



*ARC Training Centre for
Advanced Building Systems
against Airborne Infection
Transmission (THRIVE)*

**ANNUAL REPORT
2024**

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1. Introduction

The ARC Training Centre for Advanced Building Systems against Airborne Infection Transmission (THRIVE) formally commenced on 31 August 2023.

Our **vision** is to **lead** the advancement of knowledge and technological infrastructure development, in pursuit of **clean and healthy indoor air environments**, that improve mental cognition and foster productivity. To **achieve** this, we are committed to building collaborative and innovative **partnerships** with the scientific community, governmental bodies, industry stakeholders, and the public.

Our **mission** is to **design and engineer** building systems which facilitate high quality indoor environments. These systems will **effectively control** airborne pathogens and pollutants, while **enhancing thermal comfort** and **optimising energy efficiency**, and ultimately, will empower building occupants to reach their full potential.

THRIVE's Fields of Science include:

- aerobiology
- aerosol science
- architecture
- computational fluid dynamics
- building design and engineering
- data science
- environmental economics
- environmental science
- law
- machine learning
- public health
- signal processing and artificial intelligence

THRIVE Social Media Accounts:

- Website: <https://thriveiaq.com/>
- LinkedIn: <https://www.linkedin.com/company/thriveiaq/>
- YouTube: <https://www.youtube.com/@thrivelAQ>

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2. THRIVE Researchers in 2024

Centre Director

Distinguished Professor Lidia Morawska, PhD

Associate Directors

Associate Professor Lindy Burton

Professor Geoff Hanmer

Professor Jason Monty

Professor Zoran Ristovski

Centre Manager

Mr Rafat Alam

Operational Staff

Ms Chantal Labbe, Research Support Officer

Ms Lara Kemp, Communications Officer

Academic Researchers

Professor Richard Brown, Faculty of Engineering, QUT

Professor Giorgio Buonanno, University of Casino and Southern Lazio, Italy

Professor Clinton Fookes, Faculty of Engineering, QUT

Professor Amanda Kennedy, Faculty of Business & Law, QT

Professor Prashant Kumar, University of Surrey, UK

Adjunct Associate Professor Wendy Miller, School of Earth and Atmospheric Sciences, QUT

Dr Sara Omrani, School of Architecture & Built Environment, QUT

Associate Professor Thomas Rainey, Faculty of Engineering, QUT

Adjunct Professor Tunga Salthammer, Fraunhofer WKI, Germany

Associate Professor Robyn Schofield (The University of Melbourne)

Professor Boguang Wang, Jinan University, China

Professor Hao Wang, Jinan University, China

Dr Tharindu Fernando Warnakulasuriya, Faculty of Engineering, QUT

Professor Maosheng Yao, Peking University, China

Postdoctoral Researchers

Dr Enoch Adotey

Dr Robert Groth

Dr Martin Larbi

Dr Henry Oswin

Dr Hedy Wang

Partner Investigators

Mr Marc Dunn, Samsung Electronics Australia

Dr Tim van der Graaf, Versuni

Mr Paul Hoertz, Trane Technologies

Ms Pat Keady, Handix Scientific

Mr Graeme McLeish, QED Environmental Services

Dr Heike Neumeister-Kemp, Mycotec

Dr Hamesh Patel, Mote NZ

Dr Greg Picker, AREMA

Dr Andrew Poslinski, Trane Technologies

Mr Ken Schoeneck, Trane Technologies

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Mr Ian Searle-Crossley, Amazon Web Services
Mr Robert Sharon, Blue IoT
Ms Ivi Sims, BULCS Holdings
Mr Kurt Sterzl, Amazon Web Services
Ms Plum Stone, The Safer Air Project
Mr Scott Tew, Trane Technologies
Dr Zubin Varghese, Trane Technologies
Mr Mark Vender, AIRAH
Mr Simon Witts, VA Sciences

Doctoral Students (ARC Funded)

Udita Gupta (QUT-based; Supervisor: Lidia Morawska, Richard Brown)
Dilani Madhubhashini (QUT-based; Supervisor: Enoch Adotey, Lidia Morawska, Tunga Salthammer)
Samitha Wijewantha (Supervisor: Henry Oswin with Enoch Adotey, Lidia Morawska)
Bingnan Zhao (Supervisor: Stuart Grange, Lidia Morawska)

Doctoral Students (UoM Funded)

Salman Khan (UoM-based; Supervisor: Jason Monty, Robyn Schofield)

Doctoral Students (Other Funded)

Justine Hupkes (Supervisor: Richard Brown, Lidia Morawska)

Masters' Students

Robyn Meldon (Supervisor: Lidia Morawska, Richard Brown, Enoch Adotey, Greg Bell)
Robert Sharon (Supervisor: Lindy Burton, Lidia Morawska)

Postgraduate Completions, PhD

None

Postgraduate Completions, Masters

None

3. Major Research Events & Highlights

- **THRIVE Forum** was held at QUT on 1 February 2024. Title: ***Making Australia resilient to airborne infection transmission.***
- **THRIVE Future Buildings Forum** was held in Sydney at the NSW Government Workplace Hub on 30 April 2024. Forum title: ***Energy and Indoor Air Quality.*** >100 participants between those who attended face-to-face and those connected virtually attended the Forum.
- **THRIVE Satellite Event** was held at QUT on 18 July 2024. Title: ***Science for Action: Changing the world in small steps.***
- **THRIVE Centre Launch** was held in The Cube at QUT on 19 July 2024.



