

Imperial College
London

Engagement Academy

Jan-Dec 2020

Engagement Academy 2020

The [Engagement Academy](#) is delivered in partnership between Imperial's [Science Communication Unit](#) and [Public Engagement Team](#).

The aim of the academy is to foster the development of a community of staff for whom Societal Engagement is an integral, supported and valued part of their professional identity and practice, enabling Imperial to grow and maintain mutually beneficial relationships with society.

Due to the COVID-19 pandemic, this year's programme evolved from face-to-face workshops and visits to online sessions and independent study.

What does the Academy involve?

- Seven days of seminars, practical workshops, visits and group discussions
- Internal and external speakers
- Reading and activities between sessions
- Developing, delivering and evaluating their own practical engagement activity with support and feedback from session leaders and peers

Engagement Academy 2020 Cohort

Oytun Babacan, *The Grantham Institute for Climate Change*

Fadil Bidmos, *Department of Infectious Disease*

Stanislava Boskovic, *Department of Civil and Environmental Engineering*

Rose Brown, *Business School*

Vanessa Eyles, *Department of Mathematics*

Suzy Ford, *Department of Surgery and Cancer*

Keisha Khyne-Sam, *Central Faculty, Community Engagement*

Nitya Krishnan, *Department of Infectious Disease*

Madeleine Morris, *The Grantham Institute for Climate Change*

Maeve O'Sullivan, *Central Faculty, Public Engagement*

Emily Prior, *School of Public Health*

Anenta Ramakrishnan, *National Heart and Lung Institute*

Alex Shaw, *Department of Infectious Disease*

Cecilie Skaarup, *Department of Bioengineering*

Francesca Troiani, *Department of Electrical and Electronic Engineering*

Maria Valera Espina, *Department of Computing*



Project Summaries

Engagement Academy participants have developed a range of projects to engage audiences with Imperial research. Read about their ideas on the following pages.



Stanislava Boskovic

Department of Civil and Environmental Engineering

Platform for Urban Co-design and Citizens Engagement

Cities are often seen as the main problem – major contributors to climate change, biodiversity degradation and air pollution – but cities can actually be a solution.

Cities are complex living systems, composed of natural and artificial elements with multiple layers of networks, interactions, and corresponding services. Many factors govern the complex synergies between these components, including technological advances, ecological considerations, and socio-economic aspects. These are all dynamic and in constant transition, requiring cities to continuously adapt in order to maintain their functionality while aiming to improve the health and wellbeing of their citizens. A city and its spaces reflect its society and culture, with many facets that contribute to their understanding.

Engagement concept: A platform for defining urban spaces through an authentic and active dialogue among citizens, experts and stakeholders with mutual understanding of context-specific solutions creates an appropriate basis for a collaborative design that results in the exchange of ideas, new relationships, learning and creativity.





Rose Brown

Business School

What the Tech? Digital Skills Project

This project is a weekly drop in session held at Edward Woods Community Centre managed by the Business School. What the Tech? involves working with Business School students to engage with and have a positive impact on the White City Community. It provides weekly drop-in sessions and addresses the isolation of elderly residents in the community and provides support with digital skills.

The aim of the project is to put the Business School's mission to *'improve society through the power of innovative thinking'* into practice and to support the College's work to engage with the White City community. My aim is to continue working with the project and find creative ways to continue the positive engage we provide to the community.



