UKRI policy fellowships 2027

Fellowship position

Fellowship title:

UKHSA advancing pathogen biosurveillance and biosecurity preparedness fellowship

Fellowship type:

Natural hazards and resilience fellowship

Host organisation:

UK Health Security Agency (UKHSA)

Host team:

Analytical Innovation Unit

Academic discipline/s:

Artificial intelligence, data science, bioinformatics, epidemiology, public health

Summary:

Emerging artificial intelligence capabilities could strengthen the UK's resilience to biological threats through the identification and assessment of potential applications in pathogen biosurveillance and biosecurity preparedness, producing practical recommendations to support their safe and effective adoption within UKHSA.

Policy topic:

This work will explore how UKHSA can use AI-enabled pathogen biosurveillance to strengthen preparedness for biological threats and support pandemic preparedness, while establishing the governance, assurance and oversight needed for its safe and effective implementation.

Research career stage:

Open to early and mid-career researchers

Fellowship structure

The fellowship is scheduled to begin on 1 October 2027 subject to security clearance requirements. The fellowship will have three phases:

- inception: duration is 3 months at 0.4 FTE
- main placement: duration is 12 months at 0.6-1 FTE

- knowledge exchange: duration is 3 months at 0.4 FTE

Work arrangements

Location requirements:

The Analytical Innovation Unit is geographically dispersed, with colleagues working remotely or attending UKHSA's headquarters in Canary Wharf usually on a hybrid basis. The team primarily collaborates through online meetings and other digital tools. The fellow is likely to work with stakeholders in other teams who are based in different UKHSA offices or work entirely remotely. Reflecting these working arrangements, the fellowship can be undertaken on either a hybrid or primarily remote basis, subject to the in-person attendance requirements outlined below. The fellow may work from UKHSA's offices in Liverpool, Leeds or Birmingham, as well as its headquarters in Canary Wharf, subject to local space and access arrangements.

Hybrid working:

Much of the fellowship will involve desk-based research and remote collaboration, and there is no requirement to attend an office for a specified number of days each week. A laptop will be provided, enabling the fellow to work from home or an agreed UKHSA office and access the systems required for the role. In-person collaboration will be encouraged where it adds value, particularly for co-designing the research, engaging with stakeholders and sharing emerging findings.

During the inception phase, the fellow should expect to attend at least one in-person meeting in London to work with the host team and relevant stakeholders to agree the fellowship's scope, research priorities and intended outputs. During the placement phase, travel to London will be required approximately once a month. This may include team meetings, stakeholder workshops, conferences, training and away days. These are most likely to take place in London, although some activities may be held at other UKHSA offices.

Security clearance and nationality eligibility criteria:

Basic Personnel Security Standard (BPSS) is required, which usually takes around six weeks. We would expect the successful applicant to start the security clearance application process, with support from the host team, as soon as their fellowship has been confirmed by UKRI. Inception phase can begin before the security clearance process is completed but will be required for the main placement phase. The civil service also has nationality requirements that candidates would need to meet in order to take up the post. Please see civil service recruitment nationality rules for further information. Candidates should check these requirements before applying to ensure they meet the eligibility criteria

Fellowship position description

Overview:

The fellow will be embedded within the UK Health Security Agency's (UKHSA) Analytical Innovation Unit, working at the intersection of artificial intelligence (AI), pathogen biosurveillance, biosecurity and public policy.

UKHSA has statutory responsibilities to protect the public from infectious disease threats through surveillance, preparedness and response. Advances in AI, genomics and environmental surveillance offer significant opportunities to strengthen these capabilities, particularly through the development of pathogen-agnostic approaches that can detect emerging biological threats more rapidly and effectively.

