

Institution: University of Essex

Unit of Assessment: 18 – Economics and Econometrics

a. Overview

Economics at Essex, which consists of members of the **Department of Economics** and economists located in the **Institute for Social and Economic Research (ISER)**, has a distinguished tradition of research excellence. Consistently high performances in past Research Assessment Exercises (RAEs) along with strong international rankings, such as those compiled by RePEc and Tilburg University, highlight our reputation for producing research of the highest international standard.

Clusters of core research excellence fall into the following broad areas:

- (1) Equilibrium Search and Macroeconomics
- (2) Decisions, Games and Networks
- (3) Labour, Household Behaviour and Applied Micro Data Analysis
- (4) Development, Migration and Trade

Additional strengths in theoretical econometrics and experimental economics complement and support research in these areas. In the applied micro data analysis cluster, the EUROMOD programme focuses on the impact of tax-benefit policies from an international perspective.

These evolving clusters involve staff in: sharing ideas and strategic approaches; generating innovative and creative thinking; and facilitating networks and collaboration with both academics and users, locally, nationally and internationally.

Our research centres, the UK Longitudinal Studies Centre (UKLSC) and the Centre on Micro-Social Change (MiSoC), as well as the new EssexLab experimental facility give Essex Economics a distinctive multidisciplinary aspect, involving active collaborations in epidemiology, sociology, demography and political science. Economics at Essex is a world leader in developing the interplay between economic theory, data collection, economic measurement, identification and inference.

Economists in the UoA, unified by a commitment to compelling theory and rigorous empirical analysis, form a collegial and vibrant research group that fosters collaborative research projects and joint doctoral student supervision. Seminars, workshops and conferences are diverse and bridge research clusters.

This ethos has brought considerable success. Since 2008, the UoA has: (a) published over 180 papers in most of the top journals in economics; (b) raised over £20 million in research funding; and (c) had significant influence and impact on policy debates and practice.

Success is also evident in graduate student research. Two-thirds of our PhD graduates since 2008 obtained academic posts, with the rest getting jobs in central banking and the private sector. The recently established Doctoral Training Centre (DTC) at Essex, which is one of only 12 single institution DTCs and currently with 14 ESRC-funded students in Economics and 65 PhD students in total, indicates the depth and quality of our research training.

b. Research Strategy

Achievements

Commitment to Excellence: In the 2008 RAE, Essex re-affirmed its long-standing commitment to excellence in economic modelling and its application to empirical work. The primary objective then was to 'maintain Essex as an internationally recognised centre of excellence in economics through publications in leading journals, collaborative research projects, external grants and contributions to professional organisations.' This fundamental research objective was successfully realised with outputs following the ambitious plans set out in the last research assessment. This objective remains our main long-run goal over the next REF cycle and beyond (see below).

Publications: Since 2008, economists at Essex have published approximately 180 peer reviewed articles in internationally recognised journals, with 90 non-Essex co-authors. Internal collaboration is also widespread and stems from our collegial and inclusive environment. Since 2008, 20 current members of staff co-authored at least one paper with a current colleague (30 when we include

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former colleagues). Of the papers returned in this assessment, more than one-third were co-authored with Essex colleagues. A selection of these papers was published in the so-called top-5 journals while the vast majority appeared in the leading field and general interest journals.

Research Income: The generation of substantial research income accompanies top quality research. Economics at Essex obtained 63 grants from external funders generating approximately £21 million during the relevant period. Of these, 5 grants were over £1m and another 10 were over £300k. At least twenty-five researchers benefited directly from external funding.

Impact and Engagement: The accompanying material on impact illustrates our deep commitment to high profile, policy relevant research. The UKLSC, housing the UK Longitudinal Household Survey (UKHLS), also known as *Understanding Society* (USoc), the largest panel survey in the world, and MiSoC demonstrate our engagement in multidisciplinary research. Beyond our leading impact examples, extensive media exposure and the high external profile of key contributions from all our research clusters substantiate our broad engagement with the wider community.