- **THRIVE Distinguished Guest Lectures Series** was launched in 2024, these lectures are recorded and uploaded to our [YouTube channel](#). The details of the lectures are as below:
 - Professor Giorgio Buonanno, University of Cassino and Southern Lazio, Italy (1 February 2024). Title: ***Airborne transmission of respiratory pathogens in classrooms: from manual airing to personal ventilation.***
 - Mr Alexander Mikszewski, Queensland University of Technology (QUT), Australia (1 February 2024). Title: ***Airborne infection risks assessment tools: applications during COVID-19 and beyond.***
 - Dr Peter McGarry, University of Queensland, Australia (1 February 2024). Title: ***Reasonably practicable methodology using in-space CO₂ concentration to assess ventilation to indoor spaces.***

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- Mrs Alina Sarosiek, Psychologist, Brisbane, Australia (1 February 2024). Title: ***From neurons to buildings: unravelling the secrets of neuroarchitecture.***
- Mr Sohail Hasnie, Former Energy Specialist for Asian Development Bank (30 April 2024). Title: ***Building Energy Presumption: The Potential of Technology.***
- Mr Brock Manville, Energy Manager, National Arts Gallery, Washington D.C., USA (30 April 2024). Title: ***IAQ 2024: Notes from the National Gallery of Art.***
- Professor Jason Monty, The University of Melbourne and Professor Geoff Hanmer, ARINA (30 April 2024). Title: ***Future Prospects and Current Issues in Building Ventilation.***
- Mr Simon Witts, Director, VA Sciences (30 April 2024). Title: ***What controls the design***
- **THRIVE Symposium** was held at QUT on 2 December 2024. Title: ***State of Indoor Air in Australia.*** This interdisciplinary forum was relevant to experts from many fields and to anyone involved with buildings, from academics to leaders tasked with maintaining a safe and resilient internal environment of schools, offices, art museums, and any space we share with others – including homes. Big questions investigated by the team during the forum included:
 - What do we know about the quality of air in Australian buildings? What pollutants are of concern? How are they linked to health outcomes? Greenhouse gas emissions?
 - Can we achieve a balance in building performance with respect to indoor air quality, thermal comfort, and the energy needed to support this for specific climate(s) and specific building types?
 - What additional risks will climate change pose with the increased frequency of episodic pollution events, rainfall intensity, and frequency and duration of heat waves? What is the impact of these changes on indoor air quality? What additional efforts will be required to protect people from exposure to outdoor pollutants penetrating indoors?
 - Can public building mechanical systems be optimised to address dynamic IEQ risk and carbon emissions?
 - Do we need more R&D? More regulation? More collaboration between all stakeholders, including occupants?

A selection of the presentations was uploaded to our [YouTube channel](#). The details of the lectures are as below:

- Distinguished Professor Lidia Morawska, Queensland University of Technology. Title: ***Introduction to the Symposium***
- Associate Professor Wendy Miller, Queensland University of Technology. Title: ***Introduction to State of Indoor Air in Australia Reports***
- The Honourable Ted Baillieu, Former Premier of Victoria. Title: ***How governments use State of Environment reports or similar (i.e. evidence) to inform policy***
- Ms Hayley Teasdale, Head of Science Policy & Advice, Australian Academy of Science. Title: ***Activities the Australian Academy of Science in support of good indoor air quality for Australia***
- Dr Amanda Wheeler, CSIRO. Title: ***Smoke from bushfires and wood heaters***
- Mr Liam O'Brien, Assistant Secretary, Australian Council Trade Unions (ACTU). Title: ***The state of indoor air in relation to workers' health; perspective of the unions***
- Ms Plum Stone, The Safer Air Project. Title: ***What it means for those with chronic health conditions who are more susceptible to infections if they inhale these airborne pathogens***
- Prof Bronwyn King, Burnet Institute. Title: ***Indoor air quality advocacy***

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4. Awards & Achievements

- Distinguished Professor Lidia Morawska's work was recognised in Monte Carlo on 7 November, where she was presented with the [2024 Planetary Health Award from the Prince Albert II of Monaco Foundation](#) for her "outstanding scientific work on air quality and its impact on human health and the environment". The Planetary Health Awards honour key international figures and organisations, with only three recipients each year. Lidia attended the Monte Carlo ceremony and was presented with the award by HRH Prince Albert II.



