Dr Federico Tartarini - Curriculum Vitae

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Scopus in
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Work and Research Experience

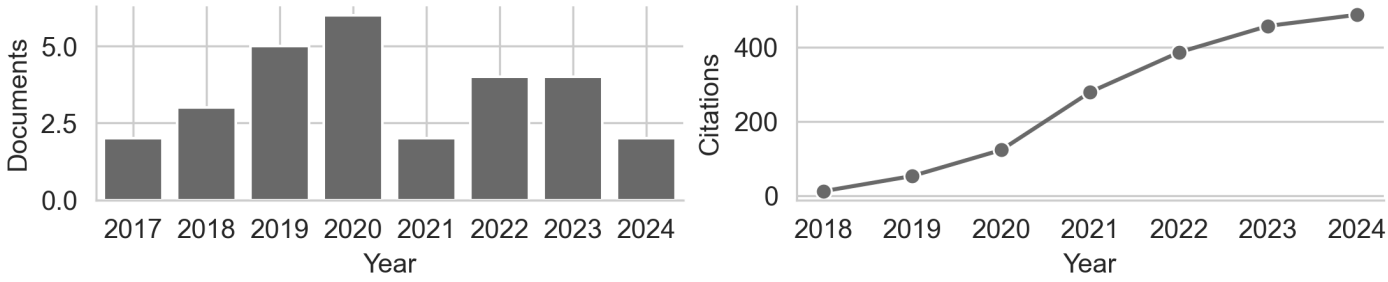
- **University of Sydney - School of Architecture Design and Planning** — Sydney, AU
  Senior Lecturer and USYD Horizon Fellow — *06/2024 – present*
  - **Beat the Heath**: Advancing Our Understanding of Heat Stress and Developing Effective Sustainable Interventions to Reduce Health Risks in a Warming World.
  - **Teaching**: Architectural and building science.
- **ASHRAE 55 committee voting member** — Atlanta, US
  SSPC 55 "Thermal Environmental Conditions for Human Occupancy" committee — *11/2020 – present*
  - **Addenda**: I wrote 8 addenda for the ASHRAE 55–2017 which are now included in the ASHRAE 55–2023.
- **University of Wollongong - Sustainable Buildings Research Centre** — Wollongong, AU
  Honorary Fellow - Faculty of Engineering — *06/2019 – present*
- **University of Sydney - Faculty of Medicine and Health** — Sydney, AU
  Senior Research Associate - Heat Health Research Incubator — *10/2022 – 06/2024*
  - **Open source software**: Developed the HeatWatch – web tool to calculate a personalised heat health risk; and Sports and Medicine Australia Extreme Heath Policy – web tool to calculate a heat health risk when playing sports.
  - **Research**: Leading and coordinating the project: "A new Heat Stress Scale for reducing personal health risk during heatwave disaster" funded by the NSW Reconstruction Authority, AU.
- **Berkeley Education Alliance for Research in Singapore (BEARS)** — Singapore, SG
  Postdoctoral Scholar - SinBerBEST 2 — *06/2019 – 09/2022*
  - **Open source software**: Maintainer and main developer of the CBE Thermal Comfort Tool – web tool for thermal comfort calculations and visualizations; pythermalcomfort – thermal comfort Python package; CBE Clima Tool – web tool to analyze climate data; Cozie for iOS and Fitbit – application for IEQ and physiological data collection.
  - **Research**: Conducted a longitudinal thermal comfort study and developed personalized thermal comfort models using wearable and IoT devices. Performed data analysis, and carried out test experiments involving human subjects. Determined under which environmental conditions electric fans can safely cool people.
  - **Industrial research projects**: Collaborated in the construction and commissioning of the BCA ZEB+ Building, the first retrofitted Zero Energy Building in Singapore for the Singaporean Building and Construction Authority (BCA). Helped with the development of the BCA Green Mark compliance path.
- **University of Wollongong - Sustainable Buildings Research Centre** — Wollongong, AU
  Associate Research Fellow - Faculty of Engineering — *06/2017 – 06/2019*
  - **Industrial research projects**: Company: Daikin Australia. Developed smart controllers and IoT sensors.
  - **Research Grants**: Project title: LLS1 – iHUB – Education (Schools) Living Laboratories. Total grant value AU$480,570.
  - **International Energy Agency Energy in Buildings and Communities (IEA EBC) Annex 69**: Represented the UOW in the IEA EBC Annex 69 "Strategy and practice of adaptive thermal comfort in low energy buildings".
  - **Data Scientist**: Helped colleagues analyze data in several research projects and assisted the SBRC in the development of research facilities concerning data acquisition, storage, and analysis.
  - **Application developer**: Developed two Android applications.
  - **Advantages SME grant**: Company: Enviro Buildings Services. Developed learning algorithms using Python and Matlab for self-commissioning of HVAC components and models for performance prediction.
- **Nier Ing** — Bologna, IT
  Consultant for an Italian engineering consulting firm — *03/2013 - 02/2014*
  - **Activities**: Conducted feasibility studies for private and public clients. Modelled building energy consumption using EnergyPlus and TRNSYS.

