

Rachel Lowe

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BSC Personal Webpage · LinkedIn · ORCID · Google Scholar

Research interests

Climate change, adaptation, mitigation; global health resilience; environmental change; planetary health; infectious disease epidemiology; statistical and mathematical modelling; impact-based forecasting.

Higher Education

Degree	Subject	University	Year
PhD	Mathematics (Statistical Modelling)	University of Exeter, UK	2011
MSc	Geophysical Hazards (UCL Graduate Master's Award)	University College London, UK	2007
BSc (Hons)	Meteorology & Oceanography with a year in Europe (University of Granada, Spain)	University of East Anglia, UK	2004

Professional Appointments

Jan 2022 – present: ICREA Research Professor / Global Health Resilience Group Leader

Barcelona Supercomputing Center (BSC), Earth Sciences Department, Barcelona, Spain.

Jan 2017 – present: Royal Society Dorothy Hodgkin Fellow / Associate Professor

London School of Hygiene & Tropical Medicine, Department of Infectious Disease Epidemiology, London, UK.

Mar 2012 – Dec 2016: Postdoctoral Scientist / Head of Climate Services for Health

(Maternity leave Mar – Oct 2016)

Catalan Institute for Climate Sciences (IC3), Climate Dynamics and Impacts Unit, Barcelona, Spain.

Oct 2010 – Feb 2012: Visiting Scientist

Abdus Salam International Centre for Theoretical Physics (ICTP), Earth System Physics, Trieste, Italy.

Oct 2007 – Dec 2010: Network Facilitator EURO-Brazilian Leverhulme research network

EUROBRISA: Euro-Brazilian initiative for improving South American seasonal climate forecasts.

University of Exeter, College of Engineering, Mathematics and Physical Sciences, UK.

Publications (selected from more than 100 peer reviewed journal articles)

- Moirano G, Fletcher C, Semenza JC, **Lowe R.** (2025). Short-term effect of temperature and precipitation on the incidence of West Nile Neuroinvasive Disease in Europe: a multi-country case-crossover analysis. *The Lancet Regional Health–Europe* (<https://doi.org/10.1016/j.lanep.2024.101149>).
- **Lowe R** & Codeço CT. (2025). Harmonizing Multisource Data to Inform Vector-Borne Disease Risk Management Strategies. *Annual Review of Entomology* (<https://doi.org/10.1146/annurev-ento-040124-015101>).
- van Daalen KR, Jung L, Dada S, Othman R, Barrios-Ruiz A, Malolos GZ, Wu KT, Garza-Salas A, El-Gamal S, Ezzine T, Khorsand P, ..., **Lowe R.** (2024). Bridging the gender, climate, and health gap: the road to COP29. *The Lancet Planetary Health* ([https://doi.org/10.1016/S2542-5196\(24\)00270-5](https://doi.org/10.1016/S2542-5196(24)00270-5)).
- Díaz AR, Rollock L, Boodram LL, Mahon R, Best S, Trotman A, Van Meerbeeck CJ, Fletcher C, Dunbar W, Lippi CA, Lührsens D, Sorensen C, Muñoz AG, Ryan SJ, Stewart-Ibarra AM, **Lowe R.** (2024). A demand-driven climate services for health implementation framework: A case study for climate-sensitive diseases in Caribbean Small Island Developing States. *PLoS Climate* (<https://doi.org/10.1371/journal.pclm.0000282>).
- Carvalho BM, Maia C, Courtenay O, Llabrés-Brustenga A, Lotto Batista M, Moirano G, van Daalen KR, Semenza JC, **Lowe R.** (2024). A climatic suitability indicator to support Leishmania infantum surveillance in Europe: a modelling study. *The Lancet Regional Health–Europe* (<https://doi.org/10.1016/j.lanep.2024.100971>).
- van Daalen KR, ..., **Lowe R.** (2024). The 2024 Europe report of the Lancet Countdown on health and climate change: unprecedented warming demands unprecedented action. *The Lancet Public Health* ([https://doi.org/10.1016/S2468-2667\(24\)00055-0](https://doi.org/10.1016/S2468-2667(24)00055-0)).

