



Growing  
research  
impact



# Introduction

The Doctoral Training Alliance (DTA) is the UK's largest cohort-based doctoral training programme of its kind. Launched by University Alliance in 2015, it builds on our universities' research strengths and industry-focused ethos and is aimed at producing independent, highly-employable researchers with knowledge, expertise and skills in strategically-important research areas. With a geographical footprint stretching from Cardiff and Plymouth in the South West to Middlesbrough in the North East, the programme is more expansive than other doctoral training partnerships and attracts a diverse profile of students.

Collaboration with industry and civil society is at the heart of the DTA, with business and third sector organisations including the Big Lottery Fund, Philips International and Legal & General providing external quality assurance and monitoring. The cohort model shared across 19 universities gives students access to a wide network of support and training as well as research equipment that may not be available at their home institution. DTA supervisors, many of whom are at an early stage in their career, benefit from the advice and guidance of more senior colleagues in other universities, and opportunities to expand their collaborations.

A coordinated training programme provided by specialist officers from universities and industry seeks to instil a common set of values and qualities in DTA researchers. By working together, member institutions can enrich their learning and research environment in ways that would be harder to achieve through acting alone.



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**DTA Applied Biosciences for Health:** *For a happier, healthier future*

**DTA Energy:** *Tackling global energy challenges*

**DTA Social Policy:** *Towards a strong, cohesive society*

# Healthy ageing: introduction

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One in three children born in the UK today can expect to live to the age of 100.\* The growing number of older people in the UK – and across the industrialised world – presents both major challenges and opportunities for our society. We face the significant task of ensuring the needs of an ageing and larger population are met.

The DTA in Applied Biosciences aims to understand the healthy ageing process to ensure older people can lead healthy and fulfilling lives as much as possible. It builds on the wide spectrum of Alliance universities' research strengths in areas including the biology of ageing and human disease, physical activity and rehabilitation, mental health and the development of assistive and other technologies.

The DTA also facilitates knowledge and asset-sharing, helping to provide students with the multi-disciplinary skills essential to addressing the global challenge of an ageing population and to support the delivery of the government's industrial and life sciences strategies.

“The Doctoral Training Alliance (DTA) represents a hugely innovative and successful development in postgraduate research training. It pools the research training resources of member universities – allowing for sharing of ideas, experiences and challenges among research students in different universities. It encourages research students to think beyond the confines of their specific research topics, and to improve their communication skills and sense of community, thereby enabling them to appreciate their research and its applications within a wider context.

Equally important, it brings supervisors from the different participating institutions together to share experiences and best practice in how best to nurture research students' latent and varied talents. These interactions will not only enhance research output but will have the further positive effect of promoting inter-institutional and interdisciplinary collaboration.”

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Professor Gerry McKenna, Chair, DTA Applied Biosciences for Health  
Independent Advisory Group

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“Meeting other first-year PhD students within my fields has been beneficial. This has given me a good network of people who can offer support and has also made me more aware of current developments within human sciences.”

*Rosie Donnell, DTA Applied Biosciences for Health*

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\*ONS (2016), *What are your chances of living to 100?*, <https://visual.ons.gov.uk/what-are-your-chances-of-living-to-100/> 32

# Healthy ageing: case studies



Andrei Albuлесcu is in the second year of his PhD at Liverpool John Moores University

Broccoli has long been touted as one of the healthiest vegetables on our plates. But Andrei Albuлесcu, a PhD student from Romania at Liverpool John Moores University, hopes his research will help us unearth additional benefits as a nutraceutical – a medicinally valuable nutrient. Andrei is designing and testing chemical probes to investigate sulforaphane, the main cancer-preventative compound found in broccoli. These probes mimic the activity of sulforaphane and via the use of techniques emit signals that will enable researchers to identify important interactions with proteins relevant to cancer and inflammatory diseases.

Currently in the second year of his PhD project, Andrei’s research aims to promote a better understanding of the pathways, mechanisms and biomolecules involved in these processes, and help develop improved therapies for cancer, Alzheimer’s disease, diabetes and rheumatoid arthritis.

