

# NOT-EQUAL

## EPSRC Network+: Social Justice through the Digital Economy

### Pilot Projects: Application Form

We are seeking funding proposals from shortlisted candidates for Not Equal's first call for pilot projects. For full guidance please see details of the call on the Not Equal [website](#).

Pilot research projects can be between 6-8 months in length. We expect to fund up to 12 pilot research projects of up to £40k (80%FEC) for this first funding call.

Please submit this form before the deadline of **5pm, 30<sup>th</sup> April 2019** to [notequal@ncl.ac.uk](mailto:notequal@ncl.ac.uk).

Applicants will be advised on the outcome of their proposal by the 30<sup>th</sup> May 2019.

GENERAL INFORMATION	
<p><b>Lead Applicant (PI):</b> Helen Pallett</p> <p><b>Email address:</b> h.pallett@uea.ac.uk</p> <p><b>Job Title:</b> Lecturer in Human Geography</p> <p><b>Department:</b> School of Environmental Sciences</p> <p><b>Organisation:</b> University of East Anglia</p>	<p><b>Co-Investigators (names and organisations):</b> Jason Chilvers, Reader in Environmental Social Sciences, School of Environmental Sciences, University of East Anglia; Involve (led by Simon Burall) as sub-contractors</p> <p><b>Supporting Partner(s):</b></p> <p><b>Project Title:</b> Just Public Algorithms</p> <p><b>Project Tagline:</b> How can we democratically govern algorithms for more socially-responsible public services?</p> <p><b>Eol Reference Number:</b> NE30</p>

### 1. SUMMARY

*Please provide a summary of your proposed research project (<300 words).*

'Just public algorithms' aims to design an observatory for algorithms and society, in order to improve the democratic oversight and socially responsible development of algorithms in public services. This will be achieved by first reviewing existing work on algorithms in public services, current responsible research and innovation (RRI) frameworks around algorithms and AI, and emerging literature on public observatories. This review work will be accompanied by a mapping of existing examples of public engagement around the use of algorithms in public services in the UK. Second, a stakeholder workshop will be held to reflect on the findings of the review and mapping work, and to codesign the institutional blueprint of the observatory for algorithms and society. Finally, a blueprint for the observatory of algorithms and society will be proposed including identifying potential actors and organisations to be involved, developing an organizational design, and proposing methods to be used for



continued mapping of public engagement with algorithms in public services, foresight around these approaches, and application of principles and findings.

By achieving these objectives this project will provide the most comprehensive picture yet of citizen responses to the ways in which algorithms are being adopted in and around UK public services, from welfare payments to policing, healthcare and immigration. The key outputs of the 'Just Public Algorithms' project will be an academic paper presenting key findings from the review work, mapping and stakeholder workshop on how to responsibly govern the use of algorithms in public services, and an accessible briefing note for policy-makers, practitioners and concerned citizens presenting the proposed design for the observatory and exploring how it can support the responsible innovation of these approaches.

## 2. HOW DOES YOUR PROPOSAL ALIGN WITH THE THEMES AND OBJECTIVES OF NOT EQUAL?

*Please describe how your proposal helps understand, explore or develop practical responses to social justice issues within the digital economy; and how does your proposal enhance a cross-disciplinary way of working. Please also indicate which of the Not Equal challenge areas your proposal focuses on e.g. Algorithmic Social Justice, Digital Security for All and Fairer Futures for Business and Workforce (<500 words).*

Our proposal focuses on the Algorithmic Social Justice challenge area of Not Equal and applies this concern to the adoption of algorithms in public services. This project aims to develop a practical response to pressing social justice issues presented by the digital economy, by carrying out initial anticipatory governance work around the use of algorithms in public services in the UK and providing a roadmap for the continuing responsible and democratic governance of these technologies.

Algorithms raise specific social justice issues which are particularly acute in the domain of public services. Because algorithms learn from existing data sets, they can repeat and even amplify sexist and racist tropes (Noble 2018; Buolamwini and Gebru 2018), and can reflect problematic unstated assumptions of earlier systems, for example, denying the existence of trans bodies (Keyes 2018). Furthermore, the vast amounts of data needed to train algorithms are often obtained and combined in ways in which the data subjects themselves are unaware (Tufekci 2019). The negative consequences of the adoption of algorithms in public services have been particularly documented in the US context where it is argued the costs of these development fall on already marginalized communities. In welfare and taxations systems algorithms are used to discourage the lowest income groups from claiming welfare payments (Eubanks 2018). A piece of software used in the Florida justice system to predict the likelihood of reoffending and make decisions early release was more likely to recommend black inmates for lengthened sentences (Donovan et al. 2018).

