

FACULTY OF NATURAL, MATHEMATICAL  
& ENGINEERING SCIENCES

**KING'S**  
*College*  
**LONDON**

**THE ABSW SCIENCE & TECHNOLOGY  
JOURNALISM SUMMER SCHOOL**

# Introducing academic excellence at King's College London

**Explore cutting-edge scientific research**

**Tuesday 27 June 2023**

New Hunts House, Guys Campus,  
London SE1 1YR

**absw**  
ASSOCIATION OF BRITISH  
SCIENCE WRITERS

Effective science communication is integral to healthy public debate, and academia has a big role to play. Getting what you need from the trusted source in front of you won't just be vital for this story, but everything that a journalist does. Meet the researchers that will give your story authority.



**Dr Alex Brogan, Lecturer in Chemistry,  
Department of Chemistry**

A Lecturer in Chemistry, Dr Alex Brogan's research and that of his research group is centred around the development of new protein-based biomaterials, silk and other natural fibers are traditional examples, for use in a number of different scenarios. Of particular interest is how biology can be used to make the manufacture of chemicals, fuels and plastics more efficient and sustainable.

This is primarily achieved through the chemical treatment of enzymes, biological catalysts, so that they might operate under conditions that will be relevant in industry, such as high temperatures. Alex's main focus currently is in how an enzyme's conditions might be changed to effectively recycle and break down plastics and textiles. It's hoped that this will enable a fully circular economy by opening the door for new plastics and textiles to be made from recycled material.



**Dr Cristin Buescu, Senior Lecturer in  
Financial Mathematics, Department of  
Mathematics**

Dr Cristin Buescu is a financial mathematics researcher, with a particular interest in the pricing of financial contracts, the impact of risk factors like default or funding on transactions, and the mitigation of risk.

Naturally, issues concerning finance matter to those outside Canary Wharf and Wall Street – everyone needs money to live. Cristin's research looks at computing the price impact of multiple risk factors in transactions between large financial institutions. By accurately computing how risk impacts transactions between banks, it is hoped that the amount of money lost due to these risk factors in large scale transactions can be lessened and freed up for investment in businesses and communities.



### **Robin Carpenter, AI Ethics and Governance Lead, London Institute for Healthcare Engineering**

Robin's work is focused on applied ethics in artificial intelligence (AI) used in healthcare settings. AI is being deployed more and more in scenarios like cancer screening through increasingly smart medical devices, but the training data used to train these AI can be biased, exacerbating existing socio-economic inequalities that can negatively impact care for some patients.

By implementing best practice principles such as fairness, patient benefit and reliability of AI into existing legal frameworks around data handling and device construction, Robin's work hopes to reduce algorithmic bias and improve outcomes for patients.



### **Dr Mike Cook, Senior Lecturer in Computer Science, Department of Informatics**

Dr Mike Cook is an artificial intelligence (AI) researcher who studies AI and creativity. His main focus is the development of automated game designers – AI systems that participate in, model and shape the process of making games. He is the designer of [ANGELINA](#), an automated game designer that has had its work exhibited in galleries, and helped design a Top 500 Android game. He is currently developing [Puck](#), a downloadable automated game designer.

In addition to studying how people speak to generative AI systems, Mike also researches the ethics of AI and the impact of AI on the creative industries, decoding how we might work with AI to fill new roles in our lives, rather than have them replace roles humans have already filled.



### **Dr Seray Ibrahim, Research Associate, Department of Informatics**

Dr Seray Ibrahim is a researcher in human-computer interaction with a specialist interest in digital health and children's communication skills, learning and wellbeing. Her research looks at how digital technology might positively impact the lives of marginalised people traditionally disassociated with the way technology is designed.

Her current research looks at harnessing technology to improve mental health interventions for children, with a focus on parenting support, delivering support for young people in the moments that they need it. Seray's recent work with [Purrble](#), an interactive toy for children to help guide their emotional regulation, has been featured in the [2023 London Design Biennale](#) and in a recent trip to 10 Downing Street.



### **Dr Grazia Todeschini, Reader in Engineering, Department of Engineering**

Dr Grazia Todeschini is a Reader in the Department of Engineering at King's College London. Her main research area is in the computer modelling and simulation of large electrical power systems. Specifically, she looks at how renewable energy and the components needed to harness it, such as wind turbines, solar panels and energy storage, can be integrated into the grid efficiently. This is primarily done by exploring how Artificial Intelligence and Machine Learning models can be built to test how these sources may best be integrated.

This has led her to collaborate with industry on how to implement this in the UK, including the National Grid and Ofgem. In addition to her work with renewables, Grazia is also interested in championing and promoting underrepresented groups in STEM.

## About the Faculty of Natural, Mathematical & Engineering Sciences

The Faculty of Natural, Mathematical and Engineering Sciences at King's College London draws on a long tradition of world-leading research and teaching in chemistry, engineering, informatics, mathematics and physics. From AI ethics to astrophysics, wireless communication to cell biology and financial mathematics, our internationally-renowned scientists are working across traditional subject boundaries, leading cutting-edge research to tackle global challenges and answer fundamental questions about our universe.

For all future communications enquiries about scientists at King's College London, please contact Kenji Newton at [kenji.newton@kcl.ac.uk](mailto:kenji.newton@kcl.ac.uk) or call 07388865752.