



openZoning

Zoning data for all



Urban America is in a housing crisis, and the nation is taking notice.

The New York Times

***Google Pledges to Invest
\$1 Billion to Ease Bay Area
Housing Crisis***

Facebook

Facebook Invests \$150 Million
in Affordable Housing for the
Bay Area



**Apple commits \$2.5
billion to combat housing
crisis in California**

But we're not addressing the broken system.

“**The limited (housing) supply response** is not the result of technological constraints, or imperfect competition in the construction industry, but rather consequence of an

the increasingly restrictive regulatory environment.”

- Edward Glaeser, renowned economist and
Harvard Professor

Each regulation in CA cities is associated with a
4.5% and 2.3% increase in housing and rent cost, respectively.

- California study, John Quigley &
Steven Raphael²

Each additional acre of minimum lot size requirement is associated
with a **50% drop in building permits.**

- Boston study, Edward Glaeser &
Bryce Ward¹



1. Edward L. Glaeser and Bryce A. Ward, "The Causes and Consequences of Land Use Regulation: Evidence from Greater Boston"
2. John M. Quigley and Steven Raphael, "Regulation and the High Cost of Housing in California"

Complex zoning is institutionalizing
the housing crisis,



but how can we reform what we can't understand?

"In many cases **zoning exists in a way that is intentionally opaque** because it exists as a tool to create political power and influence and to allow groups **to control outcomes in a way that is not explicitly anti-democratic but is intentionally anti-democratic.**"

- Jascha Franklin-Hodge, Executive Director at the Open Mobility Foundation, former CIO at the City of Boston



The
**Open Zoning Feed Specification
(OZFS)**

the standard format for web-published zoning data





Standardized, open-source zoning data & API

GTFS

Google Transit
Feed Specification



Open
Street
Maps

OPEN ZONING MAPS

MUNICIPALITY

BOSTON

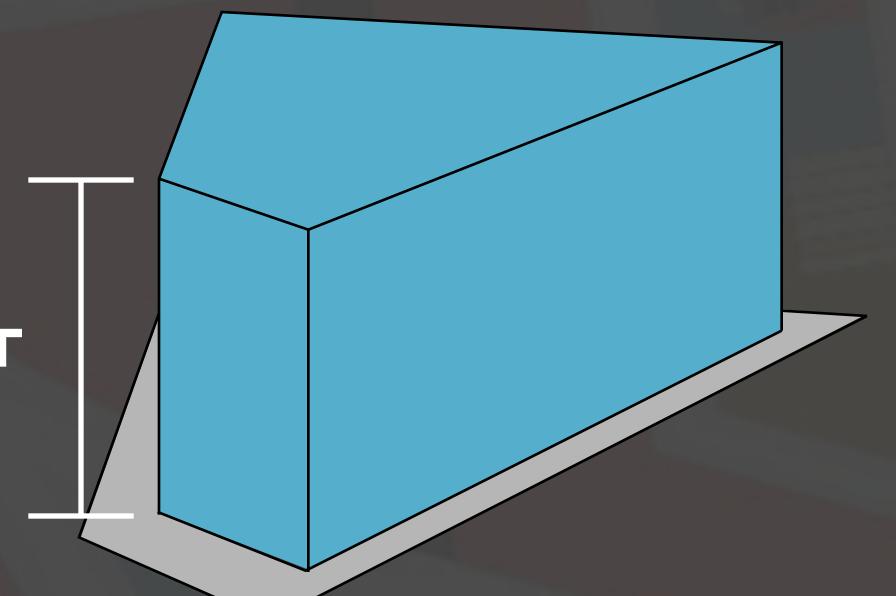
ADDRESS

37 BAY STATE RD.
BOSTON, MA 02215

OVERLAYS
HISTORIC DISTRICT H1
CHARLES RIVER FRONTAGE

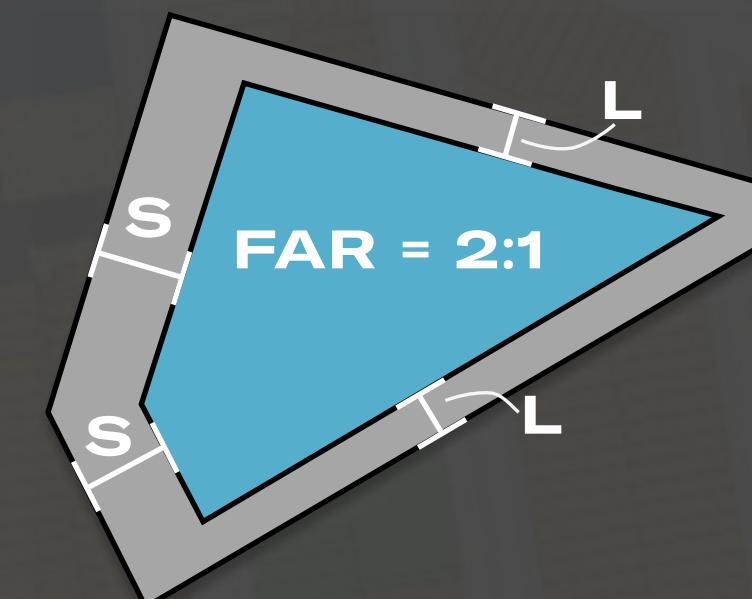
ALLOWABLE USES
SINGLE FAMILY
MULTIFAMILY

MAX. # OF DWELLING UNITS = 12

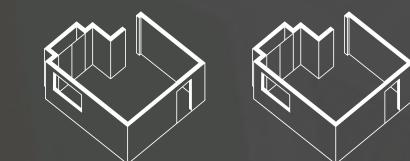


MINIMUM SETBACKS

Street (S) = 15'
Lot (L) = 8'



1 OFFSITE PARKING SPOT REQUIRED PER 2 UNITS



This enables our vision: a future in which accessing & updating zoning data is as easy as searching an address on Google Maps.



Expert & User interviews

6

Developers

4

**Land-Use Policy
Researchers**

4

City Officials

2

**Open Data
Experts**

6

**Buildtech
founders & VCs**

2

**National Institute
Leaders**

Expert & User interviews



Jascha Franklin-Hodge

Executive Director at Open Mobility Foundation



Kairos Shen

Former Director of Planning and Chief Planner for the City of Boston



Alfonso Costa Jr.

Former Deputy Chief of Staff for the U.S. Department of Housing



Andrew Salzberg

Former Director of Transportation Policy at Uber, early OZFS advocate



Paul Salama

CEO of ClearRoad, former Zoning Strategy Lead at Envelope



Matt Haggman

Former Program Director at the Knight Foundation



Chris Hagerbaumer

Former Director at the MobilityData, the non-profit that manages the GTFS



Jim Bildner

CEO at the Draper Richards Kaplan Foundation

What we heard

1

the need for a research-funded data standard

- the market viability of a data standard
- the niche expertise

2

the argument for open source data collection

- continuously changing data
- the network effect

1

the need for a research-funded data standard

Transit data: why private funding works

"The General Bikeshare Feed Specification (GBFS) was originally created by an alliance of private operators **who wanted their data to be available in trip planning apps like transit and Google.**"

-- Andrew Salzberg, Head of Policy at Transit

Zoning data: why private funding doesn't work

"In many cases ***zoning exists in a way that is intentionally opaque*** because it exists as a tool to create political power and influence and to allow groups to control outcomes in a way that is not explicitly anti-democratic but is intentionally anti-democratic."

-- Jascha Franklin-Hodge,
Executive Director at Open
Mobility Foundation

1

the need for a research-funded data standard



Paul Salama

Former Zoning
Strategy Lead at



ENVELOPE
opportunity visualized

The market viability of a data standard

“To say that the data covered 95% of cases was just never good enough to do [profitable] zoning analysis on [at Envelope].

So, that ground up model [of just collecting zoning data] never worked, at least to fund a company.”

