

Imagine if...

**10 PhD Students
10 Great Impacts**

3MT® Finalist Summaries

6pm, 12 June 2018



THE CONVERSATION



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Programme

- 6:00 Welcome
 - 6:05 Three minute thesis presentations from ten PhD students
 - 6:05 Katie Pybus, Department of Health Sciences
 - 6:09 Sarah Masefield, Department of Health Sciences
 - 6:13 Stephen Thorpe, Department of Biology
 - 6:17 Jamie Khoo, Centre for Women's Studies
 - 6:21 Marina Noelia Cantarutti, Department of Language and Linguistics
 - 6:25 Mickey Conn, Department of Social Policy & Social Work
 - 6:29 Christine Jackson-Taylor, Department of Sociology
 - 6:33 Nicola Farthing, Departments of Mathematics & Physics
 - 6:37 Robin Brabham, Department of Chemistry
 - 6:41 Giampaolo Pitruzzello, Department of Physics
 - 6:45 Greg Dyke talks communication
 - 7:05 Prizes and close
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Introduction

Welcome to the 2018 3MT® (Three Minute Thesis) competition at the University of York!

3MT® is a competition developed by the University of Queensland, Australia. Its success has led to the establishment of local and national competitions in several countries. Today, ten University of York research students have just three minutes to communicate their research and its impact to you – the audience – and our judging panel. Communicating to different audiences is important for researchers as it helps to demonstrate the contribution that research makes to wider society and the economy.

Competition rules

Participants:

- A single static PowerPoint slide is permitted. No slide transitions, animations or 'movement' of any description are allowed. The slide is to be presented from the beginning of the oration.
- No additional electronic media (e.g. sound and video files) are permitted.
- No additional props (e.g. costumes, musical instruments, laboratory equipment) are permitted.
- Presentations are limited to 3 minutes maximum and competitors exceeding 3 minutes are disqualified.
- Presentations are to be spoken word (e.g. no poems, raps or songs).
- Presentations are to commence from the stage.
- Presentations are considered to have commenced when a presenter starts their presentation through either movement or speech.
- The decision of the adjudicating panel is final.

Audience:

- No unwanted audience participation
- Mobiles off
- Use a post-it-note to let us know what you think of the competition!

Prizes

First prize – iPad

Second prize - £150 Amazon voucher

Third prize - £75 Amazon voucher

The organisers

The Research Excellence Training Team (RETT) work on behalf of the York Graduate Research School to organise this annual event as a showcase of PhD talent. The RET Team are committed to providing a supportive, stimulating and structured framework in which research students, research staff, and those who support them, can improve the conduct of research and develop their professional skills and career profile. We are always looking for collaborators in the form of organisations and individuals who can support our work. If you, or your organisation, are interested in helping us to develop our programme of skills training or are able to offer opportunities for our researchers, please contact us at rett@york.ac.uk

For more information see: www.york.ac.uk/rett

Judging criteria

At every level of the competition each competitor will be assessed on the two judging criteria listed below. Each criterion is equally weighted and has an emphasis on audience reaction.

Comprehension and content

- Did the presentation provide an understanding of the background and significance to the research question being addressed, while explaining terminology and avoiding jargon?
- Did the presentation clearly describe the impact and/or results of the research, including conclusions and outcomes?
- Did the presentation follow a clear and logical sequence?
- Was the thesis topic, research significance, results/impact and outcomes communicated in language appropriate to a non-specialist audience?
- Did the presenter spend adequate time on each element of their presentation - or did they elaborate for too long on one aspect or was the presentation rushed?

Engagement and communication

- Engagement and communication
- Did the oration make the audience want to know more?
- Was the presenter careful not to trivialise or generalise their research?
- Did the presenter convey enthusiasm for their research?
- Did the presenter capture and maintain their audience's attention?
- Did the speaker have sufficient stage presence, eye contact and vocal range; maintain a steady pace, and have a confident stance?
- Did the PowerPoint slide enhance the presentation - was it clear, legible, and concise?

Judging panel

Ama de Graft Aikins

Dean of International Programmes and Professor of Social Psychology, University of Ghana

Saffron Townsend

Senior Policy Manager - Public Engagement with Research, UKRI

Philip Carpenter

Advisor and Board/Council Member in Publishing and Higher Education

Jet Sanders

2017 3MT winner, Department of Psychology, UoY

Tom Stoneham

Dean of the York Graduate Research School, UoY

Karen Clegg

Director of the Research Excellence Training Team, UoY (Chair)

Acknowledgements

Our sincere thanks to the following people for their involvement and support with this event: Greg Dyke, all the members of the Judging Panel, the GSA (Graduate School Association), The Conversation, Vitae, The Festival of Ideas team, and, of course, our audience.