This fellowship will explore how UKHSA can safely, effectively and responsibly adopt artificial intelligence within pathogen biosurveillance and pandemic preparedness whilst maintaining the pace of innovation. The primary focus will be to understand, surface, and strengthen core components of the biosecurity AI

ecosystem. Specific areas for development could include the development of governance, assurance and policy frameworks whilst exploring the potential role of AI-integrated capabilities as part of enhanced surveillance.

We envisage the fellow undertaking original research and analysis in one or more of the following areas:

- development of evidence, governance and assurance frameworks for the responsible use of AI in biosecurity and public health
- approaches for translating AI-generated evidence into public health and biosecurity policy and operational decision making
- AI-enabled analysis of genomics and metagenomics data for pathogen detection and characterisation
- exploring the use of frontier models to strengthen biosecurity
- application of AI to environmental surveillance, including wastewater-based monitoring
- opportunities and risks associated with emerging AI capabilities in pandemic preparedness and biological threat detection

The exact focus and scope of the fellowship will be co-designed with the fellow during the inception phase and shaped jointly by UKHSA priorities and the fellow's expertise, interests and research objectives.

Collaboration and policy engagement:

The fellow will work closely with data scientists, bioinformaticians, analysts, epidemiologists and policy colleagues across UKHSA. They will also have opportunities to engage with a wider network of partners across government, academia and industry.

This may include collaboration with colleagues working on national biosecurity initiatives, pathogen genomics, environmental surveillance and pandemic preparedness, helping to ensure that emerging research is translated into practical policy and operational outcomes.

Benefits for the fellow:

The fellow will be embedded within UKHSA's Analytical Innovation Unit which works at the forefront of AI, biosecurity and public health innovation. They will have a designated line manager, regular support meetings, office space, IT equipment and access to relevant analytical platforms, datasets and networks.

The fellowship offers:

- an opportunity to co-design, undertake and publish original research in academic journals with the scope of the work shaped jointly by UKHSA priorities and the fellow's expertise and interests
- direct experience of how analytical evidence informs government policy and operational decision-making within a national public health organisation
- the opportunity to influence national approaches to pathogen biosurveillance, pandemic preparedness and biosecurity
- access to UKHSA datasets and scientific, modelling and analytical expertise
- participation in cross-agency working groups and professional networks, providing exposure to the wider policy and evidence landscape
- knowledge-exchange opportunities through workshops, policy discussions, professional networks and cross-government collaborations

This fellowship provides a unique opportunity to help shape the future application of AI in UK health security while building lasting links between academic research, innovation and public policy.

Person specification

Applications will be assessed by UKRI panel assessment against the following essential opportunity-specific requirements in addition to the generic eligibility and call criteria.

Essential criteria:

- a proven track-record of research expertise in artificial intelligence, machine learning, statistics, bioinformatics, computational biology or a closely related quantitative discipline
- strong understanding of data science and analytical methods, including experience using complex data to generate evidence and insights that address real-world challenges
- ability to communicate complex technical evidence and concepts effectively, and to collaborate with stakeholders from scientific, policy and operational backgrounds

Applicants shortlisted from the panel assessment will be invited to a host led interview. At this stage the host will also take into account the following desirable fellowship-specific requirements

Desirable criteria:

- knowledge of public health surveillance, epidemiology and infectious disease intelligence, including the use of clinical, environmental and population-level data to inform public health decision-making
- experience of, or interest in, developing governance, policy or regulatory approaches for the responsible use of AI in public health, biosecurity or other safety-critical domains
- Interest in translating research, analytical evidence and emerging technologies into public health, biosecurity or pandemic preparedness policy and practice

Processing personal data

If applicants are shortlisted by the UKRI assessment panel UKRI will need to share the application and any personal information that it contains with the host for the host led interview selection process.

Your personal data will be handled in line with UK data protection legislation and managed securely. If you would like to know more, including how to exercise your Rights, please see the UKRI privacy notice.

Please see the UKHSA privacy notice and they will delete your data at the end of the selection process unless you are successful, in which case we will retain your data as an independent data controller.