EPH EARLY CAREER RESEARCHER PUMP PRIMING GRANTS APPLICATION FORM AND CV TEMPLATE

SCHEME AIMS AND SCOPE

The EPH Early Career Researcher pump priming grants offer flexible funding of up to £12,500 for up to 1 year (projects requesting less funding or a shorter duration are welcome). The aim of this scheme is to offer an opportunity to Research Fellows and Assistant Professors currently employed in the Faculty of Epidemiology and Population Health (EPH) to undertake activities that will help to advance their research career. This might include activities to underpin a later planned funding application, such as generating pilot data, carrying out preliminary research, strengthening collaborations or undertaking training. Where required, some or all of the funding can be used to cover a proportion of the applicants' salary, providing protected time to carry out the proposed work. Please note that this funding cannot be used as a top up to a previously funded/ongoing study or for PhD projects.

ELIGIBILITY CRITERIA

The scheme is open to Research Fellows and Assistant Professors in EPH. We require applicants to have an employment contract until the at least 31st May 2025 to allow the selection process to take place (awards cannot be made to individuals who have left LSHTM before the selection process has completed, and cannot be utilised after a break in employment. Applicants must have previously been appointed following a competitive recruitment process. Please note that individuals whose only Faculty affiliation is as a Distance Learning tutor are not eligible for this award. Applicants on a Skilled Worker Visa who wish to request costs towards salary should contact Kidist Asfaw, HR Staff Immigration & Compliance Officer, prior to making an application to ensure that there will be no adverse effect on their visa status.

Applicants must identify a senior academic within LSHTM with relevant experience who agrees to provide primary support and supervision for the proposed activities – this can be the current line manager, but this is not a requirement and another individual could instead fill this role.

APPLICATIONS AND ASSESSMENT CRITERIA

This application form and your CV should be submitted to ephpumppriming@lshtm.ac.uk by **17:00 on 30th April 2025.**

All sections of the application form are mandatory. Please note that the word limits will be strictly enforced and any text over the limit will be deleted.

Your CV should if possible use the LSHTM CV template – if you would prefer not to use this then please provide your CV on a Word document with the same headings, and covering your career history (including any career breaks and periods of part-time working), postgraduate education history (degrees, diplomas, professional certificates), publication record, funding record if applicable (all grants/fellowships to date listing the awarding body, grantholder(s), title, your role, amount awarded and dates), ORCID ID, contributions to education, and internal and external citizenship contributions.

Applications will be assessed by a selection panel against the following criteria:

- Academic track record of the applicant (taking account career stage).
- Quality and feasibility of the proposal.
- How the proposed work will lead to research career advancement (e.g. plans for onward funding, if appropriate).
- Value for money.

FURTHER GUIDANCE
Applicants are encouraged to consult the SRO's intranet page on preparing funding applications.
Applicants are advised to discuss their application with their line manager and/or Head of Department.
Queries regarding the scheme and the application form/process should be directed ephpumppriming@lshtm.ac.uk.

1. APPLICANT DETAILS	
1.1 Name	Katharine Sherratt
1.2 Position	Research Fellow
1.3 Department	Infectious Disease Epidemiology & Dynamics
1.4 Exceptional circumstances: If you wish, use this space to let us know details of any personal circumstances that you feel have affected your application (e.g. overseas location, part-time hours, parental leave, sickness absence, extended period of absence, disability, carer responsibilities, Covid-19 etc), including for what period of time you were affected. Applications will be assessed in the context of any specific circumstances outlined. Applicants should not state here any information they would not want the committee members to see. For any sensitive personal information you may submit a separate Personal Circumstances form directly to Liz Allen.	I have a disability and am currently seeking support from occupational health for appropriate adjustments. I had an extended period of absence over 2024 due to ill health.

2. PROPOSAL DETAILS		
2.1 Title	**Advancing and evaluating collaborative evidence synthesis in outbreak modelling**	
2.2 Start date (dd/mm/yyyy)	01/06/2025	
2.3 Duration (months)	4	

2.4 Proposal lay summary (maximum 250 words)

During outbreaks of infectious disease, mathematical models help predict how diseases might spread and evaluate control measures. Modelling collaborations are celebrated as a structure for developing better insights and more useful advice for decision-makers. However, we don't yet have good evidence for how to combine different models effectively for different decision-making needs, or ways to evaluate how these collaborations work as a whole.

This project aims to prepare the groundwork for an independent research career focusing on scientific collaboration during infectious disease outbreaks. I aim to explore better methods for combining evidence from different models and at the same time evaluate how modelling teams can collaborate more effectively with each other and with policymakers.

With this funding, I aim to develop a fellowship application for longer-term research, build connections with experts across different fields, and attend training events focused on the science-policy interface. Ultimately, I aim to contribute to improving how modelling evidence informs public health decisions during outbreaks, making our response to future epidemics more sustainable and effective.