Personnel Profile: Since 2008 personnel turnover has strengthened and improved the group's core strengths while maintaining a tightly connected community of young and dynamic scholars. It has also allowed us to expand in areas, such as game theory, political economy and experimental economics (Ganguli, Mengel, Oliveros, Renou, Vasconcelos, Weidenholzer), macroeconomics (Carrillo-Tudela, Etheridge, Halket, Meeks), trade and development economics (Bhalotra, Delavande, Chakravarty, Wright) and applied microeconometrics (Alan, Brewer, Crossley, Mastrobuoni, Parey), while maintaining a strong presence across all sub-disciplines.

Collaborations: MiSoC and USoc provide important and inclusive platforms for complementary interests. Research clusters integrate PhD students as both supervisees and research assistants. Grants are often jointly held by ISER and the Economics Department (e.g., the ESRC grant held jointly by Bryan, Carrillo-Tudela and colleagues within the whole UoA).

The Faculty of Social Sciences at Essex fosters interdisciplinary links and collaboration across disciplines. Our thriving *Joint Empirical Social Sciences* (JESS) seminar combines the research activities listed above with a broader interdisciplinary scope involving also sociologists and political scientists.

Examples of Notable Achievements: In each of our four research clusters, we have compelling examples of excellence during the REF period. These include:

(1) Equilibrium Search and Macroeconomics

Citing separate papers by Coles and colleagues in the Background report for the 2010 Nobel Prize in economics (pp. 22 and 25), the Swedish Academy of Sciences underlines the crucial role played by Essex in the advancement of search theory. The key contributions have been to introduce heterogeneity, such as in worker productivities and human capital, in order to generate equilibrium search and matching models that better match observed distributions in wage profiles, employment tenures and unemployment durations. These insights are being extended and applied to the post-2008 recession in a major ESRC project (Bryan, Carrillo-Tudela, Coles and Taylor). They have also been applied to the marriage market to explain the changing characteristics of partnerships, education choices and labour market participation decisions (Booth, Coles, Francesconi). Insights on macro policy embrace: credit market shocks and the macroeconomy (Meeks); public debt, monetary policy and central bank independence (Niemann); and housing markets (Etheridge, Halket).

(2) Decisions, Games and Networks

The UoA has been at the forefront of research on modeling information flows and social interactions and their economic implications. A fundamental contribution has been to provide an equilibrium network model that can explain the concentration of information among a few key, influential individuals (Galeotti); related frameworks have been extended in pioneering work on firm organisation and voting patterns and have been recognised with a major ERC Starting Grant. Ganguli's work, recognised with an ESRC Future Research Leader award, provided an insightful characterisation of general equilibrium when traders have different patterns of ambiguity aversion. Another key contribution is by Ghigliano, who produced a framework for transmission of innovation that is consistent with observed patterns of productivity and patent citations. Others have generated key insights on mechanism design, commitment and communication (Renou); on social norms and cooperation (Mengel); on oligopolistic markets with informational asymmetries and

collusion (Weidenholzer); and on election outcomes with multiple issues and with imperfect information (Oliveros).

(3) Labour, Household Behaviour and Applied Micro Data Analysis

We had an extremely successful launch of *Understanding Society*, the largest panel survey in the world, with 40,000 UK households, which incorporates and expands the British Household Panel Survey (BHPS). We also made a substantial intellectual investment in: refunding MiSoC, which reflects our engagement in large, data intensive projects as well as our commitment to being at the forefront of their usage, and in EUROMOD's funding for providing the European Commission and national governments with models to simulate the effects of policy change. Other important examples are: Crossley's funding for research on long-term savings plans and programme evaluation for policy analysis; Del Bono's grants on socio-economic inequality and the economic effects of breastfeeding; Pudney's grant on disability benefits. Major publications include those on household finance, consumption and portfolios (Alan, Crossley); gender issues (Bhalotra, Booth, Nolen); public policy evaluations (Brewer, Francesconi); early child investments (Bhalotra, Del Bono, Francesconi); childhood economic conditions and mortality (Hatton); labour supply and retirement behaviour (Mastrobuoni); and human capital formation and education (Bhalotra, Parey). Reflecting a deliberate strategy of the UoA in building on existing strength and capacity, all our impact case studies in the current submission stemmed from this cluster.