Katie Pybus, Department of Health Sciences

Can you turn on a light switch?

Those with experience of mental illness know that this type of condition can be just as disabling as a physical illness. It can stop you from getting out of bed in the morning, or socialising or sometimes being able to work. For all these reasons, a person experiencing mental illness may need extra support, and the costs can add up. Personal Independence Payments (PIP) were introduced in 2013 to help people with all health conditions who may be facing these extra costs. But is PIP fair? When deciding who is eligible for this support and who isn't, are mental and physical illnesses treated equally? My research finds that people with mental illnesses are 2.4 times more likely to be turned down for PIP than someone with a physical health condition. So, is mental illness really being taken seriously as politicians like to suggest, or are new forms of stigma emerging?

Katie is in the final year of a PhD in Health Sciences focusing on mental illness, stigma and welfare reform. Prior to her PhD, Katie worked for over ten years in mental health settings, most recently as a community mental health nurse and these experiences have informed her current research.



Sarah Masefield, Department of Health Sciences

The hidden health of mothers of preschool disabled children

Almost 30% of mothers of disabled children experience depression compared with 19% of mothers of typically developing children. Stress and depression have been well-researched in this group, but what about other symptoms associated with stress, such as headaches, muscle pain, and sleep problems? Mothers describe receiving their child's disability diagnosis and adjusting to the caregiver role as the most stressful time of their lives. Most significantly disabling conditions are diagnosed before the child is five, but research has focused on mothers of older children. My research investigates the health and behaviour of mothers of preschool children with complex disabilities, such as Down syndrome and epilepsy. Do these mothers have more stress-related symptoms but visit the doctor less often than other mothers? Identifying differences between mothers with and without disabled children will provide a greater understanding of the effects of stress due to caregiving and how caregiving influences GP visiting behaviour.

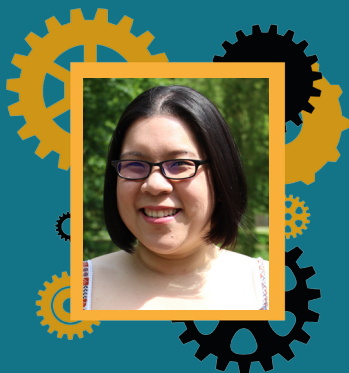
Sarah has degrees in English Literature and Occupational Therapy. She has experience of volunteering and working with children and adults with disabilities and mental health needs in England, Scotland, Ireland and Uganda. Sarah was the patient and public involvement officer for the European Respiratory Society, before starting her PhD in 2016.



Stephen Thorpe, Department of Biology **Electrophotonics: The swiss army knife of diagnostics**

When you go to your GP, you would like them to tell you what is wrong with you with absolute certainty and then give you the best treatment for it. This would be confirmed by tests looking for microbes and molecules that are either causes or indicators of disease. The reality is that your GP relies almost entirely on you telling them your symptoms, and any tests they would like to perform must be sent away to a separate lab. This causes delays in the beginning of your treatment. I am developing a new diagnostic tool to perform these tests in your GP's office. Using our electrophotonic technology, combining optical and electrical measurements together, my tool can do more tests than existing methods and do them faster. The tool I have made will improve your healthcare by making sure that you get the right treatment at the right time.

Steve studied Electronic Engineering with Nanotechnology at the University of York before moving across the lake to the Department of Biology for a PhD in combatting infectious diseases. Now working on an interdisciplinary project across biology, physics and electronic engineering he enjoys working at the interface between sciences, dabbling in nano fabrication, surface chemistry and microbiology



Jamie Khoo, Centre for Women's Studies **But is she pretty? How women respond to beauty ideals**

Girls as young as six are going on diets. Women (and, increasingly, men too) everywhere suffer eating disorders, are frequently body-shamed and resort to drastic procedures to achieve desirable appearances. Commonly, we blame the media and consumerism for perpetuating these damaging beauty ideals. But while they do have harmful effects, they don't form the whole picture. It is vital that we also consider how women themselves receive and respond to these beauty ideals. What else influences the way they think about their bodies? What stories lie behind the makeup and coiffed hair? Using in-depth interviews, my research explores how storytelling our social interactions, experiences and personal histories around bodies and beauty offers powerful therapeutic potential for treating women's troubled relationships to their bodies. I propose that these 'beauty stories' can be incorporated in education, healthcare, therapy, diet and fitness industries to develop more holistic ways for addressing body-related concerns.