- [Professor Lidia Morawska has been elected an International Honorary Member of the American Academy of Arts and Sciences](#). This great honour signifies the high esteem in which Lidia is held by leaders in her field and members of the Academy.
- Congratulations to Distinguished Professor Lidia Morawska for being named in [ABC's The Science Show's Top 100 Australian Scientists](#).
- A major new paper was published in *Science*, titled "Mandating indoor air quality for public buildings" (<https://doi.org/10.1126/science.adl0677>). This is a consensus of a large international team, and we expect it to have a major impact on changes in the regulatory approach to indoor air quality. You can find our QUT story here: [QUT - Blueprint for mandating indoor air quality for public buildings in form of standards](#). And a links to the paper on QUT ePrints: [Mandating indoor air quality for public buildings | QUT ePrints](#).
- Professor Geoff Hanmer, ARINA and Associate Director for Professional Development and Programs at Thrive, was appointed Adjunct Professor of Architecture at UTS as of 14 November 2024.

5. Government Interactions & Engagement

Lidia Morawska

- Prof Lidia Morawska attended and gave two plenary presentations at the **Clean Indoor Air Forum**, held at Parliament House in Canberra on 18 March 2024. Title: **Indoor Air: what to measure and why**; and **Indoor air achievements**.
- Submission to the [National Urban Policy for Australia](#): The Australian Government are developing a National Urban Policy on the role that all levels of government, industry and the community can play in improving Australian cities and suburbs. Title: **Submission by THRIVE to the National Urban Policy for Australia**.
- Development of “**A Clean Indoor Air for Australians National Strategy**” following the THRIVE Satellite Event held at QUT on 18 July 2024, titled, “*Science for Action: Changing the world in small steps*”. This strategy was presented to **The Honourable Anthony Albanese MP, Prime Minister of Australia** in a meeting with Prof Morawska and other colleagues, at Australian Parliament House on 19th of August 2024.
- Other **IAQ meetings** were held at **Parliament House** on 19 August 2024, with a number of Labor MPs/Senators including: Dr Michelle Ananda-Rajah MP, Josh Wilson MP (Assistant Minister for Climate Change), Andrew Garratt (CoS), Chris Bowen MP (Minister for Climate Change), Senator Anthony Chisholm MP (Assistant Minister for Education), Mr Jack McClellan (Advisor, Office of the Hon Jason Clare MP), Mr Dan Skehan (Senior Schools Advisor for the Minister of Education), Freya Zemek and Cassandra Simpson (Advisers of the Office of The Hon Ed Husic MP), and Dr Monique Ryan MP.
- A **meeting** with the **Environmental Health & Climate Change Branch, Australian Government, Department of Australian Government Department of Health and Aged Care**, was held on 20 August 2024, with Stephen Bouwhuis (Assistant Secretary, Environmental Health & Climate Change Branch), Paul Hunt (Director, Environmental Health Policy Section, Environmental Health & Climate Change Branch), Alison Roy (Assistant Director, Environmental Health Policy Section, Environmental Health & Climate Change Branch) and with Prof Morawska (THRIVE).
- Contributions to the ‘[Effectiveness of germicidal ultraviolet Light in an Upper room Configuration in Decreasing COVID-19 in Aged-care Residential facilities \(ELUCIDAR\)](#)’, Victorian Government, Department of Health. The Victorian Department of Health is exploring innovative strategies to reduce the transmission of respiratory viruses in residential aged care facilities, such as COVID-19 and influenza. As part of this work, we will conduct a clinical trial to see if upper room germicidal ultraviolet lighting can decrease levels of COVID-19 in Victorian residential aged care facilities. For more information how [germicidal ultraviolet light – combatting airborne virus transmission](#) works.
- Provided evidence to the **Royal Commission of Inquiry into COVID-19 Lessons Learned: Aotearoa New Zealand’s response to COVID-19**.
- Submission to [Safe Work Australia’s proposed workplace exposure limits for 9 chemicals](#).

Geoff Hanmer

- Kept in contact with the ABCB, the ACA the RAIA with a view to furthering the introduction of measures in the NCC to support clean indoor air.