Molly Browne is in the first year of her PhD at Coventry University



When Molly was undertaking a work placement as part of her Physiotherapy BSc in an elderly residential rehabilitation centre, she saw how rapidly patients lost functional mobility, and consequently, their independence, as a result of a hospital stay due to injury or illness. Many patients were eventually discharged with less physical ability and mobility than they had before – and once they returned to their own homes or care homes, the likelihood was that this decline would continue.

This inspired Molly to undertake a PhD at Coventry University to contribute to the evidence for promoting activity to combat this decline, maintain independence and encourage healthy ageing. Her research will focus on the impact of outdoor environments and outdoor-based activity on the physical and mental well-being of residents living with dementia in UK care homes. As a result she hopes her work will lead to a cultural change within care homes to increase residents’ engagement with outdoor environments and outdoor activity, and improve their physical function and quality of life.



Naomi Burn is in the second year of her PhD at Teesside University

High intensity interval training – or HIIT – is a type of exercise that, in its simplest form, involves brief repeated bursts of exercise interspersed with recovery breaks. As the name suggests, the bursts of exercise are conducted at a high intensity, but the intensity is relative to each individual person. That means that the exercise will look different in different people, depending on their fitness level. For some people “high intensity” could be power walking, for others it could be sprinting.

Naomi was attracted to researching HIIT because there is a strong scientific rationale promoting health and fitness through participating in HIIT. Much of the evidence to date however has been collected in laboratory-based studies and little is known about how acceptable or feasible HIIT may be in settings outside a laboratory, such as workplaces. Naomi’s PhD will focus on developing and evaluating a workplace-based HIIT programme, which will be offered to employees in the North East of England. The design of the HIIT programme is based on feedback from employees in focus groups, to ensure that the programme is as feasible as possible and fits well into a working environment.

The aim of Naomi’s PhD programme is to assess if HIIT is a form of exercise that people are willing and able to engage with, in the community setting of a workplace, and if there are any impacts on various markers of health and fitness. By taking this form of exercise to wider community settings, she hopes to improve the health and wellbeing of a wider group of people.

**Alysha Burrows** is in the first year of her PhD at Manchester Metropolitan University

Alysha Burrows has embarked on her PhD at Manchester Metropolitan University on one of the most common forms of dementia among older people – Alzheimer’s disease. Alzheimer’s disease (AD) affects an estimated 850,000 people in the UK and is a major burden on healthcare systems. It is a progressive neurodegenerative disease which impacts on multiple brain functions, including memory. The most common form of AD is late onset and sporadic with no obvious disease causing mutations. Patients may also present with familial AD – a rare form with early onset symptoms which is caused by known genetic mutations.



No treatment options currently exist for those living with AD. Alysha’s research will investigate a specific process called autophagy – a mechanism that turns over unwanted products in neurons – and a protein, p62, which is an important component of autophagy. In AD, defects in autophagy are thought to contribute to the accumulation of waste products and p62 in neurons. Alysha will look at how p62 functions in healthy and AD models to identify potential therapies to modulate autophagy and inflammation to treat and reduce the disease.

**Rosie Donnell** is in the first year of her PhD at the University of Plymouth

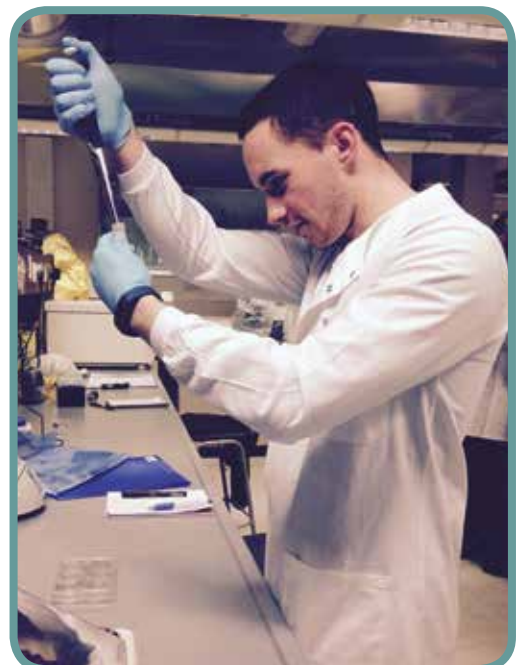
When Rosie Donnell was undertaking her undergraduate dissertation project about how the consumption of dietary nitrates improves muscle function, she learned these positive effects are only present in some populations and under certain physiological conditions. Determined to solve this puzzle, she signed up to a PhD at the University of Plymouth – as once such mechanisms are established the potential exists to manipulate them to benefit in non-responding populations and also to help tackle ageing, diseases involving muscle weakness, and diabetes.

