

The Alan Turing Institute

POSTDOCTORAL RESEARCH ASSOCIATE – CLIMATE, HEAT AND HEALTH (DyME PROJECT)

THE ALAN TURING INSTITUTE

There has never been a more significant time to work in data science and AI. There is recognition of the importance of these technologies to our economic and social future: the so-called fourth industrial revolution. The technical challenge of keeping our data secure and private has grown in its urgency and importance. At the same time, voices from academia, industry, and government are coming together to debate how these technologies should be governed and managed.

The Alan Turing Institute, as the UK's national institute for data science and artificial intelligence, plays an important part in driving forward advances in these technologies in order to change the world for the better.

The Institute is named in honour of Alan Turing, whose pioneering work in theoretical and applied mathematics, engineering and computing is considered to have laid the foundations for modern-day data science and artificial intelligence. The Institute's goals are to undertake world-class research, apply its research to real-world problems, driving economic impact and societal good, lead the training of a new generation of scientists, and shape the public conversation around data and algorithms.

After launching in 2015 with government funding from EPSRC and five founding universities, the Institute has grown an extensive network of university partners from across the UK and launched a number of major partnerships with industry, public and third sector. Today it is home to more than 500 researchers, a rapidly growing team of in house research software engineers and data scientists and a business team.

BACKGROUND

The [Data Science for Science programme](#) works alongside researchers from all disciplines across the Turing's university partner network, and with national research facilities, to make effective use of state of the art methods in artificial intelligence and data science.

[AI for Science and Government](#) (ASG) at the Alan Turing Institute is a major integrated research programme with a goal to deploy AI and data science in priority areas to support the UK economy. Within ASG, the Environment & Sustainability cross-programme theme combines inter-disciplinary expertise, covering a variety of areas including data science, AI, agriculture, environmental science, policy, meteorology, and ecology, from across the Turing community and external partners. Work in the environment and sustainability area addresses one of the defining crises of our time: the climate and biodiversity crisis. Developing robust and complex models integrating multiple datasets, real-time monitoring and data sources will enable enhanced decision making across a suit of policy areas. Researchers in the theme are also be developing a toolbox of generalisable tools that will open the advances made to other areas of research, compounding the long-term potential impact of the work

ROLE PURPOSE

The successful candidate will join the Environment & Sustainability team as part of a new project aiming to develop models and tools to provide high quality information on the impact of extreme temperature events associated with future climate change on population health.

The aim of this project is to develop models that will provide new information on 'personal exposures' to environmental hazards, specifically those related to exposure to future increased temperatures associated with climate change. Based on a microsimulation modelling approach that integrates environmental conditions with human behaviour, the results will feed into health impact analyses and highlight population groups that may be disproportionately at risk and inform local adaptation strategies to climate change risks. The project will build upon the DyME (Dynamic Models for Environments) framework and tools that were created as part of the [Royal Society RAMP Urban Analytics programme](#) that accelerated development of technological innovation in the use of dynamic microsimulation models in real-world applications. Integrating the foundations DyMe: the QUANT and [SPENSER](#) platforms for urban mobility and dynamic microsimulation, with the Joint Centre for Excellence in Environmental Intelligence's Climate Impacts Mitigation Adaption and Resilience

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(CLIMAR) framework and existing work on user interfaces in DyME the outputs of the project will include new data products, tools and interfaces for estimating the local effects of climate and heat on health.

Collaborations with local government will offer a pathway to real-world impact and access to data and there will be opportunities for public engagement work within the project.

The successful candidate will report to Professor Gavin Shaddick. They will also collaborate with other Environment & Sustainability team members, members of the Turing Data Science for Science & Humanities programme and members of the Turing Urban Analytics programme, including Professor Mark Birkin and Professor Nick Malleon. They will also be expected to work closely with external stakeholders to ensure the tools and models that are developed fit for purpose and readily accessible.

DUTIES AND AREAS OF RESPONSIBILITY

- Conduct original research to achieve the objectives of the DyME project.
- Engage with external stakeholders alongside the project's Research Application Manager to maximise the real-world impacts of the outputs of the project.
- Develop and adapt existing tools, including those developed within the DyMe project, for use in a climate, heat and health setting, and to further develop tools and interfaces in response to stakeholder feedback.
- Write and contribute to original research papers in the area of data science, climate change, environment, urban analytics & health. Play an active role in the wider Environment & Sustainability team, and Data Science for Science & Humanities programme.

