

MANCHESTER  
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The University of Manchester

Faculty of Biology, Medicine and Health  
School of Health Sciences

# Epidemiology International Summer School Summer 2020



[www.manchester.ac.uk/epi-iss](http://www.manchester.ac.uk/epi-iss) | [health@manchester.ac.uk](mailto:health@manchester.ac.uk)

# Epidemiology International Summer School 2020

## The University of Manchester

### Welcome Message

The Division of Population Health, Health Services Research and Primary Care in the School of Health Sciences, Faculty of Biology, Medicine and Health at The University of Manchester is delighted to offer a four-week summer school in Epidemiology for students from our partner universities during July and August 2020.

The purpose of this summer course is to provide self-motivated international students who are interested in epidemiology and public health with an in-depth introduction to the subject, in a world class learning environment that is enriched with British culture. The University of Manchester has a high international standing and has been the home of 25 Nobel Prize winners.

During the 4-week summer school, students will be taught in small groups by experts in the fields of evidence synthesis, biostatistics, health economics and health inequalities, and will be supported to work together on group tasks to develop their epidemiology skills. Moreover, students will have the opportunity to practice their presentation skills in an academic setting to their peers and Manchester academics as well as having the opportunity to undertake situational learning where they can work with some of our academics and research staff on projects currently being undertaken.

In addition to the academic programme, there will also be plenty of opportunities for social activities. These will include a welcome reception and a farewell celebration (involving Manchester academics and students), and trips to local attractions including parks and local cities.

We are confident that the summer school programme will give every participant a fantastic experience that will have lasting impact for the rest of their studies and career.

We look forward to welcoming you to Manchester in July 2020.

### *The Epidemiology Summer School Team*



***Prof Arpana Verma***

Head of the Division of Population Health,  
Health Services Research and Primary Care.



***Dr Hui Guo***

Lead of the Epidemiology Summer School



***Dr Paula Whittaker***

Co-director of Master of Public Health and  
MRes in Public Health/Primary Care



***Greg Williams***

Co-Lead of the Epidemiology Summer  
School

# The Academic Programme Outline

Over the course of the four weeks, you will have the opportunity to learn about a wide range of topics from our teaching staff, the details of which are outlined over the next two pages.

## **Evidence Synthesis**

Students will learn about how to understand scientific evidence, how to identify the best evidence, how to implement evidence, and will get an understanding of critical appraisal. We will examine a range of study designs, sources of bias and examine the hierarchy of evidence. Students will be guided on how best to search for evidence that can be used for evidence-based practice, and we will develop techniques with referencing software.

The sessions will be a mixture of computer workshops and classroom based talks. With some more practical skills being developed as the students work in groups.

## **Biostatistics**

After receiving an introduction to evidence, we will learn about conducting analysis of data. Students will be introduced to core statistical concepts and techniques that are essential for understanding, interpreting and undertaking biomedical research. Biostatistics sessions will demonstrate how powerful techniques can be used to investigate relationships between outcomes, patient characteristics and treatments, as well as making predictions about the prognosis of patients.

During the biostatistics sessions, students will have the chance to use the computer labs and will be guided through the use of some biostatistics software which may be new to them. Students will also be given the opportunity to run their own 'trial' and discuss the methodological issues.

## **Health Economics**

Students will be given the opportunity to look at key concepts of economic evaluation and the evidence base behind health economic practice. We will examine the role that a rationalised health care system plays and how decisions based on the cost and clinical efficacy of treatment regimens improve population health. We will also set the scene for the practical application of horizontal and vertical equity on population health.

A wide variety of learning methodologies will be used to understand these key concepts and demonstrate their applicability in real-world settings.

# The Academic Programme Outline

## Health Inequalities

Using the Social Determinants of Health, students will explore inequalities and how they impact on health outcomes across the life-course. We will examine the principles and practice of good health promotion policies, and explore the importance of the 'Health in All Policies' movement advocated by the World Health Organization.