Rosie had an unusual journey into research compared to most PhD students, as she has two GCSEs, no A-levels and no master’s degree. “When I started my undergraduate degree, I knew I had finally found something I was good at and excited about, so I wanted to take this and see how far I can actually go with it,” she said.

**Alex Jenkins** is in the third year of his PhD at the University of Lincoln

Alex Jenkins has seen first-hand as a physio assistant how exercise can benefit patients with chronic lung disease. “Patients have told me that they experienced fewer – and less severe – chest infections following pulmonary rehabilitation, a well-established exercise and education-based intervention. The reasoning behind this was unclear, so this experience inspired me to take up research in this area,” he said.

Now in the final year of his PhD at the University of Lincoln, Alex’s research not only aims to enhance knowledge but also the quality of life in patients with chronic lung disease as a way of preventing and managing chest infections through non-pharmacological therapies. The long-term effect of research in this area could have significant implications for healthcare delivery and commissioning.



“It has been fun to meet fellow PhD students involved in research in a whole spectrum of aspects related to health – chemistry, biology, biochemistry, psychology and sports science.”

*Andrei Albulescu, DTA Applied Biosciences for Health*



Katie Whytock is in the third year of her PhD at Liverpool John Moores University

Type 2 diabetes affects millions of people worldwide but has a higher prevalence in men than women. Katie Whytock is undertaking her PhD at Liverpool John Moores University to better understand this global epidemic.

The way we store and use fat in our muscle is linked to skeletal muscle insulin resistance. Katie's research has used high-fat, high-calorie diets as a method to investigate how insulin resistance develops between genders and as a model to investigate the mechanisms behind how our muscle stores fat.

A major part of the PhD has been developing immunofluorescence microscope techniques to detect how we store and use fat in skeletal muscle and how this links to obesity-induced insulin resistance. In the future, this could help researchers develop interventions and targets to prevent or reduce the onset of the disease.

James Robson is in the first year of his PhD at UWE Bristol

Trillions of other organisms share our bodies which may have an impact on our health. James Robson is fascinated with the gut microbiome and wants to understand what relationship it may have with colorectal cancer.

Colorectal cancer – also known as bowel cancer and colon cancer – is one of the largest killers in the developed world, and has the second highest incidence of any malignant disease in men and women. In the UK, bowel cancer is one of the most common types of cancer, and most people diagnosed with it are over the age of 60.



The gut microbiome is a complex ecosystem of commensal, symbiotic and parasitic organisms, which are in constant communication with the gut, the immune system and the nervous system. By identifying bacterial species and their metabolites as contributors or indicators of a disease state, James' research could potentially lead to the development of new diagnostic measures and treatment strategies.

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“ The travel budget has allowed me to attend conferences and training workshops... to develop my skills and keep up to date with the latest research and experimental practices. ”

*James Robson, DTA Applied Biosciences for Health*

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“ [The biggest benefit of the programme has been] working with others and finding people using the same techniques in different areas of research. ”

*Sari Thomforde, DTA Applied Biosciences for Health*

# Clean energy: introduction

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Whether the communities of the future are mega-cities, urban, rural or remote, the infrastructure that supports them – including housing, manufacturing, transport and services – will rely on an energy generation and distribution network that is stable, secure, and resilient to climate change and terrorism.

This network will need to be sustainable in both environmental and financial terms, integrate with intelligent systems, and be developed alongside more effective policies to manage energy consumption.