(4) Development, Migration and Trade

Contributions in development focus on research at the micro level. Delavande developed new methods of measuring subjective expectations in developing countries and explored their links with health behaviours. Focusing on children, Bhalotra provided new evidence on the role of religion on child survival and on the effects of business cycles on infant mortality and of civil war on stature. (And in a historical setting, Hatton found evidence of a trade-off between family size and the heights of children.) In research on selectivity in international migration Hatton found that the Roy model is supported once poverty in source countries is taken into account. In an important paper Wright discovered that immigration reduces offshoring and helps protect non-immigrant jobs. Breinlich provided convincing evidence that a trade model with trade costs and non-homothetic preferences can account for patterns of industrialisation better than previous assessments.

Strategic Plans

Primary Objectives: The vision of the UoA is, as before, to maintain and enhance our internationally recognised status as a centre of excellence in economic research. We will continue to publish in leading journals, develop collaborative research projects, generate external grant income, contribute to professional organisations and knowledge exchange, have an impact within and outside academia and advance our understanding of social and economic change.

In each of our core clusters of research excellence there are new and developing initiatives, which are best described by listing some examples from each area. Many projects will involve several members of staff across the UoA and across clusters.

(1) Equilibrium Search and Macroeconomics

With new and ongoing initiatives, this will continue to be a strategic research area. Coles is developing a large scale project on equilibrium labour turnover, firm growth and unemployment with Nobel Laureate Dale Mortensen. Carillo-Tudela will explore occupation transitions, vacancy and unemployment dynamics with imperfect financial markets, while Smith will enrich matching-model mechanisms, with applications to labour and housing markets. The housing market will also be a focus of new research at both micro-level (Etheridge) and macro-level (Halket). And in the wake of the crisis, new insights will be pursued on public liquidity, fiscal policy and debt sustainability (Niemann) and on the effects of bank capital requirements on aggregate lending and economic activity (Meeks). A new collaboration between econometricians in the UoA (Chambers, Gupta, Kemp) and in the Essex Business School (Kellard, R. Taylor) will focus on the econometric analysis of financial and macroeconomic data, with special emphasis on the consequences of the 2008 financial crisis.

(2) Decisions, Games and Networks

There are several new and developing initiatives in this cluster. Galeotti will pursue his innovative research, using network theory to explain how informal organisations interact with firms and bureaucracies, and together with Condorelli will conduct experiments to test the theory. Ghiglino

will work on networks and knowledge creation, and with Francesconi, develop new theory on the origin of the family. Oliveros plans further research on media bias, political exposure and communication failures in policy-making while Renou will develop theory on behaviour-proof mechanism design. Advances in finance theory will include a focus on ambiguity and portfolio management (Ganguli) and the allocation of liability with different forms of organisation and delegated monitoring (Wang). Behavioural economics, including lab experiments, will be the focus of work by Mengel on preferences and bounded rationality and by Weidenholzer on the role of salient information in firm and consumer settings.

(3) Labour, Household Behaviour and Applied Micro Data Analysis

We anticipate a strong input into applied micro data research associated with new and ongoing research, such as that by Alan and Crossley on household behaviour, financial security, and living standards; Etheridge on the welfare cost of risk and uncertainty; Brewer on inequalities and programme evaluations; Del Bono on early parental investment and child outcomes; Francesconi on family formation and dissolution; Hatton on health in an economic history perspective; Parey on vocational schooling and gender differences in university education; and Pudney on health and disability. Mastrobuoni will develop a new strand of research on the economics of crime, looking at issues such as the criminal activity of immigrants and optimal police deployment. In addition, research using panel study data will be a major focus with the funding secured for waves 6 to 8 of USoc. The biomarker data collected in waves 2 and 3 are now enabling examination of the relationships between socio-economic inequalities and bodily health. There are also plans to collect biomarker data from those under 16 and repeat biomarker data. Alan, Bhalotra, Crossley, Delavande, Del Bono, Francesconi, Hatton, Parey and Pudney have plans for joint research projects using the biomarker data in *Understanding Society*.

