

CUQM Report 2015-17



CAMBRIDGE UNDERGRADUATE QUANTITATIVE METHODS CENTRE

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GOVERNANCE OF CUQM

CUQM consists of two core members of staff and a steering committee.

Staff



Director

Dr Brendan Burchell, Department of Sociology



Teaching Associate & Administrator

Dr Matthew Sparkes, Department of Sociology

Steering Committee

Department of Geography	Dr Alice Reid
Department of History	Professor Gareth Austin
Department of Land Economy	Dr Elisabete da Silva
Department of Linguistics	Dr John Williams
Department of POLIS	Dr Pieter van Houten
Department of Sociology	Dr Brendan Burchell (Director)
Department of Sociology	Dr Matthew Sparkes
Division of Archaeology	Dr Enrico Crema
Division of Social Anthropology	Dr Sian Lazar
Division of Social Anthropology	Dr Harri Englund
Faculty of Education	Dr Michelle Ellefson
Faculty of Education	Professor Anna Vignoles (Deputy Director)
School of Humanities and Social	Mrs Isobel Humphrey
Senior Tutors Committee	Dr Juliet Foster
Social Science Research Methods Centre	Dr Maria Iacovou

BRIEF REVIEW FROM THE DIRECTOR OF CUQM

The first 'annual' report from the Cambridge Undergraduate Quantitative Methods Centre (CUQM) covered the first 18 months of its life from April 2014 until September 2015. This report covers the two-year period until September 2017 and gives details of the many activities that have happened over the past two years including two well-attended and interesting annual lectures, many short courses and a very successful undergraduate event on the measurement of inequality that packed a large lecture theatre.

The initial funding for CUQM was for three years, April 2014 until April 2017. This period was characterised by successes on a number of fronts, but there was also a strong sense that there was still work to be done to bring more quantitative methods teaching to more of the social science and humanities undergraduates at the University of Cambridge.

We now have a better sense of what has worked well and should become a more enduring feature of CUQM's contribution, and which aspects of our work need to be adapted to meet our goals.

The pre-term introductory statistics courses continue to be very popular and over-subscribed, particularly those timetabled in October and January. The feedback we receive from these courses continues to be outstanding. We are very fortunate to have retained Dr Matthew Sparkes in his role as the main provider of these courses, while many Q-Step centres in other universities have suffered from high levels of staff turnover.

The increased uptake of undergraduates into QM undergraduate Tripos papers has also been very successful. The POL6 paper has been an outstanding success with 35 politics students enrolled on that course in 2016-17. The SOC5 course looks like it will have its largest intake yet of Sociology and Education students for 2017-18. These increased numbers of students with QM skills is feeding through to a larger proportion of undergraduate dissertations using quantitative methods, and the standard of the entries for CUQM's quantitative dissertation prize has been reassuringly high for the last two years.

The School of Social Sciences and Humanities has been giving much thought to the future funding of CUQM, and the best way to plan and deliver CUQM's activities. Initially, it was agreed to continue funding CUQM for a further 12 months (until March 2018) while longer term arrangements could be considered. There was a reduction in spending for this period as much of the workload for the director, and the administrator's time, had been devoted to setting up the centre which was now running smoothly. Matthew Sparkes continued in the Teaching Associate role for CUQM, but also took over the administration functions from Siobhan Hoffman-Heap who is now fully employed by the SSRMC. We are very grateful for the assistance we have received from Siobhan in the past 18 months.

Discussions about the longer term basis for CUQM have focused on the possibility of rationalising the funding of CUQM and the Social Science Research Methods Centre (SSRMC). The centres have much in common in providing research methods training across the University, but also important differences. The SSRMC provides courses for graduates; CUQM services undergraduates. SSRMC provides training in both qualitative and quantitative methods, CUQM only in quantitative methods. SSRMC primarily aims at providing generic courses in methods to graduates from a wide range of disciplines; CUQM is guided by a strong pedagogic philosophy that social science and humanities undergraduates need to see quantitative methods being embedded in their own discipline to fully appreciate and embrace their potential.