Our DTA Energy programme aims to equip our PhD students with the skills and experience to tackle the global challenge of ensuring future security and sustainability of energy supplies and the management of energy demand.

“ The Knowledge Transfer Network (KTN) has acted as an external advisor to the Doctoral Training Alliance via the Independent Advisory Group (IAG) since its inception in 2015. I sit on the IAG associated with the Energy Programme and our Head of Health, Terry O’Neill, sits on the IAG related to the Applied Biosciences for Health Programme.

Both Terry and I see our involvement in the programme as mutually beneficial. Participants benefit from our industry experience and networks but, equally importantly, KTN benefits from our exposure to the next generation of scientifically qualified, commercially aware students.

We look forward to continuing our support and to the further development of the programmes in the future. ”

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Chris Bagley, Head of Infrastructure, KTN  
Member DTA Energy, Independent Advisory Group

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“ Research can be quite an isolating experience...investing time and effort in developing relationships from the first cohort has been very important. ”

*Sean Williams, DTA Energy*

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“ [The DTA programme] has helped me improve my communication skills and meet other people within the same field of work as me. ”

*Sherna Salim, DTA Energy*



# Clean energy: case studies



**Ashfaque Alam** is in the first year of his PhD at Sheffield Hallam University

Ashfaque Alam, a lecturer from Bangladesh, is undertaking a PhD at Sheffield Hallam University producing clean and free energy using sunlight. Solar energy can have a huge impact in developing countries like his home country, empowering those in need and aiding rapid economic development.

He is helping to develop the next generation of thin film solar cells which utilise electroplated semiconductors and graded band gap device structures. One of the key challenges for solar energy is conversion efficiency which is currently around 15% and Ashfaque aims to improve on this through his research.

Ashfaque was inspired to undertake his PhD at Sheffield Hallam University under Professor I. M. Dharmadasa (Dharme) who has worked for over 35 years in this area. In addition to his technical work on solar energy conversion, Professor Dharmadasa designed and piloted in 2008, a project called "Solar Villages" in Sri Lanka to empower local communities. This project was monitored for its impact on the sustainable development of the community and is now entering its replication stage, with the help of the Sri Lankan government. The plan is to replicate this project within and outside Sri Lanka, and Ashfaque hopes to bring this project to Bangladesh where it could have a tremendous impact.

Back home in Bangladesh, Ashfaque has already worked as a lecturer and when he completes his PhD, he hopes to continue his research and help train young people in the field, building much-needed capacity for clean energy applications in the society.

**Stephen Austin** is in the first year of his PhD at the University of Salford

Concerned with environmental impact and future sustainability, affordability and security of energy, Stephen felt compelled to undertake research into the potential ability of microbes to degrade plant cell material and the applications for biomaterial and bioenergy production.

His passion for research and finding solutions to the world's problems led him to the University of Salford, driving him to work thoroughly through situations and to seek solutions to improve the current problems that surround us.

His interdisciplinary research has potential industrial applications: where enzymes could be used in the production of biofuel and biomaterials such as carbon fibre. Following successful research, proteins could be commercialised in attempts to convert waste material into useful (clean) energy for the environment and hence bring about a possible reduction on the overreliance of fossil fuels.



**Michael Castle** is in the first year of his PhD at the University of Portsmouth

Battery technology is a cornerstone to a low carbon economy and the government is keen to establish the UK as a world leader as part of its Industrial Strategy. Michael Castle, a first year PhD student at the University of Portsmouth, is hoping that his research will generate new ideas for experimentation on battery cells.

Inspired to pursue a research career by his department and supervisor, he is researching mathematical modelling of battery micro-structures to facilitate higher discharge rates, allowing the stored energy to be used more efficiently.

His work could help develop improved battery systems, which could allow for higher powered, cleaner, more environmentally friendly batteries.

### Joshua Eardley is in the first year of his PhD at the University of Brighton

Major challenges facing society today include anthropogenic climate change, natural resource depletion and energy security. Inspired by these challenges, Joshua has directed his research efforts towards the development of a more sustainable society.

