

UCL Birkbeck MRC DTP 2023/24



# HEALTH OF THE PUBLIC

DOCTORAL TRAINING PARTNERSHIP  
PROJECTS BOOKLET  
2023/24 ENTRY

**Ibrahim Abubakar**

*Position:* Professor of Infectious Disease Epidemiology,  
Dean Faculty of Population Health Sciences  
*Location:* Institute for Global Health and FPHS Faculty Office  
*Email contact:* i.abubakar@ucl.ac.uk  
*Theme:* Health of the Public

**Research overview**

My global health research programme investigates the epidemiology, prevention and treatment of infections including tuberculosis, hepatitides, HIV, and emerging infections particularly among underserved populations. Other areas include health systems research with a focus on migration, universal health coverage and specific initiatives in Nigeria and the Sahel region of West Africa.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

- Scoping literature review of remote reading of tuberculin skin tests and CTB test for the diagnosis of tuberculosis infection (in collaboration with Prof Lele Rangaka). Potential PhD evaluating remote reading of skin tests embedded in studies in the UK and South Africa.
- Analysis of cohort study data from the END-VOC consortium (<https://endvoc.eu/>) to understand the implications of variants of concern on outcomes. There are multiple opportunities for a quantitative PhD analysing multi-country cohorts.
- Migration and climate change review investigating health triggers for internal and international migration by combining a scoping review with case studies. Potential PhD project nested within the Lancet Migration initiative (in collaboration with a network of multidisciplinary partners).
- Health system comparative analysis in the Sahel with a focus on implications for humanitarian crises (in collaboration with colleagues at Boston University and Harvard University). A potential PhD will focus on health determinants and health systems in collaboration with Sahelian organisations/institutions.

**Relevant publications**

Abubakar I, .....Devakumar D. Confronting the consequences of racism, xenophobia, and discrimination on health and health-care systems. *Lancet*. 2022 Dec 10;400(10368):2137-2146.

Zenner D, ..... Abubakar I. Drivers determining TB disease screening yield in four European screening programmes: a comparative analysis. *Eur Respir J*. 2023 May 25:2202396.

Angell B, Sanuade O, Adetifa IMO... Abubakar I, et al Population health outcomes in Nigeria compared to other West African countries, 1998-2019: a systematic analysis for the Global Burden of Disease Study. *Lancet* 2022.

Gupta RK ... **Abubakar I**. Discovery and validation of a personalized risk predictor for incident tuberculosis in low transmission settings. *Nature Med*. 2020 Dec;26(12):1941-1949.

**Dr Heather Bailey**

*Position:* Associate Professor in Infectious Disease Epidemiology

*Location:* UCL Institute for Global Health

*Research Group:* Centre for Molecular Epidemiology and Translational Research

*Email contact:* [heather.bailey@ucl.ac.uk](mailto:heather.bailey@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I am an infectious disease epidemiologist. I am interested in infections in pregnancy, vertical transmission of infections (from mother to child), and the health of children living with infections acquired in utero or around the time of birth. I work with collaborators, including within global paediatric network [Penta](#), on research to inform policies around infection screening, treatment and prevention.

**Rotation projects**

I am happy to discuss possible projects to fit your interests – potential areas are listed below and any of these could be developed into a full PhD.

- **CMV screening in pregnancy:** Congenital CMV infection is an important cause of childhood hearing loss. Although treatment during pregnancy can reduce the risk of congenital CMV in some cases, there are potential risks as well as benefits to antenatal CMV screening. Within this study at UCLH, there are opportunities to investigate questions around the epidemiology of CMV and the feasibility and acceptability of antenatal screening, in collaboration with a multidisciplinary team.
- **Childhood hearing loss and congenital CMV:** This project gives a unique opportunity to work with a national dataset on hearing loss up to age 5 years from the [Newborn Hearing Screening Programme](#), to address research questions around epidemiology and ascertainment of childhood hearing loss, linking this with development of future cCMV research.
- **Hepatitis B in pregnancy:** Data from 2014 showed that pregnant women living with chronic hepatitis B in England had a stillbirth rate twice the national average. This project will use national surveillance data collected through [ISOSS](#) since 2021 to investigate this and other adverse pregnancy and neonatal outcomes, in collaboration with UKHSA (co-supervisor: Dr Sema Mandal), to support equitable care.
- **HIV in pregnancy:** The [European Pregnancy and Paediatric Infections Collaboration](#) is a well-established international network of cohort and surveillance studies. Possible projects within EPPICC could focus on characteristics of pregnant women newly diagnosed with HIV to inform HIV prevention strategies, or the impact of changing HIV epidemiology or COVID pandemic on outcomes, including vertical transmission of HIV.

**Relevant publications:**

- Jones, C. E., Bailey, H., Bamford, A., et al (2022). Managing challenges in congenital CMV: current thinking. *Archives of Disease in Childhood*. doi:10.1136/archdischild-2022-323809
- Bailey, H., Nastouli, E., Webb, S., Peckham, C., & Thorne, C. (2023). Characteristics, treatment and care of pregnant women living with hepatitis B in England: findings from a national audit. *Epidemiology and Infection*. doi:10.1017/S0950268823000225
- The European Pregnancy and Paediatric HIV Cohort Collaboration (EPPICC) Study Group, Bailey, H., Goetghebuer, T., Gingaras, C., Grawe, C., Ramos, J. T., . . . Sconza, R. (2019). Nucleoside reverse transcriptase inhibitor backbones and pregnancy outcomes. *AIDS*. doi:10.1097/QAD.0000000000002039

**Dr Julia Bailey****Position:** Associate Professor**Location:** University College London**Research Group:** UCL [eHealth Unit](#)**Email contact:** [Julia.bailey@ucl.ac.uk](mailto:Julia.bailey@ucl.ac.uk)**Theme:** Health of the Public**Research overview****1. Sexual health online**

Development and evaluation of digital technologies for sexual health (e.g. [Contraception Choices](#), SexTherapyLondon)

**2. Sexual health of marginalised populations**

Addressing barriers to sexual wellbeing (individual concerns, clinician-patient communication, structural discrimination). (E.g. [Black Voices](#) project; Healthcare for Intersex, trans and non-binary people).

**3. Science Communication**

Communicating sexual health to different audiences (in words, images, audio and video)

**Rotation project** *(including a brief outline of how this will develop into a PhD project)***1. Judgement and assumption in sexual health consultations.**

This project will explore communication concerning sexual health, to understand how potentially sensitive sexual health topics are navigated, and whether/how clinicians can be 'non-judgemental' in sexual health consultations.

**Methodology:** Literature review (including social science/linguistics). Qualitative interviews with patients and clinicians. A future PhD could develop an evidence-based online learning resource for healthcare staff.

**2. Students are also very welcome to suggest their own sexual health topics**

A place on the popular [UCL Qualitative Methods in Health](#) course is possible, depending upon the timing.

**Relevant publications**

D'Souza P, Bailey JV, Stephenson J, Oliver S. Factors influencing contraception choice and use globally: a synthesis of systematic reviews. *European J of Contraception and Reproductive Health Care*. Sep 2022

Manby L, Aicken C, Delgrange M, Bailey JV. Effectiveness of eHealth Interventions for HIV Prevention and Management in Sub-Saharan Africa: Systematic Review and Meta-analyses. *AIDS Behav* 2021

Bailey JV, Wayal S, Aicken C, et al. Interactive digital interventions for prevention of sexually transmitted HIV: systematic review and meta-analyses. *AIDS* 2021;35(4):643-53

Alomair N, Algaeel S, Davies N, Bailey J. Factors influencing sexual and reproductive health of Muslim women: a systematic review. *Reproductive Health* Mar 2020 17(33)

Stephenson J, Bailey JV, Blandford A, et al. An interactive website to aid young women's choice of contraception: feasibility and efficacy RCT. *HTA report* 2020;24(56):1-44

Gurney K, Hobbs L, Adams N, Bailey JV. The SextherapyLondon interactive website for sexual difficulties: content, design and rationale. *Journal of Sex and Relationship Therapy*. 2020;35(2):210-26

**David Bann**

*Position:* Associate Professor of Population Health

*Location:* Centre for Longitudinal Studies, UCL

*Research Group/Website:*

<https://iris.ucl.ac.uk/iris/browse/profile?upi=DBANN02> and  
<https://cls.ucl.ac.uk/>

*Email contact:* [david.bann@ucl.ac.uk](mailto:david.bann@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I have a broad interest in epidemiology: understanding the distribution of health, its causes, and the application of this knowledge to improve public health. My background spans multiple disciplines: Epidemiology (PhD), Psychology (BSc), and Biology (BSc+M.Res). Areas of recent interest: health inequality; epidemiology of: obesity, physical activity, mental health; comparative research across time / place.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

I have multiple projects, each of which could develop into full PhD projects in collaboration with epidemiological, genetic, statistical, bioinformatician, and social science co-supervisors. Skills in epidemiological and statistical analysis will be developed; including longitudinal data analysis, causal estimation, open science practices, and genetics.

1. Investigating gene-environment interactions in the UK cohort studies.

There is increasing evidence that a wide variety of traits are influenced by both social and genetic factors. However, very little is known about how these social and genetic factors interact—do social and genetic factors exert their own effects irrespective of each other, or do they operate in a multiplicative way whereby certain social surroundings can mitigate genetic predisposition to health or disease (or vice versa)? This project will explore the presence of such gene-environment interactions to identify potential methods of interventions to improve health and reduce the burden of disease across society.

2. Leveraging the DNA revolution to better understand the changing links between health, intelligence, and social outcomes.

This multidisciplinary project seeks to better understand the changing links between mental and physical health, intelligence, and social outcomes in the UK. It will use data and approaches from 1 above.

3. Do interventions reduce the variability of health outcomes?

Successful interventions or policies may both reduce the variability of a health outcome and reduce the average. This project will use new statistical tools to test this. See [link](#).

4. Using text data to examine cognitive decline and social inequalities in health

This project will use text mining and machine learning techniques to exploit a unique dataset of essays collected from members of the 1958 British birth cohort study at ages 11 and 50, using these to answer important questions in epidemiology regarding cognitive decline and the source social inequalities in health.

**Relevant publications**

**Bann D**, Wright L, Hardy R, Williams DM, Davies NM. Polygenic and socioeconomic risk for high body mass index: 69 years of follow-up across life. PLOS Genetics, in press. [Preprint, Syntax](#).

**Bann D**, Wright L, Goisis A, et al, Ploubidis GB\*, O'Neill D\*. [Investigating change across time in prevalence or association using observational data](#). OSF Preprints, 2021. [Tutorial+Syntax](#).

**Bann D**. [The scope of health injustice](#). European Journal of Public Health. 2021.

**Bann D**, Johnson W, Li L, Kuh D, Hardy R. [Socioeconomic inequalities in childhood and adolescent body-mass index, weight, and height from 1953 to 2015: an analysis of four longitudinal, observational, British birth cohort studies](#). The Lancet Public Health, 2018.

**Morris T et al** [Population phenomena inflate genetic associations of complex social traits](#). Science advances.

**Julien Baruteau**

*Position:* Principal Research Fellow

*Location:* UCL Great Ormond Street Institute of Child Health

*Research Group/Website:* <https://www.ucl.ac.uk/child-health/research/genetics-and-genomic-medicine/inborn-errors-metabolism/dr-julien-baruteau>

*Email contact:* [j.baruteau@ucl.ac.uk](mailto:j.baruteau@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I am a MRC Clinician Scientist Fellow and Consultant in Metabolic Medicine at Great Ormond Street Hospital for Children in London. My research focuses on studying the pathophysiology and developing novel viral and non-viral gene therapy technologies for inherited metabolic diseases, targeting the central nervous system and the liver. My group has experience in viral (AAV, lentiviral) and non-viral (mRNA lipid nanoparticles, exosomes) gene therapy, iPSC and editing.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

Title: Messenger RNA therapy for a rare genetic disease, Gaucher disease.

Among 3,000 cerebral genetic diseases, 75% of them affect children causing severe morbidity and early death. Less than 5% of these diseases have approved disease-changing therapies. To tackle this urgent unmet needs, viral vector mediated gene therapy has shown some success but adverse events such as immune response and insertional mutagenesis are limitations for wide application. In parallel, mRNA therapy has shown safety and efficacy during the COVID-19 pandemic and is now showing promises to treat rare genetic diseases. Glucocerebrosidase (GCase) deficiency causes a severe paediatric neurodegenerative disease, Gaucher disease.

The rotation's project will consist in optimising the non-viral vector *i.e.* the lipid nanoparticle, the mRNA and amino acid sequence of the enzyme glucocerebrosidase to increase the cellular uptake and half-life respectively. This will be performed in vitro in patients' cell lines.

This can be developed in a PhD project with proof of concept in a Gaucher mouse model to treat the cerebral disease, and screen for optimal lipid nanoparticles in vivo with single cell RNA sequencing (scRNAseq). This can be adapted as more basic science or translational depending on student's preference. The student will become proficient in 2 rapidly expanding technologies in Biological Sciences: mRNA and scRNAseq.

**Relevant publications**

1. Touramanidou L ..., **Baruteau J**. Macrophage inhibitor clodronate enhances liver transduction of lentiviral but not AAV vectors or mRNA lipid nanoparticles *in vivo*. **BioRxiv**, 2023, <https://www.biorxiv.org/content/10.1101/2023.07.26.550697v1>
2. Perocheau DP ..., **Baruteau J**. *Ex vivo* primary liver sections recapitulate disease phenotype and therapeutic rescue for liver monogenic diseases. **BioRxiv**, 2023, <https://www.biorxiv.org/content/10.1101/2023.03.23.533840v1>
3. Gene therapy for urea cycle defects: an update from historical perspectives to future prospects. Duff C, Alexander IE, **Baruteau J. J Inherit Metab Dis.** 2023 *In Press*.
4. Gurung S, ..., **Baruteau J**. mRNA therapy restores ureagenesis and corrects glutathione metabolism in argininosuccinic aciduria. **BioRxiv**, 2022. <https://www.biorxiv.org/content/10.1101/2022.10.19.512931v1>
5. **Baruteau J**, ..., Gissen P, Waddington SN. Argininosuccinic aciduria fosters neuronal nitrosative stress reversed by *Asl* gene transfer. **Nat Commun.** 2018;9:3505.



**Dr Ruth Blackburn**

*Position:* Senior Research Fellow  
*Location:* UCL GOSH Institute of Child Health  
*Research Group/Website:*  
<https://iris.ucl.ac.uk/iris/browse/profile?upi=RMBLA61>  
*Email contact:* [r.blackburn@ucl.ac.uk](mailto:r.blackburn@ucl.ac.uk)  
*Theme:* Health of the Public

**Research overview**

I am a public health researcher using electronic health records and administrative data to evaluate interventions for populations with complex care needs, particularly those relating to mental health. I work with the [Child Health Informatics Group](#) (CHIG) at ICH.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

Potential projects relate to the use of population-based hospital, education and social care data with whole nation coverage of England, including Hospital Episodes Statistics and the ECHILD database. There is scope to accommodate the topic and methodological interests of the PhD student and to include collaborations with other investigators including those within CHIG. These projects have the potential to be developed into full PhD research projects.

- Phenotyping stress-related presentations in adolescence using emergency department and hospital inpatient data (collaborating with Dr Kate Lewis)
- Examining trajectories of maternal mental health in the perinatal period and beyond (including subsequent pregnancies)
- Adolescent mental health in schools, investigating individual and school-level risk factors

**Relevant publications**

- Blackburn, R., Ajetunmobi, O., Mc Grath-Lone, L., Hardelid, P., Shafran, R., Gilbert, R., & Wijlaars, L. (2021). Hospital admissions for stress-related presentations among school-aged adolescents during term time versus holidays in England: weekly time series and retrospective cross-sectional analysis. *BJPsych Open*, 7(6), 8 pages. doi:10.1192/bjo.2021.1058
- Blackburn, R., Guttman, A., Amartey, A., Zhou, L., Wijlaars, L., Saunders, N., Harron, K., Chiu, M., Gilbert, R. (2019). Long-term mortality in mothers of infants with neonatal abstinence syndrome: A population-based parallel-cohort study in England and Ontario, Canada. *PLoS Medicine*, 16(11):e1002974. doi: 10.1371/journal.pmed.1002974.
- Blackburn, R. M., Herbert, A., Wijlaars, L., & Gilbert, R. (2018). Trends in Hospital Admissions for Nonfatal Adversity-Related Injury Among Youths in England, 2002-2016. *JAMA Pediatrics*. doi:10.1001/jamapediatrics.2018.2516
- Mc Grath-Lone, L., Libuy, N., Harron, K., Jay, M. A., Wijlaars, L., Etoori, D., Lilliman, M., Gilbert, R., & Blackburn, R. (2022). Data Resource Profile: The Education and Child Health Insights from Linked Data (ECHILD) Database. *International Journal of Epidemiology*, 51(1), 17-+. doi:10.1093/ije/dyab149

**Dr Jo Blodgett**

*Position:* Senior Research Fellow

*Location:* Institute of Sport Exercise & Health

*Research Group/Website:* <https://www.iseh.co.uk/>

*Email contact:* [joanna.blodgett@ucl.ac.uk](mailto:joanna.blodgett@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

Based within the Institute of Sport Exercise & Health, there are two key avenues of research:

- 1) Physical activity in large population cohort studies to investigate determinants and outcomes related to physical activity
- 2) Women's health in both elite athletes and the general population

**Rotation project** (including a brief outline of how this will develop into a PhD project)

Menstrual health is an integral aspect of women's health, underlying many aspects of overall physical, mental and social health and well-being. Despite severe and widespread negative menstrual health experiences, upstream approaches to minimise or eliminate negative symptoms are rarely adapted. Our team is interested in how exercise, sport or daily physical movement can positively impact menstrual experiences in the general population and in elite athletes.

This rotation could begin with either primary data collection or secondary analysis in either population (e.g. elite athlete, general population) and a full PhD project could evolve to include a single target population or combine both approaches. A few potential rotation projects are listed below, but we are happy for new projects to be proposed:

1. Primary data collection of biomechanic movements (e.g. squat, jump + land, etc.) across the menstrual cycle in female footballers
2. quantitative survey of female footballers to quantify how periods impact training/competition and understand current knowledge and support received from their club
3. data collection and interpretation of an ongoing research project examining cognitive function (i.e. hand-eye coordination, decision making, reaction time, attention) across different phases of the menstrual cycle in female athletes.
4. The 1970 British Cohort Study is a study of over 17 000 individuals born in England, Scotland or Wales during the same week of 1970. Data has been collected at 11 different time points . Areas of interest to be explored include:
  - tracking irregular menstruation/symptoms across the life course
  - physical activity and menstrual symptoms/problem across the life course
  - associations b/w physical activity patterns in adolescence and menstruation in adulthood
  - investigation characteristics of different menstrual health profiles (e.g. health behaviours such as PA, nutrition, sleep, or socioeconomic position or academic attainment)/irregularity on PA levels/duration/intensity, etc.

**Relevant publications**

Bruinvels G, Burden RJ, McGregor AJ, et al. Sport, exercise and the menstrual cycle: where is the research? *Br J Sports Med.* 2017 Mar;51(6):487-488. doi: 10.1136/bjsports-2016-096279.