1

the need for a research-funded data standard



Paul Salama

Former Zoning
Strategy Lead at



ENVELOPE
opportunity visualized

The niche expertise

“In the end it’s just a three dimensional model problem... and [the number of] people who understand zoning as a concept and are digitally savvy is extremely small... the number of people who are going to be able to do that translation.”

What we heard

1

the need for a research-funded data standard

- the market viability
of a data standard
- the niche expertise

2

the argument for open source data collection

- continuously
changing data
- the network effect

2 the argument for open source data collection



Andrew Salzberg
Former Director of
Transportation Policy
at



continuously changing data

“[Zoning data] is not a one time thing, it's changing all the time.

I think if you can make that [incentive] in the common good [as open data] for multiple people to draw from, the incentive to have people continually keeping it up to date is greater.”

2 the argument for open source data collection



Andrew Salzberg

Former Director of
Transportation Policy

at



the network effect

“One of the reasons that GTFS works is that there's a whole ecosystem around it now. I work at Transit App and we consume GTFS data and so do all kinds of [transport] planning software applications.

There's a whole world around it, which makes it more robust in terms of that when anybody keeps the data up to date, it benefits more.”

Challenges

1

Developing a Zoning Data Standard

precedent



2

Collating Open-source Code Interpretations



Open
Street
Maps

3

Facilitating Adoption by Cities



Elizabeth Bowie Christoforetti

Founding Principal, Supernormal

Assistant Professor in Practice of Architecture

Principal Investigator, Laboratory for Design Technologies

Harvard Graduate School of Design



Elizabeth is the founding principal at Supernormal, a design and research practice based in Cambridge, MA. Supernormal, formed out of Elizabeth's research in the Social Computing Group at the MIT Media Lab, focuses on the design of form and processes that balance contextual and cultural relevance with the contemporary imperative to scale beyond a single instance, and to reach more people and urban places. Elizabeth is also Assistant Professor in the Practice of Architecture at the Harvard Graduate School of Design, where she co-directs the Urban Stack research group within the Laboratory for Design Technologies. Her work in both academia and practice explores the deep cultural, typological, and process-based implications of networked and scalable systems in the design of the built environment; recent and ongoing work focuses these potentials in relationship to innovations in design practice.

Curriculum Vitae

Elizabeth Bowie Christoforetti
echristo@supernormal.io
617-717-8527

Education

Harvard University Graduate School of Design Master in Architecture I with Distinction, 2009 Studio Critics: Francisco Mangado, Jorge Silvetti, Monica Ponce de Leon, Lluis Ortega, Ingeborg Rocker, John Hong, and Eric Howeler	Cambridge, MA
The School of the Art Institute of Chicago B.F.A., 2004 Department: Architecture, Interior Architecture and Designed Objects	Chicago, IL
Bowdoin College A.B., Summa Cum Laude, 2000 Departments: Religion and Visual Arts	Brunswick, ME

Honors, Awards

Laboratory for Design Technology Harvard GSD 2022 Dean's Junior Faculty Research Grant Award Awarded in collaboration with Carole Voulgaris for research on emerging methods of web-based participation and geospatial data visualization techniques in relationship to local zoning information. Spring 2022.	Cambridge, MA
2021 Re: Humanism Prize A prize and related exhibition installation focused on the relationship between art and artificial intelligence; awarded for work on human-machine creative collaboration. Selected through a juried competition process as one of ten winners out of almost 300 applicants. An award and exhibition installation at MAXXI National Museum of Contemporary Art and Architecture in Rome, Italy. Spring 2021.	
Harvard Center for Green Buildings and Cities 2020 Faculty Grant Awarded in collaboration with Carole Voulgaris for research on the development of a system of metrics and corollary open source tool that evaluates issues of feasibility, sustainability, and quality in block-level housing design and development. Spring 2021.	

Supernormal Cambridge, MA

Boston Design Biennial (Design Seaport) Winner
Selected through a juried competition process as one of five winners of the design biennial, which honors emerging design and visual art practices. With a substantial monetary award and in-kind support, Supernormal was also awarded the opportunity to design a public art installation at the public entrance to the Seaport. Winter 2020.

National Science Foundation Research Grant

Awarded to Supernormal as a subaward by the Emerson Engagement Lab for research related to the creation of a data exploration tool designed to visualize 311 data in relationship to urban decision-making. NSF research grant IIS-1815310, “CHS: Small: Collaborative Research: Making Information Deserts Visible: computational models, disparities in civic technology use, and urban decision making.” 2019.

Boston Society of Architects Small Firms Design Award

Awarded for the design of SolBe Learning Center, an early education center in Chestnut Hill, MA. 2019.

Boston Society of Architects Small Firms Design Award

Awarded for the design of Tanam, a 10-seat space for performance art and “narrative cuisine” in Somerville, MA. 2019.

Dezeen Awards Shortlist, Civic and Cultural Interiors

The SolBe Learning Center, an early education center in Chestnut Hill, MA, was shortlisted in this widely recognized international awards cycle. 2019.

Dezeen Awards Longlist, Restaurant and Bar Interiors

Tanam, a 10-seat space for performance art and “narrative cuisine” in Somerville, MA, was longlisted. 2019.

IES Illumination Award of Merit

Highest award received for the design and use of lighting in the SolBe Learning Center early education project (construction completed in 2019). Role: Lead Designer. March 2019.

Next City Big Idea Challenge

First prize awarded for a design proposal involving the renovation of a former warehouse into a center for community healthcare, fresh food, and education. Role: Lead Designer. June 2017.

Boston Society of Architects Unbuilt Design Award

Awarded for the SolBe Learning Center Prototype, an early education center. In collaboration with BOS|UA. 2016.

Global City Teams Challenge Leadership Prize

Prize awarded to exceptional Action Cluster teams that collaborate across industries to build, deploy, and test transformative IoT applications. The Local Sensing Action Cluster tests promising urban design and planning applications for IoT technology in Boston. Role: Data Analysis and Urban Design. June 2016.

Better Philadelphia Challenge Edmund N. Bacon Award

Competition held by the Philadelphia Center for Architecture and Design in memory of iconic city planner Ed Bacon. Second place winner. Infill-adelphia proposed a data-driven approach to neighborhood redevelopment with a focus on community health and incremental infill development.

Role: Lead Designer. October 2015.

Next City Vanguard Fellowship

Montreal, Canada

Selected to travel to Montreal and participate in a four-day urban leadership conference. June 2017.

MIT Media Lab, Social Computing Group

Cambridge, MA

Knight Foundation Prototype Fund Grant

Received a grant for Placelet, a sensor network developed to analyze and create metrics for the function of urban places. Placelet is part of the Big Data for Small Places study. Role: Lead Researcher. July 2015.

Utile, Inc.

Boston, MA

Living with Water Competition Out of the Box Award

Competition sponsored by the City of Boston and the Boston Society of Architects. Led Utile's multi-disciplinary competition team focused on a phased approach to district development and urban block morphology in an era of sea level rise. January 2015. Role: Senior Designer and Project Manager.

Boston Society of Landscape Architects Honor Award***for General Design***

For the Lawn on D at the Boston Exhibition and Convention Center. In collaboration with Sasaki Associates, 2015. Role: Urban Designer and Project Manager. Client: Massachusetts Convention Center Authority.

ParkingPLUS Design Challenge Winner

As one of four teams selected to re-think the role of the parking structure and its urban context in Long Island's downtowns, Utile and collaborators teamed with Rockville Centre to propose a prototypical future use parking garage and associated urban design strategies that will allow for urban transformation as the needs of the community shift away from individual vehicular transit. 2014. Role: Senior Designer and Project Manager.

Harvard University Graduate School of Design

Cambridge, MA

American Institute of Architects Henry Adams Medal

Awarded upon nomination by faculty for highest average of excellence throughout the course of study in the GSD architecture program. 2009.

James Templeton Kelley Prize Nominee

Nominated by the faculty for the best final design project submitted by an MArch degree candidate. 2009.