6. Peer Reviewed Journal Publications

Journal Articles (Refereed)

1. Aganovic, A., Buonanno, G., Cao, G., Delmaar, C., Kurnitski, J., Mikszewski, A., Morawska, L., Vermeulen, L.C. and Wargocki, P. Comparative Assessment of Airborne Infection Risk Tools in Enclosed Spaces: Implications for Disease Control. *Infectious Disease Modelling*, 10(1): 338-352, 2025. <https://doi.org/10.1016/j.idm.2024.11.003>
2. Linge, L., Chen, J., Mikszewski, A., Buonanno, G., Morawska, L., and Jermy, M. Case studies using a simple airborne infection risk calculator to minimize COVID-19 infection risk: common approaches and challenges. *Building and Environment*, 265: 111957, 2024. <https://doi.org/10.1016/j.buildenv.2024.111957>
3. Jaydarifard, S., Morawska, L. and Paz, A. Mitigating airborne infection risks in public transportation: A systematic review. *Transport Policy*, 155: 309-320, 2024. <https://doi.org/10.1016/j.tranpol.2024.07.009>
4. Salonen, H., Salthammer, T., Täubel, M., Basagaña, X. and Morawska, L. Cleaning products: Their chemistry, effects on indoor air quality, and implications for human health. *Environment International*, 190: 108836, 2024. <https://doi.org/10.1016/j.envint.2024.108836>
5. Morawska, L., Li, Y. and Salthammer, T. Lessons from the COVID-19 pandemic for ventilation and indoor air quality. *Science*, 385(6707): 396-401, 2024. <https://doi.org/10.1126/science.adp2241>
6. Morawska, L., Allen, J., Bahnfleth, W., Bennett, B., Bluysen, P.M., Boerstra, A., Buonanno, G., Cao, J., Dancer, S.J., Floto, A., Franchimon, F., Greenhalgh, T., Haworth, C., Hogeling, J., Isaxon, C., Jimenez, J.L., Kennedy, A., Kumar, P., Kurnitski, J., Li, Y., Loomans, M., Marks, G.B., Marr, L.C., Mazzearella, L., Melikov, A.K., Miller, S.L., Milton, D.K., Monty, J., Nielsen, P.V., Noakes, C., Peccia, J., Prather, K.A., Querol, S., Salthammer, T., Sekhar, C., Seppänen, O., Tanabe, S., Tang, J.W., Tellier, R., Tham, K.W., Wargocki, P., Wierzbicka, A. and Yao, M. Mandating indoor air quality for public buildings. *Science*, 383(6690): 1418-1420, 2024. <https://doi.org/10.1126/science.adl0677>
7. Kumar, P., Debele, S., Khalili, S., Halios, C.H., Sahani, J., Aghamohammadi, N., de Fatima Andrade, M., Athanassiadou, M., Bui, K., Calvillo, N., Cao, S., Coulon, F., Edmondson, J.E., Fletcher, D., de Freitas, E.D., Guo, H., Hort, M.C., Katti, M., Kjeldsen, T.R., Lehmann, S., Locosselli, G.M., Malham, S.K., Morawska, L., Parajuli, R., Pfautsch, S., Rogers, C.D.F., Yao, R., Wan, F., Wenk, J. and Jones, L. Urban heat mitigation by green and blue infrastructure: a review of drivers, effectiveness and future needs. *The Innovation*, 8(3): e146-e155, 2024. **In the top 5% of all research outputs scored by Altmetric (24/09/2024).** <https://doi.org/10.1016/j.xinn.2024.100588>
8. Higgins, C., Kumar, P. and Morawska, L. Indoor Air Quality Monitoring and Source Apportionment Using Low-Cost Sensors: A Review of Factors of Importance. *Environmental Research Communications*, 6: 012001, 2024. <https://doi.org/10.1088/2515-7620/ad1cad>
9. Groth, R., Niazi, S., Oswin, H.P., Haddrell, A.E., Spann, K., Morawska, L. and Ristovski, Z.D. Toward standardized aerovirology: a critical review of existing results and methodologies. *Environmental Science & Technology*, 58(8): 3595–3608, 2024. <https://doi.org/10.1021/acs.est.3c07275>

7. Other Publications

Editorial Articles, Other Professional Publications

1. Hanmer, G. It would cost billions, but pay for itself over time. The economic case for air conditioning every Australian school. *The Conversation*, 21 October 2024. <https://theconversation.com/it-would-cost-billions-but-pay-for-itself-over-time-the-economic-case-for-air-conditioning-every-australian-school-241465>
2. Morawska, L., Kumar, P. and Noakes, C.J. Opinion: Clean indoor air in public buildings: can this be achieved? *Safety Management; A British Safety Council publication*, June 2024, pp. 40-43, 2024. <https://www.britsafe.org/safety-management/2024/clean-indoor-air-in-public-buildings-can-this-be-achieved>
3. Morawska, L. News & Views: The burden of disease due to indoor air pollution and why we need to know about it. *Science Bulletin*, 69(9): 1161-1164, 2024. <https://doi.org/10.1016/j.scib.2024.02.031>

