

# Curriculum Vitae – Dr Marco-Felipe King

## 1. Personal Details

**Name:** Dr Marco-Felipe King  
**Current post:** Lecturer in Building Engineering and Infection Transmission  
**School / Faculty:** Civil Engineering, University of Leeds

## 2. Biographical Information

### 2.1 Previous Employment

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| Date(s)      | Position   | Details  |
|--------------|--|--|
| 2021–present | Lecturer, University of Leeds                              | <ul style="list-style-type: none"><li>• <b>Responsibilities:</b> Teaching, research, administration, leadership and citizenship.</li><li>• <b>Key achievements:</b> Led delivery of UG/PG curricula; managed MSc EEPm; lead WPE research group;</li></ul>  |
| 2020–2022    | Named Researcher, National Core Study “PROTECT” (HSE/UKRI) | <ul style="list-style-type: none"><li>• <b>Responsibilities:</b> Managed PDRA Dr Lee Benson in work package 2; coordinated DSTL experiments; led CCTV contact-mapping sub-award.</li><li>• <b>Key achievements:</b> Publications with Dstl.</li></ul>  |
| 2020–2021    | Named Researcher, EPSRC TRACK                              | <ul style="list-style-type: none"><li>• <b>Responsibilities:</b> Independent research in computational modelling; collaboration with industry partners.</li><li>• <b>Key achievements:</b> Delivered visualisation pipeline used by DfT.</li></ul>   |
| 2017–2020    | Researcher & CoInvestigator, EPSRC HECOIRA                 | <ul style="list-style-type: none"><li>• <b>Responsibilities:</b> Led hospital ward contamination workpackages; developed microbial-environment models.</li><li>• <b>Supervision:</b> UG, MSc and PhD students (incl. Waseem Hiwar).</li><li>• <b>Key achievements:</b> Coordinated strategy with PI/CoIs/NHS; secured travel grants.</li></ul> |

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| Date(s)   | Position                       | Details  |
|-----------|--------------------------------|--|
| 2013–2017 | PDRA, EPSRC<br>REFRESH Project | <ul style="list-style-type: none"> <li>• <b>Responsibilities:</b> Led computational modelling; liaised with experimentalists at Southampton Reading.</li> <li>• <b>Key achievements:</b> Authored peer-reviewed publications; presented at international conferences.</li> </ul> |

## b. Qualifications

| Year | Award title | Subject                                       | Grade                  | Awarding body       |
|------|-------------|---|------------------------|---------------------|
| 2024 | PGCAP       | Postgraduate Certificate in Academic Practice | Merit                  | University of Leeds |
| 2013 | PhD         | Infection Control Modelling                   | Excellence in Research | University of Leeds |
| 2009 | MSc         | Computational Fluid Dynamics                  | Distinction            | University of Leeds |
| 2008 | BSc         | Mathematics                                   | II.ii                  | Durham University   |

## c. Membership of professional bodies

| Year(s)      | Membership title  | Organization  |
|--------------|---|---|
| 2025–present | UKIEG Committee Member  | UK Indoor Environments Group (UKIEG)                    |
| 2024–present | Fellow of the Higher Education Academy                          | Higher Education Academy                                |
| 2024–present | ECR Representative, Indoor Environments Journal                 | Indoor Environments Journal                             |
| 2017–present | Member, Infection Prevention Society                            | Infection Prevention Society                            |
| 2014–present | Member, International Society of Indoor Air Quality and Climate | ISIAQ   |
| 2017–present | Member, Healthcare Infection Society                            | Healthcare Infection Society                            |
| 2023–present | Member, International Society of Indoor Air Quality and Climate | International Society of Indoor Air Quality and Climate |
| 2023–present | Mental Health First Aider                                       | University of Leeds                                     |

## d. Personal major honours and academic distinctions

| Date | Honour/Distinction  |
|------|---|
| 2025 | Partnership Award Nomination – Academic Personal Tutor of the Year: “ <i>Marco is eager to help whenever it is needed. He is understanding and treats you as an equal. He will take time out of his day to make sure you are okay, and help in any way he can, with things like professional support or if you just need a wellbeing chat (or to let off some steam from time to time).</i> ” |
| 2013 | PhD thesis <i>Excellence in Research</i> award by the Pro-Dean for Research at the University of Leeds.   |

### 3. Teaching (last 5 years)

#### a. Undergraduate Modules

| Date(s)      | Module & Role  | Details & Evidence of Success   |
|--------------|--|---|
| 2021–present | CIVE3750 Individual Research Project 1<br><b>Module Leader</b> | <p><b>Class size:</b> 130 students</p> <p><b>Responsibilities:</b> Ensure compliance with competence standards and AHEP4 and JBM requirements; deliver teaching sessions; allocate students to staff across all civil UG (both levels) and most TPG programs; supervise students; project design; providing feedback and support. Contribution to assessment criteria.</p> <p><b>Evidence of success:</b> Nominated for Best Supervisor of the Year 2024–25; supervised at least 30 students since starting lectureship; successful completion of all projects, with positive feedback from students</p> <p><b>Evaluation improvement since taking over in 2021:</b></p> <ul style="list-style-type: none"> <li>• Overall satisfaction: 58.0% → 81.3%</li> <li>• Teaching standard: 50.0% → 75.0%</li> <li>• Research-informed content: 55.0% → 75.0%</li> <li>• Feedback helpfulness: 55.0% → 93.8%</li> </ul> |
| 2021–present | CIVE5755 Individual Research Project 2<br><b>Support Role</b>  | <p><b>Class size:</b> 65 students</p> <p><b>Responsibilities:</b> Allocate projects to students; supervise students</p> <p><b>Evidence of success:</b> Students regularly bring gifts and thank you cards after marks are released in July.</p>   |