Barlow A, Blodgett JM, Williams S, Pedlar CR, Bruinvels G. Injury incidence, severity and type across the menstrual cycle in elite female professional footballers: a prospective three season cohort study. Available at: <https://www.medrxiv.org/content/10.1101/2023.07.12.23292497v1>



**Jessica Bone**

*Position:* Senior Research Fellow

*Location:* BSH, UCL

*Research Group/Website:* [Social Biobehavioural Research Group](#)

*Email contact:* [jessica.bone@ucl.ac.uk](mailto:jessica.bone@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

The Social Biobehavioural Research Group explores the role of social deficits and social assets (e.g. loneliness, social isolation, cultural engagement, social prescribing) on physical and mental health. I am particularly interested in the importance of these factors for children and young people's mental health. I am also interested in using advanced methods for causal inference, including outcome-wide analyses, propensity score methods, and fixed effects modelling.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)***The role of arts and cultural engagement in young people's health**

(co-supervised with Prof Daisy Fancourt)

There is a growing body of empirical evidence on the health benefits of engagement in arts and cultural activities, including participatory arts such as singing and painting, and cultural activities like going to the theatre and museums. However, most of the evidence comes from studies of older adults or from intervention studies. There is a lack of population-level evidence in young people, particularly using robust methods. This project will use outcome-wide analyses of a large cohort study to explore whether arts and cultural engagement is associated with a range of different markers of mental and physical health in young people.

This project offers an excellent opportunity to apply novel methods in a large-scale longitudinal dataset, as well as exploring the role of psychosocial factors in health. It has the potential to be developed into a full PhD project in several ways, such as by focussing on specific aspects of arts and cultural engagement, comparing the arts to other exposures, using other advanced methods for causal inference, or taking a lifecourse approach.

**Relevant publications**

- Bone, J., Bu, F., Sonke, J. K., & Fancourt, D. (2023). Leisure engagement in older age is related to objective and subjective experiences of aging. *PsyArXiv*.
- Bone, J. K., Bu, F., Sonke, J. K., & Fancourt, D. (2023). Longitudinal associations between arts engagement and flourishing in young adults: A fixed effects analysis of the panel study of income dynamics. *Affective Science*, 4(1), 131-142.
- Bone, J. K., Fancourt, D., Fluharty, M. E., Paul, E., Sonke, J. K., & Bu, F. (2022). Cross-sectional and longitudinal associations between arts engagement, loneliness, and social support in adolescence. *Social Psychiatry and Psychiatric Epidemiology*, 1-8.
- Buechner, H., Toparlak, S. M., Ostinelli, E. G., Shokrane, F., Nicholls-Mindlin, J., Cipriani, A., ... & Syed Sheriff, R. (2023). Community interventions for anxiety and depression in adults and young people: A systematic review. *Australian & New Zealand Journal of Psychiatry*, 00048674221150362.

## Alexandra Burton

*Position:* Senior Research Fellow  
*Location:* 1-19 Torrington Place  
*Research Group/Website:* Social Biobehavioural  
 Research group/<https://sbbresearch.org/>  
*Email contact:* a.burton@ucl.ac.uk  
*Theme:* Health of the Public



### Research overview

I use qualitative research methods to explore how and why social connections, social assets (e.g., social prescribing) and social deficits (e.g., loneliness) impact mental and physical health. I am particularly interested in improving access to social assets among people living with mental health problems to support their health and wellbeing.

### Rotation project (including a brief outline of how this will develop into a PhD project)

Students are welcome to suggest their own topics on social assets or deficits for people living with mental health problems. A full PhD proposal could evolve from these projects.

1: This project will explore mechanisms of action of a community singing programme for new mothers experiencing postnatal depression. **Methods:** A qualitative thematic analysis of focus groups with women taking part in a 10-week singing programme as part of a large clinical trial. Individual interviews exploring risk factors for PND and how these interact with singing will also be available. Transcripts will be analysed using Interpretative Phenomenological Analysis.

2: A systematic review on social support and CVD health outcomes in people with SMI. The specific direction of the review can be determined in collaboration with the student but should seek to answer one or more of the following research questions i) is there a relationship between social support and cardiovascular health outcomes in people with SMI?; ii) what are the mechanisms that can be used to explain how, why and in what contexts social support increases uptake of CVD risk reducing behaviours in people with SMI? iii) how is social support used within CVD risk reducing interventions and do these interventions improve CVD health outcomes in people with SMI?

### Relevant publications

Baxter, L., Burton, A., & Fancourt, D. (2022). Community and cultural engagement for people with lived experience of mental health conditions: what are the barriers and enablers? *BMC Psychology*, 10 (1), 71. doi:10.1186/s40359-022-00775-y

Warran, K., Burton, A., & Fancourt, D. (2022). What are the active ingredients of 'arts in health' activities? Development of the INgredients iN ArTs in hEalth (INNATE) Framework [version 2; peer review: 2 approved]. *Wellcome Open Research*, 7, 10. doi:10.12688/wellcomeopenres.17414.2

Burton, A., Walters, K., Marston, L., & Osborn, D. (2020). Is there an association between perceived social support and cardiovascular health behaviours in people with severe mental illnesses?. *Soc Psychiatry Psychiatr Epidemiol*. doi:10.1007/s00127-020-01879-9

Estevao, C., Bind, R., Fancourt, D., Sawyer, K., Dazzan, P., Sevdalis, N., . . . Pariente, C. (2021). SHAPER-PND trial: clinical effectiveness protocol of a community singing intervention for postnatal depression. *BMJ Open*, 11 (11), e052133. doi:10.1136/bmjopen-2021-052133

## Valentina Cambiano

*Position:* Associate Professor

*Location:* UCL IGH

*Research Group/Website:* Centre for Clinical Research, Epidemiology, Modelling and Evaluation (CREME)

*Email contact:* v.cambiano@ucl.ac.uk

*Theme:* Health of the Public



### Research overview

In the UCL Centre for Clinical Research, Epidemiology, Modelling and Evaluation

(<https://www.ucl.ac.uk/global-health/igh-centre-list/centre-creme#:~:text=The%20Centre%20for%20Clinical%20Research,population%20health%20and%20guide%20policy>)

we apply multi-disciplinary research methods to generate an in-depth understanding of problems to inform population health policies. My research aims to advance understanding of sexual behaviour and access to HIV prevention of adolescent girls and young women in Southern Africa.

### Rotation project (including a brief outline of how this will develop into a PhD project)

There are a number of research questions that could be addressed using cross-sectional data collected among sexually active adolescent girls and young women in Zimbabwe, using a respondent driven sampling approach. This survey is part of the project entitled “Towards ending HIV in Zimbabwe through focusing on improving targeting of HIV testing and uptake of HIV prevention in adolescent girls and young women” (<https://gtr.ukri.org/projects?ref=MR%2FT042796%2F1>), conducted in partnership with the Centre for Sexual Health and HIV/AIDS Research Zimbabwe (CeSHAAR) <http://ceshar.org/>, and in particular Dr Euphemia Sibanda (co-Investigator).

All these projects will be performed under the co-supervision of Dr Fiona Lampe and Professor Maryam Shahmanesh and can be conducted only as third rotation (i.e. from April 2023)

- Role of mental health in sexual behaviour among sexually active adolescent girls and young women in Zimbabwe.
- Post-exposure prophylaxis and pre-exposure prophylaxis uptake among sexually active adolescent girls and young women in Zimbabwe, barriers to access them and factors associated with their use.
- Alcohol and drug use among sexually active adolescent girls and young women in Zimbabwe and their relationship with sexual behaviour.
- HIV knowledge (including of ‘Undetectable=Untransmittable’ (U=U)) and its association with stigma and sexual behaviour among sexually active adolescent girls and young women in Zimbabwe

These projects provide a unique opportunity to work with data newly collected in Zimbabwe to address one of the most pressing issues: how to further reduce HIV incidence among adolescent girls and young women in Southern Africa. PhD students would develop skills in statistical and epidemiological analysis, and in how to work with multi-disciplinary team. A full PhD project could be developed using these data.

### Relevant publications

- Mthiyane et al. (2021). “Common mental disorders and HIV status in the context of DREAMS among adolescent girls and young women in rural KwaZulu-Natal, South Africa.” BMC Public Health 21(1):478 DOI: 10.1186/s12889-021-10527-z PMID: 33691665 PMCID: PMC7945212
- Phillips et al. (2022) Enabling timely HIV post-exposure prophylaxis (PEP) access in sub-Saharan Africa. Accepted by AIDS
- Napierala S, et al. (2022) Engagement in HIV services over time among young women who sell sex in Zimbabwe. PLoS ONE 17(6): e0270298. <https://doi.org/10.1371/journal.pone.0270298>
- Rodger AJ, Cambiano V, et al. Sexual Activity Without condom and Risk of HIV Transmission in Serodifferent Couples When the HIV-Positive Partner is Using Suppressive Antiretroviral Therapy. JAMA 2016, Jul; 316 (2), 171-181. doi:10.1001/jama.2016.5148

**Drs Sharon Cox and Sarah Jackson***Position:* Principal Research Fellow*Location:* Department of Behavioural Science and Health*Research Group:* UCL Tobacco and Alcohol Research Group (UTARG)*Email:* [s.cox@ucl.ac.uk](mailto:s.cox@ucl.ac.uk) and [s.e.jackson@ucl.ac.uk](mailto:s.e.jackson@ucl.ac.uk)*Theme:* Health of the Public

**Research overview.** A key focus of our work is to monitor and assess the pervasive gap in smoking rates across the social gradient. In England, smoking is generally declining, but this decline is not equal across all groups. Pregnant women who smoke are much more likely to be from more disadvantaged backgrounds. Women who smoke during pregnancy are a well-studied population in respect of trials for cessation but assessing the trends in patterns and prevalence of smoking of women of childbearing years across time, at a population level, is underexplored. Assessing these patterns helps us to understand if progress is being made amongst an important group of women who may become parents.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

This project provides a unique opportunity to work with the Smoking Toolkit Study (STS), which involves monthly, face-to-face, computer-assisted household surveys with adults aged 16+ in England, representative of the adult population of smokers in England. The surveys include detailed questions on smoking and cessation, and demographic characteristics and has included more than 330,000 participants since 2006.

The aim of this project is to examine trends in smoking-related behaviours among women of childbearing age in England, and differences by socioeconomic position. Objectives include:

1. To examine:
  - a. Current smoking prevalence, among women of childbearing age in England
  - b. Levels of motivation to stop smoking, among those who currently smoke
  - c. Level of cigarette addiction and rates of quit attempts and cessation, among those who have smoked regularly in the past year
  - d. Motives for trying to quit, among those who have made an attempt to quit in the past year
2. To explore the extent to which 1a-d have changed since 2006.
3. To compare differences in smoking-related behaviours (1a-d) and time trends (2) by occupational social grade as a marker of socioeconomic position.

This work could build into a PhD in women's health and tobacco related inequalities.

**Relevant publications**

The Smoking Toolkit Study: <https://smokinginengland.info/>

Kock, L., Brown, J., Shahab, L., Tattan-Birch, H., Moore, G., & Cox, S. (2022). Inequalities in smoking and quitting-related outcomes among adults with and without children in the household 2013–2019: a population survey in England. *Nicotine and Tobacco Research*, 24(5), 690-698.

Jackson, S. E., Smith, C., Cheeseman, H., West, R., & Brown, J. (2019). Finding smoking hot-spots: a cross-sectional survey of smoking patterns by housing tenure in England. *Addiction*, 114(5), 889-895.

**Professor Melanie Davies** Consultant Gynaecologist and Reproductive Medicine Specialist, Honorary Professor of Reproductive Medicine and **Dr Hajra Khattak** (NIHR Academic Clinical Lecturer and Specialty Registrar in Obstetrics and Gynaecology)

*Location:* EGA Institute for Women's Health

*Research Group/Website:*

*Email contact:* [melanie.davies@ucl.ac.uk](mailto:melanie.davies@ucl.ac.uk), [h.khattak@ucl.ac.uk](mailto:h.khattak@ucl.ac.uk)

*Theme:* Health of the Public



### Research overview

Children and young adolescents are now surviving cancer due to groundbreaking research into anti-cancer therapies. Survivorship has also brought into focus quality of life after cancer, in particular reproductive health. Our team have an interest in preservation of fertility in (assigned at birth) females and in reviewing late effects of cancer survivors in particular their reproductive health.

### Rotation Project: Investigating Late Effects of Cancer on Fertility in Sarcoma Patients

This joint-supervised project aims to conduct a retrospective study exploring fertility preservation options and reproductive outcomes in children and young adults diagnosed with sarcoma, a cancer arising from muscle or soft tissue. With approximately 170 children diagnosed with sarcoma annually in the UK, improved survival rates underscore the importance of addressing quality of life, particularly in terms of future fertility. The project will focus on utilising the extensive patient records from the UCLH Reproductive Medicine Unit in collaboration with the London Sarcoma Service, one of Europe's largest and highly regarded sarcoma services. With the multidisciplinary team that spans across Great Ormond Street Hospital, the Macmillan Centre, and UCLH, the study will closely examine late effects related to reproductive outcomes in sarcoma patients particularly after fertility preservation treatments. The project also offers a unique opportunity to work with electronic health records and develop large datasets between Oncology and Reproductive Health disciplines.

### Potential PhD Development:

This project lays the groundwork for potential PhD studies for research into long-term outcomes of cancer treatments in young adolescents on their subsequent reproductive health and life outcomes, with or without prior fertility preservation treatments. The following themes will be used:

1. Quality of Life: Understanding late effects, including infertility as overall survivor wellbeing.
2. Reproductive health concerns: Exploring patient perspectives to identify challenges for parenthood in sarcoma survivors.
3. Informed decision making: Exploring knowledge about fertility preservation, cancer treatment and family planning choices.
5. Psychological wellbeing: Exploring mental health concerns in relation to infertility during survivorship.
6. The project also holds the potential for exploring long term data on preconception health, pregnancy, and child health outcomes in female sarcoma survivors.

### Relevant publications

Xu Z, et al. Long term pregnancy outcomes of women with cancer following fertility preservation: A systematic review and meta-analysis. *Eur J Obstet Gynecol Reprod Biol.* 2023.

Anderson RA, Davies MC. Preserving fertility in girls and young women with cancer. *BMJ* 2016.

Khattak H et al. Experiences of young girls and women undergoing ovarian tissue cryopreservation: A systematic review and thematic synthesis. *J Psychosom Obstet Gynaecol* 2022.

Khattak H, Amorim CA. What are my options? Fertility preservation methods for young girls and women. *Fertil Steril.* 2022.

Khattak H et al.. Fresh and cryopreserved ovarian tissue transplantation for preserving reproductive and endocrine function: a systematic review and individual patient data meta-analysis. *Hum Reprod Update.* 2022.



## Jennifer Dykxhoorn

*Position:* Principal Research Fellow

*Location:* Division of Psychiatry

*Research Group/Website:* [www.mentalhealthepi.com](http://www.mentalhealthepi.com)

*Email contact:* [j.dykxhoorn@ucl.ac.uk](mailto:j.dykxhoorn@ucl.ac.uk)

*Theme:* Health of the Public



### Research overview

I am a psychiatric epidemiologist and public mental health expert. My research interests include using longitudinal methods to explore the social and spatial determinants of mental illnesses, with a particular focus on historically marginalised populations, including migrants and refugees.

Project supervised with Dr. Marie Mueller who uses epidemiologic & geographic methods to explore relationships between place and health.

### Rotation project (co-supervised with Dr Marie A. E. Mueller)

Aspects of the physical environment, including built and natural environments, and factors such as air, noise, heat, and light pollution, are likely to affect individual, community, and population mental health. There are many open questions about what environmental factors affect mental health outcomes, and in whom.

Using a range of readily available secondary data on exposures (e.g., greenspace or air pollution) and mental health outcomes in the London region, this rotation project will allow the student to work with the supervisors to shape the research questions and project to align with their interests.

There are several data sources that could be used for this project, including UK longitudinal studies, the London Datastore, and Ordnance Survey. The student will have the opportunity to shape the project around their interests and to define their own research question(s). During their rotation, the student will gain experience in project development, data management and cleaning, data analysis, and preparing a manuscript for publication. The richness of available data and the opportunity for data linkage allow for this rotation project to be developed into a full PhD project.

### Relevant publications

Mueller MAE, Midouhas E, Flouri E. [Types of green space and adolescent mental health and well-being in metropolitan London](#). *Cities & Health*. 2023 Feb 24; 7(3): P378-397

Mueller MAE, Flouri E. [Neighbourhood greenspace and children's trajectories of self-regulation: Findings from the UK Millennium Cohort Study](#). *Journal of Environmental Psychology*. 2020 Oct 01; 71.

Spyridonidis S, Dykxhoorn J, Hollander A-C, Dalman C, Kirkbride JB. [Neighborhood-level predictors of age-at-first-diagnosis of psychotic disorders: A Swedish register-based cohort study](#). *Schiz Bull Open* 2022 Jan;3(1).

Dykxhoorn J, Lewis G, Hollander A-C, Kirkbride JB, Dalman C. [Association of neighbourhood migrant density and subsequent risk of non-affective psychosis: a national, longitudinal cohort study](#). *Lancet Psych*. 2020 Apr 02;7(4): P327-336.

## Professor Daisy Fancourt

*Position:* Professor

*Location:* Behavioural Science and Health

*Research Group/Website:* [www.sbbresearch.org](http://www.sbbresearch.org)

*Email contact:* [d.fancourt@ucl.ac.uk](mailto:d.fancourt@ucl.ac.uk)

*Theme:* Health of the Public



### Research overview

The Social Biobehavioural Research Group explores how our health is influenced by social connections and behaviours and the biological mechanisms underpinning this. The large interdisciplinary team provides opportunities for developing research skills and experience in research translation and impact.

### Rotation project *(including a brief outline of how this will develop into a PhD project)*

**Project Title:** Understanding the biological correlates of social connections

Social connections are associated with diverse immune, cardiometabolic, anthropometric and stress-related biomarkers. Research by us and others has shown that different biological pathways are related to various aspects of social connections including structure (e.g. social contact and network), function (e.g. loneliness and social support), and quality (e.g. social inclusion and relationship strain). To date much work has focused on specific aspects of social connections in isolation from others (e.g. the effect of loneliness on inflammatory markers, whilst controlling for social isolation). In reality, there may be different clusters of social connection patterns, such as some individuals who are isolated but still have social support and low levels of loneliness, or others who are lonely despite having large social networks and a good quality of social relationships. Techniques such as latent class analysis (LCA) could elucidate common patterns of social connections and how these relate to biomarker profiles. Additionally, novel biological data such as in-depth analyses of proteins in the body are now emerging within cohort studies, but these have not been related to social connections. This project will involve analysis of the English Longitudinal Study of Ageing (ELSA). The student will learn statistical techniques such as LCA as well as working with a broad range of biomarker data depending on their particular interests, including inflammatory markers (e.g. CRP, fibrinogen, WBCs, IGF-1), stress markers (e.g. cortisol and DHEA), cardiometabolic markers (e.g. triglycerides, cholesterol, BMI, waist circumference), and proteins (from cardiovascular and neurological proteomic assays). The project offers key transferable skills in social psychology, psychobiology, epidemiology and advanced statistics, as well as scope for development into a full PhD.

### Relevant publications

Walker, E., Ploubidis, G., Fancourt, D. (2019). Social engagement and loneliness are differentially associated with neuro-immune markers in older age: time-varying associations from the English Longitudinal Study of Ageing.. *Brain Behav Immun*, doi:10.1016/j.bbi.2019.08.189

Bu, F., Steptoe, A., Fancourt, D. (2021). Relationship between loneliness, social isolation and modifiable risk factors for cardiovascular disease: a latent class analysis. *J Epidemiol Community Health*, doi:10.1136/jech-2020-215539

Finn, S., Ajnakina, O., Bu, F., Steptoe, A. & Fancourt, D., (under review) Genetic susceptibility to mental health traits and phenotypic social connections: evidence from the English Longitudinal Study of Ageing.