Other – Refereed Scholarly Conference Papers / Abstracts

1. Hupkes, J., Brown, R., Burton, L.O., Li, Z. and Morawska, L. Building Ventilation: Development of a Taxonomy. 24th Australasian Fluid Mechanics Conference (AFMC2024), Canberra, Australia, 1-5 December 2024.
2. Morawska, L., Oswin, H.P., Niazi, S., Groth, R. and Ristovski, Z.D. The state of the art in characterisation of particles from respiratory activities. *Proceedings of Indoor Air 2024, 18th International Society of Indoor Air Quality and Climate (ISIAQ)*, Hawaii Convention Center, Honolulu, Hawaii, USA, 7-11 July 2024.
3. Miller, W., Morawska, L., Adams, R., Lester, D. and Monty, J. How can we reimagine the control of airborne pathogens through ventilation in the context of climate change? *18th International Society of Indoor Air Quality and Climate (ISIAQ)*, Hawaii Convention Center, Honolulu, Hawaii, USA, 7-11 July 2024.
4. McGarry, P., Morawska, L. and Oswin, H. Validation results of a reasonably practicable methodology using CO₂ concentration to assess ventilation to indoor spaces. *18th International Society of Indoor Air Quality and Climate (ISIAQ)*, Hawaii Convention Center, Honolulu, Hawaii, USA, 7-11 July 2024.
5. Oswin, H.P., Glachant, L. and Morawska, L. Using portable CO₂ monitors to explore the air quality of indoor spaces. *Proceedings of Indoor Air 2024, 18th International Society of Indoor Air Quality and Climate (ISIAQ)*, Hawaii Convention Center, Honolulu, Hawaii, USA, 7-11 July 2024.
6. Oswin, H.P., Silvonon, V., Growth, R., Tellier, R. and Morawska, L. A novel method for quantifying the airborne infection risk of indoor spaces. *Proceedings of Indoor Air 2024, 18th International Society of Indoor Air Quality and Climate (ISIAQ)*, Hawaii Convention Center, Honolulu, Hawaii, USA, 7-11 July 2024.
7. Silvonon V., Oswin, H.P., Groth, R., Haddrell, A., Morawska, L., Ristovski, Z.D., and Rönkkö, T. Acidity of air as a tool to help understand airborne pathogen viability. *Proceedings of Indoor Air 2024, 18th International Society of Indoor Air Quality and Climate (ISIAQ)*, Hawaii Convention Center, Honolulu, Hawaii, USA, 7-11 July 2024.

Reports – Commercial & Other

1. Hanmer, G. Review of the NCC provisions relating to ventilation for class 9b and 9c buildings; Discussion Paper: Issues and proposed action in the ventilation of Class 9b (Public Buildings, Schools and Universities) and Class 9c (RACF). Report to the ABCB, ARINA/WHP Architects, January 2024.

8. Plenary/Keynote Conference Presentations

Lidia Morawska

- Invited Plenary Presentation, 'Air Talks 2024', Australia and New Zealand Aerosol Assembly (ANZAA) for the Clean Air Society of Australia and New Zealand (CASANZ), 1 March 2024. Title: *State of science for particulate matter health effects: Setting research priorities.*
- Invited Plenary Presentation, 'The Science of Clean Indoor Air – advances, gaps and opportunities', Parliament House, Canberra, ACT, 18-19 March 2024. Title 1: *Indoor Air: what to measure and why*; Title 2: *Indoor Air achievements.*
- Invited Plenary Presentation, Workshop 'Enabling Accountability for the Assessing the Transmission of Infectious Aerosols in the Indoor Environment: Next Steps for Future Research and Policy', Johns Hopkins Center for Health Security, Baltimore Maryland, USA, 4-5 April 2024. Title: *Generation of particles during respiratory activities.*
- Invited Plenary Presentation, 'World Health Summit Regional Meeting 2024', Melbourne Convention and Exhibition Centre (MCEC), Melbourne, Victoria, 22-23 April 2024. Title: *It is time to mandate indoor air quality for public buildings!*
- Invited Plenary Presentation, 'MIT Guest Lecture, Fluids and Diseases', Massachusetts Institute of Technology, USA, 8 May 2024. Title: *The role of aerosol science in understanding and minimizing the risk of airborne infection transmission.*
- Invited Plenary Presentation, 'Przemysl Presentation', Poland, 22 May 2024. Title: *Na granicy wyobraźni, nauki i sztuki.*
- Invited Plenary Presentation, 'WHO 27th Meeting of the Joint Convention/WHO Task Force on the Health Aspects of Long-range Transboundary Air Pollution', Bonn, Germany, 22-23 May 2024. Title: *Ultrafine particles monitoring to support WHO 2021 UFP Good Practice.*
- Invited Plenary Presentation, 'Shanghai International Green Low-Carbon Proof of Concept Center', Shanghai, China, 30 May 2024. Title: *From Science to Policy: mandating indoor air quality for public buildings.*
- Invited Plenary Presentation, 'ASHRAE 241: Indoor Air Quality and Energy Efficiency in the UAE Spotlight', HawaQ in cooperation with ASHRAE Falcon Chapter, 5 June 2024. Title: *Explore the significance of mandating performance standards for indoor air quality.*
- Invited Plenary Presentation, 'Indoor and Workplace Aerosol Conference, ETH Nanoparticles Conference NPC24 – Toxicology Session', Zurich, Switzerland, 10-14 June 2024. Title: *Exposure-response to ultrafine particles: how to advance knowledge about it.*
- Invited Plenary Presentation, 'Safer indoor air: from science to policy', Centre for Safe Air (CSA) Webinar, 20 June 2024. Title: *From Science to Policy: mandating indoor air quality for public buildings.*
- Invited Plenary Presentation, ISIAQ Workshop 'IEQ Guidelines Worldwide – Recommendations' Indoor Air 2024 Conference, Hawai'i Convention Centre, 7-11 July 2024. Title: *From Science to Policy: mandating indoor air quality for public buildings.*
- Invited Plenary Presentation, Thrive Workshop 'Advanced Building Systems Against Airborne Infection Transmission', Indoor Air 2024 Conference, Hawai'i Convention Centre, 7-11 July 2024. Title: *IAQ must be regulated to protect human health in public spaces.*
- Invited Keynote Presentation, 'IHEA QLD Branch Mid-Year Conference', QLD Branch of the Institute of Healthcare Engineering (IHE) Australia and CETEC, Brisbane Convention & Exhibition Centre, 18 July 2024. Title: *It is time to mandate indoor air quality for public buildings!*
- Invited Presentation, 'Queensland Department of Education, Executive Directors Meeting', Brisbane, Australia, 29 July 2024. Title: *From Science to Policy: indoor air quality in schools.*