Rachel Lowe

Publications (selected from more than 100 peer reviewed journal articles)

- Cai W, Fanzo J, Glaser J, **Lowe R**, Lusambili AM, Marks E. (2024). Views on climate change and health. *Nature Climate Change* (<https://doi.org/10.1038/s41558-024-01998-0>).
- Gibb R, Colón-González FJ, Lan PT, Huong PT, Nam VS, Duoc VT, Hung DT, Dong NT, Chien VC, Trang LTT, Quoc DK, Hoa TM, Tai NH, Hang TT, Tsarouchi G, Ainscoe E, Harpham Q, Hofmann B, Lumbroso D, Brady OJ, **Lowe R**. (2023). Interactions between climate change, urban infrastructure and mobility are driving dengue emergence in Vietnam. *Nature Communications* (<https://doi.org/10.1038/s41467-023-43954-0>).
- Santos-Vega M, **Lowe R**, Anselin L, Desai V, Vaishnav KG, Naik A, Pascual M. (2023). Quantifying climatic and socioeconomic drivers of urban malaria in Surat, India: a statistical spatiotemporal modelling study. *The Lancet Planetary Health* ([https://doi.org/10.1016/S2542-5196\(23\)00249-8](https://doi.org/10.1016/S2542-5196(23)00249-8)).
- Lotto Batista M, Rees EM, Gomez A, Lopez A, Castell S, Kucharski AJ, Ghazzi S, Müller GV, **Lowe R**. (2023). Towards a leptospirosis early warning system in North-Eastern Argentina. *J. R. Soc. Interface* (<https://doi.org/10.1098/rsif.2023.0069>).
- van Daalen, ..., **Lowe R** (2022). The 2022 Europe report of the Lancet Countdown on health and climate change: towards a climate resilient future. *The Lancet Public Health* ([https://doi.org/10.1016/S2468-2667\(22\)00197-9](https://doi.org/10.1016/S2468-2667(22)00197-9)).
- Fletcher IK, Grillet ME, Moreno J, Drakeley C, Hernandez-Villena J, Jones K, **Lowe R**. (2022). Synergies between environmental degradation and climate variation on malaria reemergence in southern Venezuela. *The Lancet Planetary Health* ([https://doi.org/10.1016/S2542-5196\(22\)00192-9](https://doi.org/10.1016/S2542-5196(22)00192-9)).
- Sera F, O'Reilly KM, Armstrong B, Tobias A, Hashizume M, Schneider dos Santos R, von Borries R, Pascal M, Vicedo-Cabrera AM, Gasparrini A, **Lowe R**. (2021). A cross-sectional analysis of meteorological factors and SARS-CoV-2 transmission in 409 cities across 26 countries. *Nature Communications* (<https://doi.org/10.1038/s41467-021-25914-8>).
- Colón-González FJ, Sewe MO, Tompkins AM, Sjödin H, Casallas A, Rocklöv J, Caminade C, **Lowe R**. (2021). Projecting the risk of mosquito-borne diseases in a warmer and more urbanised world: a multi-model multi-scenario intercomparison modelling study. *The Lancet Planetary Health* ([https://doi.org/10.1016/S2542-5196\(21\)00132-7](https://doi.org/10.1016/S2542-5196(21)00132-7)).
- **Lowe R**, Lee S, O'Reilly KM, Brady OJ, Bastos L, Carrasco-Escobar G, De Castro Catão R, Colón-González FJ, Barcellos C, Sá Carvalho M, Blangiardo M, Rue H, Gasparrini A. (2021). Combined effects of hydrometeorological hazards and urbanisation on dengue risk in Brazil: a spatiotemporal modelling study. *The Lancet Planetary Health* ([https://doi.org/10.1016/S2542-5196\(20\)30292-8](https://doi.org/10.1016/S2542-5196(20)30292-8)).
- Colón-González FJ, Bastos L, Hofmann B, Hopkin A, Harpham Q, Crocker T, Amato R, Ferrario I, Moschini F, James S, Malde S, Ainscoe E, Nam VS, Tan DQ, Khoa ND, Harrison M, Tsarouchi G, Lumbroso D, Brady OJ, **Lowe R**. (2021). Probabilistic seasonal dengue forecasting in Vietnam: A modelling study using superensembles. *PLoS Medicine* (<https://doi.org/10.1371/journal.pmed.1003542>).
- **Lowe R**, Gasparrini A, Van Meerbeeck CJ, Lippi CA, Mahon R, Trotman AR, Rollock L, Hinds AQJ, Ryan SJ, Stewart Ibarra AM (2018). Nonlinear and delayed impacts of climate on dengue risk in Barbados: A modelling study. *PLOS Medicine* (doi:10.1371/journal.pmed.1002613).
- **Lowe R**, Stewart-Ibarra AM, Petrova D, García-Díez M, Borbor-Cordova MJ, Mejía R, Regato M, Rodó X. (2017). Climate services for health: predicting the evolution of the 2016 dengue season in Machala, Ecuador. *The Lancet Planetary Health* (doi:10.1016/S2542-5196(17)30064-5).