Federal Home Loan Bank of Boston Affordable Housing Award

Collaborated across disciplines and between schools to design and plan a development of 35 affordable rental and ownership units and an abutting landscape in Lawrence, MA.

Award: 3rd place. Spring 2007.

The School of the Art Institute of Chicago Chicago, IL
George Little Award for Creativity and Excellence in Architecture, Interior Architecture and Designed Objects
Awarded upon nomination by faculty. 2005.

Bowdoin College Brunswick, ME
Phi Beta Kappa
Awarded upon graduation in 2000.

James and Sarah Bowdoin Scholar
1996, 1997.

Edgar Oakes Achorn Prize
Awarded prize for the best essay written by a member of the second- or first-year classes in Religion. 1997.

Professional practice

Supernormal Cambridge, MA
Founding Principal
www.supernormal.io
Supernormal is a design and research practice that pursues the design of spaces and processes that balance cultural and contextual relevance with the contemporary imperative to scale — beyond a single instance, to reach more people and communities, to maintain design agency. See website for selected examples of built work and research. 2016 - present.

Utile, Inc. Boston, MA
Senior Designer and Project Manager
Practiced architecture and urban design. Led award-winning projects resulting in built work, competitions, and master plans. Selected projects include future use parking garage design, multi-family housing, urban design for sites at risk of sea level rise, cultural landscape design, and educational design. August 2010 - August 2015.

Office dA Boston, MA
Intern Architect
Conducted facade research and developed circulation and program diagrams for Thunder Stadium in St. Paul, Minnesota, a 600,000 sq ft soccer-specific mixed use stadium project (2009 *Progressive Architecture Award* honorable mention). Worked on design development documents for a multi-family housing project in Tellapur, India. Summer 2008.

Howeler + Yoon Architecture Boston, MA
Intern Architect
Davol Loft project team designer. The 1,100 sq ft loft in Boston, MA joined together two units in Chinatown. Conducted materials research, built models, designed custom furniture, design development set documents. Summer 2006.

DEGW Design Consultancy

London, England

Researcher

Collaborated with design and consultancy teams on workplace and education sector projects on post-occupancy performance research and pre-design planning. Aided in early phase strategy, user group interviews, time-based user studies and space planning analysis. Clients included Glaxo Smith Kline and the University of Central England School of Architecture. 2003-2004.

Academic positions and service

Harvard Graduate School of Design Cambridge, MA**Assistant Professor in the Practice of Architecture**

Teach architectural practice and design methods in lecture, seminar, and design studio formats within the Architecture department and Master in Design Engineering (MDE) program. Co-coordinate MDE first year studio and write novel coursework. July 2019 - present.

Principal Investigator, Laboratory for Design Technologies

Direct the cross-disciplinary Urban Stack research group as a co-principal investigator with Carole Voulgaris. Fall 2019 - present.

Practice Committee Member

Serve on committee to advance research, theory, discourse, and dissemination in architectural practice. Fall 2019 - present.

Admissions Committee Member

Serve on graduate admissions committee for MArch I, MArch I AP, MDE, and other GSD degree programs. Spring 2018 - present.

Design Critic

Taught Core II and Core III architecture studios within the first and second year MArch I program curriculum. Fall 2016 - Spring 2018.

- [STU-1102 Second Semester Architecture Core Studio: SITUATE](#)
- [STU-1201 Third Semester Architecture Core Studio](#)

Graduate Thesis Advisor[ADV-9301 Independent Thesis in Satisfaction of Degree MArch](#)

Advised MArch I and MArch II students through final project completion. Spring 2018 - present.

Harvard School of Engineering and Applied Sciences**Harvard Business School****Preceptor**

Co-develop and co-teach the *Design, Theory, and Practice* course within the MS/MBA joint degree program. July 2021 - present.

Boston Society of Architects Honors and Awards Committee**Committee Member**

Provide insight and guidance regarding the distribution of national and local awards to the Boston Society of Architects. 2021-present.

Rotch Traveling Scholarship

Boston, MA

Committee Member

Responsibilities include jury participation, writing competition briefs, and serving as a mentor to traveling scholars.

Spring 2017 - present.

ArchitectureBoston

Boston, MA

Editorial Board Member

Provide editorial guidance for ArchitectureBoston, a quarterly publication of the Boston Society of Architects. 2019-2021.

Practice-based Research Conference**Advisory Board Member**

Served on a small group committee to structure and design content for the Practice-based Research Conference, hosted by the Boston Society of Architects. Event took place in October of 2020.

ASCA Conference Peer Review

Served as peer reviewer for the Open Project Session at the ASCA 107th Annual Meeting. 2018.

Harvard Innovation Labs

Cambridge, MA

Expert in Residence

Appointed by Harvard GSD Dean Mohsen Mostafavi to serve as a mentor to students across the university pursuing entrepreneurial activities involving design. Fall 2016 - Spring 2017.

MIT Media Lab, Social Computing Group

Cambridge, MA

Researcher

Lead *Big Data for Small Places* research project. Managed graduate and undergraduate research on emerging frameworks for block-scale urban analysis and design. Geo-referenced data includes anonymized mobile device data and in-house developed sensor network data. September 2014 - May 2016.

Northeastern University School of Architecture

Boston, MA

Graduate Lecturer (ARCH 7140)

Instructed graduate architecture students in their Master's Degree Project. Funded by CVS to explore new models and opportunities for urban health care and associated clinics in the wake of the then-recent U.S. Healthcare Reform Bill. Spring 2014.

Studio Coordinator and Undergraduate Lecturer (ARCH 5110)

Wrote curriculum and coordinated studio instruction across 3 design studios. Taught upper level undergraduate and first-year graduate *Housing and Aggregation* studio focused upon multi-family urban infill housing types. Fall 2009 - Spring 2013.

Harvard University Graduate School of Design

Cambridge, MA

Teaching Assistantships

→ Architectural Design: Cities, New Ecologies (GSD 1202). Fourth Semester Core Studio. Critic: John Hong. Program Coordinator: Lluis Ortega. Spring 2009.

- Introduction to Design and Visual Studies in Architecture (GSD 1110). First Semester Core Studio. Critic: Mariana Ibanez. Program Coordinator: Preston Scott Cohen. Fall 2008.
- Fourth Semester Core Studio: Architectural Design (GSD 1202). Multi-family housing design. Critic: Ana Maria Duran. Program Coordinator: Monica Ponce de Leon. Spring 2008.
- Visiting History: Bauhaus in America (GSD 1310). Critic: Monica Ponce de Leon. Fall 2007.

Research Assistantships

- Provided research and preparation for Decorating Diversions: Industrial Design, Consumerism and the Production of Spaces (GSD 3325). Seminar Professor: Monica Ponce de Leon. May 2007 – December 2007.
- Provided research and preparation for Material Matters: Case Studies on the Environmental Impact of Material Selection and Application (GSD 6330). Seminar Professor: Monica Ponce de Leon. May 2007 – December 2007.
- Provided research and preparation for Housing and Aggregation Studio: Architectural Design (GSD 1202). Conducted background research on the history and evolution of housing morphology for 4th semester Master of Architecture core curriculum coordinator. Fall 2007 – Spring 2008.

Graduate School of Design Studio Instructor, Career Discovery Program

Provided instruction in the capacity of design critic in the architecture program. Designed lesson plans and compiled bibliography. Curriculum included three projects ranging in scale and type from a small academic design intervention on a preexisting structure to an urban-scale mixed use development. Summer 2008.

Visiting Design Critic

Regularly invited as visiting critic during mid- and final reviews of student work. Institutions include Harvard GSD, MIT, University of Pennsylvania, Pratt Institute, Carnegie Mellon, Ohio State University, and others.

Publications

Christoforetti, E. "After Architecture: Body as Building." *Pidgin 30*. Princeton University. School of Architecture. Forthcoming in Spring 2022.

Christoforetti, E., and El Sayah, Romy. "Collective Design for Collective Living." Chapter in *Machine Learning and the City*, ed. Carta, Silvio. Wiley. Forthcoming in 2022.