- Invited Plenary Presentation, 'IAQ Meeting', Maine Department of Labor, Workplace Safety & Health Division, Augusta, Maine, USA, 6 August 2024. Title: *From Science to Policy: mandating indoor air quality for public buildings*.
- Invited Plenary Presentation, 'CSA Health Workshop, 'Beyond the heart and lungs: exploring the spectrum of health impacts from air pollution', Clean Air Conference 2024, CASANZ & Centre for Safe Air, Hobart, Tasmania, 25 August 2024. Title: *Ultrafine particles (UFPs) and the brain*.
- Invited Keynote Presentation, '27th International Clean Air and Environment Conference (Clean Air Conference 2024)', Clean Air Society for Australia and New Zealand (CASANZ), Hobart, Tasmania, 25-28 August 2024. Title: *Influencing change through scientific consensus*
- Invited Plenary Presentation, 'Matthew Flinders Medal and Lecture, Science at the Shine Dome 2024', Canberra, ACT, 9-12 September 2024. Title: *The science of air: helping us thrive*
- Invited Presentation, 'The Senate of the Republic of Poland "Health for Our Children - Round Table for Improving Air Quality in Educational Institutions"', Canberra, ACT, 13 September 2024. Title: *Od nauki do polityki: obowiązek zapewnienia dobrej jakości powietrza w budynkach użyteczności publicznej*. To watch on YouTube: <https://www.youtube.com/watch?v=DzeKxak9hHo>
- Invited Plenary Presentation, 'Australasian College for Infection Prevention and Control (ACIPC) Webinar Series', 19 September 2024. Title: *Indoor air quality: science, practice, legislation*.
- Invited Plenary Presentation, 'Facilities Management Association of New Zealand (FMANZ)', Auckland, New Zealand, 25-26 September 2024. Title: *From science to policy: mandating indoor air quality for public buildings*.
- Invited Plenary Presentation, 'ACTU Healthy Work Conference', Sydney, Australia, 9-10 October 2024. Title: *Future-proofing workplace health: mandating indoor air quality for public buildings*.
- Invited Plenary Presentation, 'WeBaSOOP – Research Reinforcing in the Western Balkans in Offline and Online Monitoring and Source Identification of Atmospheric Particles', 21 October 2024. Title: *Is it time to monitor PNC routinely*.
- Invited Plenary Presentation, 'Conference on air quality and health', WHO's Asia-Pacific Centre for Environment and Health in the Western Pacific Region (ACE), Korea's National Institute for Environmental Research (NIER) and UNEP, Jeju, Republic of Korea, 24-25 October 2024. Title: *From Science to Policy: supporting effort towards air quality in WPRO*.
- Invited Plenary Presentation, 'IAQAA Conference "Using Science to Bridge the Gap in Indoor Air Quality and Disaster Response"', Rydges Parramatta, NSW 28-29 October 2024. Title: *From science to policy: mandating indoor air quality for public buildings*.
- Invited Lecture, 'College of Environmental Sciences and Engineering, Peking University', Beijing, China, 29 October 2024. Title: *From Science to Policy: mandating indoor air quality for public buildings*.
- Invited Lecture, 'Tsinghua University', Beijing, China, 30 October 2024. Title: *From Science to Policy: mandating indoor air quality for public buildings*.
- Invited Plenary Presentation, 'Panel Session 1: Sub-Forum 1 Sustainable Development and Environmental Health', Beijing Forum, College of Environmental Sciences and Engineering at Peking University, Beijing, China, 1 November 2024. Title: *Influencing change through scientific consensus: Our Air*.
- Invited Plenary Presentation, '13th Asian Aerosol Conference 2024', BCKK in Kuching, Sarawak, Malaysia, 3-7 November 2024. Title: *The world needs solutions to clean up the air we breathe: can aerosol science, technology and practice deliver them?*
- Invited Plenary Presentation, 'Centre for Robotics Retreat', Gibson Room, Queensland University of Technology, Brisbane, Australia, 15 November 2024. Title: *The science of air that helps us thrive*

