

## SHARE (Social Sciences & Humanities Access to Research Experience) Research Experience Placements - Projects

(The University of Cambridge School of the Humanities and Social Sciences and the University of Cambridge ESRC Doctoral Training Partnership (DTP))

	Title	Department	Full or Part Time	Scheme
1	<a href="#">Representative Acoustic Database for Auditory Research (RADAR)</a>	MRC Cognition and Brain Sciences Unit	Both	ESRC
2	<a href="#">‘Airs, waters and agues: The historic impact of endemic malaria in Britain</a>	Department of Geography	Both	ESRC
3	<a href="#">Mapping Archaeological Heritage in South Asia</a>	Department of Archaeology	Both	SHARE/ESRC
4	<a href="#">Exploring Contemporary Challenges in Youth Justice</a>	Institute of Criminology	Both	SHARE/ESRC
5	<a href="#">New words</a>	Humanities and Social Sciences, Anglia Ruskin University	Both	ESRC

# MRC Cognition and Brain Sciences Unit

## Project title

Representative Acoustic Database for Auditory Research (RADAR): The Creation of a Database of Representative Speech and Environmental Sounds for Auditory Research

## Supervisors

Lead supervisor: Dr Tobias Goehring

Supervisor team: Dr Alexis Deighton-MacIntyre, Dr Lidea Shahidi, Dr Clément Gaultier

## Project overview

Scientists use recordings of sounds for many purposes, such as improving hearing aids, diagnosing hearing loss, and understanding how the brain processes speech more generally. Although these topics are relevant to a large part of society, the sound recordings themselves reflect a much smaller group, limiting the generalisation and applicability of the results. In this project, we'll create a new set of sound recordings that encompass a wider range of listening experiences, enabling research that uses these recordings to reflect the lived experiences of a larger proportion of the population.

Auditory research on acoustics and speech perception extensively relies on standardised collections of recorded speech utterances and environmental sounds. These acoustic corpora facilitate reproducibility and the objective comparison across research works but are limited in the realism of the listening scenarios they encompass. For example, most speech corpora contain only read speech, which differs considerably on multiple parameters from the spontaneous speech listeners are likely to encounter in daily life in their social environments. Similarly, traditionally represented listening environments (e.g., an office or a restaurant dining room) may fail to capture diverse life experiences (e.g., a factory or a restaurant kitchen), despite the fact that lower socioeconomic status is the chief predictor of harmful noise exposure. Finally, accents and the semantic content of the speech utterances also tend to reflect a narrow cross-section of society and lack diversity. For example, English language corpora typically feature speech spoken by a single speaker in the Received Pronunciation accent, also known as "BBC English", reflecting the privileged status of white, educated, and upper-class people in British society. Occasionally, the phrases themselves may reinforce the cultural expectations of a different time, as in the commonly used Bamford-Kowal-Bench sentence lists, which broadly align with gender stereotypes held at the time of their creation in the 1970s (e.g., "Men wear long trousers" vs. "The woman tidied her house"; "Father looked at the book" vs. "She looked in her mirror"). Most speech corpora used in auditory research are similarly outdated, such as the IEEE sentences (Rothausser et al, 1969) and the TIMIT database (Garofolo et al., 1993), which is also used extensively in related fields such as automatic speech recognition.

This project will work towards addressing the need for more representative, ecologically valid, and realistic corpora for use in auditory research through the creation of acoustic corpora that encompass a wider and more diverse range of listening experiences. Importantly, this endeavour will benefit from interdisciplinary knowledge exchange between the fields of social sciences and auditory research. The project has two objectives: the creation of a speech corpus and an acoustic environment corpus and is suitable for one or two interns.

In creating both corpora, the intern(s) would be required to review the existing corpora and assist in the design of the new corpora. For the speech corpus, this would entail designing the speech material to be recorded (ensuring the use of balanced, modern, and task-relevant speech material) and assisting in designing the advertisement for speaker recruitment from Cambridge and further afield. For the environmental corpus, this would entail selecting locations for background noise recordings and planning the recordings to be taken. Then, the intern(s) would make the acoustic recordings with the help of the supervisory team, for speakers in the sound-recording booth at the MRC Cognition and Brain Sciences Unit and for environmental noise in the target locations in Cambridge. The recordings would

then be processed to remove artefacts and irregularities and to ensure clarity and quality. Both speech and noise recordings would be characterised to describe key aspects of the recordings, for example the syllables per second in the case of speech and the signal to noise ratio at which 50% of speech is understood in the case of noise. To characterise the recordings, the interns have the option to run an informal speech perception task, by recording the percent of words correctly understood by typical-hearing volunteers after the presentation of speech and noise material collected during this project, as a reference for performance outcomes when the corpora are used in further research studies.