Please note that job descriptions cannot be exhaustive, and the postholder may be required to undertake other duties, which are broadly in line with the above key responsibilities. This job description is written at a specific time and is subject to changes as the demands of the Institute and the role develop.

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PERSON SPECIFICATION		
Skills and Requirements Post holders will be expected to demonstrate the following:	Essential (E) Desirable (D)	Tested at application (a) Tested at interview (i)
Education/Qualification		
A PhD or equivalent level of experience in data science (e.g. computer science, statistics, environmental science, urban analytics, public health), or a related discipline.	E	A
Knowledge and Experience		
Demonstrable interest in environmental data science / health impacts / urban analytics	E	A/I
Demonstrable experience of coding in a language suitable for data science (e.g. python, R)	E	A/I
Experience and/or interest in scientific communication	D	A
Experience in stakeholder engagement, working with local government or a related area	D	A/I
Experience adapting research tools for external stakeholders	D	A/I
Communication		
Excellent writing skills and proven ability to communicate complex, specialist or conceptual information/research findings clearly and persuasively to diverse audiences.	D	A
Teamwork and Motivation		
Ability to work effectively across disciplinary boundaries, both as part of an interdisciplinary team and in close collaboration with external partners in different disciplines	E	I
Liaison and Networking		
Participates in networks within the organisation or externally to share knowledge and information in order develop practice or help others learn.	E	I
Decision Making		
Independently makes decisions which are low risk and that mainly affect themselves or a small number of people and are guided by regulation and practice.	E	I
Planning and Organising		
Ability to initiate, plan, organise, implement and deliver programmes of work to tight deadlines.	E	A/I
Analysis and Research		
Ability to identify or design computational and statistical analysis approaches to address specific research questions	E	A/I
Other Requirements		
Flexible attitude towards work	E	I
Commitment to EDI principles and to the Organisation values	E	I

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OUR VALUES

The Alan Turing Institute is committed to equality diversity and inclusion and to eliminating discrimination. All employees are expected to embrace, follow and promote our [EDI Principles](#) and Our [Values](#).

Our values

- Trust**
We create an environment where we have trust and can be trusted
- Inclusivity**
We expect our Turing community to contribute to a culture that is inclusive and free of barriers
- Respect**
We all have different roles, priorities and challenges but our shared purpose is the same
- Leadership**
Leadership is everyone's business; Turing leaders set the right tone and lead by example
- Transparency**
Everyone should understand the how and the why of our decisions and actions
- Integrity**
We are all ambassadors for the Turing's mission of changing the world for the better

APPLICATION PROCEDURE

If you are interested in this opportunity, please click the apply button below. You will need to register on the applicant portal and complete the application form including your CV and covering letter. If you have questions about the role or would like to apply using a different format, please contact us on 020 3862 3546 or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: 23 January 2022 23:59

TERMS AND CONDITIONS

This part time (0.5 full-time equivalent) post is offered on a fixed-term basis to 30 September 2023. The annual salary is £37,000 - £42,000 plus excellent benefits, including flexible working and family friendly policies, <https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits>

Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant at a salary of £34,510 per annum.

EQUALITY, DIVERSITY AND INCLUSION

The Alan Turing Institute is committed to creating an environment where diversity is valued and everyone is treated fairly. In accordance with the Equality Act, we welcome applications from anyone who meets the specific criteria of the post regardless of age, disability, ethnicity, gender reassignment, marital or civil partnership status, pregnancy and maternity, religion or belief, sex and sexual orientation.

We are committed to building a diverse community and would like our leadership team to reflect this. We therefore welcome applications from the broadest spectrum of backgrounds.

Reasonable adjustments to the interview process will be made for any candidates with a disability.

Please note all offers of employment are subject to obtaining and retaining the right to work in the UK and satisfactory pre-employment security screening which includes a DBS Check.

Full details on the pre-employment screening process can be requested from HR@turing.ac.uk.