



NUFFIELD/HERC Post-Doctoral Researcher in Data Science

JOB DESCRIPTION

Job title:	Nuffield/HERC Post-Doctoral Researcher in Data Science
Department:	Nuffield College/Health Economics Research Centre, Oxford Population Health
Place of work:	Nuffield College / HERC (some hybrid working may be considered)
Responsible to:	Professor Ray Duch, Director of Nuffield Centre for Experimental Social Sciences (CESS)
Salary:	£44,473 per annum (Research Officer scale, point 14)
Hours:	Full time (35 hours per week) 2 years (with a 6 month probationary period)
Length of post:	

Nuffield College and the Health Economics Research Centre (HERC) at the University of Oxford's Nuffield Department of Population Health (NDPH) seek to recruit a Post-Doctoral Researcher in Data Science to work with Professor Ray Duch (Director of the Nuffield CESS) on the Oxford REAL Demand research project.

About the Oxford REAL Demand Centre Projects

The Oxford REAL Demand Centre is a research collaboration, funded by the UK Health Foundation, that conducts experimental research on global policy challenges with a focus on the health sector. The Oxford REAL Demand Centre projects are large scale Random Control Trials (RCTs) – recent trials have focused on Vaccine uptake, financial literacy in the Global South and the impact of corruption information campaigns. A major feature of these projects is the design and implementation of very large random control trials involving in many cases tens of thousands of participants. In addition, these projects incorporate experimental findings with large and varied administrative data and with census and survey data. The disciplinary focus of these projects

ranges from health economics, to behavioural economics and political economy. The Oxford REAL Demand Centre is committed to evidence-based policies and engage with national, and international governmental agencies to evaluate the effectiveness of current policies, as well as design new programs and tools with the potential to affect ultimately the lives of millions of individuals. The Oxford REAL Demand Centre involves an international collaboration with a talented global team of faculty, staff, postdocs, and graduate and undergraduate students. The team seeks to create an innovative research model that combines the quality and rigor of an academic unit with the efficiency and innovation of a tech-lab. Research results from these studies have been published widely in leading social science peer-reviewed publications.

To learn more about the Oxford REAL Demand Centre research and team visit the web site <https://oxford-candour.com/>

The Position

The Oxford REAL Demand Centre Project is recruiting for this post-doc position that is jointly sponsored by Professor Duch at Nuffield College and by Professor Philip Clarke at the Nuffield Department of Population Health. The position is funded by the UK Health Foundation grant held at Nuffield College and the Nuffield Department of Population Health.

The successful candidate would work closely with the team of scholars at Oxford and other collaborating institutions throughout the world.

A major element of the Oxford REAL Demand Centre projects is the design and implementation of very large random control trials involving in many cases tens of thousands of participants and incorporating large and varied administrative data and with census and survey data. Additional features of these projects include 1) the development of design tools for experimental treatments that incorporate AI and machine learning; and 2) creating geo-coded digital census and modelling tools using machine learning algorithms that guide data collection and are the basis for generalizing treatment effects and calibrating heterogeneity. This is an opportunity for a talented postdoctoral researcher in Data Science to participate in leading-edge research and to collaborate in the publication of the findings in peer-reviewed scientific journals.

The post is available from September 2023, or as soon as possible thereafter. There will be an initial probationary period of six months.

Core Duties

The core duties of the post-holder are as follows:

- To participate in research teams designing, programming and implementing RCTs and Online Experimental Projects.
- To provide Data Analytics/Statistical Analyses that will entail:
 - R/Python programming
 - Econometric modelling–focus on application to experimental methods

- Machine Learning
- Large scale data handling
- Data management
- Cleaning, merging and processing raw data.
- Data visualization involving the creation of complex tables and figures for internal analyses and external presentations.
- Contribute to the writing of articles for refereed journals.
- Present research outputs at relevant conferences, workshops and symposia.
- With the Oxford REAL Demand Centre projects team and collaborators, participate in possible expansion of existing projects as well as new projects, including grant development.
- Other suitable duties that may arise under the direction of Professors Duch and Clarke in the context of the Oxford REAL Demand Centre projects.
- Work and conduct themselves in compliance with the University's code of practice and procedure for academic integrity in research and relevant research governance procedures, (including those governing ethical research conduct, data protection, and Health and Safety).

The Post-Doctoral Researcher will be employed by and primarily affiliated with Nuffield College where the successful candidate will receive supervision from and report to CESS Director, Professor Ray Duch. It is also envisaged that they will spend part of their time working with Prof Philip Clarke and researchers from the Health Economics Research Centre, NDPH that is leading the Oxford REAL Demand Centre Project.

Selection criteria

Essential:

- PhD (completed or close to completion) or advanced degree in quantitative discipline such as economics, finance, statistics, political science, computer science, or engineering.
- Excellent writing and analytical skills.
- Mastery of R and Python.
- Knowledge of causal inference methods.
- Experience implementing machine learning methods.
- An interest in working on diverse projects in team settings.
- Strong communication skills both technical and non-technical.

