

Ioanna Tsoulou

Research Fellow/Science Manager

UCL Institute for Environmental Design and Engineering (IEDE)
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Interests

Environmental planning and policy, climate adaptation and urban resilience, overheating, thermal comfort and health, building simulation, indoor air quality, occupant behavior, green infrastructure, passive adaptations

Experience

University College London (UCL) **London, UK (remotely from CT, USA)**
Research Fellow/Science Manager, Institute for Environmental Design and Engineering 2020 - Present

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

Rutgers The State University of New Jersey **New Brunswick, NJ, USA**
Researcher, Rutgers Center for Green Building 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)

Rutgers The State University of New Jersey **New Brunswick, NJ, USA**
Research Assistant, Alan M. Voorhees Transportation Center 2014 - 2015

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

Rutgers The State University of New Jersey **New Brunswick, NJ, USA**
Research Assistant, Department of Human Ecology 2013 - 2014

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

Education

Rutgers, The State University of New Jersey **New Brunswick, NJ, USA**
Ph. D. in Urban Planning and Public Policy January 2021

Concentration: Climate Adaptation, Thermal Comfort & Air Quality, Social Housing, Green Infrastructure
Committee: Profs. Clinton J. Andrews, Lyna Wiggins, Frank Felder and Anu Ramaswami

Master in City and Regional Planning (MCRP) May 2015
Concentration: Environmental and Physical Planning

University of Patras **Patras, Greece**
Master in Civil Engineering (M. Eng.) July 2012
Concentration: Environmental and Transportation Engineering

Works Under Preparation/Review

- **I. Tsoulou**, N. Jain, E. Oikonomou ... & M. Davies. “*Mixed-mode Ventilation to Reduce Overheating Risks and Energy Use in Care Homes.*”
- E. Oikonomou, **I. Tsoulou**, N. Jain... & P. Wilkinson. “*Adapting Care Homes to Heat: a Comparison of Building Retrofits.*”
- **I. Tsoulou**, C. J. Andrews, J. Senick & G. Mainelis (submitted). “*Summertime Thermal Comfort, Air Quality and Natural Ventilation of Seniors in Public Housing.*”
- C. Razo, M. Davies, R. Gupta, ... & **I. Tsoulou**. “*Passive Strategies to Improve Thermal Conditions in a Care Home in London, UK.*”
- A. Mavrogianni, **I. Tsoulou**, C. Heaviside, ... & P. Wilkinson (submitted). “*Urban Overheating and Impact on Health. An Introduction.*”
- A. Mavrogianni, J. Taylor, A. Milosevic, ... & P. Wilkinson (submitted). “*Heat Related Mortality in London.*”
- R. He, **I. Tsoulou**, S. Thirumurugesan, ... & G. Mainelis. “*Investigation of Heatwave Effect on PM2.5 Levels Indoors using Consumer-grade Air Quality Monitors.*”

Journals

- 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, M. Crane, ... 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, G. Moore, ... and M. Davies (2021). “*Relationship-Building Around a Policy Decision-Support Tool for Urban Health.*” *Buildings & cities*, 2(1), 717.
- A. Ibbetson, A. Milojevic, A. Mavrogianni, E. Oikonomou, N. Jain, **I. Tsoulou**, G. Petrou, R. Gupta, M. Davies 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, M. Davies, A. Mavrogianni, **I. Tsoulou**, N. Jain, E. Oikonomou 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, J. Anderson, ... 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

- **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, 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. https://doi.org/10.1007/978-3-030-32811-5_12-1
- 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, ... 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
- 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.*

 - How Just is Sprawl? Links among Density and Environmental Justice in US Counties.
11th AESOP Young Academics Conference, Munich, Germany.
 - **Best Paper Award, 2nd place.**
 - How Do Heat Waves Affect Seniors Living in Affordable Housing?
Ozone Research Center Science Workshop, Piscataway, NJ, USA.
 - A Living Laboratory at Rutgers: Environment, Design and User Behavior.
Rutgers Climate Symposium, Piscataway, NJ, USA.
 - Hometown Dashboard: Smart City Technologies for Improving Quality of Life.
GCTC Expo, Smart City Innovation Summit, and US Ignite Summit, Austin, TX, USA.

June 2017

April 2017

March 2017

November 2016

June 2016

Research Grants

- **UCL Bartlett Research Grants.** “Minimizing Building Envelope Heat Losses through Functional Gradation.”
01/2021 - 06/2021. PI: Kostas Grigoriadis.

Student Advising

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

2022

2022

2021

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*

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)

Service

Editorial Assistant

- *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), Urban Planning (COGITATIO)

Conference Reviewer Activity

- Building Simulation (BS)

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

Design & Visualization: AutoCAD, ArchiCAD, Rhino, SketchUp, Photoshop, Maxwell, InDesign

Spatial Analysis: ArcGIS, ArcGIS Pro, CityEngine

Statistics & Programing: STATA, MATLAB, SPSS

Energy & Air Quality: Energy Plus/Open Studio, CONTAM

Publishing Software: Lyx, Microsoft Office

Languages:

- English and Greek

Other Interests

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