CUQM and SSRMC will thus continue to have separate identities and their own distinctive 'front ends'. We will experiment with some dual activities – for instance, undergraduates will be allowed to book onto some of the more specialised SSRMC quantitative courses, where uptake for CUQM courses has been low. The main benefits will be 'behind the scenes' where many of the functions are similar – for instance, in the booking system for courses and providing better and more varied employment for the Teaching Associates. CUQM will continue to look for opportunities to integrate QM teaching into the undergraduate Triposes, and this role will be spearheaded by a senior UTO to act as 'QM champion' for the social sciences and humanities.

CUQM has relied on the cooperation of many departments and the School of Social Sciences and Humanities, as well as representatives from students and from the colleges. I would like to thank all of those who have been involved in this collaboration and contributed to the success of CUQM.

Dr Brendan Burchell

COURSES

Statistics Papers: SOC5 (Statistics and Methods) and POL6 (Statistics)

Last year saw the highest number of students of any year since CUQM started reading a statistics paper offered to HSPS students, with 14 SOC5 students and 35 POL6 students.

Student feedback about the course in Michaelmas was positive. Although only 24 of the 49 SOC5 and POL6 students provided feedback, five rated the quality of the lectures as 'excellent', 15 as 'good', and four as 'acceptable'.

The accompanying SPSS workshops run by Dr Sparkes and assisted by Bryant Hu received very positive feedback from the students. Out of the 37 students who filled in feedback forms in Michaelmas, 26 (70 percent) rated the quality of the teaching in the workshops as 'excellent', and 24 (65 percent) rated the quality of the academic content as 'excellent'. The rest of the students rated them as 'good'. Qualitative feedback also proved to be very positive; here are some illustrative examples:

"I thought Dr Sparkes was a really great demonstrator. He was very patient and took the time to explain things carefully when I did not initially understand them, which I really appreciated."

"Workshops were very useful in allowing me to take the time to understand the content of the lecture."

Nonetheless, some insightful feedback was provided by the students regarding the links between the lectures, workshops and supervisions, about the pace of the lectures, and the difficulty of the material. Necessary changes have been made to the paper content and its structure for 2017-18 to provide a course that works better for students.

The quality of the examinations for both papers was once again very high. The average score for SOC5 was 67.9 with a range of 64-75; that no student was awarded lower than a 2:1 is testament to their dedication and hard-work. The highest examination prize for the SOC5 paper went to Yiran Zhao (education) with a score of 75, and for the POL6 paper it went to Matthew Han (POLIS) with a score of 77. Both students have received their £50 Sage book vouchers as a reward for their outstanding performance.

In the 2015-16 academic year, the highest examination prize for the SOC5/POL6 paper went to Jocelyn Lang (Joint track in Sociology/Social Anthropology) with a score of 73. Jocelyn received £50's worth of books from SAGE publishers and a £50 Heffers voucher for her outstanding performance. She provided a glowing reference of her experience of undertaking SOC5 which we added as a testimonial on the CUQM website (see <https://www.cuqm.cshs.cam.ac.uk/news/cuqm-soc5-prize-2016>).

Next year there are already 20 students signed up to take SOC5, the highest number of students yet to select the paper, and we expect a similar number of POL6 students as last year. SPSS workshops will now be provided by the respective departments to provide more specific disciplinary examples of quantitative methods, but POL6 students will still 'borrow' the SOC5 Michaelmas lectures delivered by Dr Sparkes and Dr Mark Ramsden.

Introductory Course in Statistics for Social Scientists

In the 2016-17 academic year, the two-day Introductory Course in Statistics ran at the start of Michaelmas, Lent and Easter, taking the number of delivered courses to six. A total of 72 students signed up for the three courses across all affiliated CUQM departments. Nonetheless, 20 students either dropped out or did not attend, leading us to review the timing, facilities used and number of the courses we run for the 2017-18 academic year.