(4) Development, Migration and Trade

New strength will boost our research in development. Bhalotra will work on political identity and a broad range of socioeconomic outcomes in India. Delavande will extend her research on schools and fertility behaviour in Malawi, Pakistan and Uganda, and also plans to use elicited subjective expectations to gain new insights into retirement planning. New research will deepen our understanding of changing patterns of trade and migration. Breinlich will extend his work on the effects of trade liberalisation across the world, and with Nolen and Wright, will analyse the role of information on export activities using a new experimental approach. Santos Silva will assess the performance of new quantile regression and count data models on trade data. With migration being high on the UK government's agenda as well as that of many other countries, the UoA will continue to make major contributions to research in this field. Hatton will assess the effects of recession on immigration and asylum flows and on immigration policies. Further micro-level research in the UoA will be stimulated by a new immigrants sample planned for USoc.

Other Initiatives: Essex Economics will build on the successes mentioned earlier as on-going initiatives shape future developments. In particular:

- **EssexLab:** This recently established state of the art facility, run jointly with the Department of Government, is intended not only to complement experimental field work but also to link with the research based on *Understanding Society*. Lab-based research (led by Mengel, Weidenholzer, Nolen, Reinstein and Delavande) will promote and facilitate innovative projects on important issues, including network formation, evolution of cooperation and preferences, peer effects, charitable giving, labour market interactions, expectations and their effects on individual behaviour.
- **ESRC Doctoral Training Centre (DTC):** The DTC at Essex provides a rich platform for expanding our already thriving PhD programme. We plan to strengthen our programme even further with top class facilities, innovative teaching provision, and interdisciplinary work across all social sciences at Essex.
- **External Priorities:** Essex will positively respond to new ESRC funding initiatives and to emerging European funding opportunities. We will collectively pursue this goal by expanding our core clusters into new areas of research, such as financial econometrics, economics of crime, experimental economics and 'new-generation' health economics.
- **Exchange Programmes and In-house Capacity:** We will develop and strengthen our collaboration with institutions in the UK and overseas. A recent example is the Essex-Konstanz

programme which includes a postgraduate student exchange programme and three to four specialised joint workshops per year hosted by each institution. We plan to continue our extensive programme of conferences, workshops, seminars and academic visitorships and encourage external network and research centre affiliations.

c. People

i. Staffing Strategy and Staff Development

Staffing Strategy

Hiring Policy: A key element for maintaining our standard of excellence is the long-held policy of systematically attracting researchers whose primary goal is to produce frontier research and be top professionals in their fields of expertise. Essex looks for well-trained, creative economists with the most promising research agendas rather than narrowly targeting specific fields. This underlying hiring principle creates a rich, dynamic and vibrant research environment

Recruitment: Since the 2008 RAE, 19 new permanent appointments (excluding temporary appointments and turnover within the period), at both the junior and senior levels, illustrate the success of this strategy and our international standing. Established researchers in economic theory (Ganguli, Mengel, Oliveros, Renou), industrial organisation (Vasconcelos, Weidenholzer), macro-labour (Carrillo-Tudela), applied micro econometrics (Alan, Brewer, Crossley, Mastrobuoni), and development (Bhalotra, Delavande) bring recognised agendas and frontier knowledge.

This expertise augments existing strengths and is supported by a strong cohort of early career researchers. Junior hires – Chakravarty (UCL, development), Condorelli (UCL, mechanism design), Etheridge (UCL, macro-labour), Gupta (LSE, econometrics), Halket (NYU, macro), Meeks (Oxford, macro-econometrics), Parey (UCL, labour-microeconometrics), Salvatori (Warwick, labour) and Wright (UC Davis, trade) – add new blood and new depth for growth.

Fellowships, Honours and Awards: Some examples of recognition for research excellence:

- Hatton was president of the European Society of Population Economics in 2010, was elected Academician of the Academy of Social Sciences in 2012, and was winner of the Clio Can Award of the Cliometric Society in 2012.
- Francesconi was named Academician of the Academy of Social Sciences in 2013.
- Galeotti won the Trust's Philip Leverhulme Prize for young researchers (2011) along with a prestigious 5 year ERC Starting Grant in 2011.
- Salvatori and Ganguli hold 2012 ESRC Future Research Leader awards.
- Del Bono became an Elected Member of the European Association of Labour Economists Executive Committee.