**Liz Fearon**

*Position:* Lecturer in Infectious Disease Epidemiology  
*Location:* Rm 311, Mortimer Market Centre  
*Research Group/Website:* Centre for Molecular Epidemiology and Translational Research  
*Email contact:* e.fearon@ucl.ac.uk  
*Theme:* Health of the Public

**Research overview**

- Infectious disease epidemiologist, also work interdisciplinarily
- Interest in social networks. Also interested in epidemic response, testing and contact tracing interventions.
- Research primarily in HIV and sexually transmitted infections, but also COVID-19.
- Focus on working with underserved and marginalised populations.
- Methods include social epidemiology, network science, evaluation, surveillance methodologies and mathematical modelling.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

1. Projects related to characteristics of sexual partnerships and partnership network characteristics among gay, bisexual and other men who have sex with men (GBMSM) and impact on STI transmission as well as design of health promotion:

- Individual and partnership level characteristics in relation to HIV, sexual health and well-being among GBMSM in Nairobi and Johannesburg.
- Role of individual, partnership and network factors in sexual health among GBMSM in the UK (from January 2024).
- Comparative review and meta-analysis of partnership and network characteristics among GBMSM globally.

2. Testing and contact tracing interventions, including in epidemic response:

- Using modelling to assess how social contact network characteristics might affect the efficacy of different testing and contact tracing approaches
- Review of contact tracing implementation across different settings
- Review of guidelines relevant to co-production in epidemic response modelling

These projects could be extended in a number of ways, eg with additional modelling. I am also happy for students to suggest their own topics related to these topics/methods.

**Relevant publications**

Endo A, et al. Heavy tailed sexual contact networks and monkeypox epidemiology in the global outbreak, 2022. *Science*. 2022; 378 (6615). <https://doi.org/10.1126/science.add4507>

Silva MEP, et al. The role of asymptomatic testing in reducing the impact of a COVID-19 wave. *Epidemics*. 2023; 44(100699). <https://doi.org/10.1016/j.epidem.2023.100699>

Smith AD, et al. HIV burden and correlates of infection among transfeminine people and cisgender men who have sex with men in Nairobi, Kenya: an observational study. *Lancet HIV*. 2021; 8(5)e274-283. [https://doi.org/10.1016/S2352-3018\(20\)30310-6](https://doi.org/10.1016/S2352-3018(20)30310-6)

Fearon E, et al. Online socialising among men who have sex with men and transgender people in Nairobi and Johannesburg and implications for public-health related research and health promotion: an analysis of qualitative and respondent driven sampling data. *JIAS*. 2020; 23(e25603). <https://doi.org/10.1002/jia2.25603>

**Professor Nigel Field**

**Position:** Professor  
**Location:** UCL Institute for Global Health  
**Research Group/Website:** [Molecular epidemiology](#)  
**Email contact:** [nigel.field@ucl.ac.uk](mailto:nigel.field@ucl.ac.uk)  
**Theme:** Health of the Public

**Research overview**

I am Professor of infectious disease epidemiology and a public health physician with wide ranging research interests, including in using molecular epidemiology to measure infectious diseases and their transmission in the population, understanding the gut microbiota and its role in shaping health, and improving sexual health at a population level. I work in large multi-disciplinary teams.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

I would be delighted to discuss rotation projects and PhD opportunities, including the following collaborative projects:

- [COHRIE-Uganda](#): The COHRIE (Collaborative One Health Research Initiative on Epidemics)-Uganda project aims to understand interactions between humans, livestock, wildlife, and vectors in five landscapes within Uganda to inform the development of interventions. I lead an ecology and epidemiology workpackage, and DTP fellows would work on research questions such as, ‘What are the main eco-epidemiological drivers of Rift Valley Fever in Uganda?’

*(Collaborations with Uganda Virus Reference Institute and many others)*

- [Baby Biome Study](#) (BBS): I am principal investigator on BBS, which is a Wellcome-funded UK birth cohort study designed to understand how microorganisms, the immune system and other factors in early life influence later health outcomes. DTP fellows would work on research questions such as, ‘What is the association between gut microbiota and subsequent disease at two years old (e.g., obesity, respiratory disease, atopy, infection)?’

*(Collaborations with the Wellcome Trust Sanger Institute)*

These and other projects mentioned in publications below, including [Natsal](#), could be developed into full PhDs.

**Relevant publications**

1. Mitchell H, et al. Prevalence and risk factors of bacterial enteric pathogens in men who have sex with men: A cross-sectional study at the UK's largest sexual health services. **Journal of Infection**. 2023; 86 (1): 33-40.
2. Lule SA, et al. Widespread exposure to Crimean-Congo haemorrhagic fever in Uganda might be driven by transmission from Rhipicephalus ticks: Evidence from cross-sectional and modelling studies. **Journal of Infection**. 2022; 85 (6): 683-692.
3. Dema E, et al. Initial impacts of the COVID-19 pandemic on sexual and reproductive health service use and unmet need in Britain: findings from a quasi-representative survey (Natsal-COVID). **Lancet Public Health** 2022;7(1):e36-e47.
4. Garcia-Mauriño Alcazar C, et al. The association between early-life gut microbiota and childhood respiratory diseases: a systematic review. **Lancet Microbe**. 2022. 3(11), e867-e880.
5. Shao Y, et al. Stunted microbiota and opportunistic pathogen colonization in caesarean-section birth. **Nature**. 2019 Oct; 574(7776):117-121.

**Eirini Flouri**

*Position:* Professor

*Location:* Dept of Psychology and Human Development, Institute of Education, UCL

*Research Group/Website:*

<https://iris.ucl.ac.uk/iris/browse/profile?upi=EFL0U94> and

<http://cubiclab.weebly.com/>

*Email contact:* [e.flouri@ucl.ac.uk](mailto:e.flouri@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I am a developmental psychologist seeking to understand how cognition and mental health develop across childhood in the general population. I have a strong interest in the role of the built environment (indoor and outdoor) in child outcomes. I am also keen to explore how children's cognition and mental health are interlinked.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

I outline three projects below, all using the MCS, all with Dr Steven Papachristou ([efstathios.papachristou@ucl.ac.uk](mailto:efstathios.papachristou@ucl.ac.uk)) as co-supervisor. Each can be taken as a rotation project or can be scaled up to a full PhD. For the latter, please get in touch with me directly to discuss.

1. **The role of the built environment in reward processing in adolescence**
2. **The role of the indoor home environment in cognition and behaviour in the preschool years**
3. **The link between emotion regulation and spatial ability in childhood**

**Relevant publications**

- Lewis, G., Srinivasan, R., Roiser, J., Blakemore, S. J., **Flouri, E.**, & Lewis, G. (2022). Risk-taking to obtain reward: Sex differences and associations with emotional and depressive symptoms in a nationally representative cohort of UK adolescents. *Psychological Medicine*, *52*, 13, 2805-2813
- Francesconi, M., **Flouri, E.**, & Kirkbride, J.B. (2022). The role of the built environment in the trajectories of cognitive ability and mental health across early and middle childhood: Results from a street audit tool in a general-population birth cohort. *Journal of Environmental Psychology*, *82*, 101847 [doi.org/10.1016/j.jenvp.2022.101847](https://doi.org/10.1016/j.jenvp.2022.101847)
- Henderson, M., Bould, H.E., **Flouri, E.**, Harrison, A., Lewis, G., Lewis, G., Srinivasan, R., Stafford, J., Warne, N., & Solmi, F. (2021). Association of emotion regulation trajectories in childhood with anorexia nervosa and atypical anorexia nervosa in early adolescence. *JAMA Psychiatry*, *78*, 1249-1257
- Oloye, H.T., & **Flouri, E.** (2021). The role of the indoor home environment in children's self-regulation. *Children and Youth Services Review*, *121*, 105761, [doi.org/10.1016/j.childyouth.2020.105761](https://doi.org/10.1016/j.childyouth.2020.105761)



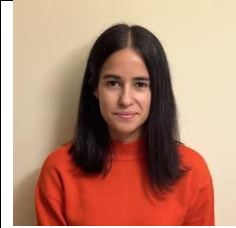
## Victoria Garfield

*Position:* Senior Research Fellow

*Location:* MRC Unit for Lifelong Health and Ageing, Institute of Cardiovascular Science

*Email contact:* [v.garfield@ucl.ac.uk](mailto:v.garfield@ucl.ac.uk)

*Theme:* Health of the Public



### Research overview

I am a Genetic Epidemiologist based at the MRC LHA. We house population-based studies such as the MRC 1946 birth cohort and the tri-ethnic SABRE study, and we conduct large scale genetic studies using the UK Biobank. My research focuses on: 1) sleep epidemiology, 2) cardiovascular risk factors and dementia.

### Rotation project

Potential rotation projects could be (there is plenty of scope to turn these into a full PhD project):

- 1) Investigating the association between genetic predisposition to habitual daytime napping and brain/cognitive health, using polygenic risk scores, across multiple ancestries (collaboration with Harvard and a sleep lab in Uruguay).
- 2) Investigating whether the association between habitual daytime napping and brain/cognitive health is modified by total night-time sleep duration (collaboration with Harvard and a sleep lab in Uruguay). This is a geneXenvironment design.
- 3) Investigating whether the relationship between type-2 diabetes and all-cause dementia is modified by genetic risk for poor sleep. This is also a geneXenvironment study.

### Relevant publications

1. Paz V, Dashti HS, Garfield V. Is there an association between daytime napping, cognitive function, and brain volume? A Mendelian randomization study in the UK Biobank. *Sleep Health*. 2023 12:S2352-7218(23)00089-X. doi: 10.1016/j.sleh.2023.05.002.
2. **Garfield V**, Farmaki AE, Fatemifar G, Eastwood SV, Mathur R, Rentsch CT, Denaxas S, Bhaskaran K, Smeeth L, Chaturvedi N. The Relationship Between Glycaemia, Cognitive Function, Structural Brain Outcomes and Dementia: A Mendelian Randomisation Study in the UK Biobank. *Diabetes* 2021 Jun; db200895.
3. Dashti HS, Daghlas I, Lane JM, Huang Y, Udler MS, Wang H, Ollila HM, Jones SE, Kim J, Wood AR; 23andMe Research Team; Weedon MN, Aslibekyan S, Garaulet M, Saxena R. Genetic determinants of daytime napping and effects on cardiometabolic health. *Nat Commun*. 2021;12(1):900. doi: 10.1038/s41467-020-20585-3.
4. Salzman A, Chaturvedi N, **Garfield V**. The relationship between cognitive function and sleep duration: A Mendelian randomisation study. medRxiv 2020.09.08.20190611; doi: <https://doi.org/10.1101/2020.09.08.20190611>
5. Henry, A., Masi, S., Fatemifar, G., Denaxas, S., Acosta, D., **Garfield, V\***. & Dale, C\* (2019). Investigating the causal association between sleep duration and cognitive outcomes in UK Biobank: a Mendelian randomisation study. *International Journal of Epidemiology*, 48(3), 849-860. \*Joint last authors.

## Manuel Gomes

*Position:* Associate Professor

*Location:* UCL Institute of Epidemiology and Health Care

*Research Group:* Applied Health Research (DAHR)

*Email contact:* m.gomes@ucl.ac.uk

*Theme:* Health of the Public



### Research overview

Decision makers are increasingly leveraging real-world data (RWD) for estimating treatment effects for regulatory and reimbursement purposes. However, many pitfalls may arise from RWD analysis and lead to biased treatment effects. My research exploits a framework for the design and analysis of RWD, which helps minimise biases while keeping each step of the way transparent and accessible.

### Rotation project

Decision makers often use routine data from electronic health records, registries and administrative datasets to evaluate the effectiveness and cost-effectiveness of health interventions. Deriving valid estimates of treatment effects from these data is challenging, not least because the data are not collected for research purposes. A promising framework to address these concerns is to apply design and analysis principles from randomised controlled trials (RCTs) to observational studies, known as 'target trial emulation' (TTE). This involves specifying the hypothetical RCT (target trial) that would answer the question of interest (e.g. treatment or policy effect), and emulating it using observational data. This project will exploit target trial emulation to improve decisions about which NHS treatments are most beneficial to patients and enable more health gains from scarce NHS resources. Rotation projects exploiting the TTE framework could focus on one of the following areas:

1. evaluation of personalised, adaptive treatment strategies about optimal treatment intensification of type-2 Diabetes.  
Datasets: UK CPRD and HES
2. improving indirect treatment comparisons (in the absence of head-to-head RCTs) of alternative biological drugs for rheumatoid arthritis  
Dataset: US Databank for rheumatic diseases
3. devising a unifying framework to aid the analysis of single-arm trials to evaluate new lung cancer treatments.  
Datasets: UK Cancer registries and US Flatiron data

Each of the rotations could evolve into full PhD projects.

### Relevant publications

**Gomes M**, Latimer N, Baio G, Freemantle N, Grieve R (2022). Target trial emulation for transparent and robust estimation of treatment effects for health technology assessment using real-world data: opportunities and challenges. *Pharmacoeconomics*, DOI: [10.1007/s40273-022-01141](https://doi.org/10.1007/s40273-022-01141).

Leahy T, Kent S, Sammon C, Ramagopalan S, **Gomes M** (2022). Unmeasured confounding in nonrandomized studies: quantitative bias analysis in health technology assessment. *J Comp Eff Res*, DOI: 10.2217/ce-2022-0029.

Leahy T, Duffield S, Kent S, Sammon C, **Gomes M** (2022). Application of quantitative bias analysis for unmeasured confounding in cost-effectiveness modelling. *J Comp Eff Res*, DOI: 10.2217/ce-2022-0030.

Katsoulis M, Stavola BD, Diaz-Ordaz K, **Gomes M**, et al (2021). Weight change and the onset of cardiovascular diseases: emulating trials using Electronic Health Records. *Epidemiology* 32 (5): 744-755.

**Jennifer Hall**

*Position:* Associate Professor

*Location:* EGA Institute for Women's Health

*Research Group/Website:* [Sexual and Reproductive Health](#) and <https://p3-study-ucl.co.uk/>

*Email contact:* [jennifer.hall@ucl.ac.uk](mailto:jennifer.hall@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

My research focuses on enabling people to have the children they choose, avoiding unwanted pregnancies (contraception) and planning and preparing for those they do want (preconception health). I conduct epidemiological analysis, qualitative investigations and am an expert in measurement. Our team is internationally renowned in preconception health and pregnancy intention.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

1 - Explore the feasibility of data linkage between the Human Fertilisation and Embryology Authority and Office for National Statistics birth registration datasets to measure the rate of natural pregnancy after In vitro fertilisation (IVF).

A recent high profile meta-analysis we conducted [1] demonstrated global interest and potential utility of this measure. A concurrent project conducted in the UCL Institute for child health has first linked these data sets recently for a different purpose [2], suggesting feasibility. The wider potential PhD project would be to carry out this data linkage to estimate the incidence of natural pregnancy after IVF, explore what factors are associated with a greater likelihood of natural conception and develop an individual risk calculator/score to be used in counselling couples considering further IVF.

2 - Jointly supervised by myself and Prof Katie Harron at ICH, the rotation project would explore the utility of the existing e-child dataset and newly linked MSDS data for analysis of preconception health or other reproductive health topics. There are opportunities to develop PhD projects to carry out analyses related to preconception health and pregnancy and child health outcomes including educational attainment and to also explore linkage with other data sources.

**Relevant publications**

**Project 1** – 1- Thwaites A, Hall J, Barrett G, Stephenson J. How common is natural conception in women who have had a livebirth via assisted reproductive technology? Systematic review and meta-analysis. Hum Reprod. 2023 Jun 20:dead121. doi: 10.1093/humrep/dead121. Epub ahead of print. PMID: 37339780.

2 - Purkayastha M, et al. Cohort profile: a national, population-based cohort of children born after assisted conception in the UK (1992–2009): methodology and birthweight analysis. BMJ Open 2021 doi: 10.1136/bmjopen-2021-050931

**Project 2:** Lancet series in Preconception health – 3 papers, especially the first, our proposal for a preconception report card, and to a description of indicators and their availability:

Other recent publications are listed [here](#)

**Prof Mark Hamer**

*Position:* Professor

*Location:* Institute of Sport Exercise & Health

*Research Group/Website:* <https://www.iseh.co.uk/>

*Email contact:* [m.hamer@ucl.ac.uk](mailto:m.hamer@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

Based within the Institute of Sport Exercise & Health, the Population Health Research Team mainly use existing data from large population cohort studies to investigate determinants and outcomes related to physical activity. Data sources primarily include British birth cohort studies and an international consortium of 15+ studies from the UK, Europe and Australia.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

ProPASS ([www.propassconsortium.org](http://www.propassconsortium.org)) is an international research collaboration platform of 15+ cohorts using thigh-worn accelerometry devices to explore the effects of physical activity, posture, and sleep patterns on a wide range of health outcomes. A pilot dataset has recently been created by harmonising data from six cohort studies (based in the UK, Australia, Netherlands, Finland and Denmark). Our current research aims are to explore physical activity, sedentary behaviour and sleep in relation to cardiovascular outcomes.

Rotation research questions can be developed to align with the interests of the student and supervisors. For example, potential topics could include explore:

- Physical activity: type (e.g. cycling, stairs, etc.), intensity (light, moderate, vigorous, etc.), duration and bout frequency (e.g. <5 min bouts of exercise, 30+min bouts of sedentary behaviour)
- Health outcomes: Cognitive health, physical capability, social networks, mental health, etc.

**Relevant publications**

Stamatakis E, Koster A, Hamer M, et al.. Emerging collaborative research platforms for the next generation of physical activity, sleep and exercise medicine guidelines: the Prospective Physical Activity, Sitting, and Sleep consortium (ProPASS). Br J Sports Med. 2020 Apr;54(8):435-437. doi: 10.1136/bjsports-2019-100786.

Stevens ML, Gupta N, Inan Eroglu E, et al. . Thigh-worn accelerometry for measuring movement and posture across the 24-hour cycle: a scoping review and expert statement. BMJ Open Sport Exerc Med. 2020 Dec 24;6(1):e000874. doi: 10.1136/bmjsem-2020-000874. P

**PIA HARDELID**

*Position:* Associate Professor

*Location:* UCL GOS ICH (Population, Policy and Practice)

*Email contact:* [p.hardelid@ucl.ac.uk](mailto:p.hardelid@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I am one of the principal investigators in the [Child Health Informatics Group](#). My team and I use administrative health datasets to examine the epidemiology of paediatric respiratory viruses, environmental impacts on child health and the impact of health inequalities (due to socio-economic position, migration status, ethnic group or disability) on children.

**Rotation project**

A number of potential rotation projects are available, including:

- Impact of air pollution and adverse housing conditions on the risk of respiratory viral infections in children (using data from the [PICNIC study](#))
- Decline and resurgence of non-COVID respiratory infections in children since 2020 using national hospital admission data for England
- Health and education outcomes for children with Sickle Cell Disease, using [ECHILD](#)
- Impact of climate change, biodiversity loss, or green spaces on health in children, working with the [Kids' Environment and Health Cohort](#) team
- Health status of migrant children, and children whose parents have migrated to the UK, using the ONS Longitudinal Study:  
<https://www.ons.gov.uk/aboutus/whatwedo/paidservices/longitudinalstudies>

Any of these could be further developed into a PhD project. This is an excellent opportunity for a student interested in quantitative research to gain experience in analysing routinely collected administrative data to address child public health priorities. The student would be joining a friendly, diverse and productive team of researchers who frequently work with collaborators in Scotland, Wales, Sweden, Canada and Australia.

**Relevant publications**

Lewis KM, De Stavola BL, Cunningham S, Hardelid P. Socioeconomic position, bronchiolitis and asthma in children: counterfactual disparity measures from a national birth cohort study. *Int J Epidemiol.* 2023;52(2):476-488. doi: 10.1093/ije/dyac193.

Miller F, Zylbersztejn A, Favarato G, et al. Factors predicting amoxicillin prescribing in primary care among children: a cohort study. *Br J Gen Pract.* 2022 ;72(722):e659–67. doi: 10.3399/BJGP.2021.0639.