Desirable:

- Knowledge of mathematical optimization.

- Experience with Julia and Javascript.
- Experience working with a large and complex code base.
- Experience working with survey data, administrative data, and National Census data.
- Familiarity with programming AI and machine learning algorithms and with Natural Language Processing.
- Relevant social science research knowledge.
- Experience creating data visualizations for academic publications as well as broad public audiences.

We recognize that the job description may not exactly match your qualifications. If you think you may be a good fit, we encourage you to apply.

APPLICATION PROCEDURE

We invite you to apply online for this position by clicking on the “Apply” link below. This will take you to the Interfolio Web Recruitment System where you will need to register for an account (if you have not done so previously) and log in before completing an online application. For the online application you will be asked to complete an application form and a recruitment monitoring form, and to upload the following documents:

- i) a curriculum vitae including the names postal and e-mail addresses of two referees;
- ii) a two-page description of your research training and experience and how these meet the requirements of the position, examples of your data science experience working in highly collaborative environments, and your motivation for working in data science for social impact. Optional: We also welcome attachments showcasing work samples and portfolios of past projects.

APPLY

The deadline for receipt of application packages is the **31st August 2023**. Applications will be reviewed as they are received and candidates may be invited for interview in advance of the closing date.

Please ask at least two referees to send references directly to the HR Officer (vacancies@nuffield.ox.ac.uk), also to arrive by 31st August 2023.

If you have any technical difficulties submitting your online application, please contact Interfolio at help@interfolio.com. For other queries, please contact the HR Department, vacancies@nuffield.ox.ac.uk. If, for your convenience, you wish to submit a hard-copy application, please contact the Nuffield College HR Department at vacancies@nuffield.ox.ac.uk. Interfolio is a US-based service which processes data on servers based outside the EEA. The Interfolio privacy policy

can be viewed here www.interfolio.com/privacy-policy/. Information submitted via hard-copy is not processed through Interfolio.

Enquiries: vacancies@nuffield.ox.ac.uk.

FURTHER INFORMATION

NUFFIELD COLLEGE

There are 39 self-governing and independent colleges at Oxford, giving both academic staff and students the benefits of belonging to a small, interdisciplinary community as well as to a large, internationally- renowned institution. The collegiate system fosters a strong sense of community, bringing together leading academics and students across subjects, and from different cultures and countries.

Nuffield College is a graduate college within the University of Oxford which was founded in 1937 and specialises in the Social Sciences, particularly Economics, Politics, and Sociology. It aims to be one of the world's outstanding social science institutions, providing a stimulating research-orientated environment for postgraduate students, research fellows, and senior academics and promoting, according to its Charter, "the study by co-operation between academic and non-academic persons of social (including economic and political) problems". About 30 students are admitted each year to undertake both taught masters courses and doctoral research for most of whom the College provides financial support in the form of studentships. In total there are about 100 students enrolled at any one time, many of whom either live in College or have offices in College. In addition, in 2022/23 the College has 36 permanent academic Fellows (of whom 5 are College-funded Official Fellows), 62 Research Fellows (of whom 21 are College-funded Postdoctoral Prize Fellows), 19 non-academic Visiting Fellows drawn from the world of business, industry, politics and administration; and a number of Research Officers working on research projects run by the College's Fellows. The College enjoys strong links with the University's social science departments and works closely with the Social Sciences Division.

Nuffield College has been – and continues to be – the source of some of the major research developments in social science. These include the British Election Studies and the major programme of research on Social Mobility in Britain. It was the birthplace of the "Oxford School" of Industrial Relations; it pioneered the development of cost benefit analysis for developing countries; and it has made a major contribution to the methodology of econometrics. At the moment the College hosts five research centres: the Centre for Experimental Social Sciences (CESS); the Centre for Social Investigation (CSI); the Nuffield Politics Research Centre; the Nuffield Centre for Applied Macro Policy (NuCAMP); and the Climate Econometrics project.

The Centre for Experimental Social Sciences (CESS) was established to promote and facilitate experimental research by social scientists in Oxford. The CESS offers an on-site laboratory with 25 computer stations, and maintains a large subject pool. The facilities are designed to support a wide range of experiments. The CESS also maintains an online panel of UK residents, and provides support for fielding online survey experiments and, recently, the facility for virtual lab experiments. The CESS has a regular seminar series that highlights the work of renowned scholars employing experimental methods. Periodic workshops held by the CESS provide training for researchers in experimental research design, experimental data analysis, and programming languages (including z-Tree and Qualtrics). More information on CESS is available at <https://cess-nuffield.nuff.ox.ac.uk/>.

NUFFIELD DEPARTMENT OF POPULATION HEALTH

The Nuffield Department of Population Health (NDPH) was created in July 2013 to undertake research and train scientists to seek answers to some of the most important questions about the causes, prevention and treatment of disease. Leading human health forward by reducing disability and premature death in both the developed and developing worlds.

