ESRC Studentships for Postgraduate Training in
Quantitative Methods in Social and Economic Research

The Doctoral Training Centre (DTC) is one of a network of 21 such centres across the UK, funded by the Economic and Social Research Council. The DTC is a consortium of four University of London colleges in the Bloomsbury area of central London: the UC Institute of Education, which leads the consortium, the London School of Hygiene and Tropical Medicine, Birkbeck College, and the School of Oriental and African Studies.

The Quantitative Methods cluster of the Doctoral Training Centre has up to eight ESRC studentships available for entry in October 2015. The cluster is a collaboration between UCL Department of Quantitative Social Science which includes the Centre for Longitudinal Studies at the UCL Institute of Education, and the Department of Medical Statistics at the London School of Hygiene and Tropical Medicine.

The Quantitative Methods (QM) cluster has three pathways for postgraduate training:

1. Quantitative Research Methods (Education Pathway)
2. Quantitative Research Methods (Policy Analysis Pathway)
3. Longitudinal Analysis and Design

We are seeking applicants for postgraduate training in the application of quantitative methods to substantive issues in the social sciences. A wide range of empirical applications would be considered, including those in the areas of health, education, labour markets, ageing, human development, living standards, and social policy. We are interested in people who wish to do research in areas such as these where this research is best addressed through quantitative approaches with a focus on the lifecourse. We are also interested in people who wish to develop new methods for application within the social sciences.

The studentships are open to both Home/EU and International students.

Duration of study

The awards are available on a full or part-time basis in three funding routes:

- **1+3 study**, available on Pathways 1 and 2, involves one year of full-time (or two years part-time) study for the MSc Quantitative Methods (Education Pathway – Pathway 1) or the MSc Quantitative Methods (Policy Analysis Pathway – Pathway 2), followed by three years of full-time (or five years part-time) research leading to award of the PhD.
• +3 study, available on all three Pathways, involves immediate entry to three years of full-time or five years part-time study leading to a PhD and assumes possession at entry of a Master’s degree that meets ESRC core training requirements.

• The 4 Year Route, available on Pathways 1 and 2 is for full-time students only. For the first two years of this route, students undertake PhD research alongside completion of the accredited taught modules of a research training Master’s programme. This is the equivalent in credits to the MSc on pathways 1 and 2 (except the dissertation).

International students on a student visa would need to study on a full-time basis.

Training on Pathways 1 and 2 is based at UCL Institute of Education (UCL), and students on these pathways will be registered as UCL students. Training on Pathway 3 will involve registration at the London School of Hygiene and Tropical Medicine (LSHTM), with training normally involving input from both LSHTM and UCL. The MSc degrees in the ‘1+3’ or ‘+4’ routes are ideal for part-time study as teaching is in the evening or in intensive two-day blocks.

Who can apply?

We encourage applications from people with interests in applying or developing quantitative methods in the social sciences and with a background either in any quantitative social science such as economics, geography, psychology, sociology, and social policy or in other quantitative disciplines such as maths or statistics.

Candidates for a 1+3 or 4 Year award must possess an upper second class honours degree or higher, or the equivalent. Candidates applying for a +3 award must have successfully completed an appropriate research training masters degree at a high level or demonstrate that they have already undertaken a programme of research training at postgraduate level which covers a minimum of 50% of the input detailed under Core Skills and in the subject-specific sections of the DTC Guidance on Research Foundation Statements. This document is available on the Bloomsbury DTC website here: http://bloomsburydtc.ac.uk/2014/10/31/esrc-funding-2015/

Our expertise

At UCL IOE, the department of Quantitative Social Science (QSS) specialises in applying quantitative methods to large, complex datasets to inform policy on education, health, labour markets, and child/adult wellbeing. Staff have leading expertise in applied economics, sociology, psychology, epidemiology, social statistics, econometric and statistical modelling, and the techniques of policy evaluation.