We will look at interventions to help reduce inequalities and examine the evidence base for delivering these in different socio-economic settings.

## Intercultural public health

Students will examine culture, its impact on health and the potential impact of 'culturally competent' communities. Through group work, discussions and interactive activities, we will look at cultural models, frameworks and policies in relation to participants' personal and professional practice with the aim of improving health and wellbeing outcomes.

## Situational learning

Students will be given the opportunity to work alongside some of our academic and research staff within the Division of Population Health, Health Services Management and Primary Care. This will allow them to see some of the projects that are being worked on first-hand and see where some of their learning is put into practice.

## Group Project

Working in groups, the students will be able to demonstrate their learning by producing a joint project together looking at the application of their learning in the real world. They will be able to present their project to the group and the academic staff.

*Each week there will also be a cultural activity and various workshops run by the International Office, please see the section "International Office Activities and Workshops" for further details.*

# Provisional Programme 2020

## Week 1

	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	Registration and welcome <i>(International Office)</i>	Understanding evidence: study design and bias <i>(Paula Whittaker)</i>	Critical appraisal of RCTs and systematic reviews <i>(Paula Whittaker)</i>	Implementation sciences <i>(Clare Huish, John Owen, Tracey Farragher)</i>	Questionnaire design <i>(Tracey Farragher)</i>
Afternoon	Introduction to epidemiology and public health <i>(Arpana Verma, Hui Guo, Tracey Farragher, Greg Williams)</i>	Critical appraisal of observational studies <i>(Paula Whittaker)</i>	Welcome Event	English writing workshop (if applicable) / Field Epidemiology <i>(Arpana Verma)</i>	Arts methodologies in public health research <i>(Annie Harrison)</i>

# Provisional Programme 2020

## Week 2

	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	Intro to Biostatistics <i>(Andy Vail, Hui Guo, Jamie Sergeant)</i>	RCTs: design and analysis <i>(Sarah Cotterill)</i>	Observational data analysis <i>(Matthew Gittins)</i>	Causal inference, moderation and mediation <i>(Antonia Marsden)</i>	Genetic causal inference <i>(Hui Guo)</i>
Afternoon	Linear Regression <i>(Lesley-Anne Carter)</i>	English writing workshop (if applicable) / Reproducible research <i>(Matthew Parkes)</i>	Cultural trip	Meta-research <i>(Jack Wilkinson)</i>	Project work

# Provisional Programme 2020

## Week 3

	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	The role of health economics in distributing healthcare budgets <i>(William Whittaker)</i>	Indicators for inequalities <i>(Greg Williams, Arpana Verma)</i>	Applied epidemiology <i>(Tracey Farragher)</i>	Health in All Policies <i>(Angela Spencer)</i>	Intercultural Public Health <i>(Clare Huish)</i>
Afternoon	Why the poor die young <i>(Arpana Verma)</i>	Counting the cost <i>(Arpana Verma)</i>	Cultural trip	Group activity <i>(Greg Williams)</i>	Project time

# Provisional Programme 2020

## Week 4

	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	Healthy Ageing <i>(Greg Williams, Julia Mueller, Angela Spencer)</i>	Occupational and Environmental Health <i>(Martie van Tongeren, Anne Clayson, Melanie Carder)</i>	Molecular epidemiology <i>(Janine Lamb, Ken Muir, Artitaya Lophatananon)</i>	Project time / consolidation	Presentations, Photos, Feedback, Prizes, Farewell lunch
Afternoon	An introduction to designing health apps <i>(Julia Mueller, John Owen)</i>	Childhood obesity <i>(Angela Spencer, Greg Williams, Hannah Waterson)</i>	Cultural trip		Free afternoon



# Social Activities

We understand the importance of socialising with your fellow students during your time with us at the summer school. Although the main priority of the school is to develop students' knowledge, the summer school also provides the opportunity for students to experience a new culture.

As part of the summer school the division likes to run social activities for the students. This can include events such as going out for dinner and enjoying more practical activities. Our students have been out for Italian food, a British roast dinner, bowling and even went to a music concert!