Gordon, E., Harlow, J., Teng, M., and Christoforetti, E. "Towards a Collaborative Smart City: A Play-based Urban Living Laboratory in Boston." *The International Journal of Human-Computer Interaction (IJHCI)*, 2021. DOI: [10.1080/10447318.2021.2012384](https://doi.org/10.1080/10447318.2021.2012384)

Nakazawa, P. and Christoforetti, E. "Urban Stack" in *Champs Elysees: History & Perspectives*, a companion publication to the exhibition by the same name at the Pavillon de l'Arsenal, Paris, Winter 2020.

D'Ignazio, C., Gordon, E. & Christoforetti, E. "Sensors and Civics: Towards a Community-Centered Smart City." Kitchen, R., ed. *Right to the Smart City*. Emerald Publishing. 2019.

D'Ignazio, C., Gordon, E. & Christoforetti, E. "Participatory Urban Sensing: a Blueprint for a Community-led Smart City." Verhoeff, Nanna, ed. *Urban Interfaces Special Issue*. Leonardo Electronic Almanac, 2019.

Christoforetti, E., Cohen, W., and Fash, F. "The Marine Industrial Cloud." In *Architecture Boston*. Spring 2018: Port (Volume21n1): 42-43.

Christoforetti, E., Cohen, W., Cohen, Y., Rife, S., and Zhang, J. 2017. "Big Data for Small Places: A Conversation in New Practices of Urban Contexts." Chapter 1.04 in *Codify / Parametric and Computational Design in Landscape Architecture*, ed. Mekies and Cantrell, Bradley, 77-88. Routledge.

Love, Tim and Christoforetti, Elizabeth. "Wash 'n' Dry City." In *Architecture Boston*. Winter 2013: Coast (Volume 16n4).

Christoforetti, Elizabeth. "Gropius Stereoscopic Performance." In *Architecture Boston*. Web. Summer 2013: American Gropius (Volume 16n2).

Christoforetti, Elizabeth. 2010 "Growing Middle Space." In *Infrastructure and the Future: Assessing the Architect's Role*, ed. Lawrence, Amanda and Christoforetti, Elizabeth. Northeastern University.

Invited talks and conferences

Harvard Joint Center for Housing Studies

Invited contributor to the symposium "Bringing Digitization Home: How Can Technology Address Housing Challenges?" Forthcoming in Spring 2022.

American Institute of Architects Building Connections Congress 2022.

Technology in Architectural Practice Session *Digital Transformation and Leveraging Community Data*. Invited panel conversation. Online (during COVID-19) 2022.

Wentworth Institute of Technology Department of Architecture, Theories of Practice Course Lecture

Invited lecture on the recent work and perspective of Supernormal. Online (during COVID-19) 2022. Instructor: Mark Pasnik.

Stockholm School of Economics House of Innovation, Dialogues in the Garden: Reframe to Restart Conference

Invited dialogue entitled *A New Design Manifesto: From Userism to Ourism*. In conversation with Professor Roberto Verganti. Online (during COVID-19) 2021.

PRIMER21 Global Conference

Invited lecture entitled *After Architecture: Body as Building* on human-machine collaboration in design practice and cultural production. Online (during COVID-19) 2021.

**Wentworth Institute of Technology Department of Architecture,
Theories of Practice Course Lecture**

Invited lecture on the recent work and perspective of Supernormal. Online (during COVID-19) 2021. Instructor: Mark Pasnik.

**University of Virginia School of Architecture,
Professional Practice Course Talk and Panel Conversation**

Invited talk and panel conversation on the state of contemporary practice. Online (during COVID-19) 2021.

American Institute of Architects Building Connections Congress 2021

Technology in Architectural Practice Sessions. Invited talk on the role of machine intelligence in architectural practice and that changing nature of the architectural model from *modello* and *maquette* to machine learning. Online (during COVID-19) 2021.

Seaport Sessions: Design Seaport

Invited talk and panel conversation on Supernormal's installation within the Design Seaport public art program. Online (during COVID-19) 2021.

Urban Land Institute Making Connections Series

Invited talk on the development and recent work of Supernormal. Online (during COVID-19) 2020.

**Harvard Graduate School of Design,
Foundations of Practice Course Lecture**

Invited lecture and conversation on *Architecture and the digital: A conversation on unknowns from the perspective of practice and regulation* with Gregg Garmisa and Tim Twomy. Online (during COVID-19) 2020.

**Harvard Graduate School of Design,
Preparation for Independent Thesis Proposal for MUP, MAUD, or MLAUD
Course Lecture**

Invited lecture on the history and contemporary practice of perspectival representation. Online (during COVID-19) 2020.

**Practice-based Research Conference
Boston Society of Architects**

Invited talk entitled *What does IP have to do with design practice?* Online (during COVID-19) 2020.

Sasaki Foundation Speaker Series

Moderator for public panel on making change in housing policy and practice. Online (during COVID-19) 2020.

DigitalFUTURES WORLD : ARCHITECTS UNITE**Machine Intelligence in Architecture Session**

Invited talk on recent research entitled *Collective design for collective living: Machine learning, the participatory processes, and the changing role of the architect.* Online (during COVID-19) 2020.

Harvard Graduate School of Design,**Practice in Uncertain Times**

Panelist. Invited to share experience and thoughts on the topic of practice during uncertain economic conditions. Online (during COVID-19) 2020.

2020 Beyond AEC Conference

Invited talk as featured speaker on the topic of the recent work of Supernormal. Waltham, MA 2020.

Harvard Graduate School of Design,**Thermal Monocoques Course Lecture**

Invited lecture on total design in relationship to housing innovation and construction, with a focus on the use of cross laminated timber. Cambridge, MA 2020.

Facades +

Invited talk and affiliated workshop, co-taught with Perkins + Will, on the topic of *Big Data and Design.* New York, NY 2019.

AHIC Affordable Housing Summit

Invited talk and panel conversation on the use of emerging technologies in housing design. Nashville, TN 2019.

Boston Society of Architects Practice Series

Invited talk and panel conversation on emerging potentials in architectural practice. Boston, MA 2019.

University of Massachusetts Amherst, Zube Lecture Series

Invited lecture titled *Supernormal: An exploration of post-digital design practice.* Amherst, MA 2019.

Urban Land Institute (ULI) Young Leadership Group

Invited presentation and panel participation on the topic of *Data and Placemaking.* Boston, MA 2019.

Harvard Kennedy School, Fairness, Sustainability and Data for the Global South Workshop

Invited talk titled *Building Civic Form and Frameworks within Infrastructures of Urban Data.* Cambridge, MA 2018.

Ignite Connecting Technologies & Communities (ICTC) workshop

Invited NSF-funded workshop participation. College Park, MD 2018.

Harvard Graduate School of Design, Design Discovery Lecture Series

Invited talk titled *Supernormal.* Cambridge, MA 2018.

City College of New York, Spring Sciame Lecture Series

Invited talk titled *Supernormal*. New York, NY 2018.

INCOSE (International Council on Systems Engineering) International Workshop

Invited talk titled *Big Data for Small Places: Utilizing Emerging Quantitative Information for Improved Urban Quality*. Web-based conference, 2018.

Wentworth University School of Architecture

Invited talk titled *The Future of Urban Space*. Boston, MA, 2017.

2017 Urbanism Summit

Invited talk titled *Systematizing the Small*. Boston, MA, 2017.

Boston Society of Architects Placemaking Network

Invited talk titled *Using quantitative methods to understand and transform the quality of our urban places*. Boston, MA, 2016.

Yale School of Management Real Estate Conference

Invited talk titled *Leveraging new methods in data, design, and development*. New Haven, CT, 2016.

American Architectural Foundation Civic Leadership Design Forum

Served on panel during round-table discussion on the intersection of design and technology. Cambridge, MA, 2016.

Mayors Institute for City Design

Served on panel as design expert and delivered talk on *Agile design practice and the feedback loop between data and design*. Oakland, CA, 2016.