-Favarato G, Clemens T, Cunningham S, et al. Air Pollution, housing and respiratory tract Infections in Children: National birth Cohort study (PICNIC): study protocol. *BMJ Open.* 2021; doi:10.1136/bmjopen-2020-048038.

-Zylbersztejn A, Pembrey L, Goldstein H, et al. Respiratory syncytial virus in young children: community cohort study integrating serological surveys, questionnaire and electronic health records, Born in Bradford cohort, England, 2008 to 2013. *Euro Surveill.* 2021 doi: 10.2807/1560-7917.ES.2021.26.6.2000023.

- Armitage AJ, Cohen J, Heys M, et al. Description and evaluation of a pathway for unaccompanied asylum-seeking children. *Arch Dis Child.* 2022 May;107(5):456–460. doi: 10.1136/archdischild-2021-322319



**Dr Sarah Jackson**

*Position:* Principal Research Fellow

*Location:* Dept. of Behavioural Science and Health, UCL

*Research Group/Website:* [UCL Tobacco and Alcohol Research Group](#)

*Email contact:* [s.e.jackson@ucl.ac.uk](mailto:s.e.jackson@ucl.ac.uk)

*Theme:* Health of the public

**Research overview**

Until recently, steady progress was being made in reducing smoking prevalence – albeit at a slower rate than required to achieve the UK government’s target to be smoke-free (prevalence <5%) by 2030. However, recent data show an uptick in smoking among young adults since the pandemic and a substantial increase in the use of a new form of disposable e-cigarettes since 2021. There is an urgent need for research in this area to inform policy and regulation of disposable vapes.

**Rotation project****Impact of the increasing prevalence of disposables among young people on smoking and vaping in Great Britain**

The aim of this project will be to assess whether (and to what extent) the growing popularity of new disposable e-cigarettes among young adults is related to rises in vaping and smoking prevalence in this age group.

I am open to discussing the methodological approach for the rotation project. Options include:

- Qualitative focus groups to understand what makes new disposable e-cigarettes appealing to young vapers, how they use these devices, and to explore perceptions of disposables compared with cigarettes and other e-cigarette types.
- Analysis of the Smoking Toolkit Study, a large population survey, to provide representative real-world data on use of disposables and how their growing popularity is affecting vaping, smoking, and smoking cessation at the population-level.

A future PhD could expand on this work and potentially include an experimental lab study to compare the dependence potential, craving relief, and likely health risks associated with use of new disposables compared with other e-cigarette types.

**Relevant publications**[Full list of publications](#)

Tattan-Birch H, Jackson SE, Kock L, Dockrell M, Brown J. Rapid growth in disposable e-cigarette vaping among young adults in Great Britain from 2021 to 2022: a repeat cross-sectional survey. *Addiction*. 2023; 118(2): 382-386.

Jackson SE, Beard E, Angus C, Field M, Brown J. Moderators of changes in smoking, drinking, and quitting behaviour associated with the first Covid-19 lockdown in England. *Addiction*. 2022; 117(3): 772-783.

Jackson SE, Brown J, Jarvis M. Dependence on nicotine in US high school students in the context of changing patterns of tobacco product use. *Addiction*. 2021; 116(7): 1859-1870.

Jackson SE, Kotz D, West R, Brown J. Moderators of real-world effectiveness of smoking cessation aids: a population study. *Addiction*. 2019; 114(9): 1627-1638.

**Dr Vasanti Jadva**

*Position:* Associate Professor  
*Location:* EGA Institute for Women's Health  
*Research Group/Website:* Reproductive Health:  
 ReproFam  
*Email contact:* v.jadva@ucl.ac.uk  
*Theme:* Health of the Public

**Research overview**

I am a developmental psychologist and family researcher. I study the psychological adjustment of children born following assisted conception and examine new trends in family formation. I lead the ReproFam research group which conducts leading interdisciplinary research into the psychological health and lived experiences of parents and their children in diverse family forms using a mixed methods approach.

**Rotation project (including a brief outline of how this will develop into a PhD project)**

The rotation project will involve secondary analysis of data collected by the Human Fertilisation and Embryology Authority looking at trends in fertility treatments within the UK. Example rotation projects would be:

An analysis of treatments used and their outcomes by ethnic minority patients in the UK. This project would look at the use of fertility treatments by different ethnic groups in the UK and understand whether this differs regionally.

Trends in the use of reciprocal IVF amongst same-sex female couples in the UK: This project will look at change over-time in the use of different treatments by same sex female couples, and how this differs by age, location or funding type.

A potential PhD project may then develop this work into a larger project involving collecting data using surveys, semi-structured interviews, observational methods and standardised questionnaires. An example title would be:

The experiences, psychological health and parenting of ethnic minority patients undergoing IVF and gamete donation in the UK: A mixed methods study.

**Relevant publications**

Bower-Brown, S., Foley, S., Jadva, V., & Golombok, S. (2023). Grappling with tradition: the experiences of cisgender, heterosexual mothers and fathers in elective co-parenting arrangements. *Journal of Family Studies*. doi:10.1080/13229400.2023.2209060

Jadva, V., Jones, C., Hall, P., Imrie, S., & Golombok, S. (2023). 'I know it's not normal but it's normal to me, and that's all that matters': experiences of young adults conceived through egg donation, sperm donation, and surrogacy. *Human reproduction (Oxford, England)*, 38(5), 908–916.

Jadva, V., Lysons, J., Imrie, D. S., & Golombok, P. S. (2022). An exploration of parental age in relation to parents psychological health, child adjustment and experiences of being an older parent in families formed through egg donation. *Reproductive BioMedicine Online*. doi:10.1016/j.rbmo.2022.03.029

## Dr Stephen Jivraj

*Position:* Associate Professor in Quantitative Social Science

*Location:* UCL Institute of Epidemiology and Health Care

*Research Group/Website:* Health and Social Surveys

*Email contact:* Stephen.jivraj@ucl.ac.uk

*Theme:* Health of the public



### Research overview

In the Health and Social Surveys Research Group we use nationally representative population surveys. My research focusses on ageing populations and social and spatial inequalities. I am experienced in using British birth cohort and panel study datasets, implementing advanced quantitative methods including complex multilevel modelling.

### Rotation project *(including a brief outline of how this will develop into a PhD project)*

I would be interested in supervising projects on:

Neighbourhood effects and health: methods of causal analysis and mediators of neighbourhood inequality

Growing up in a coastal town and health

Expansion of morbidity by severity of disease

Eye disease: regulation of diabetes and trajectories of frailty, loneliness, and social activity

Birth rate variation by macroeconomic circumstances and individual moderators

The projects will require data available under UK Data Service special licence or secure access and linkage to census and administrative data. PhD students will develop skills in all aspects of data science (access, management and linkage, and analysis) using advanced statistical methods. Each rotation could develop into a full PhD project.

### Relevant publications

Jivraj, S., et al. (2021). **Life Course Neighbourhood Deprivation and Self-Rated Health: Does It Matter Where You Lived in Adolescence and Do Neighbourhood Effects Build Up over Life?** *International Journal of Environmental Research and Public Health*, 18 (19), 10311.

Jivraj, S. (2020). **Are self-reported health inequalities widening by income? An analysis of British pseudo birth cohorts born, 1920-1970.** *J Epidemiol Community Health*.

Jivraj, S., et al. (2020). **Living longer but not necessarily healthier: The joint progress of health and mortality in the working-age population of England.** *Popul Stud (Camb)*, 1-16.

Jivraj, S., et al. (2019). **Are there sensitive neighbourhood effect periods during the life course on midlife health and wellbeing?** *Health and Place*.

Jivraj, S., et al. (2017). **Testing Comparability Between Retrospective Life History Data and Prospective Birth Cohort Study Data.** *The journals of gerontology. Series B, Psychological sciences and social sciences*.

Jivraj, S., et al. (2015). **Short and long-term determinants of social detachment in later life.** *Ageing and Society*.

**Emily Jones**

*Position:* Professor

*Location:* Birkbeck

*Research Website:* <https://sites.google.com/view/bondcbcd>

*Email contact:* e.jones@bbk.ac.uk

*Theme:* Health of the Public

**Research overview**

I study the pathways that underpin neurodevelopmental conditions like autism and ADHD. We ask how early neurocognitive and behavioural differences from infancy interact with the environment to shape neurodevelopmental outcomes. In addition to behavioural data studies, we also develop innovative new methods for large-scale data collection (e.g. EEG, eyetracking).

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

Neurodevelopmental conditions like autism can significantly impact quality of life and mental health in childhood and adolescence. Sensory differences may represent the earliest emerging behavioural features that presage a later diagnosis of autism and ADHD, and predict later mental health conditions like anxiety. However, the degree to which a child's early environment can buffer the association between sensory responsivity and mental health outcomes in neurodivergent children remains unclear. Using large-scale existing data from the Millenium Cohort, the student would identify environmental resilience factors (e.g parenting, school environments or broader cultural variation) that moderate the association between early sensory differences and adolescent mental health conditions. Such factors could be potential targets of early support or intervention for children with emerging neurodevelopmental conditions. In a broader PhD programme, the student would broaden their focus to consider multiple neurodevelopmental domains. Further, in collaboration with colleagues at the Centre for Longitudinal Studies the student would also contribute to our new efforts to develop scalable tools for assessing neurocognitive development and sensory processing in large-scale population studies, with ongoing data collection with an initial n=100 feasibility sample of infants tested on a multimodal protocol (including EEG, eyetracking, arousal and motion). In this way, the student will develop skills relevant to designing and analysing the next wave of cohort study data.

**Relevant publications**

Miller, M., Arnett, A. B., Shephard, E., Charman, T., Gustafsson, H. C., Joseph, H. M., ... & Jones, E. J. (2023). Delineating early developmental pathways to ADHD: Setting an international research agenda. *JCPP Advances*, e12144.

Haartsen, R., Mason, L., Braithwaite, E. K., Del Bianco, T., Johnson, M. H., & Jones, E. J. (2021). Reliability of an automated gaze-controlled paradigm for capturing neural responses during visual and face processing in toddlerhood. *Developmental Psychobiology*, 63(7), e22157.

Johnson, M. H., Charman, T., Pickles, A., & Jones, E. J. (2021). Annual Research Review: Anterior Modifiers in the Emergence of Neurodevelopmental Disorders (AMEND). *Journal of Child Psychology and Psychiatry*, 62(5), 610-630.

**Aaron Kandola***Position:* Research Fellow*Location:* MRC Unit of Lifelong Health and Ageing*Research Group/Website:* Lifecourse mental health*Email contact:* [aaron.kandola@ucl.ac.uk](mailto:aaron.kandola@ucl.ac.uk)*Theme:* Health of the Public**Research overview**

I am an epidemiologist and data scientist working across UCL and health tech. I use fancy data methods to understand mental health causes and risk factors across the lifespan, and their relationship with physical health.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

The aim is to prevent or reduce the severity of mental health symptoms across the lifespan, including in high-risk groups, such as those with heart diseases, diabetes, or other chronic conditions. Possible rotation projects may fall under two broad themes, each with a wide range of exciting directions for potential research questions that can develop into a full PhD:

**1) How mental is physical health?**

We know that depression/anxiety disorders and cardio-metabolic diseases have overlapping symptoms and greatly increase the risk of each other. However, we know little about their shared causes and risk factors despite how common and debilitating these conditions are worldwide.

Projects would aim to unravel these complex mental-physical health relationships using data from one or more large cohort studies, such as NCDS or ELSA studies hosted at UCL. Research questions could focus on the most interesting aspects of these relationships to the student and can extend into a full PhD project. For example, a rotation could focus on identifying overlapping symptoms in diabetes and depression (e.g., fatigue or sleep problems), which could expand into a broader project on how these symptoms develop over time and whether they share common causes.

Primary knowledge and training focus:

- Novel physical-mental health interface understanding
- Longitudinal data analysis and causal inference methods in large cohort studies
- Interdisciplinary collaborations across UCL

**2) How can digital technologies support the prevention and management of mental health symptoms?**

Digital technologies can transform public health and clinical approaches to mental health. For example, smartphone apps could continuously monitor for early signs of mood disorder symptoms and facilitate timely interventions to prevent the need for clinical treatment.

Rotation and broader PhD projects can address key knowledge gaps in remote monitoring and prediction necessary for digital technologies to reach this potential. For example, a project could focus on examining low-intensity methods to estimate depression symptoms or trajectories, such as single-item questions or only using passively collected data. Another project could focus on developing machine learning algorithms to create multi-day depression symptom forecasts.

Projects in this area can use data from various longitudinal population-based studies with high intensity wearable and mental health data alongside real-time data from juli, a chronic disease management platform with around 25,000 users.

Primary knowledge and training focus:

- Digital health industry collaborations
- Real-world, real-time 'live' data source
- Prediction and time-series modelling, including machine learning

**Relevant publications**

- **Kandola, A. A.**, Osborn, D. P., Stubbs, B., Choi, K. W., & Hayes, J. F. (2020). Individual and combined associations between cardiorespiratory fitness and grip strength with common mental disorders: a prospective cohort study in the UK Biobank. *BMC medicine*, 18(1), 1-11.
- Firth, J., Siddiqi, N., Koyanagi, A. I., Siskind, D., Rosenbaum, S., Galletly, C., ... & Stubbs, B. (2019). The Lancet Psychiatry Commission: a blueprint for protecting physical health in people with mental illness. *The Lancet Psychiatry*, 6(8), 675-712.
- Moulton, C. D., Pickup, J. C., & Ismail, K. (2015). The link between depression and diabetes: the search for shared mechanisms. *The lancet Diabetes & endocrinology*, 3(6), 461-471.
- Insel, T. (2023). Digital mental health care: five lessons from Act 1 and a preview of Acts 2–5. *NPJ Digital Medicine*, 6(1), 9.
- **Kandola, A.**, & Hayes, J. (2023). Real-time air pollution and bipolar disorder symptoms: Remote-monitored cross-sectional study. *BJPsych Open*, 9(4), E107. doi:10.1192/bjo.2023.77
- Firth, J., Torous, J., Nicholas, J., Carney, R., Prata, A., Rosenbaum, S., & Sarris, J. (2017). The efficacy of smartphone-based mental health interventions for depressive symptoms: a meta-analysis of randomized controlled trials. *World Psychiatry*, 16(3), 287-298.



**Dr Rajvinder Karda**

*Position:* Lecturer

*Location:* UCL Institute for Women's Health

*Research Group/Website:* <https://www.ucl.ac.uk/womens-health/gene-therapy-and-editing-0>

*Email contact:* r.karda@ucl.ac.uk

*Theme:* Health of Public

**Research overview**

I lead a research team where we develop pre-clinical gene therapy and RNA editing treatments for childhood genetic epilepsies. We aim to advance and develop novel viral vectors to increase target specificity of our treatments. I collaborate with teams at UCL, nationally and internationally.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

The goal of the rotation is to develop an AAV-capsid library which specifically targets astrocytic cells of the CNS, which can be applied to pre-clinical genetic-epilepsy models.

There are three aspects to this, which will give the student training and experience in molecular biology, *in vitro* techniques, and a basic bioinformatics introduction.

Aspect one is the **creation of the AAV plasmid library** (Dr Counsell & Dr Hanlon, UCL): this will involve designing a variant library sequence set and cloning of a library plasmid. Aspect two will utilise the library plasmid to **create an AAV vector library**, involving significant cell culture experience. Aspect three applies at both previous stages and will include **next-generation sequencing (NGS) analysis of the plasmid and AAV vector libraries** to ensure a well-made library with significant depth. The NGS analysis will involve training in bioinformatics so that the student will be able to independently analyse their own experiments going forward. These experiments will be used to establish the **best AAV capsid candidate to apply for the *in vivo* aspect of the project** (Dr Chilcott, UCL).

Should any of the AAV capsid designs significantly not transduce astrocytic cells of the CNS, then we can assess targeting of other cells within the CNS. Furthermore, this novel AAV capsid can be used in genetic epileptic models set up in Dr Karda's team. This project forms the foundation of a PhD project – the development of new capsids and examining a) whether these are superior in targeting astrocytes more efficiently, and b) whether higher transduction levels lead to a superior therapeutic outcome.

**Relevant publications**

- Chilcott, E., Díaz, J.A., Bertram, C., Berti, M. and Karda, R., 2022. Genetic therapeutic advancements for Dravet Syndrome. *Epilepsy & Behavior*, 132, p.108741.
- Hanlon, K.S., Meltzer, J.C., Buzhdygan, T...Hudry, E., Maguire, C.A., 2019. Selection of an efficient AAV vector for robust CNS transgene expression. *Molecular Therapy-Methods & Clinical Development*, 15, pp.320-332.
- Karda, R., Rahim, A.A., Wong, A.M., Buckley, S.M.K, Waddington, S.N., 2020. Generation of light-producing somatic-transgenic mice using adeno-associated virus vectors. *Scientific reports*, 10(1), p.2121.

**Aikaterini Kassavou**

*Position:* Research Fellow (Process Evaluation)  
*Location:* UCL Research Department of Primary Care and Population Health  
*Email contact:* [a.kassavou@ucl.ac.uk](mailto:a.kassavou@ucl.ac.uk)  
*Theme:* Health of the Public

**Research overview**

The placement will be based with the 'Personalised Care for Parkinson's (PD-Care) programme team. The project will involve secondary analysis of data collected as part of a national Randomised Controlled Trial (N=388) of a self-management intervention to promote Well-being in people with Parkinson's. This project will look at the data collected from the intervention group participants (n=194), attending remote consultations with a health care provider to support patient self-management.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)***Identifying effective mechanisms to support patient uptake and adherence to a self-management intervention for people with Parkinson's.**

The Live Well with Parkinson's self-management intervention consists of up to six one-hour supported sessions alongside a website (the e-Toolkit). The supported sessions are delivered remotely by a health care provider over a period of 6 months and aim to improve uptake and adherence to self-management behaviours as part of patients and their carers' everyday life. Several potential projects are possible using our mixed methods process evaluation data (structured questionnaires, semi-structured interviews, video recordings and Google analytics data), which could be discussed based on student's interests. For example, one project could involve analysis of a random selection of the initial two consultation session video-recordings to identify strategies that motivate patients to improve uptake and adherence to the self-management behaviours.

The project provides the unique opportunity to conduct this research with a multi-disciplinary team: Dr Aikaterini Kassavou, Prof Kate Walters, Prof Anette Schrag, Dr Patricia Schartau.

The project could lead into full PhDs to develop effective implementation methods to improve uptake and adherence to tailored self-management behaviours as an adjunct to routine clinical practice. An excellent opportunity to advance knowledge and skills in qualitative, quantitative, and mixed methods analysis.

**Relevant publications**

- Chilala I, [Kassavou A](#), et al. Evaluating the effectiveness of remote behavioural interventions facilitated by health care providers to support medication adherence in patients with cardiovascular conditions. A systematic literature review with meta-analysis. *Annals of Behavioural Medicine* <https://doi.org/10.1093/abm/kaac037>
- Kassavou A et al. The feasibility of the PAM intervention to support treatment-adherence in people with hypertension in primary care: a randomised clinical controlled trial. *Scientific Reports*, 2021; 11(1): 8897.