Competitive research funding (selected, more than €7 million obtained since 2017)

- TACTIC Health ImpAct ToolKit for Climate change attribution. Funder: Wellcome Trust. Lead institution: University of Bern. Role: co-Principal Investigator, Mar 2025 – Feb 2028, €3,500,000 (BSC: €752,978).
- Global Development Assistance (GDA) Agile EO Information Development (GDA AID): Public Health. Funder: European Space Agency. Lead institution: Brockmann Consult GmbH. Role: BSC Principal Investigator, Sep 2024 – Jun 2026, €1,500,000 (BSC: €231,540).
- IDExtremes: a modelling tool to predict the probability of infectious disease outbreaks given compound extreme climatic events, Funder: Wellcome Trust, Lead institution: Barcelona Supercomputing Center, Role: Principal Investigator, Mar 2023 – Feb 2026, € 602,026 (BSC: € 393,602.24).
- Eco-Epidemiological Intelligence for early Warning and response to mosquito-borne disease risk in Endemic and Emergence settings (E4Warning), Funder: Horizon Europe, Lead institution: Consejo Superior de Investigaciones

Rachel Lowe

Competitive research funding (selected, more than €7 million obtained since 2017)

Cientificas (CSIC), Role: WP leader, Jan 2023 – Dec 2026, € 4,942,323 (BSC: € 519,750.00).

- Engagement and dissemination to enhance uptake of digital tools for public health resilience to climate change. HARMONIZE public engagement enrichment award, Funder: Wellcome Trust. Lead institution: Barcelona Supercomputing Center, Role: Principal Investigator, Nov 2022 – Oct 2026, € 624,007 (BSC: € 248,195).
- Infectious Disease decision-support tools and Alert systems to build climate Resilience to emerging health Threats (IDAlert), Funder: Horizon Europe, Lead institution: Umea University, Role: Co-Coordinator and WP leader, Jun 2022 – May 2027, €9,188,294 (BSC: €1,405,063).
- Harmonizing multi-scale spatiotemporal data for health in climate change hotspots (HARMONIZE), Funder: Wellcome Trust, Lead institution: Barcelona Supercomputing Center, Role: Principal Investigator, May 2022 – April 2026, € 3,115,229 (BSC: € 947,437)

Awards, Distinctions and Recognition (selected)

2024 Rockefeller Foundation Bellagio Center Climate Solutions Residency.

2024 5000 most outstanding women scientists in Spain (ranked in top quartile).

2024 Stanford University list of "World's Top 2%" scientists.

2022 BSC Distinction for ICREA appointment and creation of the BSC Global Health Resilience team.

2022 ICREA Research Professorship.

2019 Royal Society Public Engagement Masterclass Bursary.

2018 International Society for Neglected Tropical Diseases (ISNTD) Water Award for Research.

2018 Royal Society Research Grant for Research Fellows.

2017 Royal Society Dorothy Hodgkin Fellowship.

Professional activities, outreach & external visibility (selected)

- Interview with Professor Rachel Lowe, Health Emergency Preparedness and Response (HERA) Newsroom, European Commission (Oct 2024).
- BBC Earth short film "The Hidden Danger Being Fuelled by Floods" (Feb 2024).
- Early Warning Systems Consultant. Caribbean Agency for Public Health (Jun 2023 - present).
- Lancet Commission for Strengthening the Use of Epidemiological Modelling of Emerging and Pandemic Infectious Diseases (Jun 2023 - present).
- World Meteorological Organization Steering Group for Sub-seasonal Applications for Agriculture and Environment (SAGE) project of the World Weather Research Programme (WWRP) (Sep 2023 - present).
- Advisory Board member Copernicus Thematic Hub on Health (Nov 2022 – present).
- Director Lancet Countdown in Europe (Sep 2021 – Aug 2024).
- Contributing author IPCC WGII Sixth Assessment Report. Chapter 16: Key Risks Across Sectors and Regions.
- Short documentary 'Can supercomputers help stop mosquito diseases?', Royal Society (Nov 2021).
- Guest Editor special collection on climate change and communicable diseases, British Medical Journal 2020.
- World Meteorological Organization COVID-19 Research Task Team (Jun 2020 – May 2022).
- Member of Dengue Advisory Group, International Society for Neglected Tropical Diseases (2019 – present).
- World Health Organization expert working group: Using climate and weather information for predicting and preparing for cholera and vector-borne diseases (Jun 2019 – May 2021).
- Presenter at Royal Society 'The Next Big Things' platform, Hay Festival (May 2018).