TEDXQUEENSUNIVERSITYBELFAST

ENGINEERING OUR SUSTAINABLE FUTURE

TEDx
QueensUniversityBelfast
x = independently organized TED event

@TEDxQUB
#TEDxQUB

SCHEDULE OF TALKS

24 JUNE 2021 | 12.30PM

QUEEN'S UNIVERSITY BELFAST

WELCOME

It is my pleasure to welcome our worldwide audience to TEDxQueensUniversityBelfast 'Engineering Our Sustainable Future' In association with the Faculty of Engineering and Physical Sciences.

TED is an organisation that brings together bright minds to give talks that are idea-focused, and on a wide range of subjects: to foster learning, inspiration and wonder – and provoke conversations that matter.

One of the main goals of TED is to provide a platform for thinkers and visionaries, so that society can gain a better understanding of its biggest challenges, and help to create a better future.

That TED goal links closely to Queen's University's Social Charter, a Charter which underpins our commitment to translating ideas, teaching, research and professional expertise into life-changing action.

In curating the talks for today's TEDx event 'Engineering our Sustainable Future', we have highlighted just a small number of our outstanding staff, students and alumni from the Faculty of Engineering and Physical Sciences. They will showcase our community; offering a glimpse of the innovation, discovery and creativity that is taking place.

There is a long road ahead of us in meeting the challenges described in these talks but I would encourage you to get in touch if you would like to work with us in engineering a more **sustainable future for all**.

I would like to thank all those participating today, as well as everyone who has helped to organise today's event.

Professor Chris Johnson
Pro Vice-Chancellor for the Faculty of Engineering and Physical Sciences

SCHEDULE OF TALKS

WELCOME AND INTRODUCTION

WELCOME

PROFESSOR CHRIS JOHNSON, PRO VICE-CHANCELLOR FOR THE FACULTY OF ENGINEERING AND PHYSICAL SCIENCES

INTRODUCTION

PROFESSOR SU TAYLOR, PROFESSOR OF STRUCTURAL ENGINEERING

TALKS

1. [07:18]

WHY WE NEED ZERO CARBON ENGINEERS.

PROFESSOR DAVID ROONEY

@QUBCCE @BrydenCentre_EU

2.

CAN BEES HELP US TO DESIGN SUSTAINABLE SUPERMARKETS?

DR EMMA CAMPBELL

@_emmajcampbell @QUBarch @QUBNBE

3.

IT'S COMPLICATED. THE HISTORY OF AMMONIA AND THE HUMAN RACE.

RALPH LAVERY

@QUBCCE @BrydenCentre_EU @ralphlavery

4.

TEACHING ALGORITHMS RESPONSIBLY. LESSONS FROM COLD SPAGHETTI AND EMOTION RESEARCH.

DR GARY MCKEOWN AND DR MAGDALENA RYCHLOWSKA

@gmckeown @LabQUB @QUBPsych

TALKS

BONUS TALK

WHAT WOULD HAPPEN IF WE WERE ALL NARCISSISTS?

DELFINA BELILLIO (TEDXQUB 2019)

@QUBPsych @QUBAlumni

5.

ACCELERATING THE DECARBONISATION OF NEIGHBOURHOODS.

PROFESSOR GREG KEEFFE

@gregkeeffe @QUBarch @QUBNBE

6.

HOW LEADERS WIN AND LOSE THE TRANSFORMATIVE POWER OF TRUST.

DR MATTHEW ANDERSON

@QUBCCE

7.

FLYING BOATS. THE RACE TO DECARBONISE MARITIME TRANSPORTATION.

DR KATRINA THOMPSON

@artemistechltd @QUBAlumni

8.

PEOPLE-CENTRED ENGINEERS WILL FIX THE HEALTH AND SOCIAL CARE CRISIS.

ANASTASIA PERYSINAKIS

@Aperysinakis @QUBCCE

OUR SPEAKERS

David Rooney

David Rooney is a Professor of Chemical Engineering in the School of Chemistry and Chemical Engineering at Queen's University Belfast. His research focuses on energy generation and materials and he is the Director of the Sustainable Energy Research Group at Queen's and Director of the Bryden Centre, a cross-border renewable research centre. At present he works with oil and gas companies, regional industry and government to advise on Zero Carbon technologies.

He is the Dean of Internationalisation and Reputation for the Faculty of Engineering and Physical Sciences and has a long history of working with international partners including time in China developing the Queen's College at the China Medical University in Shenyang.

Emma Campbell

Emma Campbell is a Research Fellow and Design Tutor in Architecture, based within the School of Natural and Built Environment at Queen's University, Belfast. Her research focuses on future relationships between people, food, and place through the lens of sustainability. As a design-researcher, she is really interested in how design and systems-thinking might help to solve some of the wicked problems inherent in food systems today.