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| Date(s)      | Module & Role  | Details & Evidence of Success  |
|--------------|--|--|
| 2021–present | CIVE1560<br>Engineering<br>Mathematics and<br>Modelling<br><b>Lecturer (25%)</b> | <b>Class size:</b> 170 students<br><br><b>Responsibilities:</b> Design, set and mark exam questions; design and set coursework<br><br><b>Evidence of success:</b> Student feedback includes “ <i>I liked Dr Kings teaching style—very interactive and ensured understanding</i> ”, “ <i>The lecturer was great</i> ”. Dr. Borman’s PGCAP observation comments: “ <i>Participation and interaction with students in room was good. The students were engaged and were engaging. They felt able to ask questions. Positive atmosphere in room.</i> ” |
| 2018–present | CIVE5815M Building<br>Physics 3<br><b>Guest Lecturer</b>                         | <b>Class size:</b> 15 students<br><br><b>Responsibilities:</b> Deliver 6 hours per year; set exam questions and marking.   |
| 2010–2023    | EN4102 (Cardiff<br>University)<br><b>Guest Lecturer<br/>(Funded by Arup)</b>     | <b>Class size:</b> 80 students<br><br><b>Responsibilities:</b> Design workshop objectives and material; deliver 3 hours per year<br><br><b>Evidence of success:</b> Arup confirmed the lecture was well received by staff and students.  |

## b. Postgraduate Modules

| Date(s) | Module & Role                               | Details & Evidence of Success  |
|---------|---|--|
| New     | CIVE5995 Indoor Air<br><b>Module Leader</b> | <b>Class size:</b> New module for 2025–26<br><b>Responsibilities:</b> Designed learning outcomes in accordance with AHEP4; designed assessment; deliver workshops and seminars; mark coursework<br><b>Evidence of success:</b> Module development completed to high standard |

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| Date(s)      | Module & Role  | Details & Evidence of Success   |
|--------------|--|---|
| 2018–present | CIVE5370M Indoor and Urban Air Quality<br><b>Module Leader</b> | <p><b>Class size:</b> 15–75</p> <p><b>Responsibilities:</b> Designed the course; deliver 50% of material (sharing with Dr Booker and guest speakers); set 3/4 exam questions; mark and assess coursework and presentations</p> <p><b>Evidence of success:</b> 100% on all gold measure questions. Student feedback: <i>“I liked teaching style of Dr Marco, it was very interactive and engaging. All the sessions were insightful.” “The professors have a very approachable teaching style, which contributes to the effectiveness of the teaching, especially Marco. The teaching methods are varied and the students are able to communicate and collaborate fully.”</i></p> <p><b>Evaluation outcomes:</b></p> <ul style="list-style-type: none"> <li>• Overall satisfaction: 100.0%</li> <li>• Teaching standard: 100.0%</li> <li>• Learning resources: 100.0%</li> <li>• Researchinformed content: 100.0%</li> <li>• Module introduction and preparation: 92.3%</li> <li>• Peer interaction opportunities: 100.0%</li> <li>• Assessment support: 92.3%</li> <li>• Incourse feedback opportunities: 100.0%</li> <li>• Feedback helpfulness: 92.3%</li> <li>• Module management and organisation: 100.0%</li> <li>• Overall evaluation score: 97.7%</li> </ul> |
| 2022–present | CIVE5055<br>Engineering for Public Health<br><b>Lecturer</b>   | <p><b>Class size:</b> 50 students</p> <p><b>Responsibilities:</b> Run 1 lecture and 1 computer practical; set 1 exam question; mark exam papers</p> <p><b>Evidence of success:</b> Good engagement in the seminar and during the practical</p>  |
| 2017–present | CIVE5000 MSc<br>Dissertation<br><b>Supervisor</b>              | <p><b>Class size:</b> Variable</p> <p><b>Responsibilities:</b> Allocate dissertations jointly with Level 3 and Level 5; supervise over 50 students</p> <p><b>Evidence of success:</b> Students regularly score distinction marks; one produced work which we jointly published; another has a manuscript in preparation</p>   |

c. Other teaching such as external teaching, CPD, MOOCs

| Date(s)      | Activity and details  |
|--------------|---|
| 2022–present | Yearly Leeds Institute Fluid Dynamics Summer School 2h session. Designed and delivered an interactive experience of computational fluid dynamics for students with diverse backgrounds. Feedback was positive, with students actively engaged.            |
| 2022         | Specialised Ventilation in Healthcare Premises Class of 30. 1h session on “Lessons learned from the COVID–19 Pandemic”. Designed and delivered at Weetwood Hall; success evidenced by oral feedback from attendees praising the engagement during breaks. |

## 4. Research Outputs and Scholarship

### a. Publications and Outputs

Full publication list provided in Appendix.