This internship will be funded by the ESRC (Economic and Social Research Council) and will be hosted by the Cambridge ESRC Doctoral Training Partnership (DTP).

This placement is available on a full-time or part-time basis.

### Entry Requirements

No prior experience with the topic or techniques is necessary for satisfactory completion of this project. The key requirement is an interest in the topic area and high motivation to learn more about speech perception and sound recordings.

# 1. Department of Geography

## Project title

Airs, waters, and agues: The historical impact of endemic malaria in Britain

## Supervisors

Lead supervisor: Professor Alice Reid

Supervisor team: Dr Romola Davenport (Senior Research Associate), Dr Max Satchell (Research Associate)

## Project overview

Malaria is widely agreed to have been an endemic disease of low-lying marshy areas of northern Europe in the 16th – 19th centuries but had largely disappeared by the 20th century. Climate change is predicted to extend the geographical range of mosquitoes and has raised the prospect that malaria may become endemic again in Europe. However, the epidemiological importance of malaria to historical mortality patterns remains contested. While there is compelling circumstantial evidence implicating malaria in the high mortality of brackish marshes in south-eastern England in the 16th – 18th centuries, the evidence linking malaria to mortality patterns in other marshy areas of Britain remains weak. The proposed projects would form part of a larger investigation of the impact of malaria in the largest area of coastal marshes in England, the Fens. The projects would compare cultural perceptions of risk and demographic evidence of mortality patterns in Fen and non-Fen parishes of Cambridgeshire and Lincolnshire. The objective is to examine to what extent historical evidence of high mortality (which is largely indirect) is supported or problematised by other types of historical evidence, and why. Malaria in Britain is argued to have been concentrated in brackish waters (where the main mosquito vector preferred to breed). Therefore, the projects would compare anecdotal and demographic evidence for unhealthiness across a range of different environments defined by drainage systems (brackish, freshwater and 'dry') and altitude in Fen and non-Fen areas. Specifically, the interns would (1) compare contemporary literary and travel accounts of the healthiness of parishes in Fen and non-Fen areas; (2) assess Daniel Defoe's claim that marsh farmers remarried frequently because their non-marsh wives did not survive long in marshy areas; (3) test whether local priests were reluctant to reside in certain parishes for reasons of health; (4) map these patterns using Geographical Information Systems (GIS) software; (5) test whether these patterns were associated with mortality patterns indicative of malaria (using data already created by the project supervisors). Congruence between contemporary perceptions, malarial mortality patterns (burial excesses, marked seasonal patterns) and environmental conditions (brackish marshes) would strengthen the circumstantial case for malaria as an historical cause of high mortality. A lack of congruence between these variables would raise very interesting questions about the nature of the historical evidence and evidential biases. The projects would suit either two or three students working collaboratively under the close supervision of Dr Davenport and Dr Satchell. The projects are all interdisciplinary and include a combination of archival work, extraction of qualitative or quantitative data and GIS mapping. All interns would receive training in basic GIS to enable them to map their data.

Project 1 (see 1 above) requires the extraction of qualitative information from printed travel accounts and literary sources using online and hardcopy sources (available through the University Library) and the coding of this information into a semi-quantitative comparative scheme (e.g., 'healthy', 'average', 'unhealthy', 'lethal') to map the data. Drs Davenport and Satchell would supply a list of sources and a schema for extracting and coding the data, and close supervision to help students to interpret the sources. Project 2 (see 2 above) involves counting marriage types (bachelor-spinster, bachelor-widow, widower-spinster, widower-widow) for different types of parish using transcripts and online images of (handwritten) parish registers, to test whether marsh parishes were characterised by unusually high (and gendered) remarriage rates (consistent with high adult mortality). These data would then be mapped by parish. Dr Davenport would work closely with the student to address the idiosyncrasies of the sources. Project 3 (see 3 above) involves use of archival records of the Ely diocese held in the University Library. The student would film the data and then extract and map information on the levels

and reasons for absenteeism of Anglican clergy in Fen and non-Fen parishes. All students would be given training in the use of GIS software by Dr Satchell. Projects 2 and 3 would include some training in palaeography from Drs Satchell and Davenport in order to read eighteenth and nineteenth century handwriting. Students would be embedded in a large and vibrant historical research group comprised of c.40 Masters and PhD students, researchers and University teaching staff from the departments of Geography and History. The research group meets every Thursday for internal informal research seminars, and the Geography members of the research group meet every day for coffee, providing a very collegiate and interactive environment for the interns.