Our project will also attend to procedural justice around the adoption of algorithms in UK public services by more comprehensively mapping the different ways in which citizens are engaging with them. Our previous work on public engagement around energy systems found that certain kinds of engagements, such as public protests or community led initiatives, were often ignored in policy decisions which looked to surveys and deliberative workshops for justification. By identifying similarly marginalised or misrepresented forms of public engagements around algorithms in public services this project provides a much more comprehensive and just evidence base for



policy decisions. This mapping underpins a practical response to the increasing adoption of algorithms in public services through a proposed institutional blueprint for the observatory for algorithms and society, which will ensure that the social dimensions of these approaches are properly accounted for in governance decisions.

The review and mapping work and the stakeholder workshop enable cross-disciplinary dialogue encompassing recent developments in computer sciences and social sciences, as well as providing opportunities for knowledge exchange between academic and non-academic communities. The workshop will enable the sharing of expertise and experiences between these two communities, and will distil these lessons and insights from the academic literature into a framework and roadmap for future work. The observatory design which will result from this project will explicitly take account of the socio-economic contexts of algorithmic justice in public services, and seek to provide a toolkit for their further inclusion in the governance of these technologies.

### 3. CASE FOR SUPPORT

*Please describe your proposed projects, including its aims and objectives. This will include the design and method of your project, context, background literature and data to be collected. Please also indicate why is this research important and for whom (<1000 words).*

**Aim:** To design, co-produce and provide a roadmap towards an observatory for algorithms and society, in order to improve democratic oversight and socially responsible development of algorithms in public services.

#### Objectives

1. To review existing work on algorithms in public services, current responsible research and innovation (RRI) frameworks around algorithms, and emerging literature on public observatories; and to map existing examples of public engagement around the use of algorithms in public services in the UK.
2. To hold a stakeholder workshop to reflect on the findings of the review and mapping work, conduct initial foresight around algorithms in public services, and codesign the institutional blueprint of the observatory for algorithms and society.
3. To propose a blueprint for an observatory for algorithms and society which would continually map public engagements with the use of algorithms in public services, conduct foresight on the future development of these approaches, and apply these insights to the governance of algorithms in public services.

Algorithms are increasingly being used in the delivery of public services. This promises a range of benefits, from greater efficiency, to removing the need for humans to perform menial tasks, allowing greater personalisation of services, and removing the risk of human error. Yet, it has increasingly been observed that the adoption of algorithms across a wide range of applications has also had negative consequences, from entrenching discrimination to causing disruption in the labour force (BA & RS 2018).

The adoption of algorithms in public services like policing, education, healthcare and immigration has raised further concerns, around surveillance, the growing influence of private companies, the compulsory collection of biometric data, as well as the amplification of standing errors. Given these far-reaching consequences, the common assumption that algorithms can be covered by existing regulatory frameworks (cf. Smallman 2019), and their non-transparent nature (Pasquale 2015), there is a lack of appropriate regulation and accountability around algorithms in public services (Donovan et al 2018).



There is therefore an urgent need to develop a basis for appropriate regulation and oversight of the use of algorithms in public services. This needs to go beyond asking how algorithms can be made 'ethical' or attempting to prevent the most obvious examples of misuse of algorithms. Rather there are deeper issues to be addressed, such as ensuring algorithms are being adopted to address genuine needs and problems, and that the datasets from which consequential decisions are made are contestable, transparent and accountable.

The recent announcement and subsequent dissolution of Google's ethics panel illustrates the challenge of institutionalizing accountability and foresight around algorithms and AI. Many have called for direct and continued engagement of citizens in the governance of algorithms (Adams and Burall 2019) to ensure this through: people's councils (McQuillan 2018); public dialogue (Royal Society 2018; Balaram et al. 2018); new methods of public deliberation (McKelvey 2014); and citizens juries. This project takes this argument further by calling for an observatory for algorithms and society. Observatories have been suggested around a range of important public issues in recognition that public views on a particular technology or issue can never be definitively settled by a particular event or form of engagement (Chilvers and Pallett 2018). Rather there is a need to continually map across diverse instances of public engagement around a given issue to identify broader trends and connections (Burall 2018; Chilvers et al. 2018).

