J. Arundel, E. Cerin, E. Hinckson, D. Salvo, C. Higgs, G. Boeing, S. Liu,* and J. Sallis. “Creating Healthy Liveable Active Cities: What Gets Measured Gets Done.” International Society of Behavioral Nutrition and Physical Activity Annual Meeting. Auckland, New Zealand. Jun 17–20 (postponed due to pandemic).
- 2020 Cerin, E., M. Lowe, C. Higgs, A. V. Moudon, M. Stevenson, D. Adlakha, J. Arundel, E. Hinckson, D. Salvo, G. Boeing, S. Liu,* J. Sallis, and B. Giles-Corti. “Urban Design and Transport Policies to Create Healthy, Active Cities across the World: What Are They and How Can We Measure Them?” International Society of Behavioral Nutrition and Physical Activity Annual Meeting. Auckland, New Zealand. Jun 17–20 (postponed due to pandemic).
- 2020 Boeing, G. “Off the Grid... and Back Again? The Recent Evolution of American Street Network Planning and Design.” Western Regional Science Association Annual Meeting. Honolulu, Hawaii. Mar 18–21 (canceled due to pandemic).
- 2020 Boeing, G. “The Street Grid and Car Ownership: Trends in US Transportation Network Design.” Transportation Research Board Annual Meeting. Washington, DC. Jan 12–16.
- 2019 Boeing, G. “Off the Grid: The Evolution of American Street Network Planning and Design.” Association of Collegiate Schools of Planning Annual Conference. Greenville, South Carolina. Oct 24–27.
- 2019 Boeing, G. and *W. Riggs* “Converting One-Way Streets to Two-Way Streets to Improve Transportation Network Efficiency and Reduce Emissions.” Association of Collegiate Schools of Planning Annual Conference. Greenville, South Carolina. Oct 24–27.
- 2019 Boeing, G. “Urban Spatial Order: Street Network Orientation, Configuration, and Entropy.” International Conference on Network Science. Burlington, Vermont. May 27–31.
- 2019 Boeing, G. “The Legibility of Urban Form: Spatial Information Platforms and Visualization.” International Conference on Urban Experience and Design. Medford, Massachusetts. Apr 26.
- 2019 Boeing, G. “Online Rental Housing Market Representation and the Digital Reproduction of Urban Inequality.” Boston Area Research Initiative Annual Conference. Boston,

- Massachusetts. Apr 26.
- 2019 Boeing, G. "The Evolution of American Street Network Design and Planning." Urban Affairs Association Annual Conference. Los Angeles, California. Apr 24–27.
- 2019 Abdelkader, A., G. Boeing, B. T. Fasy, and D. L. Millman. "Local Persistent Homology-Based Distances between Nonplanar Road Networks." Joint Mathematics Meetings. Baltimore, Maryland. Jan 16–19.
- 2018 Abdelkader, A., G. Boeing, B. T. Fasy, and D. L. Millman. "Topological Distance Between Nonplanar Transportation Networks." Fall Workshop on Computational Geometry. Queens, New York. Oct 26–27.
- 2018 Boeing, G. "Sociodemographic Representation of Online Rental Housing Listings: Information Surpluses and Deficits." Association of Collegiate Schools of Planning Annual Conference. Buffalo, New York. Oct 25–28.
- 2018 Waddell, P., I. Garcia-Dorado, S. Maurer, G. Boeing, M. Gardner, E. Porter, and D. Aliaga. "Urban Modeling Without Zones: A Metropolitan Graph-Based Microsimulation of Real Estate Markets and Transportation." Association of Collegiate Schools of Planning Annual Conference. Buffalo, New York. Oct 25–28.
- 2018 Boeing, G. "Transportation Network Modeling and Urban Equity." Dukakis Center for Urban and Regional Policy Transportation Equity Conference. Boston, Massachusetts. Oct 19.
- 2018 Waddell, P., I. Garcia-Dorado, S. Maurer, G. Boeing, M. Gardner, E. Porter, and D. Aliaga. "Architecture for Modular Microsimulation of Real Estate Markets and Transportation." Symposium on Applied Urban Modelling. Cambridge, England. Jun 27–29.
- 2017 Boeing, G. "New Methods for Acquiring and Analyzing Worldwide Street Network Data: A Multiscale Analysis of 27,000 Urban Street Networks." Association of Collegiate Schools of Planning Annual Conference. Denver, Colorado. Oct 12–15.
- 2016 Boeing, G. "Craigslist and U.S. Rental Housing Markets." American Planning Association Annual Conference. Phoenix, Arizona. Apr 2–5.
- 2016 Boeing, G. "Understanding Informal Rental Housing Markets through Public Data." American Association of Geographers. San Francisco, California. Mar 29–Apr 2.
- 2016 Barajas, J. M., G. Boeing, and J. Wartell. "Neighborhood Change, One Pint at a Time: The Impact of Local Characteristics on Craft Breweries." Urban Affairs Association Annual Conference. San Diego, California. Mar 16–19.
- 2015 Boeing, G. "Methods for Measuring the Aggregate Complexity Outcomes of Urban Design." International Conference on Complex Systems. Tempe, Arizona. Sep 28–Oct 2.
- 2015 Boeing, G. "Pedagogy of Urban Informatics." Environmental Design Circus. Berkeley, California. Mar 6.
- 2014 Boeing, G. and P. Waddell. "Web Scraping Urban Data: Lessons from the Lab and the Classroom." Association of Collegiate Schools of Planning Annual Conference. Philadelphia, Pennsylvania. Oct 30–Nov 2.
- 2014 Boeing, G., D. Church, H. Hubbard, J. Mickens, and L. Rudis. "LEED-ND and Perceptions of Livability." Environmental Design Circus. Berkeley, California. Mar 13.