2.5 Proposal (up to 1000 words, excluding references; an additional page of figures is also allowed). Please note that the word limit will be strictly enforced and any text over the limit will be deleted.

The primary focus of your answer should be the activities you will undertake with the pump-priming grant itself. You should address: what you want do with the grant, why it is important, and how you will do it.

Suggested structure: (1) aims and objectives; (2) background and importance; (3) methods / activities; (4) proposed timeline; (5) references.

Aims

I aim to prepare the groundwork for a transdisciplinary career focused on collaboration and evidence synthesis in infectious disease modelling for outbreak response. I seek protected time and funding to:

- Prepare a postdoctoral fellowship application
- Build and strengthen my professional network
- Access training and professional development opportunities

Background

Infectious disease modelling is a useful tool for assessing current epidemiological conditions and evaluating options for control. Working in collaboration enables modellers to surface the diversity of plausible assumptions, methods, and results from modelling work. Collaborations become an essential resource for supporting both modellers and users of modelling evidence when attempting to address the complex uncertainties of an emerging outbreak [1]. This was highlighted during the COVID-19 response [2], and remains a focus for global investments for pandemic preparedness [3].

At the same time, there is no obvious framework for evaluating collaborative modelling processes and outputs. This might include identifying effective and appropriate strategies for collaboration and methods for evidence synthesis, including quantitative model combination among complex and/or contradictory modelling evidence [4]; and accounting for the costs and benefits of sourcing multiple streams of modelling evidence during emergency response to outbreaks [5].

My research has both faced and started to address the opportunities [e.g. 6] and challenges [e.g. 7-9] of such collaborations, while suggesting clear gaps in existing research. I now intend to develop a transdisciplinary research practice that equally engages with advancing methods for evidence synthesis during outbreaks, and critically evaluates the structures and processes of policy-oriented modelling collaborations. My overarching aim is to understand and evaluate the design and conduct of such collaborations, in order to improve both the robustness and public health utility of outbreak modelling work. I have identified two parallel themes around which to develop a substantial body of further research.

Theme 1: Advancing methods for collaborative evidence synthesis in outbreak modelling

I aim to examine the appropriate role and methods for evidence synthesis, including how different approaches to model combination address varying outbreak response needs. Research will explore relationships between the quantity and quality of component models in evaluating the accuracy and

validity of model combination, and continue early investigations that integrate human judgment within quantitative methods for model combination. This theme also includes identifying appropriate contexts for different evidence synthesis approaches. This suggests identifying how different forms and levels of uncertainty, for example created by pathogen characteristics, populations, and policy processes, might influence methodological choices and communication of combined modelling projections. This theme will also draw out similarities, differences, and learnings from alternative traditions of evidence synthesis, such as the Cochrane or Campbell collaborations. I am specifically interested in the assessment of quality and bias when synthesising evidence and exploring formal methods for qualitative evidence synthesis that can be applied to modelling evidence.

Theme 2: Evaluating structures and processes of outbreak modelling collaborations

This theme aims to critically evaluate the role of modelling in outbreak response work in order to strengthen infrastructures for pandemic preparedness. This will include reviewing previous evaluations of collaborative outbreak modelling for policy, drawing out the diversity of collaborative responses to meeting changing supply-demand dynamics between the producers, consumers, and participants in modelling work: for example, identifying changing policymaker expectations from modelling input. I will use this to start to characterise common themes among collaborative efforts, suggesting how collaborations between modellers and policymakers can be effectively and ethically created and evaluated. I aim to complement this with lessons from fields both within and beyond public health (for example, humanitarian response, vaccine planning, demographic and economic projections, ecology, disaster preparedness, and climate change), capturing the wide range of infrastructure for the collaborative science-policy interface.

Proposed Activities

I request funding for 0.2 FTE over four months with support for training and networking to position me for postdoctoral fellowship applications from Research Councils, Wellcome Trust and other funders.

Developing a fellowship application

I will develop these research themes into a proposal for independent postdoctoral funding. I believe I can establish a competitive interdisciplinary research niche based on my five-year track record in policy-facing crisis response and academic research. Having recently defended my PhD by publication, I have my current supervisor's support as a sponsor for further applications. This will allow me to remain at the LSHTM Centre for Mathematical Modelling, providing an ideal environment to advance modelling methods with direct insight into policy applications.

The EPH Pump Priming grant will strengthen my application by demonstrating independence with a robust external network. With few qualitative and mixed methods specialists in the modelling community, I have a unique opportunity to build cross-disciplinary dialogues. While considering multiple funding sources, I will initially focus on the Wellcome Early Career Award. I expect substantial preparation time for this interdisciplinary application and have identified gaps in my skills and network relevant to theme 2.