### b. Presentations

#### Plenary and Keynote

| Date | Title (highlight notes)  | Location                             | Int./Nat. | Registrants |
|------|--|--------------------------------------|-----------|-------------|
| 2016 | <i>The Future in Infection Risk Prediction.</i> (Waived registration and travel expenses. Speaker fee.) <b>Plenary talk.</b> | Future Infection Prevention, Salford | National  | 100         |

#### Invited

| Date | Title (highlight notes)   | Location                                    | Int./Nat. | Reg. |
|------|---|---|-----------|------|
| 2025 | Predicting human surface contacts in hospitals and public transport - Modelling disease transmission              | AI-Research at UoL                          | National  | 80   |
| 2025 | The role of surfaces in infection transmission risk   | Online for LiDO at UCL                      | National  | 25   |
| 2022 | Lessons learnt from the COVID19 pandemic. (Speaker fee.)  | Specialised Ventilation in Hospitals, Leeds | National  | 40   |
| 2020 | Indoor Air <i>Online</i> : Invited Special session - From the Micro to the Macro – Joining QMRA with Epidemiology | Online                                      | Int.      | 1000 |
| 2019 | Hospital infection control seminar. (Covered travel expenses.)  | University of Arizona                       | Int.      | 30   |
| 2019 | The Future of Infection Risk Modelling. (Travel expenses and accommodation paid. )                                | EAWAG, Switzerland                          | Int.      | 15   |
| 2019 | Behaviour, exposure and surfaces. (Travel paid.)  | Building blocks for clinicians: London      | National  | 50   |

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| Date | Title (highlight notes)  | Location                                | Int./Nat. | Reg. |
|------|--|---|-----------|------|
| 2018 | Invited Special session - Numerical modeling of cross-ventilation flows: overview of past studies and discussion on future directions. | Indoor Philadelphia                     | Air: Int. | 1000 |
| 2018 | The role of surfaces on infection transmission in hospitals. ( <a href="#">Travel paid.</a> )  | Infection Prevention Society, Halifax   | National  | 1000 |
| 2023 | Modelling bacterial recontamination on surfaces after cleaning   | SMHD, Leeds                             | National  | 120  |
| 2022 | Future Urban Ventilation Network: Not Every Measurement Should be Treated the Same   | Online                                  | National  | 30   |
| 2019 | CFD vs zonal ventilation models for predicting airborne infection transmission. ( <a href="#">Travel paid.</a> )                       | UK Fluids Network Conference, Cambridge | National  | 80   |
| 2020 | Indoor Air invited Special session - From the Micro to the Macro – Joining QMRA with Epidemiology                                      | Online                                  | Int.      | 1000 |
| 2019 | GPU-based lattice Boltzmann model for urban environments   | Leeds City Council                      | National  | 30   |

## Contributed Talks

| Date | Title (highlight notes)   | Location                                      | Int./Nat.          | Registrants |
|------|---|---|--------------------|-------------|
| 2018 | Coupled indoor/outdoor airflow simulation comparing ANSYS Fluent with a GPU-based lattice Boltzmann model for urban environments      | Indoor Philadelphia                           | Air, International | 1000        |
| 2018 | CFD of cross-flow ventilation of a full-scale cubical building using a time-dependent $k - \epsilon$ SST SAS turbulence model         | Indoor Philadelphia                           | Air, International | 1000        |
| 2018 | Health Risk Assessment of Residential Characteristics and Indoor Air Quality of Naturally Ventilated Buildings in Nigeria             | Indoor Philadelphia                           | Air, International | 1000        |
| 2017 | Coupled indoor/outdoor airflow simulation comparing ANSYS Fluent with a GPU-based lattice Boltzmann model for urban environments      | Healthy Buildings, Lublin                     | International      | 600         |
| 2017 | St James' Hospital: A CFD case study of faade pressures can inform window design  | Healthy Buildings, Lublin                     | International      | 600         |
| 2017 | Modelling environmental contamination in single and multibed hospital rooms. ( <a href="#">Waived registration and paid travel.</a> ) | ICPIC Geneva                                  | International      | 1000        |
| 2016 | Modelling the Fate Of Bioaerosols in Hospital Rooms   | Indoor Air, Ghent                             | International      | 600         |
| 2016 | Coupled indoor/outdoor airflow simulation comparing Fluent with a real-time GPU-based Lattice Boltzmann method                        | Indoor Air, Ghent                             | International      | 600         |
| 2015 | The Influence of Street Canyon Design on Hospital Air Quality   | Healthy buildings America, Boulder, Colorado. | International      | 400         |
| 2015 | The Role Of Surfaces In The Transmission Of Bioaerosols From Source To Patient In Hospital Rooms                                      | Healthy buildings America, Boulder, Colorado. | International      | 400         |
| 2015 | Urban pollution and indoor air quality, an undisputed relationship: CFD modelling of single-sided pollutant ingress                   | Healthy buildings Europe, Eindhoven           | International      | 400         |