These events involve the students, interns and tutors, specifically from the Epidemiology International Summer School. It creates the perfect opportunity for students to engage with their tutors to learn more about their research and teaching. It also allows students to explore the possibility of postgraduate study if this interested them, as they could ask questions regarding master's and PhD programmes.

Students last year thoroughly enjoyed these events, saying it made them feel closer as a group which in turn made the whole experience even more unforgettable.



# International Office Activities and Workshops

## Weekly Cultural Visits

One afternoon each week, cultural visits are organised to different locations in Manchester and the surrounding area. These locations often include parks and cities close to Manchester. These visits are optional but highly recommended and are included within the summer school. The visits give students time to explore and understand more about British culture. Examples of previous visits have included a trip to a National Trust site—a site important for British culture and heritage, and a visit to Chester to explore the rich history of the city.



## English Writing Workshops

We also run English Writing Workshops for our Summer School students. These run within the normal times of the summer school and are specifically designed for International Students. They aim to further improve the English Language skills of the students in order to ensure their writing is able to precisely convey their knowledge.

The workshops go into depth about how to write a scientific article in English and focus on structure as well as spelling and grammar. This workshop has been shown to be useful for students with varying confidence in their English language skills.

## Postgraduate Study Workshops



The summer school provides students with a great opportunity to explore postgraduate studies at the University. We run workshops to detail the options that students may wish to consider including PhD and master's programmes.

These workshops also go into detail about subject areas, applications and funding. Should any students wish to pursue postgraduate study at the University of Manchester, they will have lots of opportunities to discuss their options with members of staff during the course of the summer school, with some past students starting their application process during the Summer School.

## Testimonies from Epi-ISS 2018 & 2019 students

Our 2018 and 2019 students had an incredible time, gaining new knowledge and new friends. Since the school, a number of students have already gone on to start their application to study for a PhD at The University of Manchester, while others have gone on to more firmly establish the path they want to take in their future studies and careers.

Read some of the quotes from previous years' cohorts below:

*“A teacher listened to my topic, spent a lot of time with me to study the search strategy and then guided me step by step, and explained the various advantages and disadvantages.”*



*“The best summer of my life!”*

*“Unforgettable experience”*

*“This is a wonderful and unforgettable experience”*

*“We can get to know each other and communicate with others well”*



*“I love Manchester, I love you all!”*

# Teaching Staff

## Prof Arpana Verma



Prof Arpana Verma is Head of the [Division of Population Health, Health Services Research and Primary Care](#). She is Director of Manchester Urban Collaboration on Health (MUCH), a WHO Collaborating Centre, and honorary Consultant in Public Health at PHE. MUCH is based within the School of Health Sciences in the Faculty of Biology, Medical and Human Sciences. MUCH performs high quality research, teaching and training, in the field of public health and has established links to local, national and international public health organisations ([www.manchester.ac.uk/much](http://www.manchester.ac.uk/much)). MUCH was recently designated the World Health Organisation Collaborating Centre for Health Indicators including working as part of the [European Health Information Initiative](#) and the [Global Report on Urban Health](#).

Prof Verma is the Programme Director for the [Masters in Public Health and MRes in Public Health/Primary Care](#) online/blended distance learning course, which offers an innovative approach to learning, meeting the training needs for health professionals interested in a career in public health or those seeking new skills in this area.

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## Dr Paula Whittaker



Dr Paula Whittaker is a Senior Clinical Lecturer in Public Health. She is the course unit lead for Evidence Based Practice on the MPH programme and the Director of Evidence Based Practice for the public health team. Paula is a qualified general practitioner and Consultant in Public Health with a wealth of experience of conducting evidence reviews and implementing evidence into practice in a range of NHS and local authority settings.