## Methods

The stated aims and objectives of the 'Just public algorithms' project will be met through three linked phases of research.

### **Phase 1: Review and mapping**

- An initial review of relevant studies and literature on:
  - I. the adoption of algorithms in public services in the UK drawing on work by the Data Justice Lab (Dencik et al., 2018).
  - II. RRI frameworks proposed for the responsible and ethical development emerging technologies like nanotechnology and climate geoengineering (e.g. Stilgoe et al. 2013; the EPSRC's AREA framework) and attempts to translate them to algorithms, AI and machine learning (e.g. Whittlestone et al., 2019).
  - III. emerging work on public observatories which have been proposed as a way of taking public engagement approaches beyond a focus on discrete events (Chilvers et al. 2018), and a way to enact RRI.
- A mapping of public engagement around algorithms in public services from institutionally orchestrated public dialogues to examples of civil society action (cf. Lewis et al. 2018). This will be achieved through a combination of a systematic review of the academic literature and digital mapping methods using existing data sets and social media platforms. This builds on the systematic mapping method developed by UEA project partners for mapping public participation and societal values on future technological system change (Chilvers et al., 2018). This will address the gap identified by Whittlestone et al. (2019) that there is at present insufficient evidence on the perspectives of different publics on this topic.

### **Phase 2: Stakeholder workshop**

- A 1-day stakeholder workshop including academics, practitioners and policy-makers with interests in algorithms in public services. Workshop participants will reflect on the findings of Phase 1, conduct initial foresight around the use of algorithms in public services, and contribute to the codesign of the observatory for algorithms and society.
- The workshop design will build on Involve's recent project with Google's Deepmind (Adams and Burall 2019), which concluded that there was a need for a more focused discussion with the most relevant



stakeholders about the future consequences of algorithms in public services and how better outcomes could be encouraged.

- The workshop will be recorded by the project team through notes taken on the day, photographs, flip chart notes, post-its and other responses produced by participants.

### **Phase 3: Analysis and dissemination**

- Data from the workshop will be analysed by the research team using qualitative coding in *Nvivo*.
- Findings from Phases 1 and 2 will be synthesized into a finalized blueprint design for the observatory for algorithms and society. Workshop participants will have opportunities after the workshop to remotely feed into this process.
- The observatory blueprint will be disseminated through an academic paper and accessible briefing note.

## **4. NOVELTY OF PROPOSAL**

*Please explain the novelty of the proposed research project (<150 words).*

The proposal specifically focuses on the use of algorithms in public services, whereas the focus of much previous work has been on the ways in which algorithms are used in private sector contexts. The project also builds on recent calls for the development of observatory structures around pressing public issues, instead of relying on one-off public engagement events, or singular forms of public engagement (like surveys or deliberative workshops). This new concept recognises that there are multiple publics, forms of engagement and issue definitions in play around any given emerging technology, and can also capture broader trends, injustices and connections over time. A further innovation of the project is to link the observatory concept with the practical application of RRI frameworks. This project is also novel in bringing together academic innovations around concepts of public engagement (UEA), with recent innovations in public engagement practice (Involve).

## **5. NON-ACADEMIC PARTNERS**

*Please explain how your non-academic partners will engage with the project e.g. in-kind time, use of facilities, etc. (<150 words)*

The stakeholder workshop will involve the following non-academic partners: the Office for AI; the Centre for Data Ethics; The Royal Society; Deliberate Thinking; Doteveryone; Data Justice Lab; and Society Inside. Civil servants involved in administering significant public services, e.g. from HMRC, DWP, DJ, HO, will also be invited to the workshop. These partners will be contributing a day of their time to the project, as well as their vast experience and expertise in this area.

The partnership between UEA and Involve is at the heart of this proposal, though Involve are involved as sub-contractors rather than partners because of the need to make sure they are sufficiently remunerated for their work as a charity.

## **6. DELIVERABLES AND SOCIAL IMPACT**



*Explain the outcomes and deliverables of your project as well as the expected social impact. Please ensure this answer is suitable for a lay audience (<300 words).*

This project will deliver three main outputs which will be used to make the case for – and propose further steps to enable – continuous democratic oversight and responsible development of algorithms in public services.