Vanessa Eyles

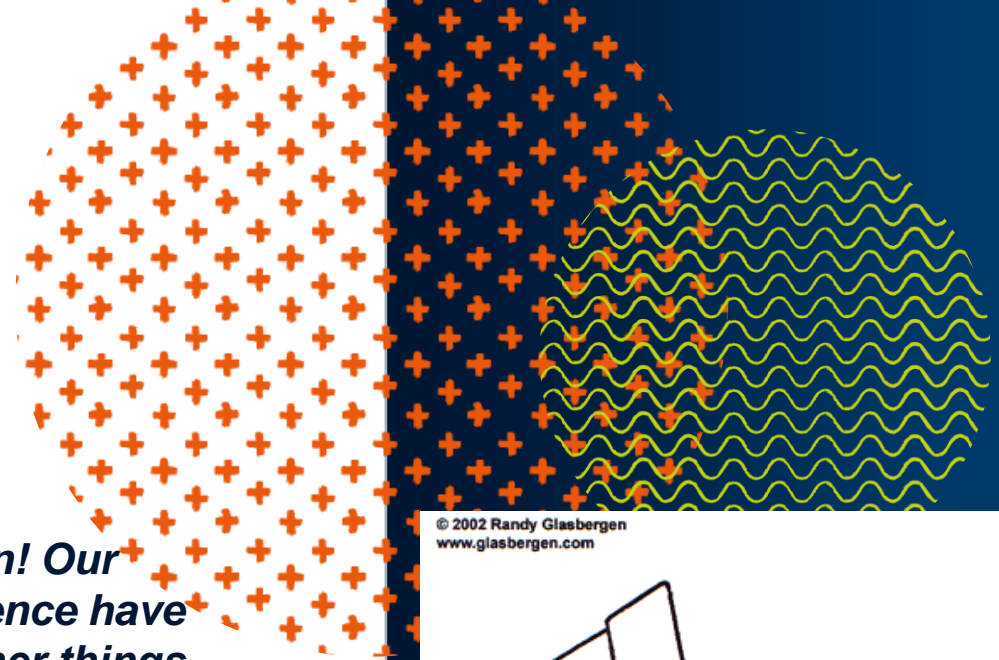
Department of Mathematics

Statistics is not just numbers!!

If you think numbers are boring and not for you, think again! Our workshop brings this world to life. Statistics and Data Science have influenced the world's reaction to COVID 19 and a lot of other things. How is this and what tools did the experts use to create the data?

Become an expert yourself, you will learn about equations, techniques, terms and a lot more. So sign up for this exciting and interactive session that explores the world of statistics and data, numbers will never be boring again!!

A workshop devised to engage young people with the world of statistics. Showing them how statistics impacts our everyday world. For example, how did our experts at Imperial map the COVID pandemic; how should we read statistics; does probability equal the truth? The subject poses fundamental questions about how we should interpret data and demonstrates that society can benefit from evidence-based reasoning.





Suzy Ford

Department of Surgery and Cancer

Tomorrow's doctors, scientists and engineers

The aim of the project is to encourage Primary KS2 pupils (year 6, aged 10-11) to learn about science, explaining the importance of STEM subjects and to think about this when they take their options in Secondary School.

The subject of Science is vast and this project will give an insight into what opportunities there are available to inspire them. In addition, my plan is to set up a podcast for a layman's audience for pupils, parents and guardians to listen together. This will help the pupils to decide which career path they would like to follow as they may be tomorrow's doctors, scientists and engineers.



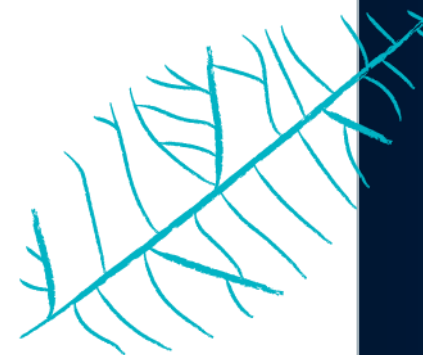
Keisha Khyne-Sam

Central Faculty, Community Engagement

Explore STEM

I would like to engage young people aged 13-19 years with STEM activities and/or events in order to inform and raise awareness. I want to work with researchers and young people to explore what they would be most interested in and to inspire them by giving them a sense of the various subject areas young people can study.

As I work in The Invention Rooms which is a community space, I would like to bring people together enabling researchers to talk about what they do, creating workshops which spark curiosity in young people about their potential future careers in STEM.



Nitya Krishnan

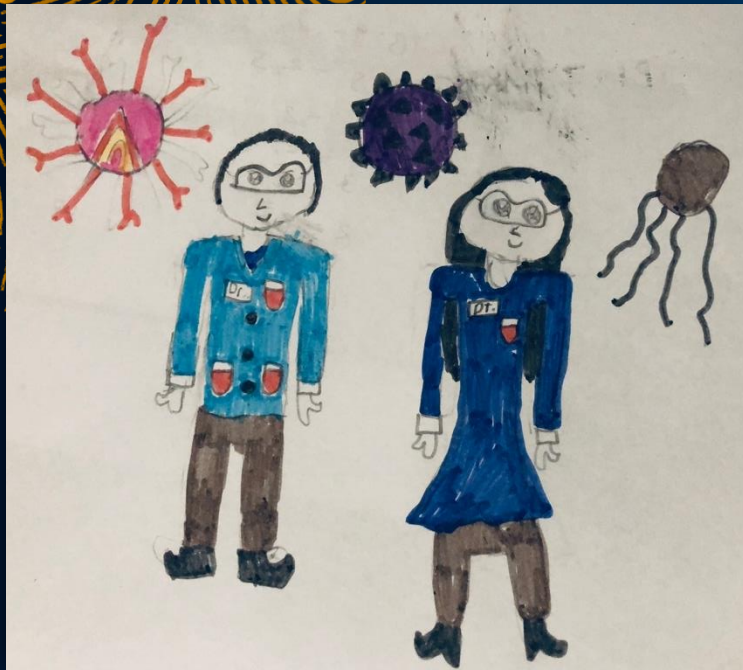
Department of Infectious Disease

Rise of the SuperBugs

With declining research into discovery of new antibiotics combined with the lack of interest from pharmaceutical companies due to unprofitable margins, the future looks bleak in the midst of rising antibiotic resistance.