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| Date | Title (highlight notes)  | Location     | Int./Nat.     | Registrants |
|------|--|--------------|---------------|-------------|
| 2015 | The role of cleaning on infection transmission in hospital patient rooms. (Waived registration and paid travel.) | ICPIC Geneva | International | 1000        |

### c. Supervision and Mentoring of Staff

| Date(s)           | Details   |
|-------------------|---|
| Sep 2017–May 2018 | Dr. Oluwafemi Akande Africa Research Excellence Fund (AREF, linked to MRC). <i>Tasks:</i> Air-quality sensor training; R and datascience tuition; statistical hypothesis testing support.   |
| 2025–Present      | Dr. Ciara Higham (PDRA) EPSRC Impact Acceleration: <i>AMPAS</i> .   |
| 2024–Present      | Dr. Waseem Hiwar (PDRA) EPSRC Impact Acceleration: <i>Cleaning</i> .  |
| 2024–2025         | Dr. Waseem Hiwar (PDRA) Mentor for <i>PRISE Fellowship</i> application.   |
| 2024              | Dr. Alice Macente UKCGE <i>Research Supervision Associate Award</i> . Role: Facilitated observation of practice and provided written feedback.  |
| 2024              | Two student interns, School of Civil Engineering (sole supervisor). Project: Systematic mapping of antimicrobial-resistance teaching across the University of Leeds and benchmarking against other universities.  |
| 2023              | One student intern, School of Civil Engineering (sole supervisor). Project: Interpreting ECR research designs; defining WPE meaning; creating a brand identity (colours & logo).  |
| 2022              | One student intern, School of Civil Engineering (sole supervisor). Project: Survey and visual design of an interactive application used for surveying employees of hospital in the Global south on their experience and knowledge of infection prevention. Developed as part of the <i>CRUCIBLE</i> collaboration (Univ. of Leeds, Univ. of Matakare and Dakar Hospital). |
| 2024–Present      | Dr. Douglas Booker <i>PGCAP mentor</i> .  |
| 2021–2023         | Dr. Lee Benson (PDRA, 2 yrs). Primary supervisor within HSE funded National Core Study <i>COVID19: Transmission and Environment</i> .   |
| 2018–2019         | Dr. Ikpe Ibanga. Supervised statistical modelling.  |

### d. Supervision of doctoral students

| Student name    | Role (%)                 | Reg. dates | Mode | Funding source | Thesis submission | Comp. |
|-----------------|--------------------------|------------|------|----------------|-------------------|-------|
| Rebecca Sale    | Co-supervisor (25%)      | 2024       | FT   | DTP funded     | —                 | No    |
| Xiaoxuan Qin    | Primary supervisor (70%) | 2022       | FT   | DTP funded     | —                 | No    |
| Danny Blundell  | Co-supervisor (25%)      | 2023       | FT   | Fluids CDT     | —                 | No    |
| Anushi Khandare | Co-supervisor (25%)      | 2023       | FT   | Aerosols CDT   | —                 | No    |

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| Student name        | Role (%)                       | Reg. dates | Mode | Funding source | Thesis submission | Comp. |
|---------------------|--------------------------------|------------|------|----------------|-------------------|-------|
| Alex Edwards        | Co-supervisor (25%)            | 2020       | FT   | Fluids CDT     | 2024              | Yes   |
| Bushra Hasan        | Primary supervisor (51%)       | 2020       | FT   | WaterWiser CDT | 2025              | Yes   |
| Jemma Phillips      | Co-supervisor (30%)            | 2020       | FT   | WaterWiser CDT | 2025              | No    |
| Waseem Hiwar        | Co-supervisor (30%)            | 2017       | FT   | DTP funded     | 2021              | Yes   |
| Natalie A. Gilkeson | Co-supervisor (50% Unofficial) | 2015       | FT   | DTP funded     | 2018              | Yes   |

## 5. Research Income

### a. Research Grants and Income - Needs work on actual values

| Start/End Dates       | Grant Title   | Funding Body | Applicants   | Role        | Value                       | Academic Contribution |
|-----------------------|---|--------------|--|-------------|-----------------------------|-----------------------|
| Aug 2022–<br>Jul 2024 | CO-TRACE  | EPSRC        | King, Mon-Williams                                   | PI at Leeds | 50%–<br>£40,165.68<br>(FEC) |                       |
| Apr 2022–<br>Mar 2026 | UKRI IAA - AMPAS  | EPSRC        | King, Noakes,<br>Fletcher, Hiwar                     | PI          | 0% –<br>£160,561.63(FEC)    |                       |
| Apr 2023–<br>Mar 2026 | UKRI IAA - A Cleaning Framework for Ground Public Transport to Mitigate Against Infectious Disease Transmission | EPSRC        | Noakes,<br>Grant-Muller,<br>Fletcher,<br>Hiwar, King | Co-I        | 0% –<br>£51,594.92(Price)   |                       |
| Apr 2022–<br>Mar 2023 | National COVID Transmission Project (extension)   | NIHR         | Multiple investigators                               | Co-I        | 13.89%                      |                       |
| Mar 2022–<br>Dec 2023 | Transport Risk Assessment for COVID Knowledge - Integration and Implementation (TRACK-II)                       | EPSRC        | Multiple investigators                               | Co-I        | 11.90%                      |                       |