**Michail Katsoulis**

*Position:* Associate Professor in Biomedical Statistics

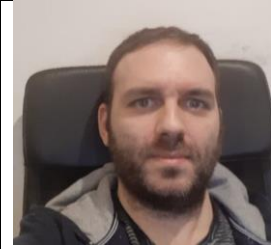
*Location:* MRC unit for Lifelong Health and Ageing (MRC-LHA), UCL

*Research group:* MRC -LHA

*Website:* <https://iris.ucl.ac.uk/iris/browse/profile?upi=MKATS53>

*Email contact:* m.katsoulis@ucl.ac.uk

*Theme:* Health of the Public

**Research overview**

My research focuses on how to best use statistical methods in observational data from cohorts and Electronic Health Records for obesity prevention and reduction of chronic disease risk and highlight the potential benefit for public health. I am mainly interested in causal inference (e.g. target trial emulation), missing data and risk prediction.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

I have a number of potential projects to offer, in collaboration with other researchers

- Target trial emulation (with Prof Reecha Sofat) – Target trial emulation provides a framework for comparative effectiveness research using healthcare databases that offers a number of important advantages for healthcare decision making. In this project, the PhD student will take advantage of the size (up to 50 million individuals), representativeness and contemporary measurements of lifestyle characteristics and comorbidities available in electronic health records (EHR) to estimate the effect of hypothetical interventions on the onset and progression of cardiovascular diseases
- Health data science in the service of obesity prevention and reduction of chronic disease risk (with Dr Alvina Lai and Dr Michele Orini) – In this project, the PhD candidate will use modern data science methods and data from many Birth Cohorts (e.g. NSHD, NCDS, BCS, MCS) and Electronic Health Records to provide insights for the improvement of obesity prevention policies.
- Development of risk prediction scores for obesity and CVD in middle life (with Dr Michele Orini and Dr Carole Sudre) - This project will include the comparison of conventional risk scores from regression modelling versus modern machine learning methods. The PhD student will use data from wearables and imaging, apart from sociodemographic and lifestyle factors.

These projects provide a unique opportunity to work with Electronic Health Records (up to 50 million individuals) and many different cohorts (UK-Biobank, NSHD, NCDS, BCS, MCS, SABRE, Whitehall II etc). PhD students would gain expertise in utilising modern data science methods to implement policy relevant epidemiologic analysis. Each of these rotations could evolve into full PhD projects.

**Relevant publications**

[Katsoulis M, et al. Lancet Diabetes Endocrinol. 2021;9\(10\):681-694](#)

[Katsoulis M, et al. Epidemiology. 2021;32\(5\):744-755](#)

[Katsoulis M, et al. Public Health. 2021;191:41-47](#)

[BD Stavola , M Gomes and M Katsoulis. Epidemiology 2023 \(in press\)](#)

**Leah Li**

*Position:* Associate Professor

*Location:* UCL GOS ICH (Population, Policy and Practice)

*Email contact:* leah.li@ucl.ac.uk

*Theme:* Health of Public

**Research overview**

My research interests include the methodology for the analysis of life course data, intergenerational and cross-cohort comparisons. My research focusses on physical growth (height and BMI), cognitive and socio-emotional development, and adult health. I am also interested in adverse childhood experiences (abuse and maltreatment), child-to-adult development and adult health outcomes.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

**Title:** BMI trajectories from childhood to mid/late adulthood in two British birth cohorts: life course risk factors and health impacts

**Background:** High BMI is associated with numerous chronic diseases, e.g. cardiovascular disease (CVD), diabetes, poor mental health. As the risk of these diseases increases with age, weight change over the life course may influence the disease risk. How weight change at different windows of life may exert its adverse effect has critical implications, not only for understanding disease aetiology, but also for development of effective public health strategies and interventions. Furthermore, there may be specific life stages when risk factors have a greater effect on developing obesity and thus intervention for preventing/reducing obesity would be more effective.

**Objectives:** To (1) explore life course BMI trajectories and identify patterns that are associated with adverse health outcomes; (2) assess risk (or intermediate) factors at different life stages (i.e. pregnancy, infancy, childhood, early, middle to late adulthood) for distinct BMI trajectories; (3) study adverse health outcomes associated with specific BMI trajectories.

**Methods:** The student will use data from two population-based birth cohorts. The 1958 British birth cohort included all born in one week, March 1958. ~17,000 individuals were followed from birth, at 7, 11, 16, 23, 33, 42, 46, 50, 55, and most recently at 62y. BMI was available at all ages. The 1970 British birth cohort included all born in one week, March 1970. ~17,000 individuals were followed from birth, at 5, 10, 16, 26, 30, 34, 42, 46, and most recently at 51y. BMI was available from 10 to 51y. In both cohorts, risk factors for obesity were collected at different life stages: parental & prenatal factors (e.g. parental BMI, parity, maternal smoking, maternal age, birthweight), childhood factors (breastfeeding, sociodemographic factors, adverse childhood experiences, signs of puberty at 10/11y), and adult factors (socio-economic status, life styles). Outcomes could be CVD risks, diabetes, depression/anxiety, disabilities, mortality, or other obesity-related outcomes.

**Relevant publications**

- Gao M, Wells J, Johnson W, & Li L (2022). Socio-economic disparities in child-to-adolescent growth trajectories in China: Findings from the China Health and Nutrition Survey 1991-2015. *The Lancet Regional Health - Western Pacific*.
- Yao W, Li L, Jiang H, et al (2022). Transgenerational associations of parental famine exposure in early life with offspring risk of adult obesity in China. *Obesity*.
- Norris T, Cole T, Bann D, Hamer M, Hardy R, Li L, et al (2020). Duration of obesity exposure between ages 10-40 years and its relationship with cardiometabolic disease risk factors: a cohort study. *PLoS Medicine*.
- Li L, Pinto Pereira SM, Power C (2019). Childhood maltreatment and biomarkers for cardiometabolic disease in mid-adulthood in a prospective British birth cohort. *BMJ Open* 2019;9:e024079.
- Li L, Hardy H (2015). Life-course BMI trajectories and blood pressure in mid-life in two

**LORRAINE MCDONAGH**

*Position:* Senior Research Fellow  
*Location:* Primary Care and Population Health  
*Research Group/Website:*  
<https://www.thisinstitute.cam.ac.uk/about/people/dr-lorraine-mcdonagh/>  
*Email contact:* [l.mcdonagh@ucl.ac.uk](mailto:l.mcdonagh@ucl.ac.uk)  
*Theme:* Health of the Public

**Research overview**

I am a [THIS \(The Healthcare Improvement Studies\) Institute](#) Fellow with a background in social and health psychology. I am passionate about tackling inequities and inequalities for under-researched populations who are neglected by healthcare systems. I mostly employ qualitative and survey methods, as well as conduct realist and systematic reviews.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

- I have a number of rotation projects which could be developed into a full PhD.
1. Use of social-psychological theory to understand individual, interpersonal, and structural factors influencing (in)equitable access to (use of, experiences in, and outcomes from) primary care for trans and/or gender diverse communities (literature review, realist review)
  2. Exploration of primary care staff experiences with delivering services to marginalised communities, and perspectives on how to best to support them with this service provision, and ultimately improve access to primary care (qualitative)
  3. Young LGBTQ+ people's attitudes towards NHS recommendations regarding the recording of sexual orientation in primary care (qualitative)

**Relevant publications**

McDonagh, L. K., Harwood, H., Saunders, J. M., Cassell, J. A., & Rait, G. (2020). How to increase chlamydia testing in primary care: a qualitative exploration with young people and application of a meta-theoretical model. *Sexually Transmitted Infections*, 96(8), 571-581.

McDonagh, L. K., Blomquist, P., Wayal, S., Cochrane, S., Calliste, J., Cassell, J., & Edelman, N. (2019). Collaborative and consultative patient and public involvement in sexual health research: Lessons learned from four case studies. *Sexually Transmitted Infections*, 96:96-100.

McDonagh, L. K., Nielsen, E. - J., McDermott, D. T., Davies, N., & Morrison, T. G. (2018). "I want to feel like a full man": Conceptualizing gay, bisexual, and heterosexual men's sexual difficulties. *Journal of Sex Research*, 1-19. doi:10.1080/00224499.2017.1410519

McDermott, D., Brooks, A., Rohleder, P., Blair, K., Hoskin, R. A., & McDonagh, L. K. (2018). Ameliorating transnegativity: assessing the immediate and extended efficacy of a pedagogic prejudice reduction intervention. *Psychology and Sexuality*. doi:10.1080/19419899.2018.1429487



**Angela Meade**

*Position:* Principal Research Scientist

*Location:* MRC Clinical Trials Unit at UCL, Institute of Clinical Trials and Methodology (ICTM)

*Research Group/Website:* <https://www.mrcctu.ucl.ac.uk/>

*Email contact:* a.meade@ucl.ac.uk

*Theme:* Health of the Public

**Research overview**

At the MRC Clinical Trials Unit, we design and carry out innovative clinical trials and develop new methodology. I am currently working with colleagues across UCL to design and develop a clinical trial in the primary prevention setting. The trial has the potential to have global public health impact.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

The UK population is living longer. Many diseases of older age (60+) develop earlier in life, via common pathways, and have similar underlying risk factors. We believe there is scope for a clinical trial to explore the efficacy of a combination of well-tolerated and low-cost drugs to prevent major diseases of ageing.

In the Healthy Ageing Through The Reduction of Chronic disease risk (HAT TRICK) trial, we aim to intervene in individuals aged 45-55 years to prevent or delay the onset of a number of major diseases of aging (e.g. cardiovascular disease, cancer, diabetes, dementia).

Designing and planning HATTRICK is a complex undertaking, which requires a team science approach. There are numerous rotation projects, any of which could be developed or combined into a PhD project:

- Evaluating the evidence for the agents to be tested in HATTRICK.
- Evaluating lessons learned from previous trials in primary prevention, including those where fixed dose combinations were investigated.
- Investigating barriers to participant recruitment and retention and exploring mechanisms to remove them.
- Designing systems and processes to follow-up participants over time: to include outcomes reported by patients and investigators or retrieval from routinely collected healthcare data.
- Evaluating modes and methods of communication with participants in primary prevention trials.
- Exploring efficiencies in the conduct of long-term clinical trials.

**Relevant publications**

Joseph P, Roshandel G, Gao P et al. Polypill Trialists' Collaboration. Fixed-dose combination therapies with and without aspirin for primary prevention of cardiovascular disease: an individual participant data meta-analysis. *Lancet*. 2021; 398(10306):1133-1146. doi: 10.1016/S0140-6736(21)01827-4.

Wang X, Ma H, Li X, et al. Association of Cardiovascular Health With Life Expectancy Free of Cardiovascular Disease, Diabetes, Cancer, and Dementia in UK Adults. *JAMA Intern Med*. 2023;183(4):340-349.

doi:10.1001/jamainternmed.2023.0015

**Gautham Mehta**

*Position:* Principal Research Fellow

*Location:* Royal Free Campus

*Research Group/Website:* Microbiome in Health and Disease

<https://iris.ucl.ac.uk/iris/browse/researchActivity/23660>

Twitter: @drgautammehta

Email contact: [gautam.mehta@ucl.ac.uk](mailto:gautam.mehta@ucl.ac.uk)

Theme: Health of the Public

**Research overview**

**Oral microbiome in liver disease:** Liver disease is now the 2<sup>nd</sup> commonest cause of preventable death in the UK. Novel treatments are urgently needed. This project harnesses developments in our understanding of gut microbiota and sequencing technology to develop novel biomarkers and treatments for liver disease.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)***Salivary microbiome as a prognostic tool in alcohol-related liver disease**

**(ARLD):** This project will 'bolt-on' to an existing £1.7 million NIHR-funded grant, 'AlcoChange', which is a randomised controlled trial of a digital health intervention for ARLD. All participants (~420) will have saliva sampling at baseline, and after 6-months of therapy. Additionally, high-quality data on clinical course and health resource use are being collected. This provides a unique opportunity to study longitudinal changes in oral microbiome populations with disease progression or improvement, and develop oral biomarkers for complications of liver disease.

Specific techniques include:

- Nucleic acid extraction
- 16S rRNA gene sequencing
- Shotgun metagenomics analyses
- Bioinformatics and biostatistics, including survival analyses

Further possibilities available are studying liver disease markers in large cohorts such as Whitehall II and UK Biobank, also funded by existing NIHR grants (NIHR: PB-PG-0418-20038).

**Relevant publications**

1. Bajaj JS, Betrapally NS, Hylemon PB, et al. Salivary microbiota reflects changes in gut microbiota in cirrhosis with hepatic encephalopathy. *Hepatology* 2015; 62:1260-71.
2. Lin S, Agarwal B, Kumar R, et al. Defining the prognosis of critically-ill patients with alcohol-related liver disease. *J Hepatol* 2021; 75:986-7.
3. Dubinkina VB, Tyakht AV, Odintsova VY, et al. Links of gut microbiota composition with alcohol dependence syndrome and alcoholic liver disease. *Microbiome* 2017;5:141.

**Anne Miles**

*Position:* Professor of Health Psychology

*Location:* Birkbeck, Department of Psychological Sciences

*Research Group/Website:* Psychology Applied to Health (PATH) <http://pathlab.bbk.ac.uk>

*Email contact:* [ae.miles@bbk.ac.uk](mailto:ae.miles@bbk.ac.uk)

*Theme:* Health of the Public

**Research overview**

My research examines patient preferences for cancer investigations and cancer treatment, and the impact different diagnostic pathways and treatments have on psychological outcomes. I am also involved in an NIHR funded project looking at using AI to help clinicians interpret the results of whole-body MRI scans.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

1. Patients with rectal cancer are more likely to have treatments such as radiotherapy and need a permanent stoma than patients with colon cancer. Such treatments have been associated with poorer mental health outcomes in a combined sample of both colon and rectal cancer patients. The proposed study would examine a pre-existing dataset of over 600 rectal cancer patients to examine predictors of poorer quality of life and worse mental health, including the degree to which the treatment they received was consistent with their treatment preferences.
2. Methods for eliciting patient preferences for different treatments, and how people balance maximising length of life against quality of life, can be complex. Research in this area often includes participants who are predominantly white and highly educated. This project would look at how easy different methods for eliciting preferences are for more diverse samples. Quantitative or qualitative methods, or a mixture of the two could be used for this project. This could form the start of a PhD examining patient preferences for different treatments among people with lower levels of education and from a variety of different ethnic groups.

Students are also welcome to suggest potential topics for research.

**Relevant publications**

Miles A, Taylor SA, Evans REC, Halligan S, Beare S, Bridgewater J, Goh V, Janes S, Navani N, Oliver A, Morton A, Rockall A, Clarke C, Morris S. Patient preferences for whole body MRI or conventional staging pathways in lung and colorectal cancer: a discrete choice experiment. *European Radiology* 2019 29 (7) 3889-3900. doi: 10.1007/s00330-019-06153-4.

Evans REC, Taylor SA, Janes S, Halligan S, Morton A, Navani N, Oliver A, Rockall A, Teague J, Miles A. Patient experience and perceived acceptability of whole body magnetic resonance imaging for staging colorectal and lung cancer compared with current staging scans: a qualitative study. *BMJ Open*. 2017 <http://dx.doi.org/10.1136/bmjopen-2017-016391>

Miles A, Evans REC, Taylor, S. Predictors of distress among patients undergoing investigations for suspected colorectal and lung cancer. *Psychology Health and Medicine*, 2021, 26:7, 887-898, <https://doi.org/10.1080/13548506.2020.1852477>

Miles A, McClements PL, Steele RJ, Redeker C, Sevdalis N, Wardle J. Perceived diagnostic delay and cancer-related distress: a cross sectional study of patients with colorectal cancer. *Psychooncology*. 2017 Jan;26(1):29-36. doi: 10.1002/pon.4093.

Miles A, McClements PL, Steele RJ, Redeker C, Sevdalis N, Wardle J. (2015) The psychological impact of a colorectal cancer diagnosis following a negative fecal occult blood test result. *Cancer Epidemiology Biomarkers and Prevention*. 24(7); 1-7 doi: 10.1158/1055-9965.EPI-15-0004

Hassan S, Miles A, Rachet B, Morris M. Variations in the type of adjuvant chemotherapy among Stage III colon cancer patients in England. *Journal of Gastrointestinal Cancer* (2023) Jan 5. doi: 10.1007/s12029-022-00899-9.

Mu-Koh D, Papanikolaou N, Bick U, Illing R, Kahn C, Kalpathy-Cramer J, Martí-Bonmatí L, Matos C, Miles A, Mun S, Napel S, Rockall A, Sala E, Strickland N, Prioret F. Artificial intelligence and machine learning in cancer imaging. *Communications Medicine* 2, 133 (2022). <https://doi.org/10.1038/s43856-022-00199-0>

**Oliver Mytton**

*Position:* Associate Clinical Professor/UKRI Future Leaders Fellow

*Location:* UCL GOS ICH (Population, Policy and Practice)

*Research Group/Website:* Obesity Policy Research Unit

*Email contact:* o.mytton@ucl.ac.uk

*Theme:* Health of the Public

**Research overview**

I am a public health physician and researcher with an interest in public health approaches to prevent obesity, from individual- to population-level approaches to promote healthy eating and physical activity. Whilst I use a range of data sciences methods, I have particular expertise in public health modelling to simulate the potential health impacts of government policies. Practising as a public health physician I am also interested in using routine (including local authority) datasets to inform public health policy and practice.

**Rotation project**

I would be delighted to discuss rotation project opportunities, which include the following collaborative projects:

1. Using the PRIMETime Model to simulate the impact of proposed government obesity policies on child (or adult) obesity and health (collaboration with Oxford University).
2. Using consumer panel data (e.g. Difference-in-difference analysis or interrupted time-series analyses) to quantify the impacts of restricting the use of price promotions on the sale of less-healthy food items (collaboration with the Institute for Fiscal Studies).
3. Using National Child Measurement data and routine data to understand local variation in child obesity and child height (collaboration with Office for Health Improvements and Disparities).

In addition, within OPRU we use a number of child cohort datasets (Millennium Cohort Study, Born in Bradford, Southampton Women's Study) to explore the causes of obesity and its socio-economic patterning; and there may be opportunities for follow-up analyses. These projects can all provide a good introduction to key methods and datasets, which could then extend into a full PhD. As part of this work, there may be opportunities to work with policy-makers, and/or learn about the translation of evidence to inform policy and practice.

**Relevant publications**

1. Mytton et al. [The potential health impact of restricting less-healthy food and beverage advertising on UK television: A modelling study](#). PLOS Medicine, 2020
2. Nakamura, R. et al. [Price promotions on healthier compared with less healthy foods: a hierarchical regression analysis](#). Am. J. Clin. Nutr, 2015
3. Pell D. et al. [Changes in soft drinks purchased by British households associated with the UK soft drinks industry levy: controlled interrupted time series analysis](#). BMJ, 2021.
4. Viner et al. [Trajectories of change in childhood obesity prevalence across local authorities 2007/08-2015/16: a latent trajectory analysis](#). J Public Health, 2019
5. Mason et al. [Impact of cuts to local government spending on Sure Start: a longitudinal ecological study](#). JECH, 2020
6. Davies S. Annex B: [Time to solve childhood obesity: CMO special report](#). Department of Health & Social Care, 2019

**Dr Joanne Ng***Position:* Senior Research Fellow*Location:* Queen Square Institute of Neurology*Research Group/Website:**https://www.ucl.ac.uk/ion/research/research-centres/genetic-therapy-accelerator-centre**Email contact:* j.ng@ucl.ac.uk*Theme:* Health of the public**Research overview:**

I lead preclinical translational AAV gene therapy development for neurological disorders including dopamine transporter deficiency syndrome, juvenile parkinsonism, epileptic encephalopathy. I collaborate with experts in clinical neuroscience, genetic mechanism to develop clinically translatable AAV gene therapies. My research also further develops AAV technology to improve transduction efficiency, selectivity and safety.