Education

- **University of Wollongong - Faculty of Engineering** — Wollongong, AU
  PhD in Engineering and Information Sciences — *03/2014 - 12/2017*
- **University of Bologna - Faculty of Engineering** — Bologna, IT
  Master of Science Degree in Energy Engineering; Final grade 110/110 cum laude — *09/2010 - 03/2013*
- **University of Wollongong - Faculty of Engineering** — Wollongong, AU
  Exchange program — *09/2012 - 02/2013*
- **Technical University of Copenhagen, Denmark - Faculty of Engineering** — Copenhagen, DK
  Exchange program — *01/2011 - 06/2011*
- **University of Bologna, Italy - Faculty of Engineering** — Bologna, IT
  Bachelor in Energy Engineering; Final grade 108/110 — *09/2007 - 07/2010*

Scientific Output

1841 citations, 28 peer-reviewed articles, h-index = 18, FWCI = 3.49



Top 10 Peer-reviewed Publications

- **Tartarini F.**; Schiavon S.; Quintana M.; Miller C. 2022 Personal comfort models based on a 6-month experiment using environmental parameters and data from wearables Indoor Air 10.1111/ina.13160
- **Tartarini F.**, et al. 2022 Application of Gagge's energy balance model to determine humidity-dependent temperature thresholds for healthy adults using electric fans during heatwaves Building and Environment 10.1016/j.buildenv.2021.108437
- **Tartarini F.**, et al. 2020 CBE Thermal Comfort Tool: Online tool for thermal comfort calculations and visualizations SoftwareX 10.1016/j.softx.2020.100563
- **Tartarini F.**, Schiavon, S. 2020 pythermalcomfort: A Python package for thermal comfort research SoftwareX 10.1016/j.softx.2020.100578
- **Tartarini F.**, et al. 2018 Thermal perceptions, preferences and adaptive behaviours of occupants of nursing homes Building and Environment 10.1016/j.buildenv.2018.01.018
- **Tartarini F.**, et al. 2017 Indoor Air Temperature and Agitation of Nursing Home Residents with Dementia American Journal of Alzheimer's Disease and other Dementias 10.1177/1533317517704898
- **Tartarini F.**, et al. 2017 Thermal Environment and Thermal Sensations of Occupants of Nursing Homes: A Field Study Procedia Engineering 10.1016/j.proeng.2017.04.196
- Földváry Ličina, V, ... **Tartarini F.** et al. 2018 Development of the ASHRAE Global Thermal Comfort Database II Building and Environment 10.1016/j.buildenv.2018.06.022
- Schweiker, M., ... **Tartarini F.**, et al., 2020. Evaluating assumptions of scales for subjective assessment of thermal environments – Do laypersons perceive them the way, we researchers believe? Energy Build. 211, 109761. doi.org/10.1016/j.enbuild.2020.109761
- Betti G.; **Tartarini F.**; et al. 2024 CBE Clima Tool: A free and open-source web application for climate analysis tailored to sustainable building design Building Simulation 10.1007/s12273-023-1090-5.
- Please visit my Google Scholar or Scopus profile for the complete list of publications.

Funding

- 2024 - 2029 – **The University of Sydney – Horizon Fellowship** – Beat the Heath: Advancing Our Understanding of Heat Stress and Developing Effective Sustainable Interventions to Reduce Health Risks in a Warming World. AU$ 250,000.

- 2024 – **USYD-ZJU Ignition Grants** – Overheating in Residential Buildings: Investigate indoor temperatures in homes in both Australia and China to understand the gaps between existing overheating criteria and occupant experiences in homes. AU$ 100,000.
- 2024 – **The University of Sydney** – Updating the SAMBA Indoor Environmental Quality sensor platform: Upgrading the SAMBA IEQ Monitoring System to support diverse built environment research efforts across multiple groups within the Architecture Design and Planning School. AU$ 25,000.

Open source tools

- HeatWatch – a web application to calculate personalised heat health risk both indoors and outdoors.
- Sports and Medicine Australia Extreme Heath Policy – a web application to calculate heat stress risk when playing activities outdoors.
- Cozie for Fitbit – a platform for human comfort data collection.
- Cozie for Apple – an iOS application for IEQ and physiological data collection.
- CBE Thermal Comfort Tool – a free and open-source web-based tool to calculate and visualize thermal comfort indices.
- CBE Clima Tool – a web-based application built to perform climate analysis.
- pythermalcomfort – a Python package to calculate several thermal comfort indices.
- jsthermalcomfort – Package to calculate thermophysiological, thermal comfort, thermal stress indices, in JavaScript.
- CBE MRT Tool – a graphical tool for modelling the spatial resolution of mean radiant temperature (MRT) within a space.
- COVID-19 aerosol infection risk estimator – a tool to provide an estimate of the propagation of COVID-19 by aerosol transmission.