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| Start/End Dates       | Grant Title  | Funding Body                      | Applicants   | Role           | Value                    | Academic Contribution |
|-----------------------|--|-----------------------------------|--|----------------|--------------------------|-----------------------|
| Dec 2021–<br>Nov 2026 | CECAM - Chamber for Environmental Control of Airborne Microorganisms     | EPSRC                             | Multiple investigators                                 | Co-I           | 7.57% –<br>£944,814(FEC) |                       |
| Sep 2021–<br>Aug 2024 | Future Urban Ventilation Network (FUVN) - King subaward                  | NERC                              | Henry Burridge (PI), PI (sub-MFK (Co-I)                | PI (sub-award) | 100%                     |                       |
| Aug 2021–<br>Mar 2022 | The National Core Study (NCS) on Transmission (“PROTECT”) - Addition     | Health and Safety Executive       | MFK (PI)   | PI             | 100%                     |                       |
| Jun 2021–<br>Dec 2023 | Classroom Air Cleaning Technologies Study                                | UK Health Security Agency (UKHSA) | Multiple investigators                                 | Co-I           | 10.92%                   |                       |
| Mar 2021–<br>Feb 2022 | Efficacy testing of Far-UVC radiation on droplets, aerosols and surfaces | Department of Health              | Multiple investigators                                 | Co-I           | 12.5%                    |                       |
| Oct 2020–<br>Mar 2022 | National COVID Transmission Project                                      | NIHR                              | Multiple investigators                                 | Co-I           | 18.69%                   |                       |
| Sep 2020–<br>Aug 2024 | Royal Society International Exchange                                     | Royal Society                     | MFK (PI)   | PI             | 100%                     |                       |
| Oct 2019–<br>Jun 2024 | Kan Tong Po International Fellowship 2019                                | Royal Society                     | MFK (PI)   | PI             | 100%                     |                       |
| 2018                  | HECOIRA  | EPSRC                             | Paul Hutchings (PI), PI<br>MFK (PI)                    |                | 1.05M                    |                       |
| 2018                  | MRC Festival   | MRC                               | MFK (PI)   | PI             | 1.2K                     |                       |
| 2018                  | Research and Development Fund  | School of Civil Engineering, UoL  | MFK (PI)   | PI             | 100%                     |                       |
| 2017                  | Crucible   | University of Leeds               | MFK (PI), Noakes (Co-I),<br>López-García,<br>Callaghan | PI             | 10K                      |                       |

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| Start/End Dates | Grant Title           | Funding Body                 | Applicants | Role | Value | Academic Contribution |
|-----------------|-----------------------|------------------------------|------------|------|-------|-----------------------|
| 2017            | Travel Grant          | Healthcare Infection Society | MFK (PI)   | PI   | 750   |                       |
| 2017            | Conference Fee Waiver | ICPIC                        | MFK (PI)   | PI   | 100%  |                       |

**Total funding as PI:** Over 1.06M

**Total funding contribution:** Significant contributions to multi-million pound research programmes

## b. Funding Sought

| Grant title  | Funding body                 | Applicants (PI/Co-PI)   | Date | Contrib.             | Status              |
|--|------------------------------|---|------|----------------------|---------------------|
| AMR  | Healthcare Infection Society | Doutorello, Uni Sheffield (PI); King (CoI)                    | 2025 | 10%                  | Unsuccessful at EOI |
| Software for Research Communities: Modelling Hospital Infection Risk | EPSRC                        | King (PI); Noakes; Sleigh; LpezGarca; Callaghan; Khan; Benson | 2021 | 20%                  | Unsuccessful at EOI |
| Large Grant  | UKRI                         | Prof. Catherine J. Noakes; Prof. Stephanie Dancer; King       | 2016 | 99 K (1 PhD student) | Unsuccessful        |

## 6. Student Education

### a. Scholarly Outputs (Publications/Outputs)

### b. Scholarly Outputs (Dissemination & Impact)

## 7. Enterprise & Knowledge Transfer

### a. EKT Activities

- I have collaborated with non-academic institutions such as Airsentry, Arup, Monaghans, NHS, Dstl, PHE/UKHSA, or the Department for Transport, leading to numerous joint publications and projects.
- I currently co-supervisor PhD students who are partially funded by industry partners which lead to enhanced understanding of treatment of air in hospitals.
- Impact Case Study within the REF2021, submitted as part of the School of Civil Engineering submission in 2021. In particular, during the COVID-19 pandemic, I directly contributed to the UK Government response by providing research evidence to different government departments including SAGE, HSE and DfT. According to the Government Chief Scientific Adviser at the time:

While it is not possible to put direct figures on the health or economic impacts of the contribution of Dr King to SAGE and to the UK Government response to COVID-19, it is my view that the key findings and recommendations in evidence reports, partially supported by Dr King's research, have directly contributed to safe reopening in different environments, and there is a good probability that the advice generated from these reports has reduced transmission rates and saved lives.