His research takes an innovative approach to maximising the efficiency of biofuel production. He is exploring whether ethanol yields can be increased by adding compatible solutes to alcoholic fermentations. The impact of this could be huge by making ethanol production more economically attractive. It would also encourage further research, especially to enhance our understanding of ethanol tolerance and to produce modified yeast species that are of interest to industry.

As well as developing through his personal research project, being part of DTA Energy has allowed Josh to expand his knowledge of other energy-related sectors and issues by attending the programme's electives and by putting him in contact with like-minded researchers.

### Eheda Hassan is in the second year of her PhD at the University of Hertfordshire

Improved energy storage can bring considerable benefits to industry, especially as we push for ways for renewable energies to replace fossil fuels. This led Eheda to pursue her research in this area. She is investigating how we can establish optimal locations for energy storage to enhance power quality and control in energy grids.

Her research could help companies set out the best optimisation strategies for locating energy storage when developing grids, using existing industry-standard software such as MATLAB and OpenDSS.

Being part of DTA Energy has allowed her to collaborate with other researchers working on similar projects from different universities across the UK. Through the DTA she has also gained access to tours of energy industries, and her funded studentship has enabled her to concentrate fully on her research.



### Delano Henry is in the second year of his PhD at Kingston University

A key challenge for the UK is to transition to a low carbon energy future. Although controversial, the current UK government believes that shale gas has the potential to provide greater energy security, growth and jobs to the UK.

Delano Henry's project investigates how effective laser Raman spectroscopy is in measuring the thermal alteration of organic matter in shale gas reservoirs. Laser Raman spectroscopy may become one of the industry standards in the future as it offers a rapid and cheap alternative to current industry standards.

Being able to precisely locate optimum thermally altered intervals in shale gas reservoirs will help minimise costs and reduce the amount of wells drilled. Delano's research could also help the wider public appreciate the exploration aspects that govern shale gas and help improve understanding of how this controversial energy source can be part of a diverse energy mix in the future alongside renewable energy. As his discipline focuses on the upstream sector of the energy industry, the DTA energy group exposes Delano to how economics, politics and environmental issues can have a direct impact on the exploration and production of energy resources, as well as how the end product reaches the consumers.

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**“ Being part of the DTA in Energy has provided me with access to industry, as well as support from colleagues across different programmes. ”**

*Stephen Austin, DTA Energy*





**Sherna Salim** is in the first year of her PhD at Nottingham Trent University

The UK government has committed to reduce 80% of its carbon footprint by the year 2050. Meanwhile, the World Health Organisation has predicted that the number of people above 60 years of age will nearly double by 2050.

Sherna's research takes a fresh look at these two challenges by addressing the need to ensure older populations can live independently while also reducing the impact urbanisation has on our carbon footprint.

She is working on developing an 'Intelligent Building' which continuously measures energy efficiency, health and well-being in correlation with occupant behaviour. It will also identify opportunities to improve both. Her research project, which is consolidating her previous engineering and product design skills, will explore innovative approaches for assisted living and smart home technology.

**Anthony Slate** is in the second year of his PhD at Manchester Metropolitan University

Anthony's research could help us use wastewater in treatment plants to generate electricity whilst simultaneously removing toxins to make it safer for public consumption.

His work focuses on the development of microbial fuel cells (MFCs) and coupling microbiology with electrochemistry. A microbial fuel cell is a bio-electrochemical system that harnesses the power of oxidising microorganisms, to convert organic waste directly into electrical energy.

In particular, Anthony aims to improve the performance of MFCs by developing more efficient electrodes through the use of 2D nano-materials such as graphene and by optimising the conditions required by bacteria for effective electron transfer. In wastewater, the research could help isolate the most effective bacteria to use, which would further optimise conditions and improve power outputs from MFCs.

Anthony was inspired to undertake this multi-disciplinary subject combining microbiology and electrochemistry to challenge his development and become a more versatile research professional.