Northeastern University School of Architecture

Invited by the faculty of the Multifamily Housing studio to provide a guest lecture on *Contemporary Masterplanning and Urban Design*. Boston, MA, 2016.

Harvard Graduate School of Design

Served on panel addressing professional practice in architecture and urban design. Cambridge, MA, 2016.

Global City Teams Challenge (GCTC) Expo

Delivered talk titled *The Urban Sense Lab sensor testbed and hyperlocal data collection and analysis in public-private partnerships*. Austin, TX, 2016.

ALSA (American Society of Landscape Architects) Regional Conference

Delivered talk title *Big Data for Small Places and new technological capacity in the design of the public realm*. Nashville, TN, 2016.

ABX 2015 Architecture Boston Expo Keynote Symposium

Invited talk titled *The role of research in practice*. Boston, MA, 2015.

AIA New England Regional Conference

Invited talk titled *The Future of practice and services in architecture and urban design*. Providence, RI, 2014.

Harvard Graduate School of Design

Invited talk titled *Progressive urban design practices, public art and the Lawn on D* to students and faculty of a course titled *Boston Public Art Lab: Producing Ephemeral Civic Interventions*, 2015.

Northeastern University School of Architecture

Invited to present recent work (titled *Supernormal: A Hybrid Practice*) to students and faculty in a graduate *Professional Practice* course. Boston, MA, 2015.

Boston Society of Architects

Invited talk titled *The Lawn on D and BCEC (Boston Convention and Exhibition Center) urban design methods*. Boston, MA, 2015.

Design work published

Greenhouse, Pat, “The Shape of Art to Come” in *The Boston Globe*. 10 December 2020, B1 Metro.

Dougherty, Matt, “2020 Vision” in *Hospitality Design*. December 2019, 106.

Cox, Erin, “Rethinking Space: Alternative Approaches to Child Care Facilities” in *LISC Early Learning Facilities Needs Assessment*. November 2019, 102.

McKnight, Jenna, “Supernormal reimagines the classroom for children’s educational centre in Massachusetts.” Web. 26 Aug. 2019, <<https://www.dezeen.com/2019/08/26/solbe-learning-center-supernormal-massachusetts-learning-centre/>> Cited Apr. 14, 2020.

Macht, Will. “Developing Resilient Waterfront Blocks” in *Urban Land*. May/June 2015, 83.

Macht, Will. “Flexible Parking Structures as Civic Catalysts” in *Urban Land*. January/February 2015, 96.

Macht, Will. “Universal Structures as Long-Term Sustainable Assets” *Urban Land*. November/December 2014, 96.

Smith, Sean. “The Life of a New Architect: Elizabeth Christoforetti” *Archinect*. Web. 28 Aug. 2014, <<http://archinect.com/features/article/106956389/the-life-of-a-new-architect-elizabeth-christoforetti>>. Cited Sept. 11, 2014.

Bernstein, Fred A. “Parking and Recreation.” *Architectural Record*. Web. 29 Jan. 2014, <<http://archrecord.construction.com/news/2014/01/140129-Parking-and-Recreation.asp>>. All cited content relevant. Cited Sept. 11, 2014.

Flint, Anthony. "Why It Makes Sense for Long Island to Rethink the Parking Garage." *City Lab (from the Atlantic)*. Web. 28 Jan. 2014, <<http://www.citylab.com/commute/2014/01/why-it-makes-sense-long-island-rethink-parking-garage/8207/>>. Illus, para 9. Cited Sept 11, 2014.

Silvetti, Jorge. "Typology: Urban Sports Culture." In *Platform 08 GSD*, ed. Kubo, Michael and Ortega, Lluis (New York: Actar, 2009), 108.

Studioworks, ed. GSD Faculty (Cambridge: Harvard GSD). Projects nominated and selected by faculty for print and web publication. 2006, 2007, 2008, 2009.

Exhibitions and Installations

After Architecture (Body as Building)

2021 Re: Humanism Exhibition (curated by Daniela Cotimbo)

MAXXI: Museum of XXI Century Arts

Rome, Italy

Work Exhibited

Artist Statement: *As we shift into an era of machine intelligence authorship is unstable, driven by immediate and automated access to the digitized history of humanity and the capacity for a new mode of machine-augmented creative production. After Architecture cracks open the cultural production of architecture to imagine a new phase for the design in which any individual may have an authorial stake in the imagination and production of our built context. After Architecture is a machine learning model that encourages the disruption of authorship in architectural production and the extension of any body into the collective identity of place.* Spring 2021.

I'm For You (User Friendly)

Design Seaport Public Art Series

One Seaport Courtyard

Boston, MA

Public Art Installation

Artist Statement: *I'm for You (User Friendly) by Supernormal explores physical and digital closeness in the public realm in a year characterized by social distancing, systemic loneliness and political polarization. The interactive piece occupies public space during the shortest, coldest days of the year. It is designed to be most alive, engaging, and visible during the darkest and longest nights, when light is most scarce. I'm for You (User Friendly) is a reflection on real and imagined relationships between places, people, and their machines in a time of isolation.* Winter 2020-2021.

Balancing Act: Urbanism and Emerging Technologies

Center for Architecture & Design

Seattle, WA

BSA Space

Boston, MA

Work Exhibited

Throughout history, emerging technologies have inspired and informed the form and function of cities. A reflection on how these technologies have evolved our urban environments

and what technology means to us today and in our future – to different people, at different times, in different places. Spring of 2019 (Boston) and Winter of 2020 (Seattle).

NOW DOCKING: Envisioning new life for a 700-foot-long pier

BSA Space

Boston, MA

Work Exhibited

In an effort to curate a spectrum of ideas—inspirational, provocative, futuristic—that transforms Dry Dock No. 4 into a signature park, ArchitectureBoston magazine invited a range of firms and artists to design and exhibit relevant work. April-June 2018.

Erratics: A Genealogy of Rock Landscape, Featuring the Work of Claude Cormier Architectes Paysagistes

Gund Hall Gallery, Harvard GSD

Cambridge, MA

Exhibition Design Consultant

The *Erratics* exhibition proposed a speculative genealogy of rock-based landscape architecture, featuring work of Montreal-based landscape architect Claude Cormier. Collaborated with curators Charles Waldheim and Jane Hutton, and Director of Exhibitions, Dan Borelli, to design the exhibition. March-May 2010.

Ecological Urbanism

Gund Hall Gallery, Harvard GSD

Cambridge, MA

Co-curator

Cross-scalar and cross-disciplinary exhibition research and content selection. Artists and designers included Sissel Tolaas, Richard T.T. Forman and the Fallen Fruit Project. Led by Gareth Doherty; collaborators include the Harvard GSD Fall 2008 ‘Curating Ecological Urbanism’ class. March-May 2009.

Platform 08 GSD

Gund Hall Gallery, Harvard GSD

Cambridge, MA

Work Exhibited

Graduate architecture project on Urban Sports Culture: A New Football Stadium for Boca Juniors in Buenos Aires exhibited upon GSD faculty selection. Critic: Jorge Silvetti.

August-October 2008.

Studioworks

Gund Hall Gallery, Harvard GSD

Cambridge, MA

Work Exhibited

Work exhibited upon GSD faculty selection. August-October 2006.