GRANTS AND AWARDS

Awards and Honors

- 2021 USC Price Bronze Level Research Award
- 2021 USC Price ASPD Golden Apple Award for teaching excellence
- 2020 Stough-Johansson Springer Award, best WRSA paper by an early-career scholar
- 2019 Network Science Society Visualization Prize finalist
- 2018 Information Is Beautiful Awards shortlist
- 2014 Kaye Bock Award, best journal article
- 2010 Accenture Inventor Innovation Award

Grants and Fellowships

- 2020–22 Connections Between Built Environments, Policy, and Public Health (\$200,000). The Public Good Projects research grant. PI.
- 2021–22 Improving the Accuracy of Intersection Counts and Densities for Measuring Urban Street Network Compactness and Resilience (\$100,000). Caltrans/Pacific Southwest Region University Transportation Center research grant. PI.
- 2020–21 Race, Class, and the Production of and Exposure to Vehicular Pollution in Los Angeles (\$100,000). US Department of Transportation/Pacific Southwest Region University Transportation Center research grant. PI.
- 2019 Urban Form Impact: Humans, Environment, Equity (\$50,000). NU Tier I research grant. Co-PI with Sara Carr and Jay Cephas.
- 2019 NU CSSH summer research matching grant (\$6,000). PI.
- 2019 NU Lab for Maps, Texts, and Networks research grant (\$2,500). PI.
- 2018 ACSP FWIG Emerging Scholar travel grant (\$500)
- 2018 NU Lab for Maps, Texts, and Networks travel grant (\$1,000)
- 2018 Northeastern University research fund (\$25,000)
- 2016–17 University of California Doctoral Completion Fellowship (\$36,655)
- 2016 UC Berkeley DCRP travel grant (\$500)
- 2016 University of California Graduate Division travel grant (\$900)
- 2015 UC Berkeley DCRP travel grant (\$500)
- 2012–16 University of California Regents' Fellowship (\$158,025)

COURSES TAUGHT

University of Southern California

Urban Informatics

Advanced Urban Analytics

Data, Evidence, and Communication for the Public Good

Northeastern University

Urban Theory and Science

Advanced Spatial Analysis of Urban Systems

Big Data for Cities

University of California, Berkeley

Urban Informatics and Visualization (graduate student instructor)