The projects will provide an excellent and varied introduction to historical research practices and to spatial research, as well as providing interns with experience of work in a collaborative research team and exposure to a large interdisciplinary research group. The projects are designed to be self-contained and to produce findings within the period of the internship and should give interns a sense of ownership over the research. The internships will make an important contribution to our current project on malaria in Britain. The proposed projects constitute important pilot studies to provide proof of concept for a larger research proposal.

This internship will be funded by the ESRC (Economic and Social Research Council) and will be hosted by the Cambridge ESRC Doctoral Training Partnership (DTP).

This placement is available on a full-time or part-time basis.

#### [Entry Requirements](#)

None. The project would suit students interested in historical research, geography, and epidemiology, and/or in the epistemological issues involved in comparing evidence from very different sources.

### 3. Department of Archaeology

#### Project title

Mapping Archaeological Heritage in South Asia

#### Supervisors

Lead supervisor: Professor Cameron Petrie

Supervisor team: Dr Rebecca Roberts, Azadeh Vafadari (Research Associate), Afifa Khan (Research Assistant), Jack Tomaney (Research Assistant), Dr Kuili Suganya (Research Associate), Junaid Abdul Jabbar (Research Assistant)

#### Project overview

Archaeological heritage is under threat in many parts of the world particularly due to the related processes of urban expansion and agricultural extensification. The Mapping Archaeological Heritage in South Asia (MAHSA) project is developing heritage documentation and management tools and expertise that support systematic documentation of archaeological heritage in Pakistan and northwest India. We are developing these tools to document the full range of archaeological heritage, which span in date from the earliest villages, through several phases of urbanism, the rise and fall of numerous historical states and empires, and up to the colonial and modern periods.

The interns would work alongside the MAHSA team to learn the methods and skills in the workflow developed by the project. They would each be responsible for a small defined geographical area and learn how to use different data sets to extract information about archaeological sites.

We have already hosted 2 student interns independently and have therefore created a training model for supporting interns working with the MAHSA project.

#### Overview of weekly tasks:

- Georeferencing of historic map sheets using the MAHSA-project protocol.
- Inputting of legacy data from published sources.
- Use of QGIS to explore data within a defined study area using digitised historic maps, machine learning outputs, digitised legacy data, and satellite imagery.
- Work alongside MAHSA project members to identify potential sites of interest for ground-truthing through fieldwork

This internship may be funded by either the University of Cambridge School of the Humanities and Social Sciences or the ESRC (Economic and Social Research Council).

This placement is available on a full-time or part-time basis.

#### Entry Requirements

You should ideally have a background in Archaeology or Geography. The work will be tailored so that you can start with smaller-scale tasks, and spend more time learning how to use GIS, for example, producing a simpler dataset as part of the project. Some basic GIS skills would be an advantage, but we will teach GIS skills as part of the internship. A desire to learn and utilise GIS and digital methods is essential, as the project will be very much GIS-based.

## 4. Institute of Criminology

### Project title

Exploring Contemporary Challenges in Youth Justice: A study of key issues for young people caught up in the criminal justice system and the staff who work with them in the East of England.

### Supervisors

Lead supervisor: Dr Caroline Lanskey

Supervisor team: Dr Jane Dominey, Dr Ali Wigzell, Dr Hannah Marshall and PhD students from the Institute of Criminology.

### Project overview

The Institute of Criminology has a long history of projects that link academic scholarship with interests from policy and practice. An example of this is the Research and Practice in Conversation (RaPiC) network that brings together youth justice practitioners and academics in the East of England region. The supervision team behind this proposal are all actively involved in RaPiC and undertake research that investigates the experience of children and young people caught up in the criminal justice system.

One aim of RaPiC is to facilitate and encourage small-scale research that addresses research questions relevant to practitioners.

This proposed project is intended to further this aim by increasing the Institute's capacity to engage in research activity with local youth justice practitioners.

Specifically, the project will investigate (using qualitative and quantitative data) questions of relevance to RaPiC members.

For example, issues already identified within RaPiC include:

- The impact of Covid on youth justice in the region
- Child criminal exploitation and county lines
- New modes of supervision (including the use of video calls)
- The relationship between young people and their supervisors
- Transience and young people (including the challenges of working with young people who frequently move between family members, placements, and services).

RaPiC meetings in early 2023 will be used to select the topics and develop suitable and achievable research objectives. There will be two outcomes of the project: 1) a research presentation to the RaPiC research network of practitioners and academics and 2) an article in a peer-reviewed journal.

The internship experience will include:

- Working with youth justice data and presenting descriptive statistics
- Interviewing local practitioners about their perspectives of the legacy of the pandemic
- Visiting youth justice settings to talk to young people
- Drawing initial themes from the qualitative data
- Presenting work from the internship to the RaPiC network

No specific training is required ahead of this placement. It is designed to be accessible to an undergraduate student who is interested in research but has no previous work experience in this area.