Jamie is a third-year PhD student at the Centre for Women's Studies. She was a writer before returning to academia and has been published in magazines and websites including Elle Malaysia, Harpers Bazaar Malaysia, Huffington Post UK Blogs and elephant journal. She also does a lot of yoga, lifts weights and spends an inordinate amount of time pondering the simultaneous pleasures and tyrannies of lipstick.



Marina Noelia Cantarutti, Department of Language and Linguistics

When two become one... in conversation

We have all seen couples finishing each other's sentences, saying the same thing at the same time, and synchronising their gestures. But are these coordinations a product of "mind-reading", and "compatibility"? My research is about those moments when two become one in interaction. I am studying ten hours of video-recorded talk between friends, workmates, and family members...but no couples. I have found that these synchronisations happen as a result of close attention to each other's wording, timing, tone of voice, and gesture. There is always one hint that we pick up on to come in at the right time and stay in sync! My methods and results will tell us how we use talk to form "teams" in interaction and speak on each other's behalf - sometimes for "naughty" purposes! This will expand our understanding of coordinated action and contribute to the work of psychologists, social workers, script-writers, and actors.

Marina Noelia Cantarutti is an Argentinian PhD student in Language and Communication. She is an English Language teacher, aspiring phonetician and conversation analyst, and former lecturer in Applied Phonetics and Discourse Analysis. Her research interests include the way in which people use prosody and gesture in conversation, and how people display to each other that they are members of the same conversational "team".



Mickey Conn, Department of Social Policy and Social Work

In-work subsidies: who benefits?

Millions of working people in the UK now rely on tax credits and other in-work benefits. The UK and US have been at the forefront of increases in these subsidies, which have grown greatly around the world over the past thirty years. Recent UK government plans to cut eligibility while merging them into the new Universal Credit have caused concern to many workers. But businesses from Tesco to Amazon, and from agriculture to care work, rely on lower-paid workers topping up their pay with in-work subsidies. This impact has been ignored in the move to Universal Credit. My interviews and data will give us a new understanding of the many beneficiaries, and how they view these subsidies and their beneficiaries. Government policy taking account of these findings will enable future changes to more effective and more efficient, to the greater benefit to all involved.

Mickey Conn is currently undertaking a PhD in the Department of Social Policy and Social Work, supervised by Dr Kevin Farnsworth. He has led seminars on Politics and Economics and Exploring Social Policy and Society. He received an MA in Politics from the University of Sheffield, his dissertation being on the impact of community radio on political participation.

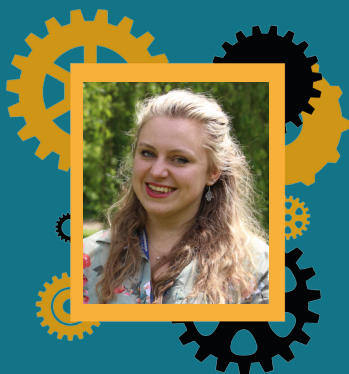


Christine Jackson-Taylor, Department of Sociology

Will God still love me if I'm gay?

There are lots of assumptions made about how, even if, religious organisations and LGBTQ (lesbian, gay, bisexual trans and queer) communities can ever fully accept each other. My research focuses on the experiences of women who are both religious and LGBTQ. We might hear difficult stories of conflict, hurt and abuse, but it is important to remember that there are also stories of comfort, support and acceptance out there. My research will help break down some of these assumptions and misunderstandings, giving a voice to those who may not have been heard before. Listening to stories helps create dialogue and talking to people who are different from ourselves is vital for increasing understanding and tolerance in our world.

Christine is a part time PhD student in the Department of Sociology. Her research focuses on the experiences of LGBTQ women who are religious. She previously studied BA Sociology and MA Modern History at the University of Leeds. While working at the University of Bradford she completed a PG Diploma in Social Research. She lives in Halifax with her wife and two cats.



Nicola Farthing, Departments of Mathematics and Physics

Slime and lasers: when biology and physics mix

Normal microscopes let us see really small things, but only in 2D. By working with lasers in my microscope, I am able to look at those small things in 3D. Using this, I'm investigating how bacteria move liquid around themselves when they are attached to surfaces. We think this motion helps the bacteria to communicate with other bacteria so that together they can produce a 'slime'. This slime sticks the bacteria to the surface and protects them from anything around that could harm them. Because of this, the mix of bacteria and slime (known as a biofilm) is very difficult to remove. This is a problem because biofilms are one of the key causes of antibiotic-resistant hospital infections that kill millions of people every year. If we can understand the way bacteria communicate then we can stop the biofilms forming in the first place and save lives.

Nicola studied for an MPhys in Maths and Physics at York before starting her joint Maths/Physics PhD in 2015. She has since learnt to appreciate how much it smells working with bacteria and has gained a new level of respect for the biologists who do. Her supervisors are Martin Bees and Laurence Wilson.