**Rotation project:** Adeno-associated viral (AAV) gene therapies are a leading modality to deliver genetic therapies for previously untreatable neurological disorders.<sup>1</sup> They are a clinical reality showing profound disease modifying impact for disorders such as Spinal Muscular Atrophy, AADC deficiency and Duchenne Muscular dystrophy. However some viral vectors require high dosage and expose individuals to significant risk of toxicity and off-target expression (especially in the liver).<sup>2</sup> Capsid evolution strategies have been able to improve AAV vector transduction efficiency and off-target effects but *in vivo* screening in mice may not translate to the clinic due to absence of human receptor mechanism.<sup>3</sup> In this project we aim to evaluate novel AAV capsid variants with superior skeletal muscle tropism towards application for neuromuscular disorders. The project aim will be to develop novel capsid variants using a human cell-surface protein array and human skeletal muscle cell lines *in vitro* as a model to identify capsid variants that are better capable of targeting human skeletal muscle. The rotation project will initially evaluate known AAV capsids *in vitro* by using human receptor pull down assays and human skeletal muscle cell lines to evaluate whether the known capsid transduction profile is recapitulated *in vitro* compared to transduction efficiency *in vivo*. In collaboration with Prof Francesco Muntoni, Dr John Counsell and Dr Killian Hanlon the PhD project will develop a novel capsid variant library with modifications to improve skeletal muscle targeting. Dr Hanlon has applied similar capsid selection strategies resulting in identification of highly efficient AAV capsid variants that retain properties across species.<sup>4</sup> The project hypothesis is that over expression of human receptors can be used as a model for human AAV transduction to support novel AAV capsid screening for human skeletal muscle targeting. Lead variants will eventually be screened in mice to evaluate *in vivo* transduction and evaluate how AAV transduction efficiency of skeletal muscle can be better modelled. The lead capsid variant evaluated *in vivo* gene therapy efficacy model of neuromuscular disease.

**Relevant publications**

1. Ng J et al. Gene therapy restores dopamine transporter expression and ameliorates pathology in iPSC and mouse models of infantile parkinsonism. *Sci Transl Med* 2021;13:eaaw1564.
2. Thomsen G et al. Biodistribution of onasemnogene abeparvovec DNA, mRNA and SMN protein in human tissue. *Nat Med.* 2021;27:1701-1711.
3. Chuapoco MR, et al. Adeno-associated viral vectors for functional intravenous gene transfer throughout the non-human primate brain. *Nat Nanotechnol.* 2023 Jul 10. doi: 10.1038/s41565-023-01419-x.
4. Hanlon KS, et al. Selection of an Efficient AAV Vector for Robust CNS Transgene Expression. *Mol Ther Methods Clin Dev.* 2019 ;15:320-332.



**MELISSA OLDHAM**

*Position:* Senior Research Fellow

*Location:* Torrington Place

*Research Group/Website:* UCL Tobacco and Alcohol Research Group

*Email contact:* m.oldham@ucl.ac.uk

*Theme:* Health of the Public

**Research overview**

I develop digital interventions for alcohol reduction amongst increasing-and-higher-risk drinkers. When thinking about alcohol reduction it is important to create tailored approaches that are acceptable and relevant for users. I am interested in tailoring interventions to different types of drinking context (e.g. in the pub with friends, at home alone).

**Rotation project** (including a brief outline of how this will develop into a PhD project)

The aims are to;

- 1) Understand perceptions of the relationship between different drinking contexts and harms portrayed in the media
- 2) Examine using mixed-methods, whether drinking contexts relate to risk perception, motivation to reduce alcohol consumption and reduction attempts among IHR drinkers
- 3) Develop a video with stakeholders, including IHR drinkers, charities and policy bodies, to heighten risk perception among IHR drinkers (study 4).
- 4) Evaluate whether the video changes risk perceptions, motivation to reduce consumption and interest in an alcohol reduction intervention (study 5).

This project will include different methods including a media review, focus groups, secondary data analysis of the Alcohol Toolkit study (a large nationally representative survey of drinkers in the UK) and online experimental designs. This project could lead to a full PhD conducting a fuller exploration of the longer term impacts of the developed intervention on drinking behaviour.

**Relevant publications**

Stevely, A., Garnett, C., Dinu, L., Holmes, J., Jones, A., & **Oldham, M.** (in press). Optimising measurement of information on the context of alcohol consumption within the Drink Less App amongst people drinking at increasing and higher risk levels: a mixed-methods usability study. *JMIR*

**Oldham, M.**, Perski, O., Loebenberg, G., Brown, J., Garnett, C. (2022). The effect of the first UK COVID-19 lockdown on users of the 'Drink Less' app: An interrupted time series analysis of socio-demographic characteristics, engagement and alcohol reduction. *Journal of Medical Internet Research* **24**(11).

**Oldham, M.**, Kersbergen, I, Cox, S, Brown, J., Piper, R., Garnett, C. (2022). Exploring changes in temporary abstinence in increasing and higher risk drinkers in England and Dry January participation in users of the Try Dry app in the UK between 2020 and 2021. *BMC Public Health* **22**(1).

**Dr Snehal Pinto Pereira**

*Position:* Associate Professor in Population Health & Applied Statistics

*Location:* Bloomsbury

*Website:* <https://iris.ucl.ac.uk/iris/browse/profile?upi=SMAUR82>

*Email contact:* [snehal.pereira@ucl.ac.uk](mailto:snehal.pereira@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I am interested in trying to understand: (i) relationships between obesity, physical activity and muscle strength, (ii) how child maltreatments are related to outcomes in adulthood and (iii) the clinical phenotype and prevalence of 'Long COVID' in adolescents. My approach is underpinned by a strong methodological foundation that aims to make the best use of existing data resources.

**Rotation project**

I have several rotation projects, each of which could be developed into a full PhD. All projects will develop transferable skills in epidemiology and statistical methods.

1. To investigate whether, and via which mechanisms, cardiorespiratory fitness (CRF) is associated with physical capability in mid-adulthood. The project will use data from the 1970 birth cohort to investigate whether CRF, collected in childhood (10 years) and adulthood (46 years) and CRF-change, is associated with physical capability (physical functioning and strength at 46 years). *Co-supervised with Dr Tom Norris.*
2. To investigate the extent to which the genetic risk of a disease could be alleviated if an intervention resulted in shifting the distribution of physical activity in those at higher risk to the distribution of physical activity among those at lowest genetic risk. Using data from UK Biobank. *Co-supervised with Dr Tom Norris and Prof Mark Hamer.*
3. Using the Children & young people with Long Covid (CLOcK) dataset many projects can be undertaken (depending on student's interest and skills). For example, can examine whether the physical and mental health symptoms post COVID test differ by ethnicity or socioeconomic status. The project is highly interdisciplinary and will be supervised across several UCL Faculties (*with Profs Stephenson and Shafran*).

**Relevant publications**

**Project 1:** Cooper R, Tomlinson D, Hamer M, & Pinto Pereira SM. (2022). Lifetime body mass index and grip strength at 46 years: the 1970 British Cohort Study. *Journal of Cachexia, Sarcopenia and Muscle*. [doi:10.1002/jcsm.12992](https://doi.org/10.1002/jcsm.12992)

**Project 2:** Herle M, Pickles A, Micali N *et al.* Parental feeding and childhood genetic risk for obesity: exploring hypothetical interventions with causal inference methods. *Int J Obes* [doi:10.1038/s41366-022-01106-2](https://doi.org/10.1038/s41366-022-01106-2)

**Project 3:** Pinto Pereira SM, Shafran R, Nugawela MD *et al.* (2022). Natural course of health and well-being in non-hospitalised children and young people after testing for SARS-CoV-2: A prospective follow-up study over 12 months. *Lancet Regional Health: Europe* [doi:10.1016/j.lanepe.2022.100554](https://doi.org/10.1016/j.lanepe.2022.100554)

**George B. Ploubidis***Position:* Professor*Location:* Centre for Longitudinal Studies, UCL*Research Group/Website:* <https://cls.ucl.ac.uk>*Email contact:* [g.ploubidis@ucl.ac.uk](mailto:g.ploubidis@ucl.ac.uk)*Theme:* Health of the Public**Research overview**

George Ploubidis is Prof of Population Health and Statistics at the UCL Social Research Institute and Director of the 1958 National Child Development Study and 1970 British Cohort Study at the Centre for Longitudinal Studies (CLS). George's research interests relate to socioeconomic and demographic determinants of health over the life-course.

**Rotation project**

We have multiple projects available in our team that offer multiple ways to develop into a full PhD using advanced measurement and statistical methods to inform public policy:

- Early life determinants of intersectional mental health inequities in adulthood. Focused on providing a socio-demographic mapping of mental health inequities in adulthood based on early life socioeconomic and demographic variables. \*
- Cross-generational differences in social mobility in the long-term trajectories of mental health. Focused on the analysis of long-term trajectories of mental health at the intersection of birth sex and early life socioeconomic indicators. \*
- A life-course approach to the study of the impact of socioeconomic disadvantage on mental health. Focused on the analysis and comparison of life-course models linking poverty and socioeconomic deprivation throughout the life span with mental health in adulthood. \*
- The mediating role of physical health in the relationship between early life socioeconomic determinants and adulthood mental health. Focused on using formal mediation analysis to explore the role of biomarkers in midlife on subsequent mental health levels. \*
- Understanding the causes of secular trends in early and midlife physical and mental health. Focused on the study of contributing factors to the shifts in physical and mental health patterns and their comorbidity among individuals during their formative years and middle adulthood. \*
- Systematic review of intersectional approaches to the study of healthy ageing. \*
- Systematic review of early life mental health and its relationship with health service use in adulthood. \*
- Systematic review of early life socioeconomic indicators and adverse experiences in mental health service use in adulthood. \*
- Does improving the areas where people live also improve their health? This project will use longitudinal data to explore how changes to local environments (either from moving between areas or improvements over time) results in changes in health, using a range of physical and mental health outcomes. \*\*
- Exploring the co-presentation and bidirectionality of eating disorder (ED) symptoms and overweight/obesity in the Millennium Cohort Study. \*\*

\* With Dr Darío Moreno-Agostino. \*\* With Dr Charis Bridger Staatz.

**Relevant publications**

See [Prof Ploubidis' UCL IRIS profile](#) for a list of relevant publications.

**Jugnoo Rahi**

*Position:* Professor of Ophthalmic Epidemiology and Honorary Consultant Ophthalmologist

*Location:* UCL GOS ICH (Population, Policy and Practice)

*Research group:* Vision and Eyes Group

*Email contact:* j.rahi@ucl.ac.uk

*Theme:* Health of the Public

**Research overview**

I am a clinician and scientist. I lead the [Vision and Eyes Group](#), which is a unique multi-disciplinary population health sciences research group. Our research interests are in visual health as well as eye disease and visual impairment in childhood and the early life origins of and life course influences on chronic complex eye conditions of adult life.

**Rotation project**

The following research areas offer rotation projects which could be developed into a full PhD proposal.

Long term health, social and educational outcomes of childhood blindness

Improving effective transition of children with rare eye disease to adult care.

Barriers and enablers to attendance at diabetic eye screening by adolescents and young adults

Post-pandemic restoration and redesign of NHS Paediatric Ophthalmology Services

Understanding inequalities in UK eye health care

Promoting resilience and well-being in children and young people living with vision impairment

**Selected publications**

1. Wagner SK, Hughes F, Cortina-Borja M, Pontikos N, Struyven R, Liu X, Montgomery H, Alexander DC, Topol E, Petersen SE, Balaskas K, Hindley J, Petzold A, Rahi JS, Denniston AK, Keane PA. AlzEye: longitudinal record-level linkage of ophthalmic imaging and hospital admissions of 353 157 patients in London, UK. *BMJ Open*. 2022 16;12(3):e058552.
2. Horvat-Gitsels LA, Cortina-Borja M, Solebo AL, Rahi JS Impaired vision and physical activity in childhood and adolescence: findings from the Millennium Cohort Study *British Journal of Ophthalmology* doi: 10.1136/bjophthalmol-2021-320315
3. Cumberland PM, Bountziouka V, Hammond CJ, Hysi PG, Rahi JS; UK Biobank Eye and Vision Consortium. Temporal trends in frequency, type and severity of myopia and associations with key environmental risk factors in the UK: Findings from the UK Biobank Study. *PLoS One*. 2022;17(1):e0260993.
4. Teoh LJ, Solebo AO, Rahi JS for the BCVIS Interest Group, Visual impairment, severe visual impairment, and blindness in children in Britain (BCVIS2): a national observational study. *The Lancet Child & Adolescent Health*, 2021; 5:190-200.
5. Hysi PG, Choquet H, Khawaja AP, Wojciechowski R, Tedja MS, Yin J, Simcoe MJ, Patasova K, Mahroo OA, Thai KK, Cumberland PM, Melles RB, Verhoeven VJM, Vitart V, Segre A, Stone RA, Wareham N, Hewitt AW, Mackey DA, Klaver CCW, MacGregor S; Consortium for Refractive Error and Myopia, Khaw PT, Foster PJ; UK Eye and Vision Consortium, Guggenheim JA; 23andMe Inc, \*Rahi JS, Jorgenson E, Hammond CJ. Meta-analysis of 542,934 subjects of European ancestry identifies new genes and mechanisms predisposing to refractive error and myopia. *Nat Genet*. 2020;52(4):401-07

**Marcus Richards***Position:* Professor*Location:* MRC Unit for Lifelong Health and Ageing at UCL*Research group:* Life Course Epidemiology*Email contact:* [m.richards@ucl.ac.uk](mailto:m.richards@ucl.ac.uk)*Theme:* Health of the Public**Research overview**

We use datasets from cohort studies (e.g. primary care and birth cohort studies) to answer questions about risk and prognosis of neurodegenerative diseases and of potential factors to modify this risk. My research focusses on neurodegenerative diseases of ageing and aims to identify risk factors for these and factors associated with rate of progression.

**Rotation project**

Collaborating with PIs in other departments, particularly Professor Annette Schrag (UCL Institute of Neurology), projects include the following:

- Lifestyle predictors over the life course of neurodegenerative signs and symptoms in later life
- Association of motor and cognitive performance over the life course with of neurodegenerative signs and symptoms in later life
- Risk of neurodegenerative conditions in individuals prescribed specific medication classes

These projects provide the opportunity to work with different health care datasets, including population-based, to identify potentially modifiable risk factors of neurodegenerative conditions and progression. PhD students would develop skills in statistical and epidemiological analysis, and in how to work with large administrative data sources, including primary care data. Each of these rotations could evolve into a full PhD projects.

**Selected relevant publications**

- Simonet C et al. Assessment of Risk Factors and Early Presentations of Parkinson Disease in Primary Care in a Diverse UK Population. *JAMA Neurol.* 2022;79(4):359-369.
- Marini K et al. Application of a Simple Parkinson's Disease Risk Score in a Longitudinal Population-Based Cohort. *Mov Disord.* 2020; 1658-1662.
- Schrag A. Clinical variables and biomarkers in prediction of cognitive impairment in patients with newly diagnosed Parkinson's disease: a cohort study. *Lancet Neurol.* 2017 Jan;16(1):66-75.
- Schrag A et al. Pre-diagnostic presentations of Multiple System Atrophy case control study in a primary care dataset. *Parkinsonism Relat Disord.* 2022 Jun;99:101-104.
- Richards M et al. Straight and divergent pathways to cognitive state: seven decades of follow-up in the British 1946 birth cohort. *Journal of Alzheimer's Disease* 2022; 89: 659-667.
- James SN et al. Adulthood cognitive trajectories over 26 and brain health at 70 years of age: Findings from the 1946 British Birth Cohort. *Neurobiology of Aging* 2023 Feb; 122:22-32.



## Caroline Sabin

*Position:* Professor of Medical Statistics and Epidemiology

*Location:* IGH, Royal Free Campus

*Research Group/Website:* Centre for Clinical Research, Epidemiology, Modelling and Evaluation

*Email contact:* [c.sabin@ucl.ac.uk](mailto:c.sabin@ucl.ac.uk)

*Theme:* Health of the Public



### Research overview

I conduct research on the contributions of HIV, behavioural and sociodemographic factors on the health of people with HIV, to increase our understanding of the role of HIV in the ageing process and support improved interventions for the prevention and management of multi-morbidity among older people with HIV.

### Rotation project *(including a brief outline of how this will develop into a PhD project)*

The POPPY (Pharmacokinetic Observations in PeoPle over fifty) study is a prospective observational study, initiated in 2013, to examine the clinical outcomes of people with HIV from seven clinics in the UK, and one in Ireland. POPPY includes three cohorts: people with HIV aged >50 years, people with HIV aged 18-49 years, and HIV-negative controls aged >50 years drawn from similar population groups. At each study visit, information is collected on a range of socio-demographic characteristics, co-morbidities, medication and other healthcare resource use, laboratory measurements, quality of life, depressive symptoms and other patient reported outcome measures. Longitudinal HIV information is captured through data linkage with existing national HIV cohorts. A subset of participants was enrolled in the POPPY Sleep sub-study which collected data on sleep patterns through self-report as well as 7-day actigraphy and overnight oximetry.

The study provides opportunities for a range of different short rotation projects as well as longer PhDs on topics relevant to HIV and comorbidities. We are keen to consider multi-disciplinary projects that benefit from the range of clinical, laboratory and social data that are collected.

### Relevant publications

\* Bagkeris E, et al. The Pharmacokinetic and clinical Observations in PeoPle over fifty (POPPY) Study: cohort profile. *Int J Epidemiol* 2018; 47(5):1391-1392e.

\* Sabin CA, et al. Pain in people living with HIV and its association with healthcare resource use, mental health and functional status. *AIDS* 2018; 32(18): 2697-2706.

\* De Francesco D, et al. Patterns of co-occurring comorbidities in people living with HIV. *OFID* 2018;5(11): ofy272

\* Halloran MO, et al. Polypharmacy and drug-drug interactions in older and younger people living with HIV: the POPPY study. *Antivir Ther* 2019; 24: 193-201.

\* Savinelli S, et al. Factors associated with obesity in the Pharmacokinetic and Clinical Observations in People over Fifty (POPPY) cohort: an observational cross-sectional analysis. *HIV Med* 2020; 21(7): 441-452.

\* Kunisaki KM, et al. Sleep disorders in human immunodeficiency virus: a substudy of the Pharmacokinetics and Clinical Observations in PeoPle over fifty (POPPY) Study. *Open Forum Infect Dis* 2020; 8(1): ofaa561.

**Andrew Seal**

*Position:* Associate Professor in International Nutrition  
*Location:* UCL Institute for Global Health  
*Research Group/Website:* <https://www.ucl.ac.uk/global-health/>  
*Email contact:* a.seal@ucl.ac.uk  
*Theme:* Health of the Public

**Research overview**

I work on health and nutrition in humanitarian contexts, with a particular focus on countries in the Horn of Africa. We are developing a programme of work on how water security, both quantity and quality, is being shaped by climate change, migration, and conflict, and assessing how this may impact on human health.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

The project may build on the work that we are currently doing in collaboration with the Somalia natural resources institute (SWALIM). Using a mix of *in situ* data sensors to monitor water quality parameters, together with household health and nutrition survey data, you will conduct analysis to track the longitudinal trends in the intake of minerals from different water sources, and how this may correlate with health and nutrition indicators.

You will also model the trends in climate and displacement how this may impact on aquifer depletion and water quality and availability. Ideally, you will have strong statistical analysis and GIS skills, together with a willingness to engage in field work and data collection on the ground. An interest in humanitarian health and environmental resilience will be useful.

During the rotation you will engage in secondary data analysis and, together with the group, develop detailed ideas for a full PhD project.