Staff Development

The UoA is committed to supporting the professional development needs of its staff with readily available training, leave, guidance, feedback and mentoring, especially for the newer members of the profession. New junior staff are given minimal administrative and supervisory responsibilities along with priority for research leave. These procedures foster top quality research and career progression. Argenziano, Breinlich, Del Bono and Niemann, all junior members of staff in 2008, have been promoted internally to Senior Lecturer/Reader, and Galeotti to Professor.

Assessment of Probationary Staff and Promotion: A rigorous assessment of research performance, overseen by the PVC (Research) and the University Staffing Committee, forms a vital part of the probation and promotion processes. Senior staff at Essex act as mentors and monitor individual research plans and annual reviews. They are briefed to take a supportive (but, if necessary, 'tough') line, with the aim of promoting career development. Career progression (with and without interruption) in the UoA follows the equality of opportunity practice regulated by the University for all research staff.

Training and Support: All new members of staff receive induction training. The University's Learning and Development Unit provides an extensive programme of courses for researchers at all stages to develop and sustain their careers. The University augments these resources with a rigorous adherence to equality and diversity regulations through its Equality and Diversity Office, and provides bespoke support for: intensive research, travel and dissemination; conferences and academic visit expenses; framing and drafting research proposals; professional development and mentoring of junior staff; and overall performance management. In addition, the UoA provides

tailored training on research funding and proposal writing, communication skills, writing for publication, and effective use of statistical software.

Internal Funding: The internal allocation of research funds is heavily skewed toward junior researchers who have had less time to raise grant funding.

Research Leave: The University will continue its generous support to all researchers for research leave (one term's leave after six terms of service), leave of absence, and University support for maternity and sick leave. Among the 30 staff who have been at Essex since the 2008 RAE, 25 took research leave with 10 taking a whole year. Staff have spent leave at research institutes and leading universities worldwide (e.g., ANU, Berkeley, Columbia, Chicago, Cornell, Mannheim, Northwestern, Princeton, Rutgers and Yale) as well as at central banks.

Equality and Diversity: Essex recently secured an Athena Swan Bronze award for its work in eliminating gender bias and creating a culture that values all staff across the whole University. It also has accreditation for the use of the 'Two Ticks' disability symbol. Essex is committed to the highest standards of equality in its recruitment and promotion practices.

ii. Research Students

PhD students are an essential part of the research environment at Essex. They are fully integrated into the research life of the unit, including seminars/ workshops/conferences, research programmes and external funding. Student progression in the PhD programme shares the same ethos as staff development. Essex supports students with readily-available training, supervision, and feedback. Expectations and standards are high but the atmosphere is nurturing and collegial. Members of staff and doctoral students meet bi-weekly for informal interaction in our common room. Similarly, students are always invited to engage informally with external seminar speakers.

ESRC Doctoral Training Centre: The recently awarded DTC at Essex highlights the outstanding strength of our PhD programme. The ESRC's clear steer towards economics and advanced quantitative methods illustrates the high regard and high quality of our doctoral training. The DTC also provides us with further opportunities to upgrade facilities, build up capacity, exploit funding opportunities and strengthen our rigorous progression procedures.

Numbers: During the relevant period, the intake of PhD students averaged 15 per annum yielding a current stock of 65 students. Currently 14 doctoral students in Economics are ESRC-funded. Overseas students are often funded through prestigious awards from their countries of origin, for instance CONACYT and the British Council. Many doctoral students develop their academic skills as Graduate Teaching Assistants with teaching responsibilities up to the masters level. For instance, Deller and Ciani were awarded prestigious Royal Economic Society Teaching Fellowships in 2011 and 2012 respectively for their exceptional promise as researchers and teachers.

Between 2008 and 2013, 75 research students received their PhDs. Approximately 50 of these students went on to positions at universities. Twenty were at UK universities including Bath, Bristol, Cambridge, Liverpool, Oxford, Reading, Southampton, Surrey, UEA, Warwick, and York; others include Bocconi, Chicago, Dusseldorf, Madrid, Melbourne, Minho, Torino, and Venice.

A further 10 students graduating during 2008-13 entered research positions in international organisations (e.g. the OECD, the IMF and the World Bank) and government research departments and ministries (e.g. the UK Department for Education, the UK Child Poverty Unit, the UK Competition Commission and the Budget Office of the Italian Senate). Others have become policy advisors or researchers at central banks in Colombia, Italy, Korea and the European Central Bank. Placements in private organisations include Goldman Sachs and Ernst and Young.