Of the 43 students surveyed at the end of the courses, 35 (or 81 percent) rated the quality of the teaching as 'excellent' and 27 (or 63 percent) rated the organisation of the course as 'excellent'. Not one student stated that the teaching or organisation was 'acceptable', 'poor' or 'very poor'. This extremely positive feedback was also followed by countless positive statements by the students who attended, with those selected below providing illustrative examples:

"Fantastic course, fantastic lecturers." (Student from Michaelmas 2016 course)

"Great mix of theoretical and practical learning - helps with memory and is more fun."
(Student from Michaelmas 2016 course)

"Has made me feel a lot more confident on using SPSS for my dissertation data, and learning how to interpret it." (Student from Lent 2017 course)

"Really interesting, well taught, always felt happy to ask questions and discuss. Felt very relevant and relatable both to work and to daily life." (Student from the Easter 2017 course)

The introductory course thus proves to be in very high demand and of great benefit to students from across the social sciences.

Based on the review of last year, we have decided to move the delivery of the Michaelmas and Lent courses from the Biological Anthropology seminar room to the Titan teaching rooms, increasing the capacity of each course from 30 to 40. This means that a larger number of students can reap the benefits from the material and skills they develop earlier in the year. The 40 places for the Michaelmas course went very quickly, and with a further 21 on the waiting list the course popularity shows no signs of abating. We are striving to replicate the success of the course in new surroundings and with a larger group of students.

Introduction to OLS regression

In the 2016-17 academic year, the one-day OLS Regression Course ran at the end of Michaelmas and Lent, taking the number of delivered courses to three. Thirteen students signed up for the two courses across the affiliated CUQM departments, although three student did not attend.

Although beneficial to the students who attended, the low number of attendees indicates there is a much larger appetite for introductory level statistics courses amongst social science students (which we will discuss further below).

For the academic year 2017-18, the OLS regression course will run at the end of Michaelmas, and greater focus will be directed at signing up students from the Introductory Course and retaining their interest. The course at the end of Lent will run if a sufficient number of students sign up.

DEVELOPMENT OF NEW COURSES

As noted above, the breakdown of the student numbers for the two courses run by CUQM indicate there is a much larger appetite for introductory level statistics courses amongst the social science students. As a result, we are currently discussing ways in which we can engage a larger group of students in reading and understanding statistics without the requirement to attend daylong courses. Two ideas are being developed:

1. The first is for a workshop (or series of workshops) tailored to first year students, providing them with a platform to read and understand published research that has used quantitative methods. They would learn how to interpret graphs, tables and multivariate regression results without the need to first learn SPSS or any other computer software. The objective is to increase their confidence with quantitative data, with the aim of increasing the number of students who take the CUQM courses or statistics papers on offer in their second and third years.
2. The second is for the development of short videos by Dr Sparkes, accessible through the CUQM website, covering statistical concepts and data analysis that students can access at their own convenience.

These ideas are in their infancy and we will provide a more detailed report at the end of the 2017-18 academic year.

EMBEDDING QM IN SUBSTANTIVE COURSES

Despite the dissemination of information that CUQM could provide to lecturers for embedding QM into substantive courses, and a dedicated section on the CUQM website (see: <https://www.cuqm.cshss.cam.ac.uk/Embedding-Quantitative-Research>), it has proven difficult to encourage lecturers to seek and use the services available. Nonetheless, Dr Mónica Moreno Figueroa, Senior Lecturer in Sociology, asked the Centre to assist with the analysis of the 2015 Mexican Intercensal Survey which had incorporated a racial/ethnic self-identification for black people. Despite being in Spanish, Dr Sparkes produced numerous tables and graphical analyses for Dr Figueroa to use in her lectures. Her testimonial was also added to the website, and can be located here: <https://www.cuqm.cshss.cam.ac.uk/Embedding-Quantitative-Research/Lecturer-Testimonials>.