**Sean Williams** is in the second year of his PhD at Teesside University

Throughout his professional career as an engineer, Sean Williams has been an advocate for life-long learning and helped his colleagues to continue to develop at work. So when the time came for him to return to full-time education to undertake a MEng in Instrumentation and Control Engineering at Teesside University Sean didn't hesitate. Following his graduation with a First-Class Honours degree, he decided to continue his research and undertake a PhD at Teesside University.

We are moving away from larger fossil-fuelled power plants towards decentralised, more volatile forms of electricity generation. But these are less predictable and more volatile. New methods of demand response are required and Sean's response is exploring whether decentralised frequency control regulation could balance these demands.

His research is one of the Teesside University Research Grand Challenges - Sustainable Environments. Notwithstanding the environmental benefits, his research aims to bring economic gain to demand-side prosumers (those who both consume and produce a product) participating in a demand-response mechanism. Equally, on the supply side, his research will present an interesting proposition to system operators by developing new measurement and control systems to improve network sustainability.



# Impact on policy: introduction

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Contemporary societies are characterised by rapid changes in work and employment, shifting demographics, evolving patterns of crime, changes in health and social care, educational challenges and growing inequality. The role of coherent and effective social policy is key in ensuring acceptable standards of living for all whilst informing effective planning and change management to ensure that new forms of governance are sustainable. In this way, robust social policy is vital to address several key societal challenges.

Building on the success of the earlier DTA programmes and highlighting the impact on policy our researchers are having from across the network, the interdisciplinary DTA in Social Policy was launched to bring together criminologists, sociologists, social workers, activists and social policy experts in response to two key global challenges: social cohesion and social futures. At the same time its creation has enabled us to start connecting social scientists and policy makers from across all three programmes.

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“ [It is] great to have a wider range of input and suggestions to stimulate my thinking and actions around my research topics and build networks to support my research as well as reaching my personal longer-term goals. ”

*Alison Tingle, DTA Social Policy*

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“ As a disability rights activist and service user, I have both a personal and academic interest in the potential public policy changes around health and social care, transport, welfare reform and housing; all of which effect the life chances of disabled people in Greater Manchester. Because of the social, economic and political injustices disabled people face today, simply by being at university and studying a PhD, I am making a difference. ”

*Richard Currie, DTA Social Policy*

# Impact on policy: case studies

**Paolo Baffero** is in the first year of his PhD at the University of South Wales

Paolo Baffero is hoping his study of restorative justice in Bolivian communities will improve European knowledge on both practices of communitarian conflict resolution and pluralistic justice systems.



Bolivia has a long history of restorative justice to deal with criminal behaviour. More recently, judges have introduced and used restorative justice, which has led to it becoming accepted as part of the law. Within most rural communities, restorative practices represent the only possible and accepted response to crime, but within Bolivia as a whole these are used alongside more traditional European and judge-led justice systems most typically prevalent in more urban centres.

Paolo's research could help increase the impact of existing European programmes of secondary crime prevention – such as the Daphne research project which deals with violence and the Radicalisation Awareness Network. These employ intervention techniques directed at people who are at high risk of committing crime.



**Frangton Chiyemura** is in the second year of his PhD at the Open University and has spent the last eight months collecting data to support his research in Africa

Growing up in Zimbabwe and inspired by the role of China in transferring renewable energy technology to developing countries, Frangton Chiyemura's research explores Ethiopia-China cooperation in financing and developing two wind farms (Adama 1 and Adama 2) in Ethiopia. The topic of Africa-China cooperation on development of the wind energy infrastructure in Africa in general and Ethiopia, in particular, remains under-explored. Frangton hopes his research will contribute to improved understanding and generation of new debates and insights on wind energy policy development in Ethiopia and Africa as a whole.

Frangton will examine how China as a developing country is helping Ethiopia, another developing country, to achieve the Sustainable Development Goal 7 on ensuring access to affordable, reliable, sustainable and modern energy, and how China is becoming a key development partner for many African countries.

**Richard Currie** is in the first year of his PhD at Manchester Metropolitan University

At the age of 11, Richard Currie told his family he was planning to go to university and get a good job. He achieved this goal despite challenges presented by his disability, and after graduation became a disability rights activist.