QSS hosts a number of research and resource centres. The Centre for Longitudinal Studies (CLS) is an ESRC Resource Centre managing three of Britain’s world renowned birth cohorts: the 1958 National Child Development Study, the 1970 British Cohort Study, and the Millennium Cohort Study and the Longitudinal Survey Young People in England. DoQSS also now hosts the Cohorts and Longitudinal Studies Enhancement Resources Programme (CLOSER) which is a collaboration between nine separate cohorts and longitudinal studies. This aims to facilitate cross-cohort comparative work. For further information please see www.closer.ac.uk. The Department is also a partner in the new English Administrative Data Research Centre in collaboration with the University of Southampton, Institute of Child Health at University College London, LSHTM and the Institute for Fiscal Studies. The department also manages the collection and analysis of OECD’s TALIS and PISA surveys for England in 2013 and 2015 respectively.
At LSHTM, the Department of Medical Statistics (DMS) is a centre of excellence for research into statistical methods for social and health science data, with an outstanding reputation for masters and research level teaching. Topics of expertise include missing data, longitudinal data, causal inference, and structural equation modelling. Staff make the major contribution to the Royal Statistical Society accredited MSc in Medical Statistics, which includes a broad quantitative methods core appropriate for both social and medical data (please note that this MSc is not included in our ESRC-funded training pathways.)

For further details, including of the research interests of academic staff who could be potential PhD supervisors, please go to our QSS, CLS, and DMS Departmental websites.

Training Pathways

1. MSc in Quantitative Research Methods (Education Pathway)

The MSc Quantitative Research Methods (Education Pathway), which starts the 1+3 and 4 Year routes, enables students to combine economic concepts with QM to analyse educational issues. Possession of a first degree in economics is not essential for entry to the MSc. There is an emphasis on valid research designs to generate estimates of causal effects from data generated via social experiments, natural experiments, and non-experimental settings. Statistics training covers a range of models for continuous and limited dependent variables and evaluation techniques. Students are taught about major data sources for education research and about collection of new data. There are three compulsory modules – Impact Evaluation Methods, Economic Perspectives on Education Policy, and Quantitative Analysis II (i.e. Intermediate Statistics) and on the 1+3 route (but not the 4 Year route) – a dissertation. Students then have a choice from other options on the MSc for the remaining courses. In the +3 element of funding, students would expect to use datasets such as LSYPE, NPD and the CLS birth cohorts to address their research topic.

2. MSc in Quantitative Research Methods (Policy Analysis Pathway)

The MSc Quantitative Research Methods (Policy Analysis Pathway), which starts the 1+3 and 4 Year routes, provides rigorous training in methods, especially QM, to enable students to design studies to evaluate policy and to use a range of models to analyse resulting data. Modules are taught in two-day blocks. Students take three compulsory modules (Impact Evaluation Methods, Statistical Analysis, Longitudinal research and analysis) and then other options from the MSc, and – on the 1+3 route (but not the 4 Year route) – a dissertation. During +3 element of funding, students apply QM to datasets such as the CLS birth cohorts and other longitudinal, cross-sectional, and administrative microdata.

3. Longitudinal Analysis and Design

This pathway draws on methodological and practical skills in design and use of longitudinal data in both IOE and LSHTM. Students specialising in health will normally be based at LSHTM and those in education and other substantive areas at UCL. Students will typically receive supervision from both partners. Besides working on their thesis topic, using for example datasets mentioned above, students will work alongside survey managers, data officers and researchers on short-term projects, giving practical insight into all stages of longitudinal research from consultation and design through data collection, cleaning and documentation and analysis.

Advanced Training

We will draw on extensive advanced training expertise in both UCL and LSHTM to meet students’ needs with tailored programmes of further study in the +3 element of funding. Students are able to take specialist short courses to further thesis research and professional development.
Existing courses in advanced QM include missing data methods, statistical methods in epidemiology, longitudinal modelling, structural equation models, bootstrapping, and causal inference. We will also encourage students to take appropriate courses elsewhere e.g. at nearby ESRC research centre Cemmap at the Institute for Fiscal Studies and through the NCRM.

