

# Ioanna Tsoulou

## Research Fellow/Science Manager

UCL Institute for Environmental Design and Engineering (IEDE)  
The Bartlett School of Environment, Energy and Resources, London, UK

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## Interests

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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

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**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 - CUSSH (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

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

Concentration: Climate Adaptation, Heat Exposure, IAQ, Seniors, 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

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- **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 & G. Mainelis (under review). “*Summertime Thermal Comfort, Air Quality and Natural Ventilation of Seniors 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.*”
- R. He, **I. Tsoulou**, S. Thirumurugesan, ... & G. Mainelis. “*Effect of Heatwaves on PM<sub>2.5</sub> Levels in Apartments of Vulnerable Population.*”

## Journals

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- 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

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- 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

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- A. Mavrogianni, **I. Tsoulou**, C. Heaviside, ... & 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, A. Milosevic, ... & 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

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- 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

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- 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." *7<sup>th</sup> 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. *8<sup>th</sup> 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.*

  - Summertime Outdoor Activities of Seniors Living in Public Housing.  
*59th ACSP Annual Conference, Greenville, SC, USA.*
  - Measuring Energy & Air Quality in Public Housing Sites during Heat Waves.  
*58th ACSP Annual Conference, Buffalo, NY, USA.*
  - How Seniors Living in Public Housing Cope with Heat Waves.  
*57th ACSP Annual Conference, Denver, CO, USA.*
  - 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, 2<sup>nd</sup> 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.*

*December 2019*

*October 2019*

*October 2018*

*October 2017*

*June 2017*

*April 2017*

*March 2017*

*November 2016*

*June 2016*

## Research Grants

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

## Student Advising

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

*2022*

*2022*

*2021*

## Teaching

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### 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

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### 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

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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

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#### 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)

#### 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

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**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, DesignBuilder, CONTAM

**Publishing Software:** Lyx, Microsoft Office

#### Languages:

- English and Greek

### Other Interests

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