Stakeholder mapping and mentorship

To avoid duplication and identify research gaps, I aim to undertake a rapid stakeholder mapping of key institutions and researchers relevant to epidemiological science-policy interfaces. My current network focuses on respiratory diseases in higher-income settings (Europe, US, WHO Pandemic Hub), but I aim to engage with experts in alternative contexts and fields offering insights into synthesising collaborative work. Drawing on stakeholder mapping techniques and networking I aim to identify 5-10 relevant researchers/informants for informational interviews. This will clarify current research across diverse science-policy interfaces, identify research gaps, and help find potential mentors and collaborators.

Training and professional development

I plan to spend time with existing collaborators to understand current areas of interest and the potential for continued overlap. I have also identified several key opportunities for expanding my network.

- Centre for Science and Policy annual conference: "Resilience in a changing world"
- Metascience biennial conference
- Wellcome Connecting Science training course: "Science Policy: Improving the Uptake of Research into UK Policy"

Timeline

- June 1-September 3 at 0.2 FTE:
    - June - July: Stakeholder mapping, informational interviews
    - June - August: Fellowship application preparation
    - August: application internal review
    - September 30: Wellcome Early Career Award deadline
- June 24: CSaP annual conference
- June 30-July 2: Metascience biennial conference
- August 18-20: Wellcome Connecting Science training course.

References

[1] M. Baguelin *et al.*, 'Tooling-up for infectious disease transmission modelling', *Epidemics*, vol. 32, p. 100395, Sep. 2020, doi: 10.1016/j.epidem.2020.100395.

[2] K. R. Moran, T. Lopez, and S. Y. Del Valle, 'The future of pandemic modeling in support of decision making: lessons learned from COVID-19', *BMC Glob. Public Health*, vol. 3, no. 1, p. 24, Mar. 2025, doi: 10.1186/s44263-025-00143-z.

[3] WHO, 'Research prioritization for pandemic and epidemic intelligence: technical brief'. Accessed: Apr. 30, 2025. [Online]. Available: https://www.who.int/publications/i/item/9789240094529

[4] G. F. Medley, 'A consensus of evidence: The role of SPI-M-O in the UK COVID-19 response', *Adv Biol Regul*, vol. 86, p. 100918, Dec. 2022, doi: 10.1016/j.jbior.2022.100918.

[5] N. G. Reich *et al.*, 'Collaborative Hubs: Making the Most of Predictive Epidemic Modeling', *Am J Public Health*, vol. 112, no. 6, pp. 839–842, Jun. 2022, doi: 10.2105/AJPH.2022.306831.

[6] K. Sherratt *et al.*, 'Predictive performance of multi-model ensemble forecasts of COVID-19 across European nations', *eLife*, vol. 12, p. e81916, Apr. 2023, doi: 10.7554/eLife.81916.
[7] K. Sherratt *et al.*, 'Exploring surveillance data biases when estimating the reproduction number: with insights into subpopulation transmission of COVID-19 in England', *Philosophical Transactions of the Royal Society B: Biological Sciences*, vol. 376, no. 1829, p. 20200283, Jul. 2021, doi: 10.1098/rstb.2020.0283.=
[8] K. Sherratt *et al.*, 'Characterising information gains and losses when collecting multiple epidemic model outputs', *Epidemics*, p. 100765, Mar. 2024, doi: 10.1016/j.epidem.2024.100765.
[9] K. Sherratt *et al.*, 'Improving modelling for epidemic responses: reflections from members of the UK infectious disease modelling community on their experiences during the COVID-19 pandemic', *Wellcome Open Research*, vol. 9, no. 12, 2024, doi: 10.12688/wellcomeopenres.19601.1.

3. STRATEGIC CASE FOR FUNDING	
3.1 How will this project build on your existing research, and help to advance your career (up to 300 words) *In your answer, you should also outline the expected outputs from this project, including onward funding applications if appropriate, as well as any anticipated research or conference papers, datasets, code, or other research outputs. Make it clear what the markers of success for this project will be.*	This project builds directly on my five years of policy-facing crisis response work and academic research in infectious disease modelling. This included COVID-19 response work, including in the UK leading 4 first-author contributions to SPI-M, and subsequently developing and evaluating the European forecast and scenario modelling hubs, interfacing with the ECDC. I simultaneously developed this into original research, publishing work that investigated both quantitative model evaluation, including model accuracy and bias, and qualitative evaluation of the institutional structures for modelling in outbreak response. I recently defended this in a PhD by publication recognising the strength of my existing work. In this process, I identified critical gaps in our understanding of how evidence synthesis and cross-disciplinary collaboration can be better understood and implemented for public health impact. With an existing position and network within the Centre for Mathematical Modelling at LSHTM, I am now positioned to transition toward independent research that bridges methodological innovation with critical evaluation of science-policy interfaces. The EPH Pump Priming grant will support this transition by enabling me to develop a competitive Wellcome Early Career Award application, building from my interdisciplinary perspective at the intersection of quantitative modeling and qualitative evaluation of collaborative structures. Few specialists in the modeling community combine these approaches, creating a distinctive research niche. Expected outputs include: ● A complete Wellcome Early Career Award application (deadline September 30) ● Applications to at least two additional funding schemes (Research Councils or charitable foundations) ● A draft stakeholder map of key institutions and researchers in evidence synthesis and science-policy interfaces providing relevant insights for outbreak modelling

