

Ioanna Tsoulou

Research Scientist

Department of Buildings (DOB), Sustainability Bureau
New York City, NY USA

+1 (732) 762-1398 ✉ iotsoulou@buildings.nyc.gov / ioannatsoulou@gmail.com 🔗 <https://ioannatsoulou.org>

Interests

Environmental & Energy Policy, Climate Adaptation, Urban Sustainability, Building Decarbonization, Overheating, Thermal Comfort & Health, Indoor Air Quality, Occupant Behavior, Green Infrastructure, Passive Strategies

Experience

Department of Buildings (DOB), Sustainability Bureau

New York, NY, USA

Research Scientist, Policy and Finance

2023 - Present

- Decarbonization of Buildings in New York City (Local Law 97)

Institute for Env. Design & Engineering, The Bartlett, UCL

London, UK

Research Fellow/Science Manager

2020 - 2023

- Complex Urban Systems for Sustainability and Health - CUSSH (Wellcome Trust)
- Climate Resilience of Care Settings - ClimaCare (NERC)

Center for Green Building, The Bloustein School, Rutgers University

New Brunswick, NJ, USA

Researcher

2013 - 2020

- Indoor Air Quality in Low-Income Households (CDHW & VNB)
- Thermal and Air Quality Conditions of Seniors in Public Housing during Heat Waves (NSF)
- Green and Resilient Shelter Practices and Implementation Strategies (NJ DCA)
- Building Modeling and Simulation of Occupant Behavior for EnergyPlus/Open Studio (US DOE)
- A Living Laboratory to Optimize Future Workspace Designs (Rutgers)
- Hometown Dashboard: Smart City Technologies for Improving Quality of Life (Rutgers)
- Sandy Recovery What-if Scenarios for Coastal Community Resiliency in NJ (NSF)
- Flood Risks and Real Estate Decision Making in Coastal New Jersey (NJ Sea Grant)

Voorhees Transportation Center, The Bloustein School, Rutgers University

New Brunswick, NJ, USA

Research Assistant

2014 - 2015

- Cost Analysis of Roadway Construction, Operations and Maintenance in NJ (NJ DOT)
- Contraflow Plans of Roadways in NJ (NJ DOT)

Human Ecology, Rutgers University

New Brunswick, NJ, USA

Research Assistant

2013 - 2014

- Evaluation of Water Infrastructure in New Jersey's Combined Sewer Overflow Cities (NJ Future)

Education

The Bloustein School, Rutgers University

New Brunswick, NJ, USA

Ph. D. in Urban Planning and Public Policy

Jan 2021

- Dissertation: *A Social-Ecological Approach for Heat Adaptation of Senior Low-Income Housing*
Advisor Prof. Clinton J. Andrews

M.Sc. in City and Regional Planning

May 2015

- Concentration: Environmental Planning and Design

School of Engineering, University of Patras

Patras, Greece

M.Eng. in Civil Engineering

July 2012

- Concentration: Environmental Engineering and Transportation

Works Under Preparation/Review

- **I. Tsoulou**, N. Jain, E. Oikonomou ... & M. Davies. “*Modeling Thermal and Air Quality Trade-offs in London’s Care Homes.*”
- **I. Tsoulou**, C. J. Andrews, & J. Senick. “*The Value of Outdoor Landscaping and Amenities during Heatwaves for Seniors Living in Public Housing.*”
- E. Oikonomou, **I. Tsoulou**, N. Jain... & P. Wilkinson. “*Adapting Care Homes to Heat: A Comparison of Building Retrofits.*”
- C. Razo, **I. Tsoulou**, R. Gupta, ... & M. Davies. “*Passive Strategies to Improve Current and Future Thermal Conditions in Care Homes.*”