PhD Degree Structure: Research students take three required PhD level courses in Micro, Macro and Econometrics together with relevant field courses. They are encouraged to attend the Essex Summer School, the largest social science research methods training programme in the world. They are also allocated funds for more specialist training at external institutions, such as the Institute of Fiscal Studies in London, the IZA Summer School in Bonn and CMPO in Bristol.

Soon after entry into the PhD programme, each student is paired with at least one experienced supervisor who shares their research interests. Supervisors have regular and frequent contacts with students and are primarily responsible for steering the student toward completion. Students also meet twice a year with, and receive feedback from, their supervisory board. Supervisory board

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reports are sent to the Graduate Director (Research) who convenes the Research Students Progress Committee to closely review and monitor progression against given targets.

Throughout their period of study, PhD students are required to give a minimum of one presentation per year to the Research Student Seminar (RSS), the first of which is a thesis proposal. At least two members of staff attend the RSS and provide written feedback on the presentation. All students are required to attend the RSS and are encouraged to comment on the work of others. PhD students are encouraged, with financial support, to attend relevant conferences and to present their research to external audiences. They are also encouraged to collaborate with staff members and jointly initiate events such as the 2008 Workshop on 'Background and Opportunities: Intergenerational Dimensions of Inequality'.

Integration into the Research Strategy: Doctoral students are treated as colleagues who play an important role in advancing research at Essex. Current and former PhD students often publish joint work with their supervisor or another member of staff. Some of these papers have been submitted to this evaluation exercise. This work not only reflects high-quality, close-knit research training but also extends the Essex research agenda. During the relevant period, 20 joint papers have been published in peer-reviewed journals (e.g. Belot and James 2011; Chambers and Thornton 2012, 2013; Chambers and Kyriacou 2013; Coles, Jones and Smith, 2010; Ferreira and Taylor 2011; Francesconi, Jenkins and Siedler 2010, 2011; Francesconi, Rainer and van der Klaauw 2009; Hancock, Pudney and Zantomio 2009; Kuo and Smith 2009; Papadopoulos and Santos Silva, 2012). More than 15 more papers are under review including papers by Booth, Cardona-Sosa, and Nolen; Coles and Maghadassi; Santos Silva and Wei.

PhD students often join established research teams as research officers or research assistants, giving them firsthand experience of on-going 'real life' research projects. Examples include Alberto Tumino's collaboration with Taylor's team on understanding the labour market impacts of the recession in Britain and Francesca Zantomio's collaboration with Pudney's team on welfare take-up. Angus Holford was a fellow in the Behavioural Insights Team ('Nudge Unit') at the Cabinet Office.

d. Income, Infrastructure and Facilities***Income***

The 2008 RAE panel report noted that the ability of Essex to attract research income was substantially above the median of comparable units. This exceptional performance continued during the current period. Economics at Essex raised nearly £21 million in research funding from both public and private sources. This includes the ESRC refunding of both MiSoC and UKLSC.

Individual successes accompanied the collective successes of the UoA. These include:

- Bryan, Carrillo-Tudela, Coles and Taylor received an ESRC grant for £600k to study the impact of recession on unemployment
- Breinlich, Nolen and Wright received a grant from the British Academy of over £120k to analyse the consequences of exporting using a novel experimental approach
- Salvatori and Ganguli won ESRC Future Leaders awards (£160k +) to work on job polarisation/ job quality and on the economic implications of ambiguity, respectively
- Galeotti received a prestigious five-year award of over £800k from the European Research Council to analyse networks, markets and organisations
- Pudney and Salvatori are part of a €2 million ERC Advanced Grant based in Dublin, Bristol and Essex, and led by Nobel Laureate James Heckman
- Brewer, Chambers, Del Bono, Pudney, Rabe each attracted grants of around £100k.

Organisation and Infrastructure

The University's organisation and infrastructure underpin this remarkable performance. The Pro-Vice Chancellor (Research) heads the University's comprehensive research infrastructure. The Research and Enterprise Office (REO) backs up the PVC (Research), assisting with grant applications, overseeing research income and monitoring output. The REO also fosters links with end-users and coordinates collaborative inter-university networks. In addition, the University provides core resources for four senior posts that are free of undergraduate teaching (Brewer, Delavande, Del Bono, Pudney) and underwrites a fifth (Bhalotra).