Planetizen

Python for Planners

Data Analysis and Visualization for Planners

Geospatial Data Analysis

Street Network Analysis

SERVICE**Academic Journal Editorial Boards**

Urban Studies, 2021–

Urban Findings, 2020–

Academic Journal Peer Review

American Behavioral Scientist

American Journal of Sociology

American Sociological Review

Annals of the American Association of Geographers

Applied Network Science

Case Studies on Transport Policy

Cities

Computers, Environment and Urban Systems

Environment and Planning A: Economy and Space

Environment and Planning B: Urban Analytics and City Science

European Physical Journal: Data Science

Geo: Geography and Environment

Geographical Analysis

International Journal of Geographical Information Science

International Planning Studies

International Regional Science Review

ISPRS International Journal of Geo-Information
Journal of the American Planning Association
Journal of Open Source Education
Journal of Planning Education and Research
Journal of Planning Literature
Journal of Transport and Land Use
Journal of Transport Geography
Journal of Urban Technology
Landscape and Urban Planning
Mathematics
Nonlinear Dynamics
Physica A: Statistical Mechanics and Its Applications
PLOS One
Proceedings of the National Academy of Sciences
The Professional Geographer
Region
Research in Transportation Economics
Scientific Reports
Social Forces
Social Indicators Research
Sustainability
Sustainable Cities and Society
Town Planning Review
Transactions in GIS
Transport Findings
Transport Policy
Transport Reviews
Transportation Research Part D: Transport and Environment
Transportation Research Record
Urban Design International
Urban Planning
Urban Science
Urban Studies

Academic Press Peer Review

Cambridge University Press

Routledge

Springer Nature

Funding Agency Peer Review

National Science Foundation

Research Grants Council of Hong Kong

Social Sciences and Humanities Research Council of Canada

Service to Field

Review and Appraisal Committee, Association of Collegiate Schools of Planning, 2021–22

Program Committee, Spatial Data Science Symposium, 2021

Co-Lead, Emerging Data and Technologies track, World Society for Transport and Land Use Research Conference, 2021

Outreach and Engagement Task Force, Association of Collegiate Schools of Planning, 2019–2021

Program Committee, Future Cities Challenge, 2019–20

Review and Appraisal Committee, Association of Collegiate Schools of Planning, 2018–20

Scientific Committee, Symposium on Simulation for Architecture and Urban Design, 2018–20

Book review editor, *Berkeley Planning Journal*, 2013–14

Service to Department

Ph.D. Degree Committee, USC Price, 2020–22

Research Committee, USC Price, 2020–21

Chair, Urban Planning and Development Ph.D. Admissions Sub-Committee, USC Price, 2020–21

Hiring Search Committee, USC DUPSA, 2019–20

Standing Committee on Digital Proficiencies and Quantitative Methods, Northeastern CSSH, 2018–19

Ph.D. program faculty representative, UC Berkeley DCRP, 2015–16

Ph.D. program admissions committee, UC Berkeley DCRP, 2015–16

Doctoral Committees

Robert Binder, USC Price, exam committee

David Rosas Flores, USC Price, exam committee

Thu Nguyen, USC Price, exam committee

Clemens Pilgram, USC Price, exam committee

Bonnie Wang, USC Price, exam committee

Mengya Xu, USC Spatial Sciences Institute, exam committee

Li Yi, USC Spatial Sciences Institute, exam committee

Studio Review Jury

MIT, Workshop on Geographic Information Systems (Prof. Sarah Williams), Fall 2018

MEMBERSHIPS

American Association of Geographers
American Planning Association
Association of Collegiate Schools of Planning
Association for Computing Machinery
Complex Systems Society
Network Science Society
New York Academy of Sciences
Project Management Institute
Python Software Foundation
Regional Studies Association
Urban Affairs Association

CREDENTIALS

U.S. Department of Defense secret clearance
U.S. Department of Homeland Security public trust
Project Management Professional (PMP)

CONSULTING

2017–19 The Public Good Projects, New York, New York
2017–18 Calthorpe Analytics, Berkeley, California
2016–18 UrbanSim Inc., Berkeley, California
2013–18 Avalon Health Economics, Morristown, New Jersey
2013 Raimi & Associates, Berkeley, California
2010–11 Voluntary Service Overseas, London, England

PROFESSIONAL EMPLOYMENT

2009–13 Accenture, New York, New York; London, England; San Diego, California
2007–09 Permission Data, New York, New York
2004–07 Acumen Inc., Mesa, Arizona

Updated July 2022