Journals

- **I. Tsoulou**, R. He, J. Senick, G. Mainelis & C. J. Andrews (2023). “*Monitoring Summertime Indoor Overheating and Pollutant Risks and Natural Ventilation Patterns of Seniors in Public Housing.*” *Indoor and Built Environment*, In Press.
- R. He, **I. Tsoulou**, S. Thirumurugesan, ... & G. Mainelis. “*Effect of Heatwaves on PM_{2.5} Levels in Apartments of Vulnerable Population.*” R. He, I. Tsoulou, S. Thirumurugesan, ... & G. Mainelis. “*Effect of Heatwaves on PM_{2.5} Levels in Apartments of Low-Income Elderly Population: A Case Study Using Low-Cost Air Quality Monitors.*” *Atmospheric Environment*, 301, 119697.
- G. Salvia, I. Pluchinotta, **I. Tsoulou**, G. Moore and N. Zimmermann (2022). “*Understanding Urban Green Space Usage through Systems Thinking: A Case Study in Thamesmead, London.*” *Sustainability*, 14(5), 2575.
- **I. Tsoulou**, S. Kim, G. Mainelis and J. Senick (2021). “*Residential Indoor Air Quality Interventions through a Social-Ecological Systems Lens: A Systematic Review.*” *Indoor Air*.
- M. Davies, K. Belesova, ..., **I. Tsoulou**, ... and P. Wilkinson (2021). “*The CUSSH Programme: Learning How to Support Cities’ Transformational Change Towards Health and Sustainability.*” *Wellcome Open Research*, 6(100), 100.
- C. Deloly, A. Roué-Le Gall, ... **I. Tsoulou**, ... and M. Davies (2021). “*Relationship-Building Around a Policy Decision-Support Tool for Urban Health.*” *Buildings & Cities*, 2(1), 717.
- A. Ibbetson, A. Milojevic, ..., **I. Tsoulou**, ... and P. Wilkinson (2021). “*Mortality Benefit of Building Adaptations to Protect Care Home Residents Against Heat Risks in the Context of Uncertainty Over Loss of Life Expectancy from Heat.*” *Climate Risk Management*, 32, 100307.
- R. Gupta, A. Howard, M. Davies, A. Mavrogianni, **I. Tsoulou**, E. Oikonomou and P. Wilkinson (2021). “*Examining the Magnitude and Perception of Summertime Overheating in London Care Homes.*” *Building Services Engineering Research and Technology*, 01436244211013645.
- R. Gupta, A. Howard, ..., **I. Tsoulou**, ... and P. Wilkinson (2021). “*Monitoring and Modelling the Risk of Summertime Overheating and Passive Solutions to Avoid Active Cooling in London Care Homes.*” *Energy and Buildings*, 252, 111418.
- G. Moore, S. Michie, ... **I. Tsoulou**, ... and M. Davies (2021). “*Developing a Programme Theory for a Transdisciplinary Research Collaboration: Complex Urban Systems for Sustainability and Health.*” *Wellcome Open Research*, 6.
- **I. Tsoulou**, C. J. Andrews, R. He, G. Mainelis and J. Senick (2020). “*Summertime Thermal Conditions and Senior Resident Behaviors in Public Housing: A Case Study in Elizabeth, NJ, USA.*” *Building and Environment*, 168, 106411.
- C. J. Andrews, M. Smart, K. Lowrie and **I. Tsoulou** (2020). “*What Is the Role of International Scholarship in JPER?*” *Journal of Planning Education and Research*, 40(1), 6-7.
- C. J. Andrews, M. Smart, K. Lowrie and **I. Tsoulou** (2020). “*Boundaries of Planning Scholarship.*” *Journal of Planning Education and Research*.
- **I. Tsoulou** (2018). “*Investigating Links Among Urban Sprawl and Environmental Justice Indicators in US Territories.*” *plNext – next generation planning*. 7: 117-135. DOI: 10.24306/plnxt/53.
- C. J. Andrews, M. S. Allacci, J. Senick, H. C. Putra, and **I. Tsoulou** (2016). “*Using Synthetic Population Data for Prospective Modeling of Occupant Behavior during Design.*” *Energy and Buildings special issue on Occupancy Behavior Modeling*. 126: 415-423. DOI: 10.1016/j.enbuild.2016.05.049.

Conferences/Peer Reviewed

- C. Razo, **I. Tsoulou**, ... & M. Davies (forthcoming). “*Passive Strategies to Improve Thermal Conditions in a Care Home in London, UK.*” ASHRAE Transactions.
- **I. Tsoulou**, N. Jain, E. Oikonomou, G. Petrou, A. Mavrogianni, A. Howard, R. Gupta, A. Milosevic, P. Wilkinson and M. Davies (2022, January). “*Assessing the Current and Future Risk of Overheating in London’s Care Homes: The Effect of Passive Ventilation.*” International Building Performance Simulation Association (IBPSA).
- **I. Tsoulou**, J. Taylor, P. Symonds, N. Mohajeri and M. Davies (2021, November). “*Improving Indoor Thermal Comfort and Air Quality and the Health of Older Adults through Environmental Policies in London.*” In Journal of Physics: Conference Series (Vol. 2069, No. 1, p. 012240). IOP Publishing.
- **I. Tsoulou**, J. Senick, C. J. Andrews, G. Mainelis, R. He and H. C. Putra (2019, June). “*Heat Waves and Seniors in Public Housing: A Social-Ecological Exploration in an Urban Context.*” In the 12th International Forum on Urbanism, Beyond Resilience, Jakarta, Indonesia.