Professional Affiliations and Review Activities

- **Professional Affiliations**: Australian Institute of Refrigeration, Air conditioning and Heating (AIRAH), and ASHRAE 55 committee voting member.
- **Journal reviews**: reviewed papers for the journals Building and Environment and Energy and Buildings.
- **Overleaf advisor**

Teaching Experience

- **The University of Sydney** — Sydney, AU
  Senior Lecturer — *Jun/2024 - current*
  - **DESC9200 - Introduction to Architectural Science**: Lecturer, tutor, and student assessment and consultation.
- **The University of Sydney** — Sydney, AU
  Guest lecturer — *Mar/2023*
  - **DESC9200 - Introduction to Architectural Science**: Guest lecturer on advanced building retrofits.
- **National University of Singapore (NUS)** — Singapore, SG
  Teaching assistant — *Aug/2020 – Oct/2022*
  - **Course BPS5223 - Data Science for the Built Environment**: Guest lecturer and student assessment.
  - **Course BPS5229 - Building Energy Performance - Passive Systems**: Guest lecturer and student assessment.
- **The University of Sydney** — Sydney, AU
  Guest lecturer — *Oct/2018*
  - **BAEN2002 - Design Integration Lab: Energy**: Guest lecturer on the Solar Decathlon Competition.
- **University of Wollongong** — Wollongong, AU
  Teaching assistant — *Jul/2016 - Nov/2017*
  - **ENG 442/918 - Sustainable Energy in Buildings**: Lecturer, tutor, and student assessment and consultation.

Conferences – Oral Presentation

Invited Oral presentations

- SinBerBEST 2022 Symposium: Wearable solutions for thermal comfort, Singapore. Jul 2022
- Center for the Built Environment Symposium, UC Berkeley, US. Apr 2022
- ISHVAC 2021: 12th Intl. Symposium on Heating, Ventilation and Air Cond., Seoul, Korea. Nov 2021
- Center for the Built Environment Symposium, UC Berkeley, US. Sep 2021
- Center for the Built Environment Symposium, UC Berkeley, US. Apr 2021
- Aged Care Services, Sydney, AU. Feb 2015

Oral presentations

- Indoor Air 2024: 18th conference of the International Society of Indoor Air Quality, Honolulu, US. Jul 2024
- ACSM 2023: American College of Sports Medicine annual conference, Denver, US. Aug 2023
- COBEE 2022: 5th International conference on building energy and environment, Montreal, Canada. July 2022
- Indoor Air 2020: 16th Conference of the Intl. Society of Indoor Air Quality and Climate, Seoul, Korea. Nov 2021
- IAQVEC: 10th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings, Bari, IT. Sep 2019
- SBE16 Sydney: International High-Performance Built Environments Conference, Sydney, AU. Nov 2016
- Australian Association of Gerontology (AAG) National Conference, Canberra, AU. Nov 2016
- 15th National Conference of Emerging Researchers in Aging, Canberra, AU. Nov 2016
- International Psychogeriatric Association (IPA) -International Congress, San Francisco, CA, USA. Sep 2016
- 13th National Conference of Emerging Researchers in Aging, Adelaide, AU. Nov 2014

Awards

- **Future Leader Award**
  AIRAH (Australian Institute of Refrigeration, Air Conditioning, and Heating) *2023*
- **Excellence in HVAC&R Research**
  AIRAH (Australian Institute of Refrigeration, Air Conditioning, and Heating) *2023*
- **First price (outstanding video)**
  Postdoc Video Challenge: "Addressing Grand Challenges" from Buildings & Cities *2023*
- **Horizon Fellowship**
  The University of Sydney *2023*
- **Outstanding Project Achievement Award**
  SinBerBEST *2021*
- **Experienced Researcher**
  International conference on indoor air quality, ventilation and energy conservation in buildings *2019*
- **Best Paper Award**
  journal Building and Environment *2018*
- **Student of the year**
  AIRAH (Australian Institute of Refrigeration, Air Conditioning, and Heating) *2017*
- **Best presentation**
  15th National Conference of Emerging Researchers in Ageing *2016*
- **Innovation in ageing research**
  13th National Conference of Emerging Researchers in Ageing *2014*

Skills

- **Languages**: Italian, English
- **Programming languages**: Python, LaTeX, JavaScript, SQL, HTML, CSS
- **Softwares**: JetBrains IDEs, Microsoft Office Suite