Furthermore, in the 2015-16 report it was noted the HSPS paper Modern Britain (SOC12), and in particular the module Social Class and Inequality, would act as a 'trailblazer' for embedding material into substantive courses. As a result, during Lent 2017, Dr Sparkes taught six lectures on social class and inequality, incorporating material on the operationalisation and measurement of (new forms) of class (Figure 1), statistical models on the links between class and political orientation (see Figure 2), and different techniques and models for exploring social mobility.

Figure 1: Lecture slide displaying technique used to measure cultural capital in GBCS

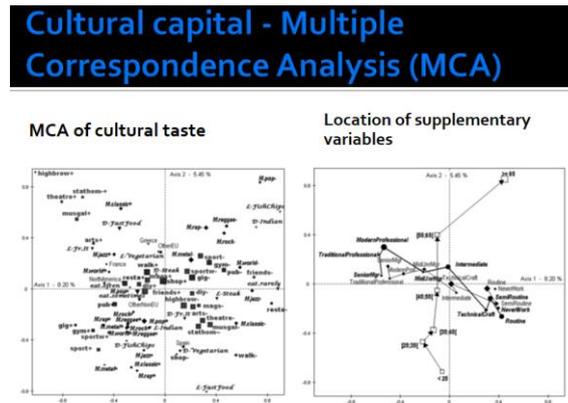


Figure 2: Lecture slide displaying an OLS Regression model of political perceptions and class

Class and political attitudes

		Coefficients ^a				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.032	.479		35.551	.000
	Female	-.321	.169	-.042	-1.904	.057
	Age of respondent, calculated	-.004	.005	-.017	-.728	.467
	Years of full-time education completed	.110	.023	.108	4.755	.000
	Social trust scale	.090	.017	.123	5.459	.000
2	(Constant)	16.894	.487		34.722	.000
	Female	-.223	.173	-.029	-1.293	.196
	Age of respondent, calculated	-.001	.005	-.006	-.279	.781
	Years of full-time education completed	.126	.025	.124	5.112	.000
	Social trust scale	.091	.017	.125	5.521	.000
	Low skilled managers	.025	.244	.003	1.102	.919
	Professionals	-.612	.282	-.051	-2.173	.030
	Managers & experts	-.571	.255	-.057	-2.238	.025
	Self-employed	-.296	.328	-.021	-.902	.367
Employers'	-1.813	.480	-.091	-3.884	.000	

a. Dependent Variable: Attitudes towards social benefits and redistribution

Dr Sparkes’s lectures will continue, in a modified Modern Britain paper, in the academic year 2017-18, and we are currently exploring whether a lecture on quantitative methods and data analysis could be added to the SOC1 curriculum.

Indeed, we have taken it upon ourselves to act in whatever capacity we can to embed QM into substantive modules and to provide opportunities for students to engage with quantitative lecturers and experts at the university (see QM Workshop section below).

QM WORKSHOP – NEW EVENT

As an additional outlet for engaging students in quantitative methods – a move partly driven by the lack of contact from lecturers for assistance in embedding material into their lectures – Dr Burchell and Dr Sparkes decided to trial a workshop around a current and topical quantitative theme. The aim was to bring together quantitative experts from across the university to provide their insights before a group discussion. We decided that a workshop on measuring inequality would be of acute interest.

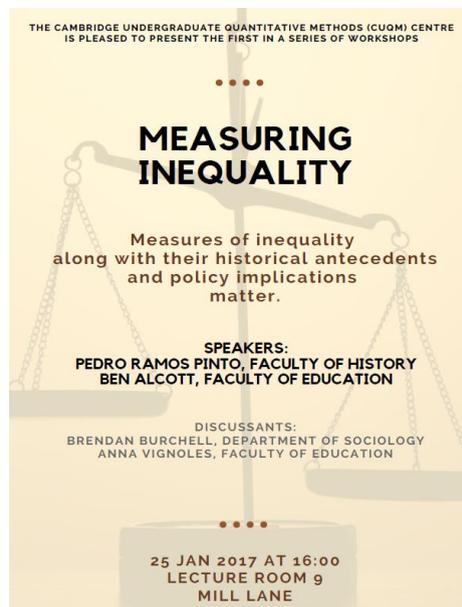
Dr Sparkes organised and chaired the event; he approached and liaised with relevant speakers, created a poster that was disseminated around the social science departments (see Figure 3), and

developed an Eventbrite page that was used to advertise the event to students (see: https://measuringinequality_cuqm.eventbrite.co.uk). The interest in the workshop was exceptionally, and surprisingly, high: 129 students from across the Social Sciences obtained a ticket through Eventbrite.

