



UKRI Policy Fellowships 2023: Fellowship Opportunity Description

Fellowship Title: DWP Model Development Fellow

Host Organisation: Department for Work and Pensions (DWP)

Host Team: DWP Modelling & Forecasting Centre of Excellence

Summary: Developing methods and approaches in microsimulation and agent-based modelling of the GB Benefit System

Fellowship Theme: Data and evaluation

Policy Topic: Welfare and Social Security Policy Development

Research Council: ESRC

Academic Discipline/s: Microsimulation and agent-based modelling

Research Career Stage: Ideally suited to early- and mid-career researchers

Fellowship Structure

Inception Phase:

Estimated Start Date: October 2023. *Exact date to be confirmed by the host depending on onboarding and security clearance requirements*

Duration: 3 months

FTE: 0.4 FTE

Main Placement Phase:

Duration: 12 months

FTE: 0.6-1 FTE

Knowledge Exchange Phase:

Duration: 3 months

FTE: 0.4 FTE

Work Arrangements

Location Requirements: Most of the work could be carried out remotely, but it would be beneficial to spend some time on-site with our model development teams, which have a major presence in London, Leeds, Newcastle and Sheffield. We can provide office accommodation in any of our Hub sites, including the above, but also Glasgow, Birmingham and Treforest (South Wales).

Hybrid Working: We would expect the successful applicant to combine time working in one of DWP's sites, to benefit from face-to-face interaction with colleagues, with some remote working, as is the case for most DWP employees. The precise arrangements will be negotiated with the successful applicant. *Eligible T&S costs are supported in the main UKRI grant. Please see full call text and guidance for more details.*

Security Clearance: [Basic Personnel Security Standard checks which](#) usually take 4 to 6 weeks to complete from submission. 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 ESRC. The inception phase engagement with the team can commence whilst checks are ongoing but proper clearance will be required before commencement of the main placement phase.

Fellowship Opportunity Description

Model and data-development work in DWP underpins some of the Government's most high-profile analysis outputs (e.g. Budget forecasts, policy costings), covering over £200bn of annual expenditure on welfare benefits and supporting delivery of flagship welfare reform programmes. With such large amounts of public money at stake, and given the crucial importance of the benefit system in supporting people that rely on it (indeed that's most of us at some point in our life-course), sophisticated models are needed using the best data available.

Over more than 20 years DWP has established a world-class model development function based around the microsimulation approach. Our sophisticated data and models capture not only the complex trends within an evolving benefit system, population and economy, but also how people are affected at a household and individual level and rich insights on the workloads generated for DWP's delivery functions. Altogether, this gives policymakers access to a rich evidence base to inform welfare policy choices they face.

We have a strong track record of engaging with academics in the field of microsimulation, with DWP modellers presenting regularly at International Microsimulation Association events. We want to build on this, and are in the process of establishing a Modelling and Forecasting Centre of Excellence situated at the centre of Government, with the aim of researching, developing and deploying new methods in model and data development. Widening and deepening our academic engagement in this process is a core part of our "Centre of Excellence" vision. We have been strengthening ties with academic institutions – for example, through a PhD placement on developing Gaussian emulators for our complex models through a collaboration with Universities of Reading and Durham, and a forthcoming cosponsored PhD study with the University of Essex aimed at developing improved methods of aligning our working-age dynamic microsimulation models to forecasted economic changes.

We now wish to invite applications from early- or mid-career academics to work with us in exploring a variety of relevant challenges and opportunities of current interest in our Centre of Excellence. There is significant scope for an ESRC Fellow to shape the role and identify where they can have an impact on the development of our models and forecasts, for example in the following areas:

- Assessing and presenting uncertainty in forecasts and projections from DWP microsimulation models used in multi £bn forecasts, costings and claimant impact analysis, crucial for high-profile Ministerial decisions on Universal Credit, pensioner and disability benefit policies;
- Developing applications of agent-based modelling and other relevant social simulation methods in social security policy design and forecasting activity;
- Combining administrative and survey data on social security and welfare in a way which maximises the usefulness of derived datasets and dependant models for policymaking (including maintaining correlations and assessing cross-dataset correlations);
- Using longitudinal data more effectively in DWP models in order to address future DWP evidence needs.

The fellow will have the opportunity to co-design clear research tasks in collaboration with officials in government based on policy needs and the fellow's interests/skills during the inception phase of the fellowship.

A Fellow would benefit from:

- The opportunity to have a significant and lasting impact on the quality of high-profile analysis underpinning £bns of annual benefit expenditure;
- Experience of Government ways of working and how policy is made, to help 'land' research more effectively;
- Access (during the Fellowship) to DWP datasets and information;
- Building a network of official contacts in analytical and policy teams in DWP and other Government Departments;

The Fellow will also benefit from wider support, networking opportunities, and learning and development available to Government analysts, giving them a richer experience during their Fellowship.

Activities

You would work closely with a variety of teams in our developing Centre of Excellence to investigate novel approaches and apply best practice from the academic fields of microsimulation and model development, including engaging with existing cosponsored PhD that will be in progress, further PhD students/graduates on short-term placements in the Centre of Excellence and helping us to make further connections with other academics within relevant fields.

We would welcome the opportunity for you to have an active role in our professional capability building activities, giving and attending seminars, reviewing our practice of model development and forecasting and improving our professional learning and development offer.

Outputs

Prior to the completion of the fellowship, we would expect a full knowledge transfer to DWP, including written documentation of methods and approaches, and examples of novel implementations of methods and academic best practise within both new models and our existing model-suite.

We are mindful of and receptive to the expectation of academic publications ensuing from this work, however any external publications that make use of DWP official information must be cleared by DWP prior to submission.

Person Specification

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

Essential Criteria:

- Strong academic track record of developing microsimulation and/or agent-based modelling approaches;
- Deep applied statistical knowledge, including multivariate methods;
- Advanced skills in working with and presenting complex data and uncertainty in complex model systems;
- Commitment to team-work and collaboration that has resulted in successful knowledge transfer and results of practical use in areas outside own direct responsibility.

Desirable Criteria:

- Track-record of engaging successfully with government/industry;
- Knowledge of the UK social policy and the benefit system.