Carole Turley Voulgaris

48 Quincy St, Room 312
Cambridge, MA 02138

425-502-0019

cvoulgaris@gsd.harvard.edu

Education

University of California, Los Angeles	Los Angeles, California
Doctor of Philosophy, Urban Planning	2012 – 2017
University of Notre Dame	Notre Dame, Indiana
Master of Business Administration, Finance concentration, Magna cum laude	2010 – 2012
Brigham Young University	Provo, Utah
Master of Science, Civil Engineering	2006 – 2007
Brigham Young University	Provo, Utah
Bachelor of Science, Civil Engineering	2000 – 2006

Employment

Harvard Graduate School of Design	2019-present
Assistant Professor, Department of Urban Planning and Design	Cambridge, Massachusetts
California Polytechnic State University	2018-2019
Assistant Professor, Department of Civil and Environmental Engineering	San Luis Obispo, California
Transpo Group	2007-2010
Transportation Engineer	Kirkland, Washington
Utah Transit Authority	2006-2007
Capital Development Intern	Salt Lake City, Utah

Research

Currently under review

Braun, L. M., H.T.K. Le, **C.T. Voulgaris** & R.C. Nethery. 2022. Who benefits from shifting metal to pedal? An equity-oriented health impact assessment for analyzing the health tradeoffs of cycling. (Revise and resubmit in progress)

Macfarlane, G.S., **C.T. Voulgaris** & T. Tapia. 2022. If you build it who will come? Equity analysis of park system changes using passive origin-destination data. (Revise and resubmit in progress)

Refereed Journal Articles

Braun, L. M., H.T.K. Le, **C.T. Voulgaris** & R.C. Nethery. 2021. Healthy for whom? Equity in the spatial distribution of cycling risks in Los Angeles, CA. *Journal of Transport and Health*. (Forthcoming)

Darling, W., E. Carpenter, T. Johnson-Praino, C. Brakewood & **C.T. Voulgaris**. 2021. A comparison of reduced-fare programs for low-income transit riders. *Transportation Research Record: Journal of the Transportation Research Board*. DOI: 10.1177/03611981211017900

Voulgaris, C.T., R. Hosseinzade, A. Pande & S. Alexander. 2021. Neighborhood effects of Safe Routes to School programs on the likelihood of active travel to school. *Transportation Research Record: Journal of the Transportation Research Board*. DOI: 10.1177/0361198121995490

Voulgaris, C.T. 2020. What is a forecast for? Motivations for transit ridership forecast accuracy in the federal New Starts program. *Journal of the American Planning Association*, 86(4), 458-469
DOI: 10.1080/01944363.2020.1746191

Voulgaris, C.T. 2020. Trust in Forecasts? Correlates with ridership forecast accuracy for fixed-guideway transit projects. *Transportation*, 47, 2439-2477. DOI: 10.1007/s11116-019-10024-8

Panik, R.T., E. Morris, & **C.T. Voulgaris**. 2019. Does walking and bicycling more mean exercising less? Evidence from the U.S. and the Netherlands. *Journal of Transport & Health*, 15. DOI: 10.1016/j.jth.2019.100590

- Shinn, J.E., & C.T. Voulgaris. 2019. Ridership Ramp-up? Initial ridership variation on new rail transit projects. *Transportation Research Record: Journal of the Transportation Research Board*. DOI: 10.1177/0361198119844462
- Blumenberg, E., A.E. Brown, K.M. Ralph, B.D. Taylor, & C.T. Voulgaris. 2019. A resurgence in urban living? Trends in residential location patterns of young and older adults since 2000. *Urban Geography*. DOI: 10.1080/02723638.2019.1597594
- Voulgaris, C.T. 2019. Crystal Balls and Black Boxes: What makes a good forecast? *Journal of Planning Literature*, 34(3), 286-299. DOI: 10.1177/0885412219838495
- Voulgaris, C. T., Smart, M. J., & Taylor, B. D. 2019. Tired of Commuting? Relationships among Journeys to School, Sleep, and Exercise among American Teenagers. *Journal of Planning Education and Research*, 39(2)142-154, DOI: 10.1177/0739456X17725148.
- Ralph, K.M., C.T. Voulgaris, & A.E. Brown. 2017. Travel and the Built Environment: Insights using Activity Densities, the Sprawl Index, and Neighborhood Types. *Transportation Research Record: Journal of the Transportation Research Board*, 2653, 1-9, DOI: 10.3141/2653-01
- Ralph, K.M., C.T. Voulgaris, B.D. Taylor, E. Blumenberg, & A.E. Brown. 2017. Millennials, built form, and travel: Insights from a nationwide typology of U.S. neighborhoods. *Journal of Transport Geography*. 57, 218-226, DOI: 10.1016/j.jtrangeo.2016.10.007
- Voulgaris, C.T., B.D. Taylor, E. Blumenberg, A.E. Brown, & K. Ralph. 2017. Synergistic neighborhood relationships with travel behavior: An analysis of travel in 30,000 US neighborhoods. *Journal of Transportation and Land Use*, 10(1), 437-461, DOI: 10.5198/jtlu.2016.840
- Voulgaris, C.T. 2016. A TUF Sell: Transportation Utility Fees as User Fees for Local Roads and Streets. *Journal of Public Works Management and Policy*, 21(4), 305-323. DOI: 10.1177/1087724X16629961
- Brown, A., E. Blumenberg, B.D. Taylor, K. Ralph, & C.T. Voulgaris. 2016. A Taste for Transit? Analyzing Public Transit Trends among Youth. *Journal of Public Transportation*, 19(1), 49-67. DOI: 10.5038/2375-0901.19.1.4
- Voulgaris, C.T., A. Loukaitou-Sideris & B.D. Taylor. 2015. Planning for Pedestrian Flows in Rail Rapid Transit Stations: Lessons from the State of Current Knowledge and Practice. *Journal of Public Transportation*, 18(3), 1-14. DOI: 10.5038%2F2375-0901.18.3.1
- Conference Presentations***
- Voulgaris, C.T., & S. Littlefield. 2021. Working from home or taking work home? Travel effects of the option to work from home. *100th Annual Meeting of the Transportation Research Board*. Online.
- Voulgaris, C.T., R. Hosseinzade, A. Pande & S. Alexander. 2021. Neighborhood effects of Safe Routes to School programs on the likelihood of active travel to school. *100th Annual Meeting of the Transportation Research Board*. Online.
- Lamera, M., M. Williams, A. Bauranov, A. Pande, & C.T. Voulgaris. 2021. Safety performance of edge-lane roads. *100th Annual Meeting of the Transportation Research Board*. Online.
- Darling, W., E. Carpenter, T. Johnson-Praino, C. Brakewood & C.T. Voulgaris. 2021. A comparison of reduced-fare programs for low-income transit riders. *100th Annual Meeting of the Transportation Research Board*. Online.
- Voulgaris, C.T. 2020. Home away from home or work away from work: What are the travel effects of working from home? *60th Annual Association of Collegiate Schools of Planning Conference*. Online.
- Voulgaris, C.T. & R. Oulton. 2019. Green and Complete Streets as an Opportunity for Cross-course Collaborative Projects. *American Society of Engineering Education Pacific Southwest Conference*. Los Angeles.
- Shinn, J.E. & C.T. Voulgaris. 2019. Ridership Ramp-up? Initial ridership variation on new rail transit projects. *98th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Panik, R.T., E.A. Morris, & C.T. Voulgaris. 2019. Does walking and bicycling more mean exercising less? Evidence from the US and the Netherlands. *98th Annual Meeting of the Transportation Research Board*. Washington, DC.