Book Chapters

- A. Mavrogianni, **I. Tsoulou**, C. Heaviside, ... and P. Wilkinson (2022). “*Urban Overheating and Impact on Health. An Introduction.*” In *Urban Overheating: Heat Mitigation and the Impact on Health* (pp. 1-20). Springer.
- A. Mavrogianni, J. Taylor, ..., **I. Tsoulou**, ... and P. Wilkinson (2022). “*Heat Related Mortality in London.*” In *Urban Overheating: Heat Mitigation and the Impact on Health* (pp. 171-180). Springer.
- A. Mavrogianni, E. Oikonomou, **I. Tsoulou**, ... and P. Wilkinson (2021). “*Indoor Overheating, Climate Resilience, and Adaptation of Care Settings.*” In *The Palgrave Handbook of Climate Resilient Societies*. Palgrave Macmillan, Cham.
- R. Jagannathan and **I. Tsoulou**, (2021). “*Educating Youth for Future Unemployment in Greece.*” In *The Growing Challenge of Youth Unemployment in Europe and America: A Cross-Cultural Perspective*. Bristol University Press.
- J. A. Senick, C. J. Andrews, H. C. Putra, **I. Tsoulou** and M. S. Allacci, (2018). “*Synthetic Populations of Building Office Occupants and Behaviors.*” In *Building Performance Evaluation* (pp. 63-72). Springer, Cham.

Technical Reports

- L. Lotz, J. Pickering, ..., **I. Tsoulou**, ... and T. Shealy (2019). “*Twenty Questions About Design Behavior for Sustainability.*” Report of the International Expert Panel on Behavioral Science for Design, Nature Sustainability.
- C. J. Andrews, H. C. Putra, **I. Tsoulou**, M. S. Allacci, and J. Senick, (2016). “*Occupant Behavior Module for EnergyPlus/OpenStudio.*”
- D. Van Abs, A. McClean, **I. Tsoulou**, Y Gao, and T. Evans, (2014). “*Water Infrastructure in New Jersey’s CSO Cities: Elevating the Importance of Upgrading New Jersey’s Urban Water Systems.*” New Jersey Future.

Conferences/Workshops

- Reducing Indoor Overheating and Pollutant Risks for Seniors through London’s Environmental Policies. *Society for Risk Analysis (SRA) Annual Meeting, Arlington, VA, USA.* December 2021
- Symposium on “Creating Better Streets, Blue and Green Spaces for Sustainability & Health: Learning from Stakeholders in London through the CUSSH Project.” *7th International Centre for Behaviour Change (CBC) Conference, London, UK.* November 2021
- Assessing the Current & Future Risk of Overheating in London’s Care Homes: The Effect of Passive Ventilation. *Building Simulation 2021 Conference, Bruges, Belgium.* September 2021
- Improving Thermal Comfort, Air Quality & Health of Older Adults through Environmental Policies in London. *8th International Building Physics Conference (IBPC) Copenhagen, Denmark.* August 2021
- A Socio-Ecological Approach to Risk: Managing Overheating in Senior, Low-Income Residences. *Society for Risk Analysis (SRA) Annual Meeting, Arlington, VA, USA.* December 2019

- Summertime Outdoor Activities of Seniors Living in Public Housing.
59th ACSP Annual Conference, Greenville, SC, USA. October 2019
- Measuring Energy & Air Quality in Public Housing Sites during Heat Waves.
58th ACSP Annual Conference, Buffalo, NY, USA. October 2018
- How Seniors Living in Public Housing Cope with Heat Waves.
57th ACSP Annual Conference, Denver, CO, USA. October 2017
- Investigating Sprawl and Environmental Justice Dimensions in US Counties.
9th ISIE Conference and 25th ISSST Annual Conference, Chicago, IL, USA. June 2017
- How Just is Sprawl? Links among Density and Environmental Justice in US Counties.
11th AESOP Young Academics Conference, Munich, Germany. April 2017
- **Best Paper Award, 2nd place.**
- How Do Heat Waves Affect Seniors Living in Affordable Housing?
Ozone Research Center Science Workshop, Piscataway, NJ, USA. March 2017
- A Living Laboratory at Rutgers: Environment, Design and User Behavior.
Rutgers Climate Symposium, Piscataway, NJ, USA. November 2016
- Hometown Dashboard: Smart City Technologies for Improving Quality of Life.
GCTC Expo, Smart City Innovation Summit, and US Ignite Summit, Austin, TX, USA. June 2016

Research Grants

- **U.S. Department of Energy (DOE).** “Local Law 97: Driven by Community Needs and Leading the Way to Net Zero.” **\$19.9 M.** 01/2025 - 12/2030. PI: Ioanna Tsoulou.
- **UCL Bartlett Research Grants.** “Minimizing Building Envelope Heat Losses through Functional Gradation.” **£10 K.** 01/2021 - 06/2021. PI: Kostas Grigoriadis (role: co-PI).