According to the UKRI report Impact evaluation of UKRI's RI funding response to COVID-19, the research carried out within TRACK (where I was modelling WP co-lead) provided crucial advice to DfT and transport operators. In particular, according to this report:

The Department for Transport (DfT) received research findings and information from the TRACK project through the pandemic and routinely used it to inform their strategic thinking and guidance on COVID-19.

According to the DfT representative, the TRACK project was a game-changer in terms of transport-specific advice. TRACK project provided evidence in a fast-moving pandemic context and was a trusted source of understanding about how transmission can happen in public transport.

TRACK project outcomes and impact cannot be quantitatively measured. However, it is probably the most impactful award covered in this case study: its findings were the most significant evidence the Department for Transport used to inform its overall departmental COVID-19 strategy.

My research on COVID-19 transmission with collaborators has also been cited in evidence reports and guidance by the German Bundestag (<https://www.bundestag.de/resource/blob/791826/0c75842689-065-20-pdf.pdf>), USA Homeland Security ([https://www.dhs.gov/sites/default/files/2024-04/240125\\_mql\\_sars\\_cov-2.pdf](https://www.dhs.gov/sites/default/files/2024-04/240125_mql_sars_cov-2.pdf)), the Welsh Gov Technical Advisory Group (<https://www.gov.wales/sites/default/files/2024-03/technical-advisory-group-consensus-statement-on-face-masks-for-the-public.pdf>), the UKHSA (<https://assets.publishing.service.gov.uk/media/65144556b1bad400144fd910/NH>

*//www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-(covid-19)-and-considerations-during-severe-shortages,amongotherinstitutions.*

## 8. Academic Leadership

### a. School Level

- 2025 Employee Engagement School Action Plan Team Early career academic representative - Needs making succinct and paraphrasing: purpose of the School Action Group is to identify two or three straightforward actions that we can enact at school level to improve some areas where the score from the Employee Engagement Survey within the school indicates there may be issues. This will involve meetings of the group, and hopefully meetings with groups from the wider school to fully understand the issues and try to find actions that will address them in an effective way.
- Competence Standards design School of Civil Engineering Led on designing Competence Standards for MSc EEPM, as part of Curriculum Redefined.
- 2020–Present PhD Transfer exams and Annual Progress reviews.
- 2023– Present: Indoor Air Group seminar series chair - organise speakers both external and internal on a monthly basis, focusing on early career researcher development.
- 2023–Present Director, Water, Public Health and Environmental Engineering Research Group – Organise AGM, feed into IPE plans to coordinate with David Elliot; coordinate communication and internal image, website, linkedin, spotlights and competitions, run workshops of common interest and aim at specific grant proposals.

Specifically: Providing academic leadership in promoting research activities across the group; Working with the Schools Director of Research and Innovation to develop and fulfil the Schools research strategy and respond to Faculty and University research initiatives and strategy; Stimulating a supportive and productive research environment by, amongst other things, promoting research seminars and other research development activities; Working with the DoRI in providing feedback to research proposals under development; Offering mentoring and developmental support to all staff, especially junior staff, in the research group; Working with the Schools Director of Research and Innovation to ensure that all staff within the research group contribute to deliver the School of Civil Engineering research strategy; Arranging and chairing research group meetings; Developing and maintaining an appropriate group structure that reflects the diversity of research interests and in support of areas of research strength and activity. Supporting and encouraging internal and external collaboration, including Institutes within the School linked to the research group, and with research initiatives across the Faculty, the University and with external organisations; Identify, support and develop strategic research project bid development and collaboration development opportunities. Working with research group members, Director of Research and Faculty marketing to ensure a coherent external face for the research group on the website and in other marketing materials; Determining priorities for investment in research equipment and facilities including contributing to annual strategic planning exercises; Identifying future staffing needs to support research group activities and contributing to the preparation of business cases for recruitment and participation in recruitment processes; Agree a research group budget annually from the Director of Research and Innovation based on an annual submission of research plans Working with the Director of Research and Innovation and

others as required to prepare Integrated Planning Exercise submissions annually. Working with the Director of Research and Innovation and others as required to prepare future REF submissions and any other external or internal reviews. Working with the DPRS to facilitate engagement of PGRs with School and research group activities and providing opportunities for PGR training and development. Collaboration with other research group leaders across the University

- 2022 Deputy Director, Water, Public Health and Environmental Engineering Research Group – Coordinated WPE Cake meeting events and research culture.

Specifically:

Working with the group leader in developing and implementing strategies for enhancing the profile of the group both nationally and internationally, by working effectively with all key players in the School, Faculty and the University as well as from outside the University, in consultation with WPE lead and DoRI; Facilitating the communication of research group activities and opportunities to members, including ECRs and PGRs. Stimulating an intellectual atmosphere by, inter alia, promoting research seminars and other scholarly activities such as support to publication, internationalisation and impact activities; Assisting in arranging and co-chairing meetings for all academic staff in the research area, at least 4 times per year; Working with the group leader to promote appropriate research bidding activities and development of collaborations both nationally and internationally. Assisting in organising meetings with all academic, research and technical support staff of the CIE group (at least 2 times per year) to determining needs for research equipment and facilities and help with the selection of key priorities for investment to be included in the Schools Integrated Planning Exercise (IPE); Supporting the development of plans for and agreeing financial support for research group activities from the research development fund, in conjunction with the DoRI; Working with the group lead and PGR Director to facilitate recruitment and engagement of PGR students with School and research group activities. Offering mentoring and developmental support to all staff, especially junior staff, in the research area. Contributing to monitor the research activities and achievements of the group and providing reports and data required that will be reported to the DoRI and School Research Committee.