The aim of the engagement activity is to inform the public about antibiotic misuse and how it contributes to drug resistance using a game-based approach. I believe it is never too early to start educating young minds about the challenges we face in the world today. My target audience is upper primary school children and their parents.

The game will be designed using Google forms and can be plugged into Google classrooms or other online platforms set up in schools for the current virtual learning environment. The task will be an after-school activity which can be completed with parents at home. Mentimeter based survey tools will be used to obtain feedback about the game experience.



Draft sketches of the game avatar

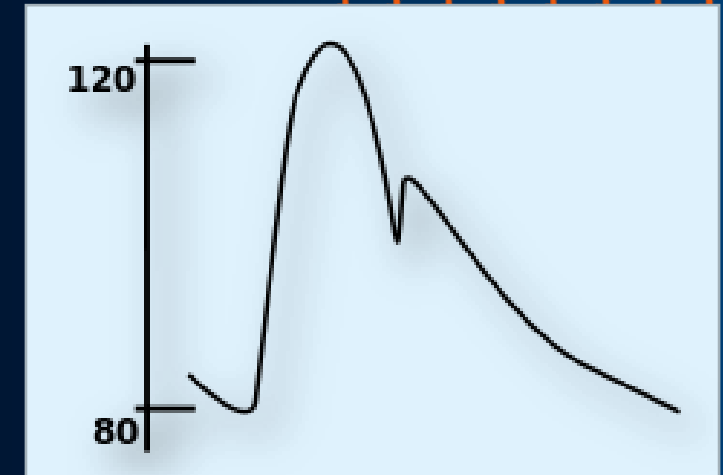
Anenta Ramakrishnan

National Heart and Lung Institute

Taking the pressure off the numbers

Raised blood pressure, or hypertension, is a preventable but very common and strong cause of strokes and heart disease. Using blood pressure machines, we usually measure the highest and lowest pressures in the arm's brachial artery, called systolic and diastolic blood pressure. However, we know that blood pressure varies in a wave-like pattern during one heartbeat, and there is lots more useful information found in this waveform rather than just the highest and lowest numbers. However, we still do not know which numbers the public would find most useful to know about.

I am delivering workshops with members of the public, specifically with members from ethnic groups where hypertension is more common, and with young adults, because hypertension rates are increasing in this age group. We will be using creative and reflective exercises to explore what we interpret from blood pressure measurements and our emotional and practical responses to measurements.



Alex Shaw

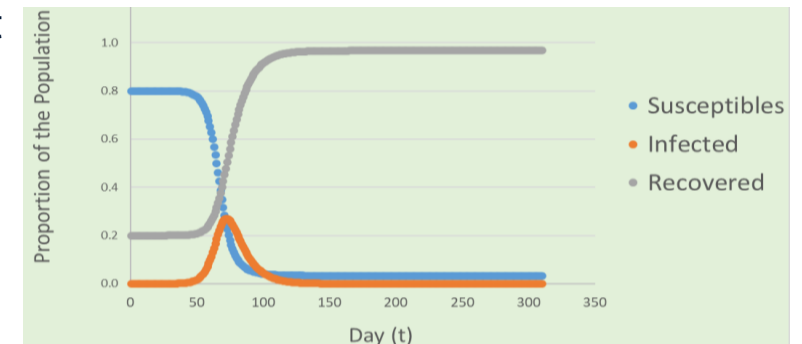
Department of Infectious Disease

Outbreak activities

My outreach activities (in a very timely fashion) focused on disease outbreaks. I had initially planned a laboratory practical investigating a viral outbreak, but following lockdown this was rapidly converted into a remote data analysis activity.

High school students played the part of an analytical response team, learning about pathogen detection and then analysing DNA sequences to investigate the spread of a virus through a town. To counter the virus they used mathematical models to predict the effects of interventions.

This was followed by a seminar about how viruses and vaccines work, and a discussion about their thoughts on vaccines.