Student Advising

- Xianyun Fu (MSc dissertation) 2022
Institute for Environmental Design and Engineering, UCL
- Jiantong Li (MSc dissertation) 2022
Institute for Environmental Design and Engineering, UCL
- Christopher Razo (MSc dissertation with distinctions) 2021
Institute for Environmental Design and Engineering, UCL

Teaching

Rutgers, The State University of New Jersey

New Brunswick, NJ, USA

Teaching Assistant, Edward J. Bloustein School of Planning and Public Policy

2014 - 2020

- Introduction to Planning, Policy and Health (Undergraduate), *Spring 2020*
- Topics in GIS (Graduate), *Spring 2019*
- Urban Design Studio (Graduate and Undergraduate), *Spring 2018*
- Designing Healthy Cities (Undergraduate), *Fall 2014 & Fall 2016*
- Graphical Communication for Planners (Graduate), *Spring 2014 & Spring 2015*

Honors and Awards

External

- Association of Collegiate Schools of Planning (ACSP) Student Travel Award 2019
- International Society for Industrial Ecology (ISIE) Young Professionals Student Scholarship 2017
- Northeast Sustainable Energy Association (NESEA), Scholarship for Emerging Professionals 2017

Gerondelis Foundation Fellowship, Gerondelis Foundation, Inc. 2014 - 2016
University of Patras John S. Latsis Scholarship 2005 - 2007

Rutgers

Rutgers GradFund Conference Travel Award 2020
Laurence M. Downes Graduate Award in Energy and Environmental Policy 2019 - 2020
Rutgers Conference Travel Awards 2016 - 2019
Bloustein School Graduate and Teaching Assistantships 2015 - 2019
Rutgers TA/GA Professional Development Fund Awards 2015 - 2018
Rutgers Climate Institute, Student Support Fund Award 2016 - 2017
Bloustein School Memorial Fellowship 2013 - 2015

Memberships

Association of Collegiate Schools of Planning (ACSP), Association of European Schools of Planning (AESOP), Society for Risk Analysis (SRA), International Society of Industrial Ecology (ISIE), The Northeast Sustainable Energy Association (NESEA)

Service

Guest Editor

- *Frontiers in Sustainability: Special Issue on Housing Sustainability through a Systems Lens* 2022 - 2023

Editorial Assistance

- *Journal of Planning Education and Research (SAGE)* 2019 - 2020

Journal Reviewer Activity

- Sustainable Cities and Society (Elsevier), Building and Environment (Elsevier), Journal of Planning Education and Research (SAGE), Building Research and Information (Taylor & Francis), Sustainability (MDPI), LAND (MDPI), Urban Planning (COGITATIO), Buildings (MDPI), Environmental Health Insights (SAGE), Discover Cities (Springer Nature), Discover Sustainability (Springer Nature), Indoor and Built Environment (SAGE), Scientific Reports (Springer Nature)

Conference Reviewer Activity

- Building Simulation (BS), Building Physics (IBPC)

Conference Organizing

- Annual Krueckeberg Doctoral Conference in Urban Studies, Urban Planning and Public Policy
Rutgers University, New Brunswick, NJ, USA 2015 - 2019
- 6th Annual Sustainable Raritan River Conference
Rutgers University, New Brunswick, NJ, USA June 2014

Community Service

- Co-founder of the Greek Graduates of Rutgers Organization (GGRutgers), Rutgers University 2018 - 2020

Skills

Graphics/Visualization: SketchUp, Photoshop, AutoCAD, ArchiCAD, Rhino, Maxwell, InDesign

Building Simulation: Energy Plus/Open Studio, DesignBuilder, CONTAM

Statistics & Programing: STATA, MATLAB, SPSS

Spatial Analysis: ArcGIS, ArcGIS Pro, CityEngine

Languages:

- English and Greek

Other Interests

Music Theory/Composition, Piano, Pottery, Interior Design/Decor