**Relevant publications**

1. Grijalva-Eternod CS, Jelle M, Mohamed H, Waller K, Osman Hussein B, Barasa E, et al. Evaluation of conditional cash transfers and mHealth audio messaging in reduction of risk factors for childhood malnutrition in internally displaced persons camps in Somalia: A 2 × 2 factorial cluster-randomised controlled trial. *PLoS Med.* 2023;20(2):e1004180.
2. Seal A, Jelle M, Nemeth B, Hassan MY, Farah DA, Musili FM, et al. Data innovation in response to COVID-19 in Somalia: application of a syndromic case definition and rapid mortality assessment method. *Glob Health Action.* 2022;14(sup1):1983106.
3. Seal AJ, Jelle M, Grijalva-Eternod CS, Mohamed H, Ali R, Fottrell E. Use of verbal autopsy for establishing causes of child mortality in camps for internally displaced people in Mogadishu, Somalia: a population-based, prospective, cohort study. *Lancet Glob Health.* 2021;9(9):e1286-e95.
4. Jelle M, Morrison J, Mohamed H, Ali R, Solomon A, Seal AJ. Forced evictions and their social and health impacts in Southern Somalia: a qualitative study in Mogadishu Internally Displaced Persons (IDP) camps. *Glob Health Action.* 2021;14(1):1969117.

## Lion Shahab

*Position:* Professor of Health Psychology

*Location:* Department of Behavioural Science and Health

*Research Group/Website:* [UCL Tobacco & Alcohol Research Group \(UTARG\)](#)

*Email contact:* [lion.shahab@ucl.ac.uk](mailto:lion.shahab@ucl.ac.uk)

*Theme:* Health of the Public



### Research overview

Our group aims to integrate population and individual approaches to quitting smoking and reducing alcohol consumption by a) providing insights into population-wide influences on smoking and alcohol consumption and b) advancing the scientific foundation and development of interventions aimed at promoting smoking cessation and helping people reduce their alcohol consumption.

### Rotation project *(including a brief outline of how this will develop into a PhD project)*

#### ***Evaluating the public health impact of novel nicotine delivery devices***

This project involves a lab-based assessment of genetic, epigenetic and multi-omic salivary markers in users of e-cigarettes to establish a risk profile of these products. The project seeks to find novel biomarkers that go beyond standard tobacco-based measure to assess the health impact of e-cigarettes.

This project also provides a unique opportunity to work with the Smoking Toolkit Study (STS), which involves monthly, face-to-face, computer-assisted household surveys with adults aged 16+ in England, representative of the adult population of smokers in England. The surveys include detailed questions on smoking and cessation, and demographic characteristics and has included close to 400,000 participants since 2006. As part of the STS, we are now collecting data on past regular and ever e-cigarette use and propensity to smoke.

The rotation project could be worked up into a full PhD project to evaluate the impact of e-cigarette availability on e-cigarette and cigarette use trajectories among young people to determine the behavioural – in addition to the health – impact of novel nicotine delivery devices.

PhD students would develop experimental and lab-based research skills and gain experience in big data analysis and transdisciplinary research. The project involves collaboration with UCL researchers (Prof Jamie Brown, Dr Emma Beard, Dr Dimtra Kale) as well as researchers from the University of Bristol, Toronto and Ohio.

### Relevant publications

- Beard E, Brown J, Shahab L. Association of quarterly prevalence of e-cigarette use with ever regular smoking among young adults in England: a time-series analysis between 2007 and 2018. *Addiction* 2022;117(8):2283-93. doi: 10.1111/add.15838
- Richmond RC, Sillero-Rejon C, Khouja JN, et al. Investigating the DNA methylation profile of e-cigarette use. *Clin Epigenetics* 2021;13(1):183. doi: 10.1186/s13148-021-01174-7
- Shah S. Salivaomics: The current scenario. *J Oral Maxillofac Pathol* 2018;22(3):375-81. doi: 10.4103/jomfp.JOMFP\_171\_18
- Shahab L, Goniewicz ML, Blount BC, et al. Nicotine, Carcinogen, and Toxin Exposure in Long-Term E-Cigarette and Nicotine Replacement Therapy Users: A Cross-sectional Study. *Ann Intern Med* 2017;166(6):390-400. doi: 10.7326/M16-1107
- Shahab L, Brown J, Boelen L, et al. Unpacking the Gateway Hypothesis of E-Cigarette Use: The Need for Triangulation of Individual- and Population-Level Data. *Nicotine Tob Res* 2022;24(8):1315-18. doi: 10.1093/ntr/ntac035

**Professor Laura Shallcross**

*Position:* Director of the Institute of Health Informatics  
*Location:* 222 Euston Road  
*Research Group/Website:* <https://www.ucl.ac.uk/health-informatics/research/vivaldi-study>  
*Email contact:* l.shallcross@ucl.ac.uk  
*Theme:* Health of the Public

**Research overview**

Our research aims to reduce the burden and impact of infection and outbreaks in care homes, by integrating analysis of routinely collected data with mixed methods research. We work in partnership with people who live and work in care homes and with policymakers to translate our findings into action.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

Students have the opportunity to undertake a range of projects using data that have been collected through the national VIVALDI (COVID-19 in care homes) study. Examples include:

- Investigating how use of testing for COVID-19 (PCR and LFD testing) varied across care homes / care providers during the pandemic and factors associated with this variation
- What does LFD testing tell us about the movement of care home staff between homes during the pandemic?
- How quickly were vaccines and boosters rolled out in care homes? How did this vary across care homes / regions? Did the pace of vaccine roll out and uptake decline substantially with successive boosters? Did uptake vary according to care home type, region, demographics of the local area?
- How have reinfection rates changed over the pandemic and do they vary according to the variant / timing of the primary infection?
- Are there other outbreak definitions that may better describe transmission of infection within the home?

**Relevant publications**

<https://www.ucl.ac.uk/health-informatics/research/vivaldi-study>

**Nicola Shelton**

*Position:* Professor of Population Health

*Location:* 1-19 Torrington Place WC1E6BT

*Research Group/Website:*

<https://www.ucl.ac.uk/epidemiology-health-care/research/epidemiology-and-public-health/research/health-and-social-surveys-research-group>

*Email contact:* n.shelton@ucl.ac.uk

*Theme:* Health of the public

**Research overview**

I'm the Director of the Health and Social Surveys Research Group where we use nationally representative surveys to look at population health. I'm a former editor of the Health Survey for England and current director of CeLSIUS which supports use of the ONS Longitudinal Study. I have wide ranging research interests including alcohol and health, health geography, and work exit in later life.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

The project will look at alcohol consumption by occupational groupings to see if certain occupations are more or less at risk of higher levels of alcohol consumption. The rotation will be completed using cross-sectional data from the Health Survey for England.

It will be developed into a PhD looking at alcohol related mortality in the ONS Longitudinal Study. The longitudinal research will look at life course occupational histories between 1971 and 2011 as previous research on alcohol and occupation and mortality has used the occupation from the death certificate.

**Relevant publications**

Case, P., Ng Fat, L., & Shelton, N. (2019). Exploring the characteristics of newly defined at-risk drinkers following the change to the UK low risk drinking guidelines: a retrospective analysis using Health Survey for England data. *BMC Public Health*, 19 (1), 902. doi:10.1186/s12889-019-7240-0

Holdsworth, C., Mendonça, M., Pikhart, H., Frisher, M., de Oliveira, C., & Shelton, N. (2016). Is regular drinking in later life an indicator of good health? Evidence from the English Longitudinal Study of Ageing. *Journal of Epidemiology and Community Health*, 70 (8), 764-770. doi:10.1136/jech-2015-206949

Ng Fat, L., Cable, N., & Shelton, N. (2015). Worsening of health and a cessation or reduction in alcohol consumption to special occasion drinking across three decades of the life-course. *Alcoholism: Clinical and Experimental Research*, 39 (1), 166-174. doi:10.1111/acer.12596

Boniface, S., Kneale, J., & Shelton, N. (2014). Drinking pattern is more strongly associated with under-reporting of alcohol consumption than socio-demographic factors: evidence from a mixed-methods study. *BMC Public Health*, 14, 1297. doi:10.1186/1471-2458-14-1297



## Shino Shiode

*Position:* Senior Lecturer in Geographic Information Science  
*Location:* Geography Department, Birkbeck  
*Research Group/Website:* Geospatial Modelling research group  
*Email contact:* s.shiode@bbk.ac.uk  
*Theme:* Health of the Public



### Research overview

I am a geographic data scientist who has an active interest in understanding the spatial aspect of public health and epidemiological events. My work focuses on discovering and describing geographical patterns of their data, and identifying the causal relationships that exist between the contributing factors and the outcomes whilst adjusting for their spatial bias.

### Rotation project *(including a brief outline of how this will develop into a PhD project)*

The volume and the range of publicly available data on public health and epidemiology are on the rise. Many of them come with locational information, yet they remain under-explored; e.g. few studies explore where each event has happened, how the spatial concentration of the data affects the measurements, and how it maps against that of possible contributing factors. This tendency is particularly prevalent with datasets in the area of global health.

This rotation project will look at *violence against women and children* in the middle- and low-income countries with a focus on the geospatial variations of these events. We will mainly use data from Spatial Data Repository in the DHS (Demographic and Health Surveys) programme and the geographical variations in the distribution and the weight of each variable. The project will provide the candidates with an opportunity to (1) gain the contextual knowledge surrounding the mechanism of domestic and intimate violence, (2) raise awareness for the spatial bias in health data, and (3) develop introductory practical skills for handling and analysing the relevant geospatial data. These skillsets are transferrable across a range of health and epidemiological contexts all of which are inherently affected by the spatial bias that exist in each data.

The first step of the project covers how to obtain, process and visualise the relevant geospatial data in the form of map representation. This is followed by learning how to analyse these data, which offers exposure to a series of analytical methods that are specifically designed for interpreting data that has locational information. They are different from the methods for non-geographical data in that these spatial methods can adjust for the spatial variation in the local weight of the phenomena.

There are variety of ways to extend this project to a full PhD research, and these include the methodological extensions to develop a more sophisticated geospatial modelling approach, as well as critical examination of data from various sources to better explain the regional and locational variations of the violence cases and, thereby, enable more locally specific recommendations towards reduction in violence in the respective study area.

### Relevant publications

- Thurston, H., Freisthler, B., & Wolf, J. P. (2022). Contrasting Methods of Measurement in Spatial Analyses Examining the Alcohol Environment and Child Maltreatment. *Child Maltreatment*, 27(4), 515-526.
- Moraga, P. (2019). *Geospatial health data: Modeling and visualization with R-INLA and shiny*. CRC Press.
- Minamisava, R., Nouer, S. S., Neto, O. L., Melo, L. K., & Andrade, A. L. (2009). Spatial clusters of violent deaths in a newly urbanized region of Brazil: highlighting the social disparities. *International Journal of Health Geographics*, 8, 66.
- Manda, S., Haushona, N., & Bergquist, R. (2020). A Scoping Review of Spatial Analysis Approaches Using Health Survey Data in Sub-Saharan Africa. *Int J Environ Res Public Health*, 17(9).
- Khatib, K., Raheem, M. A., Sartorius, B., & Ismail, M. (2019). Prevalence and risk factors for child labour and violence against children in Egypt using Bayesian geospatial modelling with multiple imputation. *PLoS ONE*, 14(5), 1-20.
- Boxer, P., Drawve, G., & Caplan, J. M. (2020). Neighborhood Violent Crime and Academic Performance: A Geospatial Analysis. *American Journal of Community Psychology*, 65(3/4), 343-352.
- Bergquist, R., & Manda, S. (2019). The world in your hands: GeoHealth then and now. *Geospatial Health*, 14(1).

**Dr Jean Stafford**

*Position:* Senior research fellow

*Location:* MRC Unit for Lifelong Health and Ageing at UCL

*Research Group/Website:*

<https://iris.ucl.ac.uk/iris/browse/profile?upi=JSTAF57>

<https://www.ucl.ac.uk/cardiovascular/research/population-science-and-experimental-medicine/mrc-unit-lifelong-health-and-ageing-ucl>

*Email contact:* [j.stafford@ucl.ac.uk](mailto:j.stafford@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I am a psychiatric epidemiologist interested in life course mental health, cognition and dementia. My research interests include: the mental health of older people, with a particular focus on late-life psychotic disorders; links between mental health, cognition and dementia; and the role of social relationships in cognitive trajectories and dementia.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

Although previous research suggests that psychiatric disorders may be associated with later cognitive decline and dementia, the mechanisms underlying these associations are poorly understood. The projects proposed below aim to investigate longitudinal relationships between psychiatric disorders, cognition and dementia, with a focus on possible underlying mechanisms. Projects will involve longitudinal datasets such as British birth cohorts, the English Longitudinal Study of Ageing, Whitehall II, and/or Swedish population register data. Proposed projects are as follows:

- Investigating associations between psychiatric symptoms, cognitive trajectories and brain health markers in the 1946 birth cohort study and the Insight 46 neuroscience study.
- Examining temporal relationships between psychiatric symptoms and cognitive outcomes across multiple longitudinal studies.
- Investigating associations between psychiatric disorders, including depression, anxiety, bipolar disorder and schizophrenia, and dementia risk in Swedish population register data.
- Examining potential mediators of associations between psychiatric disorders, cognition and dementia, such as cardiovascular health and inflammatory biomarkers.

Projects have the potential to be developed into full PhD projects in collaboration with epidemiologists, statisticians, and clinicians. There is scope to accommodate the interests of the PhD student within these projects, and other related project ideas proposed by students are welcome.

**Relevant publications**

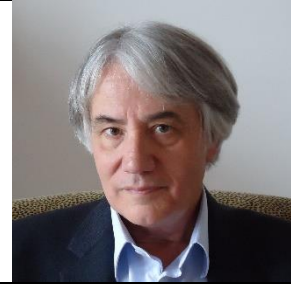
**Stafford, J.**, Chung, W. T., Sommerlad, A., Kirkbride, J. B., & Howard, R. (2022). Psychiatric disorders and risk of subsequent dementia: Systematic review and meta-analysis of longitudinal studies. *International Journal of Geriatric Psychiatry*, 37(5), 1-22. doi:10.1002/gps.5711

**Stafford, J.**, Dykxhoorn, J., Sommerlad, A., Dalman, C., Kirkbride, J. B., & Howard, R. (2021). Association between risk of dementia and very late-onset schizophrenia-like psychosis: a Swedish population-based cohort study. *Psychological Medicine*, 1-9. doi:10.1017/S0033291721002099

**Stafford, J.**, Howard, R., Dalman, C., & Kirkbride, J. B. (2019). The incidence of nonaffective, nonorganic psychotic disorders in older people: a population-based cohort study of 3 million people in Sweden. *Schizophrenia bulletin*, 45(5), 1152-1160. doi:10.1093/schbul/sby147

## Andrew Steptoe

*Position:* Professor of Psychology and Epidemiology  
*Location:* Department of Behavioural Science and Health  
*Research Group/Website:*  
*Email contact:* a.steptoe@ucl.ac.uk  
*Theme:* Health of the Public



### Research overview

I am a psychologist and epidemiologist, and director of the English Longitudinal Study of Ageing. I work on issues such as links between social factors and biology, cognitive ageing, cross-national studies of healthy ageing, social isolation and loneliness, and positive emotional wellbeing and health.

### Rotation project *(including a brief outline of how this will develop into a PhD project)*

#### Positive psychological wellbeing and physical health

Negative emotional states such as depression and anxiety have long been known to contribute to the incidence and prognosis of physical health conditions such as coronary heart disease, diabetes, and frailty. Research over the past 20 years has suggested that positive psychological wellbeing (including hedonic and eudemonic wellbeing) is health protective, reducing risk even when negative states are taken into account. Pathways linking positive wellbeing with physical health include both biological factors such as inflammation and neuroendocrine dysfunction and health behaviours.

Much of this work has been carried out in ELSA, but has relied on self-reported physician diagnoses of health conditions. This project will take advantage of linkage between ELSA and Hospital Episode Statistics to provide a more nuanced perspective on the role of psychological wellbeing in the incidence and progression of major physical health conditions. It could be developed into a programme of studies involving analysis of pathways, health disparities, and genetic processes.

### Relevant publications

- Steptoe A, Deaton A, Stone AA. (2015). Subjective wellbeing, health, and ageing. *The Lancet*, 385, 640-648. PMC4339610.
- Steptoe A, Fancourt D. (2019). Leading a meaningful life at older ages and its relationship with social engagement, prosperity, health, biology, and time use. *Proc Nat Acad Sci USA*. 116, 1207-1212, PMC6347683
- Steptoe A. (2019). Happiness and health. *Annu Rev Public Health*, 40, 339-359.
- Steptoe A. (2019). Investing in happiness: the gerontological perspective. *Gerontology*, 65, 634-639.
- Fancourt D, Steptoe A. (2020). The longitudinal relationship between changes in wellbeing and inflammatory markers: are associations independent from depression? *Brain Behav Immun*, 83, 146-152.
- Panagi L, Hackett RA, Steptoe A, Poole L. (2021). Enjoyment of life predicts Type 2 diabetes incidence over 12 years of follow-up: findings from the English Longitudinal Study of Ageing. *J Epidemiol Comm Health*, 75, 297-304

**Alastair Sutcliffe**

*Position:* Professor of General Paediatrics (hon. Consultant Paediatrician)

*Location:* UCL GOS ICH (Population, Policy and Practice)

*Research Group/Website:* <https://liftresearchucl.com/>;

<https://enchantresearchucl.com/>

*Email contact:* [a.sutcliffe@ucl.ac.uk](mailto:a.sutcliffe@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

Our research group (see photo!) uses record-linkage methodology to combine multiple national and international administrative datasets (e.g., hospital, cancer registration, education etc.) to answer important questions about the longitudinal health of sub-fertile men and women. We also explore long-term health and educational outcomes of children conceived via assisted reproductive technology (ART).

**Rotation project** (including a brief outline of how this will develop into a PhD project)

This rotation will provide a unique opportunity to work with data from the Human Fertilisation and Embryology Authority, the independent regulator of fertility treatment in the UK. PhD students would develop skills in record linkage, statistical and epidemiological analysis, and longitudinal data analysis using large administrative data sources. The rotations have the potential to evolve into a full PhD project depending on the student's interests.

I have a number of potential projects collaborating with others in the group. Specific research questions can be developed to align with the interests of the student and supervisors.

1. **Long-term health and education outcomes for children conceived by assisted reproductive technology (with Prof Katie Harron):** a chance to work with the new ECHILD data resource.
2. **Long-term malignant/non-malignant outcomes for sub-fertile women in the UK (with Dr Mitana Purkayastha):** an opportunity to work with national cancer registration, hospital, and mortality data.
3. **Long-term malignant/non-malignant outcomes for sub-fertile men in the UK (with Dr Mitana Purkayastha):** an opportunity to work with national cancer registration, hospital, and mortality data.
4. **Association between ART and congenital anomalies (with Dr Mitana Purkayastha):** an opportunity to work with national hospital data.

**Relevant publications**

- Sutcliffe AG et al. General health in a cohort of children conceived after assisted reproductive technology in the United Kingdom: a population-based record-linkage study. *American journal of obstetrics and gynaecology*. 2023 Jan 1;228(1):82-e1.
- Purkayastha M et al. Cohort profile: a national, population-based cohort of children born after assisted conception in the UK (1992–2009): methodology and birthweight analysis. *BMJ open*. 2021 Jul 1;11(7):e050931.
- Williams CL et al. Cancer risk among children born after assisted conception. *New England Journal of Medicine*. 2013 Nov 7;369(19):1819-27.
- Venkatesan T et al., Describing national trends in preterm infant mortality in the United States by race and socioeconomic status: a population study (1995-2020) of 100 million births, *JAMA Pediatrics*, ISSN: 1072-4710

**Professor Matthew Sydes**

*Position:* Prof Matthew Sydes  
*Location:* UCL  
*Research Group:* MRC Clinical Trials Unit at UCL  
*Email contact:* m.sydes@ucl.ac.uk  
*Theme:* Health of the Public

**Research overview**

Matt Sydes is Professor of Clinical Trials & Methodology. His research interests are improving the way clinical trials are implemented in practice. This includes judicious use of healthcare systems data, implementation of late-phase platform protocols & considering how trials are design & run to impact clinical practice.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

Many rotation projects are available which could be developed into full PhDs.