- Voulgaris, C.T.** 2018. In Forecasts We Trust? Correlates with ridership forecast accuracy for fixed-guideway transit projects. *97th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Voulgaris, C.T.** 2017. Federal Money for Local Projects: Analyzing Trends in Federally Funded Transit Project Cost Estimates. *57th Annual Association of Collegiate Schools of Planning Conference*. Denver, Colorado.
- Voulgaris, C.T.** 2017. Costly Errors: Analyzing Trends in Federally Funded Transit Project Cost Estimates. *96th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Voulgaris, C.T.**, E. Blumenberg, M. Brozen & K. Bridges. 2017. Are These Streets Made for Walking? Walking and the Built Environment in Four California Cities. *96th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Ralph, K.M., **Voulgaris, C.T.** & A. Brown. 2017. Travel and the Built Environment: Insights using Activity Densities, the Sprawl Index, and Neighborhood Types. *96th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Blumenberg, E., **C.T. Voulgaris**, M. Brozen & K. Bridges. 2017. Walk on: Are changes in neighborhood characteristics associated with changes in walking? *96th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Brozen, M., K. Bridges, **C.T. Voulgaris**, & E. Blumenberg. 2017. Improving the next generation of travel demand models to better represent pedestrian needs: The case of large California Metropolitan Planning Organizations. *96th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Voulgaris, C.T.** 2016. Crystal Balls and Black Boxes: Forecast accuracy for federally-funded transit projects. *56th Annual Association of Collegiate Schools of Planning Conference*. Portland, Oregon.
- Brown, A., E. Blumenberg, B.D. Taylor, **C.T. Voulgaris**, & K. Ralph. 2016. A Taste for Transit? Analyzing Youth and Public Transit Use Trends in the U.S. *95th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Ralph, K., **C.T. Voulgaris**, B.D. Taylor, E. Blumenberg, & A. Brown. 2016. Youth, Travel, and the Built Environment: Insights from Typecasting Places and Younger Travelers. *95th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Voulgaris, C.T.**, E. Blumenberg, B.D. Taylor, A. Brown, & K. Ralph. 2016. Neighborhood Character and Travel Behavior: A Comprehensive Analysis of the U.S. *95th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Voulgaris, C.T.**, E. Blumenberg, A. Brown, K. Ralph & B.D. Taylor. 2015. Who Are the Travelers in Your Neighborhood? *55th Annual Association of Collegiate Schools of Planning Conference*. Houston, Texas.
- Taylor, B.D., E. Blumenberg, A. Brown, K. Ralph & **C.T. Voulgaris**. 2015. Back to the City? Are Millennials Favoring Cities over the Suburbs and Rural Areas, and What Does This Mean for the Future of Travel? *55th Annual Association of Collegiate Schools of Planning Conference*. Houston, Texas.
- Voulgaris, C.T.**, A. Loukaitou-Sideris & B.D. Taylor. 2015. Planning for Pedestrian Flows in Underground Rail Transit Stations: A State-of-Practice Survey. *94th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Voulgaris, C.T.**, B.D. Taylor, & M. Smart. 2015. Long Routes to School? School Travel and Activity Participation among High School Students. *94th Annual Meeting of the Transportation Research Board*. Washington, DC.
- Turley, C.** 2014. Promises and Pitfalls of Transportation Utility Fees. 2014. *Transportation Research Board 5th International Conference on Surface Transportation Financing: Innovation, Experimentation, and Exploration*. July 11, 2014. Irvine, California.
- Turley, C.** & G. G. Schultz. 2008. Sensitivity Analysis of Driver Behavior and Vehicle Performance Parameters in a Microscopic Traffic Simulation Model. In *Proceedings of the 10th International Conference on Applications of Advanced Technologies in Transportation*, Athens, Greece.

Reports

- Voulgaris, C.T., S. Alexander, R. Hosseinzade, J. Jimenez, K. Lee, & A. Pande. 2020. *Measuring Success of Safe Routes to School Programs.* (MTI Report No. 1821). Mineta Transportation Institute.
doi:<https://doi.org/10.31979/mti.2020.1821>
- Kawahara, T., B. Liu, A. Pande, C. Thigpen, & C.T. Voulgaris. 2019. *Moving from Walkability? Evaluation of Traditional and Emerging Data Source for Evaluating Changes in Campus-Generated Greenhouse Gas Emissions.* (MTI Report No. 1857). Mineta Transportation Institute.
- Blumenberg, E., K. Bridges, M. Brozen, & C.T. Voulgaris. 2016. *Heightening Walking above its Pedestrian Status: Walking and Travel Behavior in California.* (UCCONNECT Report No. TO 015 – 65A0529). University of California Center for Economic Competitiveness in Transportation.
- Blumenberg, E., A. Brown, K. Ralph, & B.D. Taylor, & Voulgaris, C.T. 2015. *Typecasting Neighborhoods and Travelers: Analyzing the Geography of Travel Behavior among Teens and Young Adults in the U.S.* Federal Highway Administration.
- Loukaitou-Sideris, A., B.D. Taylor, & C.T. Voulgaris. 2015. *Passenger Flows in Underground Railway Stations and Platforms* (MTI Report No. 12-43). Mineta Transportation Institute.
- Smart, M.J., K.M. Ralph, B.D. Taylor, C. Turley, & A.E. Brown. *Honey, Can You Pick-Up Groceries on Your Way Home? Analyzing activities and travel among students and in non-traditional households.* (Report number UCTC-FR-2014-07). University of California Transportation Center.
- Turley, C. 2011. Water Services: Progress and Constraints. *Briefing Papers* (266). Catholic Parliamentary Liaison Office. Cape Town.
- Turley, C. 2011. What Drives the Bus? Public Transport Objectives in South Africa. *Occasional Papers* (30). Catholic Parliamentary Liaison Office. Cape Town.

Media Coverage

- David Harrison, "Billions Spent on Roads and Transit Projects Are Often Based on Optimistic Forecasts," *Wall Street Journal*, September 21, 2021, sec. Politics, <https://www.wsj.com/articles/transportation-projects-often-rely-on-optimistic-forecasts-11632216602>.
- Gorey, H. 2019. "Will transportation woes drive down home prices?" RealEstate by Boston.com and Globe.com. 4 September 2019. <http://realestate.boston.com/buying/2019/09/04/transportation-woes-drive-home-prices/>
- Lindblom, M. 2018. "Sound Transit seeks two light-rail stations in South Lake Union, only five blocks apart." Seattle Times. 25 March 2018. <https://www.seattletimes.com/seattle-news/transportation/sound-transit-seeks-two-light-rail-stations-in-south-lake-union-but-at-what-cost/>
- Lindblom, M. 2016. "Megaproject expert: Transit-cost estimates getting more realistic." Seattle Times. 22 August 2016. <http://www.seattletimes.com/seattle-news/transportation/megaproject-expert-transit-cost-estimates-getting-more-realistic/>
- Lindblom, M. 2016. "Sound Transit's cost overruns for first phase hit about 86 percent." Seattle Times. 20 August 2016. <http://www.seattletimes.com/seattle-news/transportation/sound-transits-cost-overruns-for-first-phase-hit-about-86-percent/>
- Viotti, V. 2015. "How much more can we afford?" *Honolulu Star Advertiser*. 4 October 2015. <http://www.pressreader.com/usa/honolulu-star-advertiser/20151004/283678298490196/TextView>
- Laskow, S. 2015. "How Simulators are changing subway-station design" *Politico New York*. 6 February 2015. <http://www.politico.com/states/new-york/city-hall/story/2015/02/how-simulators-are-changing-subway-station-design-086730>

Teaching

SES 5394: Travel Behavior and Forecasting	Spring 2022 Harvard Graduate School of Design
SES 5437: Transportation Economics and Finance	Fall 2021 Harvard Graduate School of Design
VIS 2128: Spatial Analysis	Fall 2021 Harvard Graduate School of Design
ADV 9204: Preparation for Independent Thesis Proposal	Fall 2020 Harvard Graduate School of Design
SES 5215: Analytic Methods of Urban Planning: Quantitative	Fall 2020, 2021 Harvard Graduate School of Design
STU 1122: Second Semester Core Urban Planning Studio	Spring 2020 Harvard Graduate School of Design
VIS 2129: Spatial Analysis and the Built Environment	Fall 2019, 2020 Harvard Graduate School of Design
Civil Engineering 523: Transportation System Planning	Fall 2018 California Polytechnic State University
Civil Engineering 527: Sustainable Mobility	Spring 2018, 2019 California Polytechnic State University
Civil Engineering 423: Intelligent Transportation Systems	Spring 2018, 2019 California Polytechnic State University
Civil Engineering 424: Public Transportation	Winter 2018, 2019 California Polytechnic State University