The University's Research Promotion Fund coupled with a well-resourced, department-level

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Research Endowment Fund provides generous support for research expenses, travel and conferences. Special attention is given to providing a high level of support for individual researchers particularly those at the beginning of their careers. There is also a very effective mentoring system. Further support includes keeping teaching loads low through the extensive use of temporary lecturers, teaching fellows and graduate teaching assistants.

Access to large datasets subject to stringent confidentiality conditions has been facilitated by the University's investment to become compliant with the ISO27001 data security management standard, and by close proximity of the UK Data Archive's secure data access service.

Facilities

Faculty of Social Sciences: Economists at Essex benefit from the close proximity of the Departments of Sociology and Government, both long standing, top ranked centres of excellence for social science research in the UK. Their presence creates a large pool of expertise for interdisciplinary research proposals and joint activities for students and staff.

EssexLab: Formally launched in April 2013 to run a range of social science experiments, this is a joint venture between the UoA and Government intended to enhance both on-going experimental field work and research based on *Understanding Society*. The lab has 32 networked workstations with state-of-the-art equipment/software, a mobile wireless lab with 32 high-spec tablets, a dedicated lab manager, and an extensive subject database – placing Essex among the top in Europe for social science experimental infrastructure. The University finances a grant scheme for pilots and small scale projects. The lab is integrated into the PhD programme and used by economists, including Delavande, Mengel, Nolen, Reinstein and Weidenholzer.

PhD Laboratory: The UoA and Government also share exclusive use of a recently refurbished PhD research laboratory. This lab, strategically located between the two units, has dedicated space for small-group work. It also provides students with access to our new cluster machine named Albert.

Albert: The recently acquired Albert is a state-of-the-art computer cluster with a DELL PowerEdge server, 64GB of RAM, eight Intel Xeon E7540 6-core processors and a wide array of software. Albert enables high performance multi-dimensional computing and management of large datasets, thereby opening opportunities for economic and multidisciplinary research work using 'big data'.

University-wide Facilities: These include: (a) the Albert Sloman Library, with 1.1M volumes, over 16,000 journals and about 100 databases; (b) the UK Data Archive; and (c) the Essex Summer School, the largest social science research methods training programme in the world.

e. Collaboration and Contribution to the Discipline

Dissemination: The dissemination of our research is broad and highly visible. Staff averaged eight external presentations per year through invited seminars, highly recognised international conferences and specialised workshops. Our rich and diverse set of seminars, workshops and conferences offer the opportunity to exchange ideas and also facilitate external collaboration. Since 2008, the UoA:

- organised over 480 external seminars (an average of 80 per academic year), with outstanding speakers.
- held 30 conferences and workshops with international participants. These include the long-standing May conference which showcases research collaborations between members of the economics group and prominent US and European economists, and the BHPS/*Understanding Society* conferences, which bring together UK and overseas researchers working on one of the country's major economic data resources.
- hosted 80+ extended stay visitors, including Nobel Laureates Mortensen (Northwestern) and Pissarides (LSE). Other established researchers include: Hoynes, Kariv (Berkeley); Kartik, Edlund, Casella (Columbia); Topa, van der Klaauw (FRB New York); Arellano (CEMFI); Bollinger (Kentucky); Manea, Werning (MIT); Horowitz, Manski, Wolinsky (Northwestern); Light (Ohio State); Burdett, Menzio (UPenn); Battaglini, Gul (Princeton); Miller, Rauch (UCSD); Hamermesh (Texas); van Ours, van Soest (Tilburg); Pollak (Wash U, St Louis); Rostek, Wright (Wisconsin); and Hörner, Moscarini, Samuelson (Yale).