**Possible Topics for PhD research**

Examples of possible topics for PhD research include the following. The list is not intended to be exhaustive and we welcome research proposals in other areas:

- the impact of environmental factors on educational attainment
- determinants of university education and drop-out
- impact of changes in HE finance on university applications for disadvantaged students
- international comparisons of the impact of HE finance on university applications/participation
- the impact of chronic conditions during childhood and later health and education outcomes
- international comparisons of longitudinal evidence on childcare/pre-school and their outcomes, or on links between poverty and child health/behaviour/education
- measuring the effectiveness of schools, universities or colleges
- international comparisons of factors affecting pupil performance
- the links between family background, education and youth unemployment
- rates of return to education for university drop-outs
- the impact of higher fees on university applications from students from poor backgrounds
- the links between ethnicity, language, social circumstance, pupil mobility and attainment
- pathways to health and happiness in early old age
- young people’s aspirations and outlook to the future
- statistical methods for missing data in surveys and/or administrative data
- health and health behaviours
- initiation and maintenance of problem drinking
- explaining educational inequalities
- international comparisons of educational attainment, social mobility and educational assessment
- efficacy of education interventions
- implications of educational trajectories
- mid-life reversibility of early life biosocial disadvantage
- health inequalities in the UK over time
- adversities in childhood/adolescence
- survey methodology, non-response and attrition, survey design and measurement issues
- multilevel modelling, structural equation modelling, sequence analysis, attitude measurement, sample design
- handling missing data in clustered studies - an investigation of competing approaches
- comparison of latent class models and machine learning methods to identify complex social and biological phenotypes
- the use of multiple imputation with sampling weights and other predictive estimands
- appropriate imputation for complex social surveys, such as the British Household Panel Survey
- sensitivity analyses for non-response in social science
- statistical methods for understanding the effect of social networks
Financial support

ESRC studentships pay tuition fees, plus an annual maintenance stipend: currently £15,863.

Students undertaking research involving Advanced Quantitative Methods (AQM) will normally receive an additional stipend of £3,000 per year in the +3 phase of their studies. Candidates should submit the Application for Advanced Quantitative Methods Training (AQM) form at the same time as their ESRC funding application. A detailed case will need to be made that advanced quantitative methods will form an integral part of both the training and research programme for applicants to be considered for eligibility for this additional stipend.

Application procedure for UCL IOE candidates

The application procedure for a Quantitative Methods DTC ESRC studentship via the UCL Institute of Education is a three-step process:

1. Contact Lorraine Dearden (l.dearden@ioe.ac.uk) with your research idea, details of your background and qualifications and in particular details of your quantitative skills. If you have the requisite background, she will find a potential supervisor in QSS who is willing to progress your research idea. If you have already made contact with a potential supervisor, you should mention this when contacting Lorraine.
2. Once a potential supervisor is found, potential candidates will be interviewed by two members of QSS to assess suitability for a PhD in the department.
3. If they are judged suitable for the PhD, the candidate needs to
   a. Complete an ESRC DTC expression of interest form to Alison Freeman, DTC Co-ordinator by 23\textsuperscript{rd} January (downloadable at http://bloomsburydtc.ac.uk/2014/10/31/esrc-funding-2015/) and
   b. Complete the formal application for the ESRC studentship. The form and full details are available at http://bloomsburydtc.ac.uk/2014/10/31/esrc-funding-2015/. This form should be submitted by your supervisor to Alison Freeman, DTC Co-ordinator by 6 February 2015 at 4.00pm. The AQM application form must also be submitted by 6 February 2014.

Further information

Intending applicants are strongly encouraged to contact one of the following people, depending on the institution to which you would like to apply, for an informal discussion before approaching potential supervisors or starting an application:

UCL IOE: Professor Lorraine Dearden l.dearden@ioe.ac.uk
LSHTM: Dr Elizabeth Allen Elizabeth.Allen@lshtm.ac.uk