The 'Measuring Inequality' workshop took place on 25 January 2017, with Dr Pedro Ramos Pinto (Faculty of History) and Dr Ben Alcott (Department of Education) delivering interesting and engaging presentations, and Dr Anna Vignoles and Dr Alice Reid acting as discussants. This inter-disciplinary panel explored how statisticians measure inequality, the advantages and disadvantages of reducing a complex phenomenon like inequality to a single variable, and the way policies are shaped around metrics for gauging inequality.

Exploring these questions will help the undergraduate students, postgraduates and academics who attended to make sense of UK and global inequality, and to understand how its measurement shapes and defines the types of questions we can ask and answer.

Figure 3: Measuring Inequality poster



With the success of the event, the workshop will become an annual event in the CUQM calendar and will take place at the start of Lent Term. The next workshop will cover 'Big Data', and organisation for the event has already started.

ANNUAL LECTURES

2016 Annual Lecture

The 2016 annual lecture was delivered by Dr Tim Leunig, Chief Scientific Adviser and Chief Analyst at the Department for Education. The lecture took place on 9 March 2016 and was titled 'If You Don't Have Data You're Just Another Person With An Opinion' (Lecture poster is presented in Figure 4). Dr Leunig provided a very lively talk, to a packed Mill Lane lecture room, on the use of data to track, monitor and affect educational performance in secondary schools.

Figure 4: 2016 Annual Lecture Poster

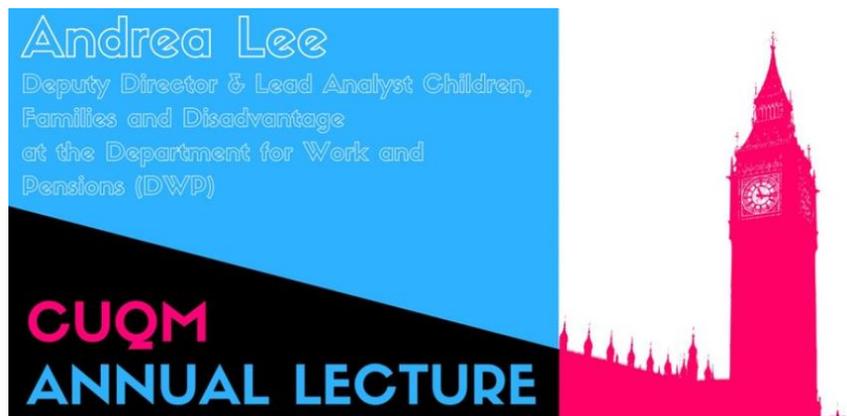


2017 Annual Lecture

The 2017 annual lecture was delivered by Andrea Lee, the Deputy Director and Lead Analyst of Children, Families and Disadvantage at the Department of Work and Pensions. Andrea Lee has substantial experience, working across a multitude of government departments in areas covering localism and decentralisation, troubled families, and risk and uncertainties.

The lecture took place on 9 March 2017 and was titled 'Children, Families and Disadvantage: Using Evidence, Analysis and Data to Improve Children's Outcomes' (Lecture poster is presented in Figure 5). Andrea Lee covered two statistical techniques used by the DWP to model whether reoffending rates are reduced by employment, and the impact that a new fee has on parental use of the Child Maintenance service.