Membership in Learned Societies and Research Networks: During the relevant period, Francesconi and Hatton were named Academicians of the Academy of Social Sciences. Staff are

also affiliated with leading research institutes and networks such as the Institute for Fiscal Studies (Brewer, Crossley, Etheridge, Francesconi, Halket, Parey, Pudney); the Centre for Economic Policy Research (Booth, Francesconi, Hatton, Rockett); the Centre for Microdata Methods and Practice (Pudney); IZA (Booth, Brewer, Carrillo-Tudela, Del Bono, Francesconi, Hatton, Mastrobuoni, Parey); CESifo (Francesconi, Smith); CHILD (Francesconi); and the European Search and Matching Network (Carrillo-Tudela, Coles, Smith). Established exchange programmes allow junior researchers to move between Essex and DIW Berlin, and between Essex and Konstanz.

Advisory Activities: Staff are also members of advisory groups in a number of organisations such as the Department of Work and Pensions; the Home Office; the ESRC; the International Review Panel of the Danish Council for Independent Research; Statistics Canada; and the UK Millennium Cohort Survey scientific committee (Bhalotra, Brewer, Crossley, Del Bono, Francesconi, Pudney).

Journal Editorship: Economists at Essex are on the editorial boards of 12 peer-reviewed journals, including the *Review of Economic Studies*; *Journal of Econometrics*; *Economic Journal*; *Journal of Economic Theory*; *Journal of International Economics*; *Journal of Applied Econometrics*; *International Journal of Game Theory*; *Journal of the Royal Statistical Society*; *Review of Economic Design*; and *Empirical Economics*.

Interdisciplinary Research: Collaboration at Essex extends to joint research with an array of other disciplines. The interdisciplinarity of ISER and our close proximity to the Sociology and Government departments, with which we share joint seminar programmes, enable Essex economists to pursue ambitious, thought-provoking exchanges of ideas across disciplines. Interdisciplinary work can be found in Biology (Francesconi, Mengel, Weidenholzer); Business and Management Studies (Galeotti); Demography (Delavande); Epidemiology (Del Bono, Francesconi, Pudney); Finance (Alan, Ganguli, Markose, Santos Silva, Wang); Mathematics (Ghigino, Renou, Weidenholzer); Political Science (Delavande, Oliveros); Psychology (Crossley, Francesconi); and Sociology (Brewer, Delavande, Del Bono, Pudney).

Understanding Society: A very substantial contribution to economics and the general research base worldwide is the new UKHLS, which continues and expands the British Household Panel Survey (BHPS) into the world's largest longitudinal social science study. These surveys deliver high-quality, world-class data on the social and economic circumstances of households from across the UK. *Understanding Society* is pioneering in its interdisciplinary focus and methodological approach and is now collecting information on topics from illicit and risky behaviours to social, political and religious participation; measures ranging from respondents' cognitive ability to their environmental attitudes and behaviours. A significant sub-sample provides administrative health, education and economic records allowing unprecedented analysis of these factors' impact. Pudney is a co-applicant on successive UKHLS funding bids, and several Essex economists (Brewer, Delavande, Del Bono, Francesconi) have been closely involved in strategic and detailed decisions on UKHLS design.

Non-Academic Collaboration: Generous research funding and leave opportunities have enabled staff within the whole UoA to interact and collaborate with individuals at government departments and central banks. Visits ranged from a few days to year-long secondments. These included the Bank of England (Meeks), Bank of India (Markose), Federal Reserve Banks of Atlanta (Smith) and New York (Delavande, Francesconi) and the UK Department for Work and Pensions (Brewer).

Staff also maintain strong knowledge exchange links with other research users, from non-governmental agencies and charities. Non-governmental and charitable links include Eurostat (Santos Silva); the Money Advice Service (Taylor); the Joseph Rowntree Foundation (Taylor, Brewer, Pudney); the Sutton Trust and UNICEF (both Del Bono); AgeUK (Pudney); the Resolution Foundation, the Child Poverty Action Group, the Nuffield Foundation and Gingerbread (all Brewer). Links with regulators include the UK Competition Commission and Irish Commission for Communications Regulation (both Weeds). Essex also publishes the East of England Quarterly Report on local economic conditions and has established related links with the South East Local Enterprise Partnership and the National Institute of Economic and Social Research (Kemp, Smith).

Private sector links with industry, commerce and consultancies include Prudential, UNUM Insurance (Pudney, Taylor); the Rand Corporation (Delavande); Charles River Associates (Weeds); RBB Economics (Santos Silva); and Microsoft (Condorelli).