Richard is now undertaking his PhD at Manchester Metropolitan University to analyse how interactions between Manchester City Council and user-led organisations improve the life chances of disabled people.

In particular he will look at the Manchester All-Age Disability plan, an initiative launched by Manchester City Council in collaboration with disabled people's organisations and disabled people's user-led organisations to create public policy initiatives that are both cost effective and make a real difference to people's lives.

Richard hopes that by studying a PhD he also helps pave the way for more disabled people to enter higher education. He plans to teach within the field of disability studies and wants his research to pilot more effective ways disabled people's organisations and local and national government can work together to transform the lives of disabled people.



**Matthew Hibbert is in the first year of his PhD at Liverpool John Moores University**

Matthew Hibbert's research at Liverpool John Moores University aims to increase understanding of why some LGBTQ+ people engage in sexualised drug use.

Sexualised drug use – including chemsex – can lead to high risk sexual behaviours including unsafe sex and increased risk of infection. Matthew undertook his PhD to understand why and the impact it could have on physical and mental well-being.

Matthew has worked for a number of years as a HIV/STI prevention scientist and as a HIV/STI Information Analyst. He hopes his research will raise awareness of the issue, not just among men, but women and trans people as well and lead to the development of interventions that benefit the LGBT+ community. The findings could be used to inform policy and service provision in sexual health settings, and also raise awareness of inequalities experienced by the LGBT community in general and be used to campaign for greater social inclusion.

**Sherley John is in the first year of her PhD at Teesside University**

Sherley John, an Indian dentist, has begun her PhD at Teesside University to investigate whether fluoride interferes with iodine in a study – the first of its kind in the UK – which could have far-reaching implications for all, particularly women of child-bearing age.

Fluoride can reduce tooth decay and is therefore added either to drinking water, milk or salt in many countries – in the UK, over six million people receive optimally fluoridated water. The majority of toothpastes and mouthwash products also contain fluorides. Iodine is an important nutrient for making thyroid hormones which are required for normal growth and development. Iodine deficiency, particularly during pregnancy and early childhood may have a negative long-term impact on the brain development of the foetus and children. Iodine deficiency disorder (IDD) is still a public health issue in all continents including Europe and the World Health Organisation (WHO) has classified the UK as having mild-moderate iodine deficiency.



There are conflicting results from previous studies that fluoride may interfere with iodine uptake and thereby affecting thyroid function. Sherley's research will evaluate and compare iodine status and thyroid function in expectant women and newborns from fluoridated and non-fluoridated areas, to gain a better understanding of the role of fluoride on iodine status during pregnancy as only a handful of studies worldwide have reported on this issue. Despite both tooth decay and brain damage in childhood (due to iodine deficiency) being among the simplest and least expensive disease to prevent, they still remain a major public health concern in many countries worldwide. Sherley hopes that her work would provide primary evidence which could guide public health policy making, particularly for child-bearing women.

**Yvonne Parkes is in the first year of her PhD at Nottingham Trent University**

Yvonne Parkes has been fuelled by a desire to help vulnerable people for many years. Her first role within the caring profession was as a volunteer on a helpline for a national domestic abuse organisation and this led to further employment in a women's refuge, as a foster carer and to becoming a special guardian.



Initially she believed that higher education was not for someone like her. But a conversation with a friend with a similar background who attended Nottingham Trent University (NTU) changed her mind. Yvonne embarked on an undergraduate degree in social work at the university and was encouraged by her course tutor to stay on to undertake a MRes in Psychological Research Methods which she undertook whilst working as a part-time Research Assistant.

Her master's dissertation focussed on transgenderism, which inspired her to work with the LGBTQ+ community. Yvonne decided to embark on a PhD at NTU allowing her to help close a gap in knowledge at local and national policy about the experiences of LGBTQ+ Looked After Children. Currently the Office for National Statistics does not collect demographic data on LGBTQ+ Looked After Children, and guidance and legislation currently do not place a duty on social workers to discuss these matters with young people in care. Yvonne hopes her research will ensure these vulnerable young people can access the professional allies they need.



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