1. Platform protocols: The case to run multiple questions within a well-developed protocol is now widely understood & increasingly delivered. The ability to add new, well-powered comparisons is important. However, some researchers have started to talk about “perpetual protocols” (which worryingly implies taking any question just to keep the protocol going). Over time, in any protocol, issues build up. What is the right time to stop a platform protocol & initiating a new platform protocol & what are the conditions that drive this? MRC CTU at UCL has been running platform protocols longer than most trials units. The findings would be relevant to the new generation of platform protocols initiated in the UK & beyond.
2. Late phase trials are designed to impact practice. Not all drugs are used in their licensed indication. What is the relative role of regulators, rationing / commissioning bodies, guidelines committees, clinical activists & patient communities? How does this vary internationally? How can this be made clearer? What lessons can be taken back into the design & implementation of clinical trials?
3. Improving clinical trials with “Exit interviews” & “interim team discussions”: Every trial experiences issues & the trial team (usually) learn & grow. These lessons may not be extended to other trial teams within a unit, let alone to other units. Can lessons be learned by conducting exit interviews with trial staff at the end of a trial? Following an “agile” approach, what is the merit of periodic interview reviews?
4. Practice-changing clinical trials involve hundreds of supporting staff, centrally & at sites, but few will be recognised with authorship on key papers. What are the implications of this? Are there helpful approaches to improving recognition? How is authorship enacted across a range of clinical trials fields? How non-authors are recognised if at all & what impact to researchers feel? Can trial-specific roles be included in CRediT? How to track & validate contributions? Would alternative approaches would be acceptable to researchers, journals & universities?

**Relevant publications**

- 1: Parmar -- 2017 -- Clin Trials: 10.1177/1740774517725697; Schiavone -- 2019 -- Trials: 10.1186/s13063-019-3216-8; Noor -- 2022 -- BMJ Open: 10.1136/bmjopen-2021-055615
- 2: Embleton-Thirsk -- 2019 -- Clin Trials: 10.1177/1740774519862528
- 3: (None)
- 4: Sydes -- 2017 -- N Engl J Med: 10.1056/NEJMc1707245



**Dr Shema Tariq**

*Position:* Senior Research Fellow/Honorary Consultant  
HIV/Sexual Health Physician

*Location:* UCL Institute for Global Health

*Research Group:* The Centre for Clinical Research in Infection  
and Sexual Health

*Email contact:* s.tariq@ucl.ac.uk

*Theme:* Health of the Public

**Research overview**

I combine working as an NHS doctor in sexual health and HIV with public health research on HIV, emerging infections and health inequalities. I'm a mixed methods researcher (trained in medical anthropology and epidemiology). My research is co-produced, and I work in partnership with community-based organisations across Europe.

**Rotation project** (including a brief outline of how this will develop into a PhD project)

These would be suitable for students wishing to gain experience in qualitative and mixed-methods research in HIV and sexual health, as well as co-production.

- 1) **Food insecurity among people living with HIV:** A questionnaire and interview study on food insecurity and HIV in London. There will be opportunity to undertake a systematic review, or support design/analysis of the study. This may inform a PhD focused on an aspect of food insecurity in HIV in the UK.
- 2) **VERDI Qual:** We are conducting qualitative research on the 2022 mpox outbreak, and are likely to be extending this work to other new infections and vaccine hesitancy. There are opportunities for qualitative data analysis and potentially primary data collection. This work could lead to a PhD using qualitative methods to explore (re)emerging infections.
- 3) **CASCADE:** CASCADE is a cohort study of recently-acquired HIV in Europe and Canada. We have qualitative data to analyse with potential themes including: missed opportunities for prevention, experiences of recently acquired HIV, experiences of immediate antiretroviral therapy, and stigma.
- 4) **HIV and menopause:** We will be conducting a mixed methods evaluation of a new clinic delivering menopause care with peer support for women living with HIV. This work would inform a PhD exploring menopause care among women living with HIV. This would have to be undertaken in Term 3.

**Relevant publications**

- 1) Nicholls EJ, Policek N, Volny-Anne A, Spire B, Burns F, Ruiz-Burga E, Tariq S. For CASCADE Collaboration. A systematic review of qualitative research on recently acquired HIV. AIDS. Minor revisions submitted.
- 2) Bukasa L, Namiba A, Brown M, Ndu'ngu E, Nangwale M, Letting G, Chirwa P, Thorne C, Tariq S. Setting the research agenda: involving parents and children in research on children who are HIV-free. Journal of International AIDS Society. Minor revisions submitted.
- 3) Ruiz-Burga E, Tariq S, Touloumi G, Gill J, Nicholls EJ, Sabin CA, Mussini C, Meyer L, Carlander C, Grabar S, Jarrin I, Van Der Valk M, Wittkop L, Burns F, Porter K. CASCADE: protocol for a multicentre mixed-methods observational study of people with recently-acquired HIV infection in Europe and Canada. BMJ Open, 2023;13:e070837.
- 4) Okhai H, Sabin CA, Haag K, Sherr L, Dhairyawan R, Shepherd J, . . . Tariq S. The prevalence and patterns of menopausal symptoms in women living with HIV. AIDS & Behavior. 2022; DOI: 10.1007/s10461-022-03696-4.
- 5) Okhai H, Sabin CA, Haag K, Sherr L, Dhairyawan R, Burns F, . . . Tariq S. Menopausal status, age and management among women living with HIV in the UK. HIV Medicine. 2021;22(9):834-842. doi:10.1111/hiv.13138

**Claire Thorne**

*Position:* Professor of Infectious Disease Epidemiology  
*Location:* UCL GOS ICH (Population, Policy & Practice)  
*Research Group/Website:* PPP Infections group  
*Email contact:* Claire.thorne@ucl.ac.uk  
*Theme:* Health of the Public

**Research overview**

I co-lead the European Pregnancy and Paediatric Infections Cohort Collaboration (EPPICC) – leading on research on pregnant women living with HIV, alongside Jeannie Collins who leads on EPPICC paediatrics (further details in Data Sources section). Participating studies include multisite cohorts with national or sub-national coverage, single-site cohorts and surveillance studies.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

We conduct regular retrospective data mergers and pooled analyses of observational individual patient data on pregnant women diagnosed with HIV before or during pregnancy and their infants within EPPICC. Other EPPICC Pregnancy team members include Rebecca Sconza (GOS ICH) and Heather Bailey (IfGH).

Examples of potential rotation projects using these datasets include:

- Investigation of the rate of and risk factors for stillbirth and neonatal mortality in infants born to women living with HIV
- Estimating the prevalence of maternal co-infections among pregnant women living with HIV and exploring adverse pregnancy and infant outcomes in women with coinfection
- Examining virological failure in pregnant women conceiving on antiretroviral therapy

These projects could be developed into a full PhD on clinical epidemiology of HIV in pregnancy in Europe.

**Relevant publications**

European Pregnancy and Paediatric HIV Cohort Collaboration. Birth defects after exposure to efavirenz-based antiretroviral therapy at conception/first trimester of pregnancy: a multicohort analysis. *JAIDS* 2020, 83(2), E15.

European Pregnancy and Paediatric HIV Cohort Collaboration Study Group. Nucleoside reverse transcriptase inhibitor backbones and pregnancy outcomes. *AIDS* 2019; 33:295-304.

Chiappini E, Ene L, Galli L, et al. Severe haematologic toxicity is rare in high risk HIV-exposed infants receiving combination neonatal prophylaxis. *HIV Med* 2019; 20:291-307

**Prof Cecilia Vindrola, Dr Sam Martin and Dr Emma Beecham***Position:* Senior Research Fellow*Location:* Department of Targeted Intervention*Research group:* Rapid Research Evaluation and Appraisal Lab (RREAL)*Email contact:* [c.vindrola@ucl.ac.uk](mailto:c.vindrola@ucl.ac.uk) / [s.martin@ucl.ac.uk](mailto:s.martin@ucl.ac.uk) / [e.beecham@ucl.ac.uk](mailto:e.beecham@ucl.ac.uk)*Theme:* Health of the Public**Research overview**

The purpose of RREAL is to improve the quality and impact of rapid research used to study and evaluate clinical and health service models and interventions for time-sensitive contexts. This includes using social listening to co-create research questions, plus digital analytics and process mapping to analyse big qualitative datasets.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

RREAL has a number of potential projects that bring together researchers from a wide range of disciplines (clinicians, health psychologists, digital epidemiologists, medical anthropologists and health economists):

- The complexity of [Long Covid symptoms](#) experienced and self-reported by Long Covid patients – (using an existing social media dataset on the Pulsar platform)
- Mapping of diagnosis and treatment journeys of young people with cancer in the UK, using the dataset created by the BRIGHTLIGHT 2021 cohort study
- Big qualitative data analysis of free text within national audit surveys/case reviews covering peri-operative cardiac arrest from the [Royal College of Anaesthetists' 7th National Audit Project \(NAP7\)](#) dataset.
- [Collaborative And Digital Analysis Of Big Qual Data In Time Sensitive Contexts – LISTEN](#) (use of large qualitative datasets in the context of emergencies to inform response efforts).

These projects provide a unique opportunity to work with a wide range of data sources, developing skills in statistical and epidemiological analysis as well as the analysis of large qualitative datasets (Big Qual Data). As RREAL focuses on applied health research, PhD students will also develop skills on the translation of research findings to changes in policy and practice. These studies have the potential to influence the future delivery of services in the NHS, the strategy of the HSRC at the Royal College of Anaesthetists (RCOA) and the use of data for epidemic response efforts by organisations such as Doctors without Borders (MSF).

**Supervisors:**Prof Cecilia Vindrola (<https://orcid.org/0000-0001-7859-1646>)Dr Sam Martin (<https://orcid.org/0000-0002-4466-8374>)Dr Emma Beecham (<https://orcid.org/my-orcid?orcid=0000-0002-1832-0286>)**Relevant publications**

-Healthcare workers' mental health and wellbeing during the COVID-19 pandemic: Longitudinal analysis of interview and social media data. Vera San Juan V, Martin S, Badley A, Maio L, Gronholm P, Buck C, Flores E, Vanderslott S, Syversen A, Mulcahy Symmons S, Uddin I, Karia A, Vindrola-Padros C. medRxiv 2022.04.29.22274481; doi: <https://doi.org/10.1101/2022.04.29.22274481>

-Re-ordering connections: UK healthcare workers' experiences of emotion management during the COVID-19 pandemic. Dowrick A, Mitchinson L, Hoernke K, Mulcahy Symmons S, Cooper S, Martin S, Vanderslott S, Vera San Juan N, Vindrola-Padros C. *Sociology of Health & Illness*. 2021 Nov;43(9):2156-77.

-“Any idea how fast ‘It’s just a mask!’ can turn into ‘It’s just a vaccine!’”: From mask mandates to vaccine mandates during the COVID-19 pandemic. *Vaccine*. Martin, S., & Vanderslott, S. (2021).

-Children’s and Parents’ Conceptualization of Quality of Life in Children With Brain Tumors: A Meta-Ethnographic Exploration. Beecham E, Langner R, Hargrave D, Bluebond-Langner M. *Qualitative Health Research*. 2019;29(1):55-68. <https://doi.org/10.1177/1049732318786484>

- Inviting parents to take part in paediatric palliative care research: A mixed-methods examination of selection bias. Crocker JC, Beecham E, Kelly P, et al. *Palliative Medicine*. 2015;29(3):231-240.

<p><b>S Goya Wannamethee</b>  <i>Position:</i> Professor of Epidemiology  <i>Location:</i> Dept Primary Care and Population Health, UCL  <i>Research Group/Website:</i> <a href="https://www.ucl.ac.uk/epidemiology-health-care/british-regional-heart-study-brhs">https://www.ucl.ac.uk/epidemiology-health-care/british-regional-heart-study-brhs</a>  <i>Email contact:</i> g.wannamethee@ucl.ac.uk  <i>Theme:</i> Health of the Public</p>	<p>Insert Picture of yourself or your subject matter</p>
<p><b>Research overview</b></p> <p>I am Director of The British Regional Heart Study (BRHS) a prospective study of over 7000 men who have been followed up for all-cause mortality, cardiovascular disease, cancers, and related morbidity. My research focuses on the prevention and prediction of CVD, cancers, multimorbidity and ageing conditions including disability and dementia.</p>	
<p><b>Rotation project</b> (including a brief outline of how this will develop into a PhD project)  Potential rotation projects include-</p> <ol style="list-style-type: none"> <li>1. <u>Shared risk factors in cardiovascular disease (CVD) and cancers.</u> CVD and cancers share many common risk factors suggesting a shared biology. The BRHS data is used to investigate risk factors common to both CVD and cancer. This would include selecting one or two risk factors - lifestyle factors (obesity, smoking, diet, physical activity, alcohol intake), blood lipids, hypertension, nutritional factors, and social factors. This rotation could evolve into a PhD project by exploring the extensive range of vascular risk factors and exploring other cohort data sources in diverse populations. The longitudinal research and collection of data spanning over 30 years will allow a life course approach on the role of lifestyle factor and vascular risk factors in the prevention of CVD and cancers in later life.</li> <li>2. <u>Socioeconomic factors and risk of cardiometabolic multimorbidity (CMM):</u> Multimorbidity is defined as the co-occurrence of two or more chronic diseases. Cardiometabolic multimorbidity (any two of CHD, stroke, or diabetes) is a common pattern of multimorbidity in older people. This rotation using BRHS will look at the impact of social class on the development of CMM. This rotation could evolve into a full PHD project to assess the impact of a wide range of social factors, area deprivation and social activities on CMM and other patterns of multimorbidity in older adults using BRHS and other cohort data.</li> </ol> <p>These projects provide an opportunity to work on prospective cohort studies and develop skills in statistical and epidemiological analysis.</p>	
<p><b>Relevant publications</b></p> <ol style="list-style-type: none"> <li>1. Koene RJ et al. Shared Risk Factors in <b>Cardiovascular Disease and Cancer</b>. 2016 Mar 15;133(11):1104-14.</li> <li>2. Vincent L et al cardiovascular disease and <b>Cancer</b>: Is There Increasing Overlap? <i>Curr Oncol Rep</i>. 2019 Apr 6;21(6):47.</li> <li>3. Hibler EA et al Addressing the "<b>Common Soil</b>" of risk factors for cardiovascular disease and cancer. <i>JACC CardioOncol</i>. 2021 Mar 16;3(1):59-61.</li> <li>4. Alvarez-Galvez J et al. Social determinants of multimorbidity patterns: A systematic review. <i>Front Public Health</i>. 2023 Mar 27;</li> <li>5. Singh-Manoux A, et al. Clinical, socioeconomic, and behavioural factors at age 50 years and risk of cardiometabolic multimorbidity and mortality: A cohort study. <i>PLoS Med</i>. 2018.</li> </ol>	

**Jonathan Wells**

*Position:* Professor of Anthropology and Pediatric Nutrition  
*Location:* UCL Great Ormond Street Institute of Child Health  
*Website:* <https://www.ucl.ac.uk/child-health/>  
*Email contact:* [jonathan.wells@ucl.ac.uk](mailto:jonathan.wells@ucl.ac.uk)  
*Theme:* Health of the public

**Research overview**

This project will apply an evolutionary theoretical framework, to improve understanding of how and why societal stresses and public health interventions impacting the brain (ie through experience) are associated with physical health outcomes of adults and children. The data come from cohort studies / interventions in low-income countries (Bangladesh, Ghana).

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

The project aims to intergrate global health, epidemiology and evolutionary theory. From an evolutionary perspective, human biology has been shaped in ways that maximise Darwinian fitness (surviving and producing offspring). As environments deteriorate, health may be sacrificed in favour of fitness. Public health interventions are sometimes less effective than anticipated, because they benefit fitness more than health outcomes. This framework provides a novel lens through which to examine how mental stresses and efforts to reduce them, experienced through the brain, impact our physiology and physical health. The rotation project, using data on adults from Bangladesh and/or Ghana, will test the hypothesis that poorer mental health is associated with a metabolic profile that 'discounts the future', indicated by a central body fat distribution that benefits survival (immune function) at a cost to long-term health (risk of diabetes, hypertension, cardiovascular disease). The full PhD project may extend this approach to children born to mothers participating in a cluster randomized trial, testing the benefits of Participatory Women's Groups (PWG) community mobilisation in Bangladesh. The children are shortly to be followed up at 10-14 years. The PhD will consider whether maternal exposure to the PWG intervention is associated with markers of health, physical maturation and social/education capital of the adolescent offspring.

**Relevant publications**

Wells JCK, Nesse RM, Sear R, Johnstone RA, Stearns SC. Evolutionary public health: introducing the concept. *Lancet*. 2017 Jul 29;390(10093):500-509.

Wells JCK, Cole TJ, Cortina-Borja M, Sear R, Leon DA, Marphatia AA, et al. Low Maternal Capital Predicts Life History Trade-Offs in Daughters: Why Adverse Outcomes Cluster in Individuals. *Front Public Health*. 2019 Jul 31;7:206.

Fottrell E, Ahmed N, Morrison J, Kuddus A, Shaha SK, King C, et al. Community groups or mobile phone messaging to prevent and control type 2 diabetes and intermediate hyperglycaemia in Bangladesh (DMagic): a cluster-randomised controlled trial. *Lancet Diabetes Endocrinol*. 2019 Mar;7(3):200-212.



**Dr Anna (Ania) Zylbersztejn**

*Position:* Senior Research Fellow in Public Health Data Science

*Location:* UCL GOS ICH (Population, Policy and Practice)

*Research Group/Website:* [Child Health Informatics Group](#)

*Email contact:* [ania.zylbersztejn@ucl.ac.uk](mailto:ania.zylbersztejn@ucl.ac.uk)

*Theme:* Health of the Public

**Research overview**

I am a researcher within the [Child Health Informatics Group](#) and [the NIHR GOSH BRC Applied Child Health Informatics theme](#). My research uses routinely collected data (such as, primary and secondary healthcare records, school census) to study health and education outcomes of children with rare or complex diseases.

**Rotation project** *(including a brief outline of how this will develop into a PhD project)*

I have two potential rotation projects:

- Variation in health of children with complex health needs:  
The student will use linked data from GP practices and hospital admissions (from the [Clinical Practice Research Datalink, CPRD](#)) to describe health outcomes of children with complex health needs (for example learning disabilities or autism) compared to other children registered in GP practices. This rotation project can be developed into a PhD project examining health and wellbeing of families of children with complex health needs using mother-baby linkage in CPRD.
- Health outcomes of children with selected chronic conditions  
Student will use national hospital admissions data to examine healthcare use and health outcomes of children with selected chronic conditions associated with additional learning needs. This rotation project can be developed into a PhD project looking at health and educational trajectories using [the ECHILD database](#) which links national health and education data (currently 15 mln children)

These rotation projects will provide an opportunity to learn about potential of administrative health records for child health research and gain experience in data analysis using Stata or R. Both projects can be developed into full PhD projects.

**Relevant publications**

- Zylbersztejn A et al. *Trends in hospital admissions during transition from paediatric to adult services for young people with learning disabilities or autism: population-based cohort study*. Lancet Regional Health Europe (2022). doi:10.1016/j.lanepe.2022.100531
- Zylbersztejn A et al. (2020) *Phenotyping congenital anomalies in administrative hospital records*. Paediatric and Perinatal Epidemiology;34(1):21-28.
- Zylbersztejn, A et al. (2018) *Child mortality in England compared with Sweden: a birth cohort study*. Lancet. doi:10.1016/s0140-6736(18)30670-6