1. The stakeholder workshop provides an opportunity for collective foresight about how these approaches might develop, and what their likely negative consequences are, and will encourage discussion about what can be done to mitigate the worst impacts. It will also co-produce an observatory design to enable ongoing foresight democratic oversight, and socially responsible innovation of these approaches. By bringing together different stakeholders and using the review work conducted during the project as a baseline, it will help policy-makers and practitioners to learn from recent academic work about the potential impacts of these technologies.
2. The academic paper presenting key findings from the mapping and workshop on how to govern the use of algorithms in public services will raise awareness about the potential future problems of using these technologies in governance and public services. The dissemination of project findings as well as the identification of an observatory design will encourage greater transparency around the use of algorithms.
3. The accessible briefing note for policy-makers and practitioners presenting the proposed design and roadmap for the observatory for algorithms and society will try to move the public discussion beyond avoiding the worst potential impacts of algorithms on public services. It will encourage consideration of how algorithm-based approaches could be used with the intention of improving public services from a citizen perspective. It will draw on examples which suggest how algorithms in public services could be used to empower marginalized communities, give citizens greater insights into how knowledge for and about them is created, or enable the simplification of important means of resource and information distribution.

## 7. WORK PLAN

*Please outline the work-plan for your proposed research/activity (<200 words).*

- **Phase 1:** Review and Mapping. Initial review of the use of algorithms in public services in the UK, RRI and observatory frameworks; systematic mapping of instances of public engagement around algorithms and AI in public services. *Led by UEA (Pallett, Chilvers and researcher). Months 1-4.*
- **Phase 2:** Stakeholder workshop. Bring together policy-makers and practitioners to consider the findings of phase 1 and discuss their experiences and ideas. Participants will review RRI frameworks and help codesign the blueprint and roadmap towards the observatory for algorithms and society. *Led by Involve (Burall and colleagues). Month 5.*
- **Phase 3:** Analysis and dissemination. Analyse data from phases 1 and 2. Write up briefing note describing findings of work and laying observatory design and roadmap – including how it will help to ensure responsible innovation of these approaches. Write up academic paper on project findings on current state of use of algorithms in public services targeted at *Big Data & Society*. *Led by UEA with input from the whole research team. Months 5-8.*

## 8. HOW WILL YOU COMMUNICATE THE FINDINGS OF YOUR RESEARCH TO THE PUBLIC?





*Please outline your dissemination plans e.g. events, networking with local support groups, creating vlogs, writing blogs, etc. (<200 words).*

The primary aim of this project is not to engage the public, but rather to set the foundations for better ongoing public engagement around the use of algorithms in public services. This requires first getting a clearer sense of what is going on in practice and considering the appropriate frameworks and institutional designs to support ongoing ethical and democratic governance. However, we will still make sure that we are completely transparent about our process by using the 3S Research Group and Involve websites to give details about the project, and supplementing this information with regular blog posts and social media posts using both our organisational and personal accounts to give updates on the project. At the end of the project the briefing note will be an accessible public document clearly laying out the key findings and arguments of the project. This will be communicated through a press release from the University of East Anglia's press office and will be featured on Involve's newsletter (circulated to 800 people) to ensure a broad reach.

## 9. EXISTING FUNDING

*Will any existing funding be used on this project (e.g. PhD funding)? If so, please provide information on these and how they will be used on the project.*

Not applicable.

## 10. TRACK RECORD OF APPLICANTS

*Please indicate any previous relevant experience, qualifications and publications of the lead applicant and team (<200 words).*

Pallett has conducted academic research on the institutionalisation of deliberative forms of public engagement in UK science policy (Pallett 2015; 2018). With Chilvers she developed new conceptual frameworks and methods for mapping ecologies of public engagement around a particular issue or system (Chilvers et al., 2018). Chilvers has a wealth of experience facilitating public and stakeholder workshops, and developing anticipatory governance and RRI interventions (Chilvers 2008; Macnaghten & Chilvers 2014). They are both part of the [3S Research Group](#) which carries out field leading research into societal engagement with science, innovation and sustainability.

Involve is the UK's leading participation organisation, which aims to create a new focus for thinking and action on the links between new forms of public participation and existing democratic institutions. A core element of Involve's work, which is led by Burall, concentrates on bringing public voices into policy decisions involving science and technology. Over the past five years this has included a focus on data, algorithms and AI. The organisation provides support to BEIS for the delivery of [Sciencewise](#), has run processes on data and AI for the [Cabinet Office](#), [Home Office](#) and [Deepmind](#) to bring stakeholders and policy makers together to build collaborative policy-making spaces.