This project involves collaboration between academics and practitioners. It draws upon pre-existing links through the RaPiC network, and the student interns will be supported by the supervision team throughout the placement.

The supervision team will offer a range of support to students throughout the placement including weekly feedback and review meetings (more frequent than weekly in the early stages), project-specific training. This will include an introduction to the field of study and research methods training. The introduction to the topic will include access to a recorded seminar on youth justice and meetings with the supervision team to learn about and discuss their youth justice research. The intern will also be given some key readings in youth justice research. The research methods training will include access to an online seminar on interview techniques with follow-up training by members of the supervision team on conducting interviews with young people. Depending on their research experience, the intern will also receive to basic training in quantitative and qualitative data analysis including the use of the statistical software SPSS and the qualitative analysis tool: NVivo. This will take the form of online training with follow-up in person training on how to apply the general principles to the specific research project.

The benefits of this project for the student interns include:

- Learning and using basic research skills
- The chance to be part of a lively research group
- The opportunity to undertake research in collaboration with practitioners and on themes of direct relevance to youth justice.
- The experience of giving a research presentation to practitioners and academics
- The opportunity to be involved as a co-author of a subsequent journal article. (The writing of the article would take place after the internship period but the student's contribution during the internship would be recognised by being listed as a co-author).

This internship may be funded by either the University of Cambridge School of the Humanities and Social Sciences or the ESRC (Economic and Social Research Council).

This placement is available on a full-time or part-time basis.

### Entry Requirements

This placement is suitable for students studying a wide variety of subjects. It will involve dealing with both qualitative and quantitative data. There are no specific requirements. Ahead of the internship period, the supervision team will work closely with youth justice practitioners to ensure that the necessary arrangements for access, research ethics and work with children and vulnerable adults are put in place.



## 5. Humanities and Social Sciences based at Anglia Ruskin University

### Project title

New Words

### Supervisors

Lead Supervisor: Professor Melanie Bell

Supervisor Team: Gemma Harvey

### Project overview

This project is part of a research programme that aims to understand the nature of language and how people use it to communicate. The project is specifically concerned with compound words, such as *teacup* or *laptop*, which are formed from two or more smaller words. People often coin these kinds of words when they need a name for an invention or a new idea. Recent examples in English include, for example, *Brexit* and *zoom shirt*. However, such combinations are inherently ambiguous – for example the word *laptop* has come to mean ‘portable computer’, but it could also refer to part of the body and could conceivably have been used to name other inventions – an app for athletes maybe (lap as a circuit of a racetrack) or a bib for a pet cat (think of lapping milk). Recent research has shown that most compounds are far more ambiguous than previous work in psycholinguistics and computational linguistics had assumed: when asked what a previously unknown compound is most likely to mean, people produce a very wide range of interpretations. The current project builds on this recent finding by asking how speakers resolve the ambiguity to achieve successful communication. The project aims to find out whether newly coined compound words have default meanings, or more likely meanings, or whether any interpretation is possible given a sufficiently clear context. And if the latter, what contextual and other factors determine the interpretation someone arrives at?

Interns will be mainly required to code and process data that has already been collected. Depending on the task, the data may consist of free text interpretations of compounds produced in an online experiment, recordings of compound words produced in phonetics laboratories, or extracts from large collections of texts available online. Specific tasks may include, for example:

- categorising interpretations provided by participants in the experiment
- annotating examples of language qualitatively, based on meaning or structure
- making quantitative measurements on speech data using phonetic software
- contributing to the curation and management of large datasets
- extracting additional data from existing databases of spoken or written language.

In the initial stages interns will need to learn about the coding system(s), and about the relevant coding to be introduced into the files. In the later stages, depending on progress with coding, interns will work with the supervisor to commence the subsequent analysis of the coded data. Finally, they will be asked to keep careful notes and to write a report on the methodology and related issues, which may enable them to contribute to a publication resulting from the project.

The student(s) will gain discipline-specific academic skills in linguistics as well as more general research skills, including for example data management and the coding of qualitative data. In addition they will develop a range of transferable skills, including self-management, problem solving, communication and literacy, application of basic IT skills, numeracy, and project management. This combination of specialist and transferable skills will provide an excellent foundation for further study and for their future careers, whether in academia or elsewhere.

The project will benefit the research programme by allowing us to move forward from the collection of raw data to analysis of the data in an appropriately coded form. The project represents preliminary work to underpin a larger research proposal.

Training will be provided by the project supervisor as required.

This placement is available on a full-time or part-time basis.

### Entry Requirements

The essential criteria are an interest in language and fluency in English. Given the nature of the research, native speakers of English are likely to be most suitable. For some tasks, knowledge of linguistics and/or phonetics would be advantageous, but not essential.