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## Clare Huish



Clare Huish is a Lecturer in Public Health at The University of Manchester where she leads on Implementation Sciences and Intercultural Public Health. Aside from her teaching role as part of the MPH team at The University of Manchester, she has a background in Early Years movement development, public health research, implementing sciences and training professionals in health and education. She has led on Intercultural training in the UK and South America. Her teaching style has been described as dynamic, warm and enabling. She has a keen interest in The Art of Public Health and facilitating the application of research into practice in new and creative ways.

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## John Owen



John Owen is a Lecturer in Technology Enhanced Learning working in a team of health professionals and data scientists, supporting interdisciplinary and innovative teaching and research (<https://sites.manchester.ac.uk/i3hshub/>). He has a background in teaching multimedia computing and experience in the development, implementation and evaluation of online and blended learning, particularly for public health focussed courses. He currently teaches on two courses for the Master of Public Health programme: Implementation Science and Digital Public Health, and lead the MPH programme's online skills course.

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## Dr Sarah Cotterill



Sarah is a Senior Lecturer in the Centre for Biostatistics. She is interested in behaviour change research, and has extensive experience in the design of randomised controlled trials for the evaluation of health and public policy interventions. Current research includes evaluation of the UK diabetes prevention programme, a systematic review of social influences on health professional behaviour change, and an RCT of arthritis gloves on hand pain.

## Teaching Staff

**Greg Williams**



Greg Williams is a Lecturer in Public Health at The University of Manchester where he leads on Health Services Management and Global Health in the 21st Century. As well as teaching, Greg has an extensive background in public health research and has multiple peer-reviewed publications from local, national and international research projects. He has worked on and managed projects that have ranged from urban health indicator data collection to healthy ageing interventions, through to the evaluation of programmes aimed at reducing health inequalities. Greg is also the current Vice-President of the Urban Public Health section of the European Public Health Association.

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**Dr Julia Mueller**



Dr Julia Mueller recently completed her PhD in Health Psychology at The University of Manchester, and works at the Division of Population Health, Health Services Research and Primary Care. Julia has developed an online intervention for those worried about lung cancer, which involved extensive qualitative evaluation by obtaining feedback from potential users. She is knowledgeable and proficient in designing, conducting and analysing qualitative and quantitative research, and has expertise in the area of cancer patient care.

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**Prof Andy Vail**



Andy Vail is Professor of Clinical Biostatistics. He leads the Centre for Biostatistics. His main interests concern the application of statistical reasoning to clinical research, with a focus on pragmatic design of research projects and careful inference from results. Andy has major clinical collaborations in stroke, fertility, photo-dermatology and rheumatology.

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**Dr Hui Guo**



Hui is a Senior Lecturer in Biostatistics at the Centre for Biostatistics. Her qualifications in Statistics include an MSc (University College London), and a PhD (University of Cambridge). Hui's current research focuses on development and applications of statistical methodology in genetics and disease causal mechanisms on the basis of large-scale multi-omics data.

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**Dr Jamie Sergeant**



Jamie Sergeant is a Lecturer in Biostatistics at The University of Manchester's Centre for Biostatistics. His research is focused on the epidemiology of musculoskeletal diseases and he collaborates closely with colleagues in the Centre for Epidemiology Versus Arthritis. Jamie has a keen interest in the teaching and learning of statistics and how statistics can be communicated effectively to all audiences.

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**Dr Jack Wilkinson**



Jack is a Presidential Fellow based at the Centre for Biostatistics at The University of Manchester. His research interests include study design and analysis in assisted reproduction. His PhD research looked at methods to analyse complex sequential data in in vitro fertilisation. Jack is a statistical editor for Cochrane Gynaecology and Fertility.

## Teaching Staff

### Dr Tracey Farragher



Tracey Farragher is a Lecturer in the Division of Population Health, Health Services Research and Primary Care at the University of Manchester, UK. She is an epidemiologist whose research involves utilising the vast potential of routinely-collected health data, cohort data and the linkage of these various datasets, to answer a range of complex health problems. She is a member of the Integrated Interdisciplinary Innovations in Healthcare Science (i3HS) Hub at the University of Manchester, a multidisciplinary project to promote teaching and research across disciplines for population health benefit through data sciences (<https://sites.manchester.ac.uk/i3hshub/>).