Funded Research Grants

Center for Green Buildings and Cities Faculty Research Grant Role: Co-principal Investigator (with Elizabeth Christoforetti) Project Title: Location-based Sustainability Analysis	2021 Amount: \$19,393
Center for Green Buildings and Cities Faculty Research Grant Role: Principal Investigator Project Title: Evaluating Methods for Estimating Site-level Vehicle Miles Traveled	2020 Amount: \$19,992
California State University Transportation Consortium Grant Role: Principal Investigator Project Title: Safety Considerations for All Road Users of Advisory Bike Lanes	2019 Amount: \$75,000
California Department of Transportation Grant Role: Principal Investigator Project Title: Transportation Management Center Training Simulator Support	2018 Amount: \$782,311
CTEDD Research Grant Role: Co-principal Investigator (with Anurag Pande) Project Title: An Empirical Bayes Approach to Quantifying the Impact of Transportation Network Companies on Vehicle Miles Traveled	2018 Amount: \$55,177
Mineta Transportation Institute Research Grant Role: Principal Investigator Project Title: Safe Routes to School Intersectional Analysis	2018 Amount: \$48,271
California State University Transportation Consortium Grant Role: Principal Investigator	2018 Amount: \$73,453

Project Title: Moving to Walkability? State and revealed behavior on the impacts of land use and travel demand management on mode choice	
UC Institute of Transportation Studies Grant	2017
Role: Principal Investigator	Amount: \$20,000
Project Title: Crystal Balls and Black Boxes: Optimism Bias in Ridership and Cost Forecasts for New Starts Rapid Transit Projects	
UCLA Graduate Division Dissertation Year Fellowship	2016
Role: Principal Investigator	Amount: \$35,830
Project Title: Crystal Balls and Black Boxes: Optimism Bias in Ridership and Cost Forecasts for New Starts Rapid Transit Projects	
UCCONNECT Dissertation Grant	2016
Role: Principal Investigator	Amount: \$7,500
Project Title: Crystal Balls and Black Boxes: Optimism Bias in Ridership and Cost Forecasts for New Starts Rapid Transit Projects	
UCLA Graduate Division Graduate Summer Research Mentorship Grant	2013
Role: Mentored student researcher (with Evelyn Blumenberg)	Amount: \$6,000
Project Title: The Role of Pupil Transportation in Education Reform and School Choice	

Awards and Honors

Transportation Research Board William W. Millar Award	2022
Awarded to the authors of the best paper in the public transportation area at the TRB Annual Meeting	
Urban Planning and Design Student Forum Recognition Faculty Award	2021
Selected by vote of the student body at the Harvard Graduate School of Design	
Transportation Research Board Fred Burggraf Award	2020
Awarded to recognize excellence in transportation research for scholars 35 years of age or younger	
Pacific Southwest Region CUTC Outstanding Student of the Year Award	2018
Awarded by the Council of University Transportation Centers	
Barclay Gibbs Jones Award	2017
Awarded by ACSP for best doctoral dissertation in planning	
Eno Leadership Development Conference Alumni Fellowship	2015
Awarded to top-rated applicant to the Eno Leadership Development Conference	
Institute of Transportation Studies Fellowship	2014
Merit-based fellowship for UCLA graduate students in transportation	
Eisenhower Fellowship	2013
Merit-based fellowship administered by the Federal Highway Administration	
American Public Transportation Foundation Hall of Fame Scholarship	2006
Merit-based scholarship awarded to five transportation students nationally	

Student research advising

Masters theses

"Charging America: Car access and incentive in a decarbonized future"	May 2021
Student: Carlee Griffith, Role: Chair	Harvard Graduate School of Design
"Analysis of the Effects of Adaptive Ramp Metering on Measures of Efficiency"	June 2019
Student: Jacky Loh, Role: Committee member	California Polytechnic State University
"Sidewalks to Nowhere? A Tool to Prioritize Pedestrian Improvements"	June 2019
Student: June Lai, Role: Chair	California Polytechnic State University
"Ridership Ramp-up? Initial ridership variation on new rail transit projects"	December 2018
Student: Jill Shinn, Role: Chair	California Polytechnic State University

Doctoral dissertations

"From Forecasting to Scenario Planning: The Case of Autonomous Vehicles"

Student: Aleksandar Bauranov, **Role:** Committee member

October 2021

Harvard Graduate School of Design

Service and Leadership

National Cooperative Highway Research Program

2021-present

Member, project panel on incorporation of uncertainty in long-range transportation planning

Eno Center for Transportation

2020-present

Member, advisory panel on transit costs and project delivery

Association of Collegiate Schools of Planning

2020-present

Member, Doctoral Committee

Transportation Research Board, National Academies of Sciences, Engineering, and Medicine

Member, AP090: Standing Committee on Transit Data

2020-present

Secretary, AP090: Standing Committee on Transit Data

2021-present

Member, AP030: Standing Committee on Public Transportation Marketing and Fare Policy

2021-present

Institute of Transportation Engineers

2018-2019

Faculty Advisor, Cal Poly Student Chapter

Critical Planning Journal

2012-2013

Managing Co-editor

National Association of Women MBAs

2011

President, Notre Dame Student Chapter

Institute of Transportation Engineers

2006-2007

Secretary, Brigham Young University Student Chapter

American Society of Civil Engineers

2003

Vice President, Brigham Young University Student Chapter

Professional License

Professional Engineer(PE), Washington License #: 47256

LUKE REEVE

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EDUCATION

Harvard University
Master in Design Engineering | May 2023

Georgia Institute of Technology
B.S. in Civil Engineering | May 2017
M.S. in Structural Engineering | May 2018

Design Thinking | Systems Strategy | Problem Finding

Structural Design | Material Mechanics | Problem Solving

LEADERSHIP & WORK EXPERIENCE

Gensler Strategy Lab | Boston, MA
Systems Strategist & Product Manager

2021

- Led the contextual & generative research, iterative product design & management, and strategy & system integration recommendations for the bespoke central data hub for our client's 70 site, 70 million square foot strategic facilities plan

Top Yard | New York City, NY

2021

Growth Strategy

- Managed the business growth strategy for a build tech startup productizing residential roof decks, devising the idea and writing the code to merge NYC property data with census data to locate the buildings/customers best fit for our product

OpenZoning | Harvard Laboratory for Design Technology @ the GSD

2022

Cofounder

- Devising tests for prototyping/iterating on different business models (private, private-public, open-distributed) to establish a coalition of private and public partners to create and facilitate the adoption of a national online format for zoning data

Uzun + Case | Atlanta, GA

2020

Structural Engineer | Founder and Former Head of the Parametric Modeling Committee

- Developed the technology workflow for the design of the structural system for a convention center's 60,000 sf façade, coding macros in VBA to automate the structural analysis and, in the process, creating a digital calculation ledger

Atlanta BeltLine, Inc. (ABI) | Atlanta, GA

2016

Community Planning Fellow

- Created the first draft of ABI's 6-page historic preservation policy draft in its entirety, using Chicago's as precedent
- ABI oversees the design of one of the U.S.'s largest urban redevelopment and housing equity projects, the Atlanta BeltLine

RESEARCH & PROJECTS

FBI National Use of Force Data Collection Data Visualization | Harvard

2020

MDE Information Design Studio I

- Coded 800+ lines in Python to clean/merge use of force data with census data to create an interactive data visualization enabling a radical, place-based recruiting strategy for the FBI's National Use of Force Data Collection (NUFDC)
- Currently working with the FBI's NUFDC team to integrate our data platform into their strategy technology workflow

SmilBox | Harvard

2020

MDE Product Design Studio I

- As a team of an engineer, an architect, and a UI/UXer, designed, prototyped, and pitched a kit of tele-dental, point-of-care devices utilizing Harvard research on paper-based diagnostics + electrochemistry for at-home, oral health diagnosis tools
- Lead product designer for our paper-based diagnostic device, utilizing Fusion 360 + rapid prototyping to create iterative design models and using precise, tech-integrated models and physical review of 3D-printed models for design evolution

SOFTWARE & CODING SKILLS

Coding: Python, C, HTML, CSS, Javascript, MatLab, VBA, DesignScript

Design: Figma, Miro, Keyshot

3-D & Parametric Modeling: Rhino, Grasshopper, Revit, Dynamo