	● 5-10 informational meetings with potential mentors/collaborators ● Expanded professional network across modeling disciplines and policy domains, demonstrated through new collaborative relationships Success markers include submission of a fellowship application, development of at least two new mentor relationships outside my current network, and establishment of research collaborations spanning traditional disciplinary boundaries. The long-term impact will be career advancement toward an independent research position where I can lead work improving how modelling evidence informs public health decisions during outbreaks.
3.2 If you have previously held funding as a PI, please explain how this award would have a substantial impact on your career.	*NA*

4. PROJECT COSTS [see application guidance for more information]

Direct costs only. The maximum is £12,500. Please note that this is considered insufficient to support a programme of extensive field work. You may request some %FTE salary support as part of the costing - if requesting salary support, please ensure that this has been calculated using RCP (we recommend you seek assistance from your department admin team for help with this).*

Description	Type of expenditure	Cost (£)
4 months' salary support at 0.2 FTE	Salary support	£8000
Metascience biennial conference	Training and conference	60
CSaP annual conference	Training and conference	60
Wellcome Connecting Science training course	Training and conference	599
Book purchases	Training and conference	300
Travel to collaborators	Collaboration	1000
	TOTAL	10019

*(*direct costs are costs that directly support your research proposal [e.g. direct salary costs, data, equipment, training or travel that are specifically required for the project] and do not include costs for overheads, general facilities, etc – please contact your department administrator for further guidance on this)*

4.2 Justification of costs Please include specific justification for each cost listed in section 4.1	Salary support to include stakeholder mapping, network development, fellowship preparation, and training and conference attendance. Conference and training includes two relevant conferences and a training course for professional development and networking within science-policy interface work, and support for purchasing textbooks and materials in the field (such as Cochrane collaboration handbooks). Travel to include strengthening relationships with existing collaborators based at the WHO Pandemic Hub in Berlin.
4.3 Please state how much time you will spend on the planned activities (e.g. 1 day per week), and how this will fit with your other work commitments	1 day/week, with flexibility to continue existing research and work commitments.

4.4 Are you requesting personal salary support? If No, please indicate the source of your personal salary support for the proposed project duration, giving LSHTM grant reference(s).	Yes, with additional salary support from existing Wellcome funding held by PI (Professor Sebastian Funk, Wellcome Trust grant number 200901/Z/16/Z) until March 2026.

*(*direct costs are costs that directly support your research proposal [e.g. for data, equipment, training or travel that are specifically required for the project] and do not include costs for overheads, general facilities, etc – please contact your department administrator for further guidance on this)*

5. ETHICS AND ANIMAL USE [see application guidance for more information]	
5.1 Does the project require ethical review?	No *If yes, please indicate whether the necessary approvals are already in place.*
5.2 Does the project involve the use of animals?	No *If yes, please indicate whether the necessary approvals are already in place.*

6. AUTHORISATION	
I confirm that the information in this form is accurate and within the word limits. I have reviewed the terms and conditions of this award and confirm that I will comply with these if successful.	
Applicant	*(Type name here to confirm agreement):* Katharine Sherratt Date: 30 April 2025
I support this application and confirm that the information in this form is accurate. On behalf of myself and (if applicable) any other PIs on whose grant(s) the applicant is currently working, I confirm that should the application be successful, the applicant will be released from working on their current project(s) to the extent outlined in section 4.3 in order to complete this pump priming project.	
Current Line Manager	*(Type name here to confirm agreement):* Sebastian Funk Date: 30 April 2025
I support this application and confirm that the information in this form is accurate. If successful, I agree to support the applicant as main supervisor for the work proposed in this application. *(Please complete below to confirm agreement, even if the project supervisor is the same person as the line manager)*	
Proposed project supervisor	*(Type name here to confirm agreement):* Sebastian Funk Date: 30 April 2025

TERMS & CONDITIONS OF AWARD

- The first point of contact for all grant management and reporting for this award is the EPH Faculty Office.
- Awardees will be required to submit an End of Grant Report within 3 months of the end of the award.
- Awardees must inform the EPH faculty office of any major outputs stemming directly from this award occurring following the submission of the End of Grant Report.
- Standard LSHTM terms and conditions of employment will apply during the award.