### William Whittaker



Will is a Senior Lecturer in Health Economics based at the Manchester Centre for Health Economics at the University. His primary research interests include assessing inequalities in health and access to health care and policy evaluation (integration, extended access to primary care; prevention programmes). Will's research has informed how the Department of Health and Social Care in England distribute healthcare resources.

### Damien McElvenny



Damien McElvenny is Senior Research Fellow in the Centre for Occupational and Environmental Health. He is a biostatistician and epidemiologist. He has spent over 30 years principally studying the effects of work on people's health. Damien has experience of supervising PhD and MSc students. Recent research projects he is leading or has led or co-led include:

- Cognition in former elite rugby players
- Cognition in former professional soccer players
- Single physical trauma and risk of cancer
- Formaldehyde and respiratory cancer
- Cancer and non-cancer in the rubber manufacturing industry
- Cancer in the hard-metal manufacturing industry

### Matthew Parkes



Matt is a Lecturer in Clinical Trials Statistics at the University of Manchester. He has experience in designing and analysing late phase clinical trials of nonpharmacological interventions for musculoskeletal conditions (osteoarthritis). He has five main interwoven 'themes' to his research: chronic disease clinical trials design and analysis; estimate-based interim analysis of clinical trials; choosing sensitive, meaningful outcomes for clinical trials; using digital technology to enhance outcome collection for participants and researchers; and increasing transparency and reproducibility in research when writing up through literate programming. He is a keen user of Stata, and increasingly passionate advocate of R and Python for clinical research too.

### Dr Matt Gittins



Matt is a lecturer in the Centre for Biostatistics focusing on observational epidemiology. Matt is specifically interested in developing and applying techniques to reduce sources of bias in observational data, recently focusing on air pollution, stroke, and occupational health. His PhD used case-only study designs and associated methods to reduce bias and misclassification in large scale air pollution studies. More recently he has been investigating methods to reduce overestimation in count data related to health surveillance schemes, and multilevel models to account for clustering characteristics observed in stroke patients during their inpatient care.

### Dr Antonia Marsden



Antonia is a Research Associate in the Centre for Biostatistics. Her PhD focussed on methodology for the analysis of observational data to identify and evaluate markers associated with differential treatment response. She currently works in the Biostatistics Collaboration Unit providing statistical support to a variety of studies including those in dermatology and rheumatology.

The 4 week Epidemiology International Summer School will be £3,000.

This course fee will cover:

- Group airport transfers from Manchester Airport
- Programme fees
- Student accommodation (en-suite single room/shared kitchen)
- Orientation and farewell events and selected social activities

For eligibility criteria and details about how to apply, please email [health@manchester.ac.uk](mailto:health@manchester.ac.uk)

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## Master of Public Health (MPH) and Research (MRes Public Health and Primary Care)



The MPH/MRes team at the University of Manchester (UK) is pleased to announce an exciting and novel suite of course units and studying opportunities available for students from across the world.

**The MPH/MRes is available as a full masters programme, a shorter diploma/certificate, or single units for top-up training/CPD opportunities. We offer our students a larger range of options to maximise your future earning and career opportunities.**

Both degrees give students an excellent grounding in global health, evidence based practice, epidemiology, biostatistics and critical analysis. Our teaching model encourages and supports your development as an all-round academic with skills in discussing, debating, analysing and evaluating aspects of global public health. You will study alongside doctors, researchers, health care managers, and others from around the world; many are experienced health care workers studying part time. You will gain insight into the world of research, including publishing and presenting at international conferences.

*"The masters in Public Health gave me the opportunity to gain a deeper understanding of health issues related to a variety of health care in general, allowing me to expand my horizon and change my perspective."*

Annemarie Wendicke – Research Support - Hawaii, USA

For more information e-mail [pgt.medicine@manchester.ac.uk](mailto:pgt.medicine@manchester.ac.uk) or call +44(0)161 275 1648

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