Figure 5: 2017 Annual Lecture Poster



It was a real privilege for CUQM to provide a platform for Andrea Lee and Tim Leunig to display their substantial experience and quantitative expertise in diverse fields. It was also highly beneficial for

the substantial number of undergraduate, postgraduates and academics who attended the lectures, and the subsequent drinks reception.

CUQM QUANTITATIVE DISSERTATION PRIZE

2016 Award

In 2016, six candidates were put forward for the Cambridge Quantitative Methods dissertation prize for the best social science/humanities dissertation using quantitative methods, from Archaeology, Biological Anthropology, Education, Geography, History, and Land Economy. The winner of the prize was Craig Threadgold from the Department of Geography, for his dissertation 'Regional Growth Patterns in Post-Industrial USA'. Craig was awarded £100's worth of Heffers book vouchers as the prize.

2017 Award

This year six candidates were put forward for the best undergraduate dissertation from Archaeology, Biological Anthropology, Education, History, Land Economy, and Linguistics. The field is highly competitive with marks ranging from 77 to 87, and examiners comments detailing the exceptional academic quality of the work. The judging panel for this year's nominated dissertations is currently being assembled by Dr Sparkes, and the winner is expected to be announced by the end of September. Sage publishers have agreed to sponsor a £100 prize for the best third-year dissertation using quantitative methods.

OUTREACH EVENTS

CUQM organised and ran two outreach events in 2016, both presented by Brendan Burchell. The first was part of a combined Oxford and Cambridge Challenge Day event at the Museum of Liverpool for Year 12 pupils. The second, entitled 'Social Science by Numbers' was part of a residential course for school pupils at Magdalene College. Both were over-subscribed, and feedback for both was excellent.

WORK PLACEMENTS

Work placements in quantitative organisations have been proven to enhance students' CVs, put their quantitative method training into practice, and enabled them to experience how organisations analyse and publish quantitative data. As a result, facilitating work placements for students who have undertaken either a statistics paper or one of the short courses still forms one of the key functions of CUQM.

For the second year running, CUQM has worked with YouGov to provide a six-week summer placement to students who have undertaken a statistics paper or one of the CUQM short courses. This year we had 14 applications for the placement. The applicants provided detailed CVs and covering letters outlining their suitability for the role. YouGov commented on the high quality of the applications. Having reduced the pool to three candidates, they selected Nick Partington (POL6) for

their internship. Nick started work for YouGov on 21 August and is due to finish on 29 September 2017.

Work is continuing to line up more companies to provide work placement opportunities next year.

MEDIA

Website

The CUQM website (<http://www.cuqm.cshss.cam.ac.uk>) contains all the essential information about CUQM activities, events and work placements as well as links to other statistical/data/QM related resources. A new section on 'Embedding Quantitative Research' (see: <https://www.cuqm.cshss.cam.ac.uk/Embedding-Quantitative-Research>) was added this year to provide further information to lecturers regarding the services the Centre offers.

Social Media

CUQM continues to be active on social media. The CUQM twitter feed is: @CamQuantMethods. There is also a CUQM Facebook page where all news and events are posted (see <https://www.facebook.com/pages/CUQM>).

Audio-visual

A short video clip has been produced by Justin Hodgett, an AV/IT Support Technician from the Faculty of Education. Dr Burchell, Professor Vignoles, and Dr Sparkes took part in the video, as did a number of students who undertook either SOC5, POL6 or one of the CUQM short courses. The clip is available to view on the CUQM website (<https://www.cuqm.cshss.cam.ac.uk/>) and YouGov (<https://www.youtube.com/watch?v=2eJiEI3DrA>). We would like to express our sincerest thanks for the professionalism and skill shown by Mr Hodgett in the making of this video, and for the considerable time he spent on producing it. It provides a real insight into CUQM and the work we are doing at the Centre.

NEWS

All CUQM courses, workshops and lectures are now advertised on Eventbrite, creating a streamlined and professional outlet for information dissemination and ticketing.

Dr Sparkes is the new administrator for the Centre, taking over from Siobhan Hoffman Heap.