- Invited Plenary Presentation, Launch of The Safer Air Project's Advocacy Report, Canberra, Australia, 20 November 2024. Title: *The science of air that helps us thrive*

Geoff Hanmer

- Presentation on Thrive and the Deakin University in Melbourne clean air program at the TEFMA 24 Conference in Auckland.

Wendy Miller

- Invited Plenary Presentation, Centre for Safe Air Meeting, 4 November 2024. Title: *Developing a State of Indoor Air-Australia report THRIVE*

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9. Media Appearances

Lidia Morawska

Many media appearances / interviews, for example:

- ABC News with Tegan Osbourne and Cale Matthews on 6 November, "[Calls for indoor air quality mandate and \\$10 billion for school ventilation](#)"
- Nature News with Smriti Mallapaty on 28 October, "Funding in Australian Universities"
- RNZ on 9 October, "[Air slowly getting cleaner, but health impacts of breathing pollution worse than previously thought](#)"
- Zycie Polish Newspaper on 2 October, "[Każdy z nas ma jedno życie do przeżycia. Profesor Lidia Morawska z kolejną, ważną nagrodą](#) | "[Each of us has one life to live. Professor Lidia Morawska with another important award](#)"
- Architecture & Design on 30 September, "[Visible solutions for invisible threats: How architects and designers can champion VOC-free interiors](#)"
- ABC News on 27 September, "[COVID's long shadow looms as Anthony Albanese urged to lead on indoor air quality as part of pandemic planning](#)"
- The Conversation on 26 September, "[Grattan on Friday: Experts want Albanese to lead on indoor air quality as part of pandemic planning](#)"
- Center for the Built Environment at UC Berkeley with Toby Kramer on 3 October, on IAQ Sensors.
- Radio New Zealand programme [Nine to Noon](#) on 25 September, "[Breath of fresh air: Lidia Morawska on the case for mandatory air quality standards](#)"
- Hamilton Northshore Village Voice with Evangeline Drinnan on 19 September, "Aircraft Air Pollution"
- Victoria Lewis, student journalist at QUT on 16 September, "Mandating indoor air quality for public buildings"
- Spanish National Radio on 13 September, "[Mandating indoor air quality for public buildings](#)"
- Le Figaro with Anne-Laure Frémont on 9 September, "[Les bactéries pathogènes peuvent voyager dans les airs sur des milliers de kilomètres](#)" (Pathogenic bacteria can travel through the air for thousands of kilometers)
- HVAC&R News with Mark Vender on 5 September, "[Researchers raring to build IAQ knowledge](#)"
- Climate Control News on 27 August, "[IAQ set to thrive](#)"
- ABC Radio Sydney & NSW Afternoons Program with James Valentine on 22 August, "Do you really need an exhaust fan while cooking?"
- HVAC&R News on 14 August, "[QUT launches Thrive lab](#)"
- Headtopics UK on 8 August, "[C-Path supports innovative ALS, neurodegenerative disease research with new grant](#)"
- ABC with Nelli Saarinen on 7 August, "[Do you need to turn on kitchen exhaust fans when cooking?](#)"
- @TheReSisters2 with Christine Copper on 31 July.
- ABC with Haley Gleeson on 31 July, "[Victoria's new 'clean air' project could help end the COVID pandemic and boost productivity](#)"
- Fraunhofer WKI Release on 26 July, "[Have we learned from the COVID-19 pandemic how to properly ventilate indoor spaces?](#)"
- QUT Media Release on 26 July, "[Seven steps to achieving our right to clean indoor air post-pandemic](#)"
- QUT Media Release on 19 July, "[A catalyst for revolution: Launch of Thrive looks to safeguard public health](#)"