Currently, Emma works within the Innovate UK funded Ideal Home project in partnership with Moy Park, the UK's largest poultry integrator. The project applies a research-by-design methodology to evaluate, model and redesign poultry house infrastructures with an aim to increase productivity, improve animal welfare and help the poultry sector meet net zero emissions by 2040.

Ralph Lavery

Ralph Lavery is a Chemical Engineer PhD candidate researching how to develop sustainable energy systems to facilitate a faster transition away from fossil based heat and energy production in a range of sizes and applications at the Bryden Centre in QUB.

Magdalena Rychlowska and Gary McKeown

Dr Magdalena Rychlowska is a Lecturer in the School of Psychology at Queen's University Belfast and an Honorary Fellow in the Department of Psychology at the University of Wisconsin-Madison. She earned her PhD in 2014 from the University of Clermont-Ferrand in France and joined Queen's University in 2017. She teaches research methods and cross-cultural psychology. Her research focuses on emotion and social signals, in particular smiles and laughter which are among the most common yet most understudied human expressions. A lot of her time is spent trying to figure out what smiles there are, why some laughs and smiles are more positive than others, and what makes people laugh. In short, she has the best job in the world. When she does not work, she reads, cooks, walks, or talks to her family and friends.

Dr Gary McKeown is a Senior Lecturer in the School of Psychology, Queen's University Belfast. His area of expertise is Affective Computing. That is getting computers to simulate and be responsive to emotional and social signals that humans make when they communicate with one another. Affective computing uses sensor and camera technology, awareness of context and machine learning algorithms to recognise and interpret emotional and empathic behaviour. It can also use knowledge of human emotions to synthesise emotional and empathic behaviour in Avatars. Gary is an editor for the field's flagship journal Transactions on Affective Computing and a member of the Executive Committee of the Association for the Advancement of Affective Computing. His research in psychology provides theoretical input and practical databases that inform the science of social interaction and emotions and produces data for affective computing algorithms.

OUR SPEAKERS

Greg Keeffe

Greg Keeffe is an academic and urban designer with over 30 years experience in sustainability, energy use and its impact on the design of built form and urban space. He is Professor of Sustainable Architecture and Head of the School of Natural and Built Environment at Queens University School of Architecture, Belfast, UK.

Greg has extensive experience of working closely with architects and planners to develop exciting ways of re-invigorating the city through the application of innovative sustainable technologies, informing his work on the sustainable city as synergistic super-organism. In this way, he has sought to develop a series of theoretical hypotheses about our future existence on the planet, through a series of technological and spatial interventions. Most of his work comes out of a free-thinking open-ended discussion about how things should be.

Matthew Anderson

Matthew is a good leadership activist. A former mountain leader, soldier, tech start-up entrepreneur, C-Suite member and university professor; he belongs in a world of transformation and disruption.

He has taught at seven universities and business schools across five countries, on some of the world's top MBAs, and is presently Fellow at Queens University Belfast, University of Aberdeen and the Centre of Army Leadership at Sandhurst. He is Adjunct Professor of Disruptive Leadership at KEDGE Business School in Paris.

Over the last 10 years Matthew has worked with 250+ client businesses and 5000+ senior leaders. His mission is to stimulate positive change in a rapidly changing world by evolving leaders and their businesses through reconnection with raison d'etre and meaningful being, and to accompany them on their journey.

Katrina Thompson

Katrina is an aeronautical engineer with 30 years of engineering experience in a broad range of sectors. Across offshore, telecommunications, aerospace and marine, the consistent theme is a passion for numerical methods and analysis. Her PhD research was in Computational Fluid Dynamics and she has an MSc in Finite Element Analysis.

Katrina is a Chartered Engineer, and a two-time winner of the Amelia Earhart Fellowship from Zonta International. She works for Artemis Technologies whose mission is to lead the decarbonisation of the maritime sector, primarily utilising their transformative Artemis eFoilerTM system.

Katrina is the Technical Coordinator for the 13-strong Belfast Maritime Consortium's UKRI funded Strength in Places Programme, led by Artemis Technologies, that is focused on developing zero emissions passenger ferries.

Anastasia Perysinakis

Anastasia is a multi-award-winning engineer and entrepreneur. She is the CEO of Pleotek, a start-up she co-founded at university to address shortfalls within the social care sector, inspired by caring for her disabled brother and 10 years working as a healthcare assistant. For this work, Anastasia has been featured on the BBC and the Irish Times, and was recently named a Top 100 Women in UK Tech. She was selected as the Institution of Mechanical Engineers 'Young Member Visionary of the Year', is a Royal Academy of Engineering Scholar and has been elected as a Fellow of the Royal Society of Arts, Manufactures & Commerce.

Anastasia is currently studying towards an MEng in Chemical Engineering at QUB while working in the Manufacturing Business Office at Jaguar Land Rover, focusing on strategic process improvement.