- Director, MSc Environmental Engineering and Project Management (2021–present) – onboarded new staff and arranged guest speakers; organised student field visit to the farm; ensured no timetable clashes; representative at the TPG student staff partnership forum
- 2020-present; Directly contributed to the direction of Student Education within the School by contributing to STSEC
- Staff-student Partnership Forum member. Directly contributed to engaging with student reps and enhancing Student Voice within the School by participating in the staff-student partnership forum since 2020.
- Personal tutor - leading to nomination to the Partnership Award for Best Supervisor 2025.
- 2021 – Present School Open day representative for Public Health lab tours
- 2021 – Grant peer reviewer - College proposal review panel member - School of Civil Engineering

## **b. Faculty and University Level**

- 2024-2026 – Healthy Buildings Network co-lead I co-lead the HBN, which was selected as one of the three Horizons Institute Challenge Networks for the period 2024-2026. One of the

main aims of the HBN is to trigger inter-disciplinary collaboration in this area across the University and external partners. As part of this network, different events are happening across 18 months (research seminars, stakeholder workshops, pump-priming funding call, UKIEG annual conference, etc.)

- Healthy Buildings Network - Pump-priming Programme Round 1 As part of the HBN, I co-designed and launched the pump-priming funding call, with the aim to fund eight idea-development and networking projects supporting a range of activities in the area of Healthy Buildings.
- 2025 – Led UKIEG 2025 Annual conference organisation at the University of Leeds through the Healthy Buildings Network
- 2022-2025 AMR@Leeds: Steering board committee member. Early Career Research Lead, Ran ECR engagement events monthly and lead an event to create the identity of the network, i.e. what does AMR@Leeds present to you? Also contr
- 2018–Present Mathematical modelling of infection Inter-disciplinary research with School of Mathematics: Interdisciplinary research collaboration with Prof Martín López-García in the School of Mathematics, leading to several papers, some of them internally contributed to REF2021. This collaboration has also led to successful funding proposals (e.g. TRACK UKRI COVID-19 response call-, HSE-funded National Core Study project), and new external collaborations (The Ohio State University, University of Arizona, Swiss Tropical and Public Health Institute), as well as an Impact Case Study submitted to REF2021.

### c. External

- UKIEG 2025 Annual Conference & AGM Organiser I am co-organising at Leeds, as co-lead of the Healthy Buildings Network, the 2025 annual conference and AGM for the UK Indoor Environments Group. The annual conference will host around 75-100 national and international participants in the area of Indoor Environments. The conference this year will focus on the topic ‘The Impact of Net Zero and Climate Change on the Indoor Environment and Health.
- Evidence contributor to **SAGE** during COVID19; findings incorporated into UKHSA guidance on surface transmission (REF2021 Impact Case Study).
- Consultancy for NHS St James’ Hospital on ventilation risk assessment (2021).
- Consultancy for NHS St James’ Hospital on Gledhow wing window choice for retrofitting
- ECR committee representative Indoor Environments Journal - What do they do?
- Session chair at Healthy Buildings America 2015, Indoor Air 2016 Ghent, Healthy Buildings 2017 Lublin, Indoor Air 2018 Philadelphia, and UKIEG 2025 Leeds.
- Media coverage: *Sunday Post*, *Scottish Mail* feature on mask materials (June 2020).
- Since 2010: Journal reviewer

## 12. Public and Educational Outreach

- Supervisor, Leeds Maths School Year12 projects (2023–25).

- MRC Festival of Science - Organised an exhibition and interactive activity at Thackray medical museum. Co-PI with Dr. López-García from the School of Mathematics.
- Lead, “Be Curious” infectionrisk installation (2019).
- Multiple interactive sessions for children ranging from classes of 3year olds to 16 year olds at Nuestra Escuela Leeds – La semana de la ciencia – Science week (annually since 2021).