Robin Brabham, Department of Chemistry **Palladium-unleashed Proteins: Towards the Drugs of the Future**

Modern medicine is experiencing a major shift on account of a new, powerful class of therapeutics called antibody-drug conjugates (ADCs). Composed of a drug linked to an antibody protein, ADCs offer better disease treatment and with fewer side effects than older cancer treatments. Sadly these new drugs come at a high cost to the NHS, mostly due to the challenge in linking a drug to complex proteins such as antibodies. My research aims to solve this problem by designing new, easier and cheaper methods for linking small molecules to proteins, such as drugs to antibodies. In my talk I will outline the chemistry I have developed: using the metal palladium to unleash the reactivity of proteins, forming a linkage between the protein and a small molecule. This patented work is a useful, simple strategy bringing us a step closer to the drugs of the future.

Robin Brabham is a third-year PhD student in Chemistry funded by a Departmental Teaching Studentship, researching new methodologies for the synthesis of complex bioconjugates in the field of chemical biology. This follows an integrated Master's degree in Chemistry at the University of York (2015). He occupies his spare time as an avid gamer, keen political hack, and even keener campus barfly.



Giampaolo Pitruzzello, Department of Physics **Antimicrobial resistance: will bacteria beat humans?**

The overuse of antibiotics is causing bacteria to develop resistance at alarming rates. This means that in the next few decades we could run out of effective drugs to treat even the most common infections. This is mainly due to the lack of rapid diagnostic tests to timely assess bacterial response to medical agents before prescribing them. Consequently, antibiotics are administered blindly and decisions are often taken according to the doctor's experience. The aim of my research is to develop a fast diagnostic tool for studying bacterial reaction to antibiotics. The tool relies on trapping single bacteria and looking at how they respond to drugs. Only effective antibiotics have a direct impact on their swimming patterns and shape within few hours, which is a great improvement over the current techniques. The device could help clinicians in informing the choice of the correct antibiotic at the early stages of an infection, thereby containing the spread of resistance.

Giampaolo completed his degree in Physics and Master in Condensed Matter Physics at the University of Catania and Scuola Superiore di Catania (SSC), in Italy. He is now a third-year PhD student in Physics at the University of York. His research focuses on the development of a novel susceptibility test to address to global issue of antimicrobial resistance.

The Judges

Ama de-Graft Aikins is Professor of Social Psychology and Dean of International Programmes at the University of Ghana (UG). She received her PhD in Social Psychology from the London School of Economics and Political Science (LSE) and completed postdoctoral training at the University of Cambridge. Her research and publications focus on chronic illness representations, experiences and care, Africa's chronic non-communicable disease (NCD) burden and the social psychology of knowledge production in African settings.

Saffron Townsend has a research background in biological sciences and following several associated public engagement roles working with science centres and conservation charities, joined the Public Engagement team at the UK Research Councils (now UK Research and Innovation) in 2015 as Senior Policy Manager. Her role at UKRI leads on managing programmes to embed public engagement within HE research culture and to support researchers and their institutions working with schools and young people.

Philip Carpenter is a Lay Member of the Council of the University and a member of its Finance Committee. He was previously Executive Vice President, Research at Wiley, and as such responsible for the many journals, databases, magazines and software tools Wiley publishes to support the global research community. Besides his involvement with the University, he advises the UK's leading digital learning platform business and the global research publishing industry body on its future strategy.

Jet Sanders was the 2017 3MT winner. She completed her PhD in experimental psychology at the University of York. Jet now works as a Principal Behavioural Insights Advisor at Public Health England's Behavioural Insights Team. She finds patterns that can be used to change behaviour for social benefit, with particular interest in effects of the weekly cycle. Jet splits her time between Amsterdam, York and Kyoto and will soon be London-bound.

Tom Stoneham is Dean of the York Graduate Research School and Professor of Philosophy. He was educated at Oxford University and the University of London and is a specialist in metaphysics, epistemology, philosophical logic and the philosophy of George Berkeley. He has lectured at the Universities of Oxford and York, where he was Head of Department of Philosophy 2006-2014 and has published on a variety of philosophical topics, including self-knowledge, metaphysical nihilism and issues in the philosophy of logic and language.

Karen Clegg has a PhD in Education and is a trained coach and Senior Fellow of the Higher Education Academy. She provides strategic direction for the Research Excellence Training (RET) provision at the University of York. Working to support the University's Research Strategy, the RET team co-ordinate and deliver training for doctoral students, early career researchers, doctoral supervisors and Principal Investigators and professional support staff aligned to research.



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