Your thoughts on vaccines:



Cecilie Skaarup

Department of Bioengineering

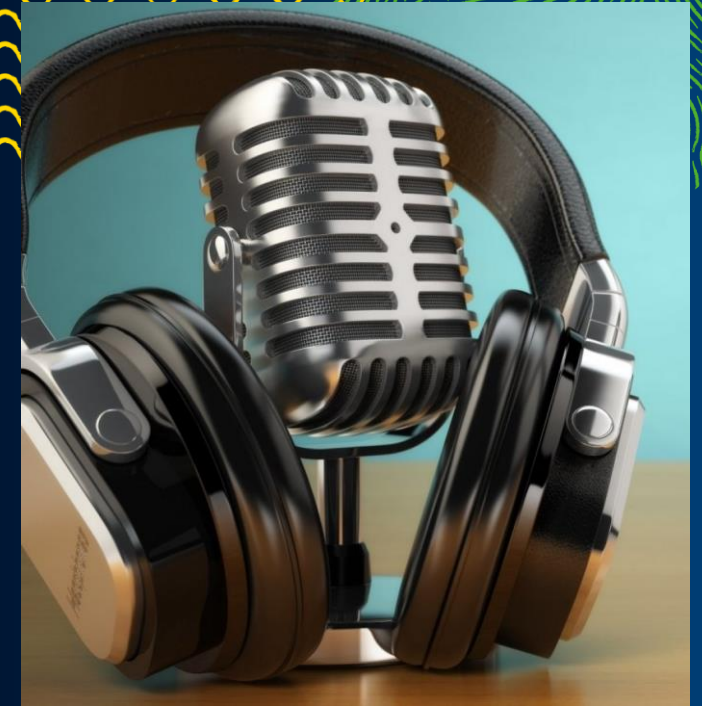
Blast injuries: stories of hope

My idea is to develop a podcast for Centre for Blast Injury Studies where the main message is hope. Hope for the people living with blast injuries within the various research fields for CBIS, even though blast injuries are fatal, grim and life changing.

The secondary messages are telling stories. Stories to make people understand why blast injury studies are important to all of us. The different angles on these stories could be:

- Stories from the researchers about why they think their research is so important.
- Stories from people living with blast injuries and their families and how they have managed to create a (good) life for themselves after the injury.
- Stories about how research mainly undertaken on military personnel can benefit the general public.

The podcast will be hosted by two CBIS researchers and each episode will focus on a researcher or civilian within CBIS' research areas.



Francesca Troiani

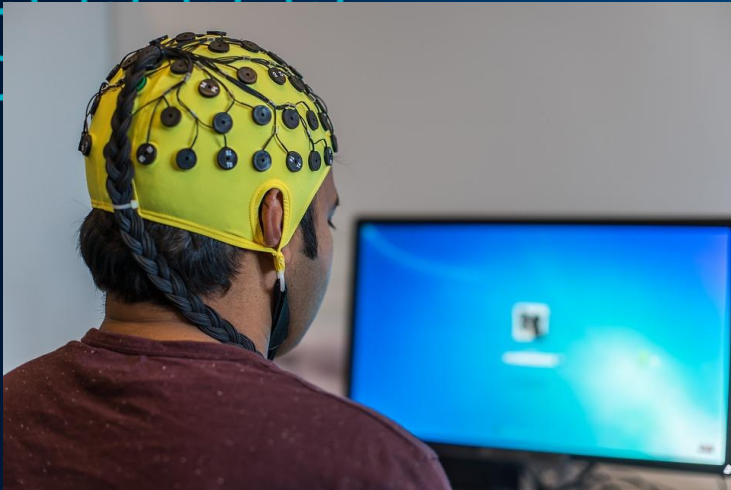
Department of Electrical and Electronic Engineering

Brain games

We are planning to develop about 100 EEG based headsets (which can detect electrical activity in the brain) to ship to people with the aim of having them to connect at a set time – during the Royal Society Summer Science Exhibition, July 5-11 2021 – and showcase a real-time recording of everybody's brain signal.

This could, possibly, be taken a step further with the development of a crowd-based game that will be played using just people's thoughts. The activity will be repeated during the course of the whole event, to give everybody the chance to participate and the game will become available after the event for everybody to keep playing.

With this activity we are planning to bring attention to our research on neural interfaces and start a conversation with members of the public to discuss their reservations and worries so that we can take them into account when working on new policies involving this technology.



Maria Valera Espina

Department of Computing

Girls in Computing

The public engagement idea that I would like to implement in 2021-22 academic year is to create a small course to encourage female, especially considering widening participation factors, in primary education Year 8 to explore the idea of studying Computer Science.

The course will consist in three steps:

Step 1 would be a talk in their school on women in Computer Science (CS). In this talk we will explain the history and highlight unknown facts of women in CS and also, we will embed some videos of our female researches in Biomedical projects to emphasize that CS is not only about games, that through CS, we can do a lot of good in the community and society.

Step2 will be a taster day (ideally in White City) where we will have one or two talks and a programming lab.

Step 3 a hackathon with all the schools that participate in that course.