## 11. BUDGET BREAKDOWN

Please provide a detailed budget breakdown and justification for your budget - for example: salary grade, point, duration and %FTE: specified journeys or conferences; identified items and quantities of consumables (<300 words)

### STAFF COSTS

PI (PALLETT) – 10% FTE – 8 MONTHS: £4105.94. OVERSEEING THE OVERALL MANAGEMENT OF THE PROJECT AND RESEARCHER, COMMUNICATING WITH PARTNERS AT INVOLVE, DIRECTING THE REVIEW AND MAPPING WORK, CONTRIBUTING TO THE PRESENTATION OF INITIAL FINDINGS AT THE STAKEHOLDER WORKSHOP, LEADING THE WRITING OF THE ACADEMIC PAPER AND BRIEFING NOTE.

CI (CHILVERS) – 5% FTE – 8 MONTHS: £2688.45. CONTRIBUTING TO OVERALL RESEARCH DESIGN, CONTRIBUTING TO THE REVIEW AND MAPPING WORK, CONTRIBUTING TO THE STAKEHOLDER WORKSHOP AND NOTETAKING AT THE WORKSHOP, CONTRIBUTING TO THE WRITING OF THE ACADEMIC PAPER AND BRIEFING NOTE.

UNNAMED RESEARCH ASSOCIATE GRADE 6/22– 50% FTE – MIDDLE 6 MONTHS OF PROJECT: £8677.30. CARRYING OUT THE REVIEW AND MAPPING WORK, CONTRIBUTING TO THE STAKEHOLDER WORKSHOP AND NOTETAKING AT THE WORKSHOP, CONTRIBUTING TO THE WRITING OF THE ACADEMIC PAPER AND BRIEFING NOTE.

INVOLVE STAFF COSTS TO ORGANISE, RUN AND ADMINISTER STAKEHOLDER WORKSHOP AND FEED IN TO OTHER STAGES OF PROJECT - £6000 (INCLUDING VAT)

### NON-STAFF COSTS

6 RETURN TRAIN TICKETS BETWEEN NORWICH AND LONDON TO ENABLE PROJECT TEAM TO MEET WITH EACH OTHER AND ATTEND STAKEHOLDER WORKSHOP IN LONDON - £750

LONDON VENUE HIRE AND CATERING FOR 1-DAY STAKEHOLDER WORKSHOP - £1000

COSTS FOR STAKEHOLDER WORKSHOP PARTICIPANTS' TRAVEL - £600

UEA ESTATES COSTS - £3138.00 (INCLUDED FOR RA ONLY)

UEA INFRASTRUCTURE TECHNICIANS COSTS - £233.75 (INCLUDED FOR RA ONLY)

UEA INDIRECT COSTS - £12601.25 (INCLUDED FOR RA ONLY)

## 11. TOTAL PROJECT COST

Please list in GBP under the headings - Overall cost, Staff, Travel and Other

	Directly incurred costs (80%)	Directly incurred costs (100%)
Staff	12,377.35	15,471.69
Non-Staff Costs: Consumables	4,800	6,000.00
Non-Staff Costs: Facilities/Equipment	0	0
Non-Staff Costs: Travel	1,880.00	2,350.00
Non-Staff Costs: Estates (RA's only)	2,697.40	3,371.75



Non-Staff Costs: Indirect (RA's only)	<b>10,081.00</b>	<b>12,601.25</b>
<b>Overall Cost*</b>	<b>31,835.75</b> Funding Requested:	<b>39,794.69</b> Total for information only:

#### Directly Incurred Posts

Role	Post	Start Date	Period on Project (months)	% of Full Time	Scale	Increment Date	Basic Starting Salary	Super-Annuation and NI (£)	Total cost on grant-80% FEC (£)	Total cost on grant-100% FEC (£)
RA	Research Associate	01/10/2019	6	100	Grade 6/22	01/08/2020	26,243	8,466	6941.84	8,677.30

\*Please note you are able to claim for RA time and RA relevant FTE related costs, PI/Co-I time and other non-staff costs. You are not able to claim for FTE related costs attributed to PI/Co-I time.

#### Further Information

If you have any further questions regarding this call for proposals, please contact [notequal@ncl.ac.uk](mailto:notequal@ncl.ac.uk) or Kate Kelly (Not Equal Project Manager) on 0191 2088268.



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