The Health Economics Research Centre (HERC) was established by the University of Oxford in 1996. HERCs aim is to contribute to health and healthcare in the UK and internationally, by conducting research on economic aspects of health and disease, the costs and benefits of prevention and treatment, and the design and evaluation of health systems. The Centre has an active teaching and training programme, including undergraduate lectures, teaching and supervision of MSc and DPhil students, and a wide range of short courses, workshops and presentations. HERC is funded in part by NHS R&D funding, and in part by project grants and fellowships from the Department of Health, as well as major medical charities and international organisations. HERC is part of the [Nuffield Department of Population Health](#) (NDPH) within the University's Medical Sciences Division, and is located on the Old Road Campus in Headington, where the major epidemiological and health services research groups in Oxford are gathered.

TERMS AND CONDITIONS

Full terms and conditions of employment will be provided in writing to the successful candidate. The information below is for guidance only and does not constitute a contract of employment.

Duration

This is a 2-year post subject to the normal pre-employment checks and satisfactory completion of a six-month probation period. The starting date is **September 2023** or as soon as possible thereafter.

Salary

The post is £44,473 per annum (Research Officer scale, point 14). Salaries are paid in arrears on the 28th of each month (or where the 28th is not a working day, on the last working day before the 28th) as detailed on your payslip. Salaries are reviewed annually in August, although the College is under no obligation to award an increase following a salary review.

Hours of Work

The post is full time and the normal hours of work are 35 hours per week, exclusive of meal breaks. It is essential that the post-holder is able to provide some flexibility with working hours in order to meet the demands of the post and for which time off in lieu will be given.

Holiday Entitlement

The post-holder will be entitled to 41 days paid leave per annum (pro-rata for part-time staff) inclusive of all public holidays and College closure days. Annual leave should be agreed with your Line Manager, as appropriate.

Pension

You will be contractually enrolled in the Universities Superannuation Scheme (USS) from the commencement of their employment, unless you opt out by completing and returning to the HR department the relevant form.

Meal Entitlement

Coffee, tea and lunch, whilst on duty, will be provided free of charge except during any kitchen closure period. The post-holder is also entitled to two academic High Table guests per term at the expense of the College.

Other Benefits

Employees will be eligible for a discounted travel to work scheme for the purchase of bus and train tickets, and where appropriate uniform.

Training

The College will support the post-holder to undertake any relevant training to enhance his or her career and financial support for these development activities will be provided where appropriate.

Oxford Colleges' Healthcare Plan

The post-holder will be eligible to join the Oxford Colleges' Healthcare Plan from the commencement of employment. The College will pay for a single membership of the Plan, but you may upgrade, at your own expense, your membership to cover your partner / spouse or your family. As this is a work benefit you will pay tax on the Subscription Rates.

Wellbeing

An Employee Assistance Programme offering a free, confidential, 24/7 telephone advisory and counselling service is available to all College employees and their family members who live in the same household.

Equal Opportunity statement

The policy and practice of the University of Oxford and Nuffield College require that all staff are afforded equal opportunities within employment. Entry into employment and progression within employment will be determined only by personal merit and the application of criteria which are related to the duties of each particular post and the relevant salary structure. In all cases, ability to perform the job will be the primary consideration. Subject to statutory provisions, no applicant or member of staff will be treated less favourably than another because of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation. Where suitably qualified individuals are available, selection panels will contain at least one member of each sex.

Data Protection

All data supplied by candidates will be used only for the purposes of determining their suitability for the post and will be held in accordance with the principles of the General Data Protection Regulation (GDPR), the Data Protection Act 2018, and the College's Data Protection Policy.

Pre-employment screening

If you are selected for the post, employment with the College will be conditional upon satisfying the following requirements:-

Eligibility to work in the UK

The Immigration, Asylum and Nationality Act 2006 makes it a criminal offence for employers to employ someone who is not entitled to work in the UK. We therefore require applicants to provide proof of their right to work in the UK before employment can commence.

Please note that you will need to provide original documents and where any documents are not in English a certified translation will be required. Do not include these documents with your application. You will be sent a request for the relevant information at the appropriate point in the selection process.

Successful applicants who do not currently have the right to work in the UK will be required to apply for permission to do so under the current UK immigration system.

Health Declaration

You will be asked to complete a health declaration form which is intended to give new employees the opportunity to inform the employer of any underlying health issues, disabilities or specific needs that could affect their ability to effectively and safely undertake the duties of the proposed role, allowing for any reasonable adjustments that may be required, in line with the provision of the Equality Act 2010.

Nothing in these particulars constitutes a contract.

Nuffield College exists to promote excellence in education and research, and is an equal opportunities employer committed to equality and valuing diversity. Applications are particularly welcome from women, disabled people and from black and ethnic minority candidates, who are currently under-represented in posts in the College.