## Appendix: Full Publication List

1545 citations; h-index: 21

1. Hiwar W, Adamson CS, Brenner DJ, Fletcher LA, **King M–F**, McQuaid JB, Tidswell E, Noakes CJ, Wood K, Eadie E. (2025). *Experimental analysis to quantify inactivation of microorganisms by FarUVC irradiation in indoor environments. Building and Environment*, 274.
2. Zhang N, Zhuang L, **King M–F**, Qian H, Zhu M. (2024). *Public surface disinfection every 2 hours can reduce the infection risk of norovirus in airports up to 83%. PLOS Computational Biology*, ed. Lau EHY, e1012561e1012561, 20.12.
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4. Bate AM, Miller D, **King M–F**, Moseley KA, Xu J, Hall I, López-García M, Parker ST, Noakes CJ. (2024). *A quantitative microbial risk assessment approach to estimate exposure to SARSCoV2 on a bus. Journal of Transport & Health*, 38.
5. Edwards AJ, **King M–F**, López-García M, Peckham D, Noakes CJ. (2024). *Assessing the effects of transient weather conditions on airborne transmission risk in naturally ventilated hospitals. Journal of Hospital Infection*, 148, 110.
6. Aranega–Bou P, Pottage T, Fenwick A, D’Costa W, Brown NF, Yaxley N, **King M–F**, Parker ST, Miller D, López-García M, Noakes CJ, Moore G, Bennett A. (2024). *A 17month longitudinal surface sampling study carried out on public transport vehicles operating in England during the COVID19 pandemic identified low levels of SARSCoV2 RNA contamination. Journal of Applied Microbiology*, 135(4).
7. Edwards AJ, **King M–F**, Noakes CJ, Peckham D, López-García M. (2024). *The WellsRiley model revisited: Randomness, heterogeneity, and transient behaviours. Risk Analysis: An International Journal*.
8. Edwards AJ, Benson L, Guo Z, LpezGarca M, Noakes CJ, Peckham D, **King M–F**. (2023). *A mathematical model for assessing transient airborne infection risks in a multizone hospital ward. Building and Environment*, 238.
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10. Jin T, Chen X, Nishio M, Zhuang L, Shiomi H, Tonosaki Y, Yokohata R, **King M–F**, Kang M, Fujii K, Zhang N. (2022). *Interventions to prevent surface transmission of an infectious virus based on real human touch behavior: A case study of the norovirus. International Journal of Infectious Diseases*, 122, 8392.

11. Walker MD, Vincent JC, Benson L, Stone CA, Harris G, Ambler RE, Watts P, Slatter T, López-García M, **King M–F**, Noakes CJ, Thomas RJ. (2022). *Effect of relative humidity on transfer of aerosol deposited artificial and human saliva from surfaces to artificial fingerpads. Viruses*, 14(5).
12. Miller D, **King M–F**, Nally J, Drodge JR, Reeves GI, Bate AM, Cooper H, Dalrymple U, Hall I, López-García M, Parker ST, Noakes CJ. (2022). *Modeling the factors that influence exposure to SARSCoV2 on a subway train carriage. Indoor Air*, 32(2).
13. Dancer SJ, Cormack K, Loh M, Coulombe C, Thomas L, Pravinkumar SJ, Kasengele K, **King M–F**, Keaney J. (2022). *Healthcareacquired clusters of COVID19 across multiple wards in a Scottish health board. Journal of Hospital Infection*, 120, 2330.
14. **King M–F**, Wilson AM, Weir MH, LpezGarca M, Proctor J, Hiwar W, Khan A, Fletcher LA, Sleigh PA, Clifton I, Dancer SJ, Wilcox M, Reynolds KA, Noakes CJ. (2022). *Modeling fomitemediated SARSCoV2 exposure through personal protective equipment doffing in a hospital environment. Indoor Air*, 32(1).
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17. Hiwar W, **King M–F**, Shuweihdi F, Fletcher LA, Dancer SJ, Noakes CJ. (2021). *What is the relationship between indoor air quality parameters and airborne microorganisms in hospital environments? A systematic review and metaanalysis. Indoor Air*, 31(5), 13081322.
18. Wilson AM, Jones RM, Lugo Lerma V, Abney SE, **King M–F**, Weir MH, Sexton JD, Noakes CJ, Reynolds KA. (2021). *Respirators, face masks, and their risk reductions via multiple transmission routes for first responders within an ambulance. Journal of Occupational and Environmental Hygiene*, 18, 345360.
19. Wilson AM, **King M–F**, LpezGarca M, Clifton IJ, Proctor J, Reynolds KA, Noakes CJ. (2021). *Effects of patient room layout on viral accruiement on healthcare professionals’ hands. Indoor Air*.
20. Burrige HC, Bhagat RK, Stettler MEJ, Kumar P, De Mel I, Demis P, Hart A, JohnsonLambias Y, **King M–F**, Klymenko O, McMillan A, Morawiecki P, Pennington T, Short M, Sykes D, Trinh PH, Wilson SK, Wong C, Wragg H, Davies Wykes MS, Iddon C, Woods AW, Mingotti N, Bhamidipati N, Woodward H, Beggs C, Davies H, Fitzgerald S, Pain C, Linden PF. (2021). *The ventilation of buildings and other mitigating measures for COVID19: A focus on wintertime. Proceedings of the Royal Society A*, 477(2247).
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26. Sharpe T, McGill G, Dancer SJ, **King M–F**, Fletcher L, Noakes CJ. (2020). *Influence of ventilation use and occupant behaviour on surface microorganisms in contemporary social housing. Scientific Reports*, 10.
27. Wilson AM, **King M–F**, LpezGarca M, Weir MH, Sexton JD, Canales RA, Kostov GE, Julian TR, Noakes CJ, Reynolds KA. (2020). *Evaluating a transfer gradient assumption in a fomitemediated microbial transmission model using an experimental and Bayesian approach. Journal of the Royal Society Interface*, 17(167).
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