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- Media Release, Senator the Hon Anthony Chisholm, Assistant Minister for Education and Assistant Minister for Regional Development on 19 July, "[New QLD research centre set to fight pathogens and improve air quality](#)"
- 3BL on 11 July, "[Advocacy Momentum Surges for Healthy Building Policy](#)"
- Mirage News on 14 June, "[Clinical Trial to Evaluate UV Light Against Airborne Viruses](#)"
- Australia Research Council on 12 June, "[Setting a new standard for Indoor Air Quality](#)"
- Cosmos with Matthew Agius on 6 June.
- Statnews.com with Megan Molteni on 4 June, "[A new discovery about carbon dioxide is challenging decades-old ventilation doctrine](#)"
- Nine.com.au with Rosalyn Fannin on 28 May, "[Air purifiers to help improve the air quality in your home](#)"
- BBC with Christian Fuller on 21 May, "[University fellow elected to prestigious academy](#)"
- QUT Media Release on 15 May, "[Smoke from controlled burn offs and surface dust are leading source of particle air pollution](#)"
- Medium with Robert Roy Britt on 6 May, "[How Toxic is the Air in Your Home?](#)"
- Santé Le Figaro with Anne-Laure Frémont on 1 May, "[Covid-19 : un air chargé en CO₂ prolonge la durée de vie du Sars-Cov-2](#)"
- Australian Academy of Science video on 27 April, "[Why we need a mandate for indoor air quality](#)"
- QUT Media Release on 26 April, "[Global air quality expert elected to American Academy of Arts and Sciences](#)"
- German Public Radio with Volkart Wildermuth on 26 April, "[Indoor Air Quality](#)".
- Nature News with Bianca Nogrady on 24 April, "[WHO redefines airborne transmission: what does that mean for future pandemics?](#)"
- Harvard Public Health Leah Samuel on 22 April, "[Governments can make indoor air healthier](#)"
- The Courier Mail on 16 April, "[New planes, many tweaks the key to fixing Brisbane's plane noise: Inquiry](#)"
- Bloomberg with Jason Gale on 15 April, "[Scientists Rename Airborne Viruses After Covid Mistakes](#)"
- InQueensland on 12 April, "[QUT Professor's national blueprint for indoor air quality](#)"
- India Education Diary on 5 April, "[University Of Colorado Boulder Scientists Urge For Policies Regulating Indoor Air Quality](#)"
- University of Surrey on 4 April, "[Indoor air quality standards needed, say international experts](#)"
- Air Quality News on 3 April, "[Calls for indoor air quality standards to be introduced worldwide](#)"
- Publico with Andréia Azevedo Soares on 29 March, "[Good air quality should be mandatory in public buildings, scientists say](#)"
- CIRES, Colorado on 2 April, "[Scientists advocate for policies regulating indoor air](#)"
- The Courier Mail on 2 April, "[Scientists demand action on indoor air quality](#)"
- The Guardian on 31 March, "[Measles alert for Sydney as experts call for improvement in indoor air quality](#)"
- QUT Media Release on 29 March, "[Mandating indoor air quality for public buildings](#)"
- News Medical Life Science on 29 March, "[Experts call for mandatory indoor air quality standards to boost health and economy](#)"
- Mirage News on 29 March, "[Blueprint Unveiled for Indoor Air Quality Standards in Public Buildings](#)"
- Polish Journalist Magdalena Majewska on 29 March.
- The World with Carolyn Baker on 28 March, "[Scientists demand enforcement of indoor air quality](#)"
- Forbes with Laurie Winkless on 26 March, "[Public Buildings Should Mandate Cleaner Air](#)"
- ABC with Tegan Taylor on 26 March, Science IAQ Paper.

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- AIRAH with Mark Vender on 26 March, Science IAQ Paper.
- Sky News with Simon Love on 26 March, Science IAQ Paper.
- Academy of Science on 22 March.
- Croaky Health Media on 14 March, "[With indoor air quality in the spotlight, experts urge governments to do more to prepare communities for bushfire smoke hazards](#)"
- Polish journalist Dominika Giordano on 11 March.
- ABC with Elise Kinsella on 22 January.

Geoff Hanmer

- 7 recent appearances and interviews relating to my most recent article in the Conversation: ABC Sydney, ABC Regional NSW, 3AW, ABC News Radio, ABC Regional SE (SA), ABC-TV (BTN High) and Education HQ.

10. Visitors

- Mr Alex Mikszewski, External QUT PhD Student, 29 January – 3 February 2024
- Adjunct Prof Giorgio Buonanno, University of Casino and Southern Lazio, Italy, 30 January – 6 February 2024
- Adjunct Prof Tunga Salthammer, Fraunhofer WKI, Germany, 15 November 2024 – 15 February 2025
- Mrs Alina Sarosiek (retired), 1 February 2024
- Dr Allen Haddrell, School of Chemistry, The University of Bristol, United Kingdom, 4 July 2024
- Prof Hao Wang, Jinan University, Guangzhou 13-28 July 2024
- Dr Hamesh Patel, Mote, NZ, 22-23 August 2024
- Professor Donald Milton, University of Maryland School of Public Health, 3 October 2024
- Associate Professor Robyn Schofield, University of Melbourne, 17 October 2024.
- Adjunct Professor Tunga Salthammer, Fraunhofer WKI, Germany, 15 November 2024 – 15 February 2025