

Imperial College
London

Engagement Academy

2021-22

Engagement Academy

Each cohort of this staff training programme explores the evolving relationship between research and society to develop their public engagement practice through study, active experimentation and reflection.

The [Engagement Academy](#) is delivered by Imperial's [Science Communication Unit](#) and [Public Engagement Team](#), and accredited by [Institute of Leadership and Management](#) in line with the Higher Education Academy.

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 2021-22 Staff

Science Communication Unit

A team of practitioners and researchers delivering internationally-renowned masters courses which combine media training with academic perspectives.

Dr. Stephen Webster (he/him)

Alexandra Fitzsimmons (she/her)

Dr. Felicity Mellor (she/her)

Gareth Mitchell (he/him)

Public Engagement Team

Central team of practitioners supporting staff and students to engage diverse audiences with Imperial's work through exchanging ideas and experiences.

Vicky Brightman (she/her)

Amy Seakins (she/her)

Charlotte Coales (she/her)

Liz Danner (she/her)



Engagement Academy 2021-22 Cohort

Anshu Bansal (she/her), *Enterprise*

Claudia Cannon (she/her), *Faculty of Natural Sciences*

Jonathan Clarke (he/him), *Department of Mathematics*

Ana Lucia Cruz Ruiz (she/her), *Department of Mechanical Engineering*

Tom Curtin (he/him), *Department of Computing*

Hannah Gowland (she/her), *Department of Brain Sciences*

Juan Guzmán-Iñigo (he/him), *Department of Mechanical Engineering*

Anna Hankin (she/her), *Department of Chemical Engineering*

Anastasiya Kishkevich (she/her), *Department of Bioengineering*

Anirudh Kulkarni (he/him), *Department of Bioengineering*

Dez Mendoza (they/them), *Library Services*

Emma Pallett (she/her), *Department of Chemistry*

Izhar Shah (he/him), *Department of Civil and Environmental Engineering*

Jayne Shaw (she/her), *Department of Bioengineering*



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.





Anshu Bansal (she/her)

Enterprise

STEMM Futures Work Experience Week (4th-8th April)

The activity involves a week of programmes aimed at 16-18 years old black students from disadvantaged backgrounds to support them to discover the wide range of subjects within STEMM studies and to help them get into university.

The week aimed to inspire the students by demonstrating how research impacts life outside of academia in real world applications, provide exposure to a wide variety of career options available to them post-university and feel confident that they will have the support available to them if they chose to follow an entrepreneurial career path.

The week- long programme involved sessions run by several Enterprise and Outreach colleagues on topics such as:

- Introduce Imperial- its history, campuses faculties, notable research
- Our work with Industry
- How we commercialise research
- Support available to students who have an idea for a startup or are interested in developing entrepreneurial skills.
- University application process and student finance
- Science communications and how we engage with different stakeholders (public, business, policymakers)
- They also completed a challenge in small groups whereby they were asked to identify market opportunities for a technology, prioritise and decide a strategy to take their product to market. The final day involved them presenting their ideas to a judging panel as if pitching their idea to investors.



Claudia Cannon (she/her)

Faculty of Natural Sciences



Science's social sides

Science for People (SfP) was a radical socialist magazine published by the British Society for Social Responsibility in Science (BSSRS) between 1972-1989.

BSSRS evolved from a 1968 campaign against university research on chemical and biological weapons, which itself emerged within the ferment of activism against the Vietnam War, and the broader political, social and counterculture movements of the 1960s. Its slogan: Science is Not Neutral.

The BSSRS collective produced an aesthetically-experimental magazine – Science for People (SfP) – examining subjects like feminism, healthcare, workers' rights, education and ethics. Its 'do-it-yourself' stylisation included cartoons and collages, breaking away from the academic and political establishments by design.

BSSRS's rich archive illuminates science's social dimensions and instigates interesting/challenging conversations about how science, tech and business impact and influence our lives in the twenty-first century. I'm keen to put on an exhibition of this literature, and contact some of those involved in BSSRS/SfP for a related panel discussion, exploring their thoughts in relation to how they felt then, where we are now, and in conversation with Imperial's current researchers – maybe for a Lates event at Imperial?

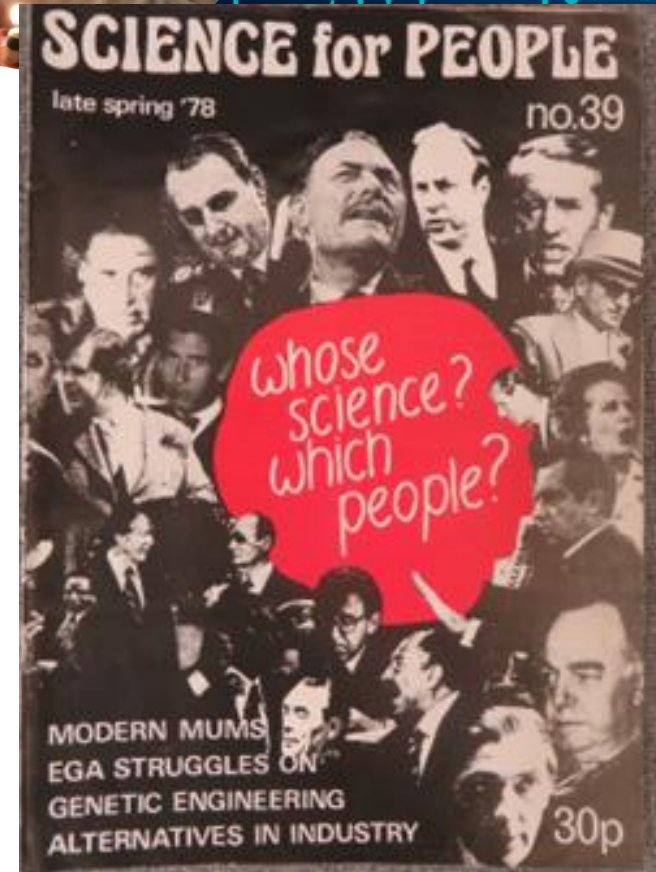


Image: cover photo of Science for People issue 39



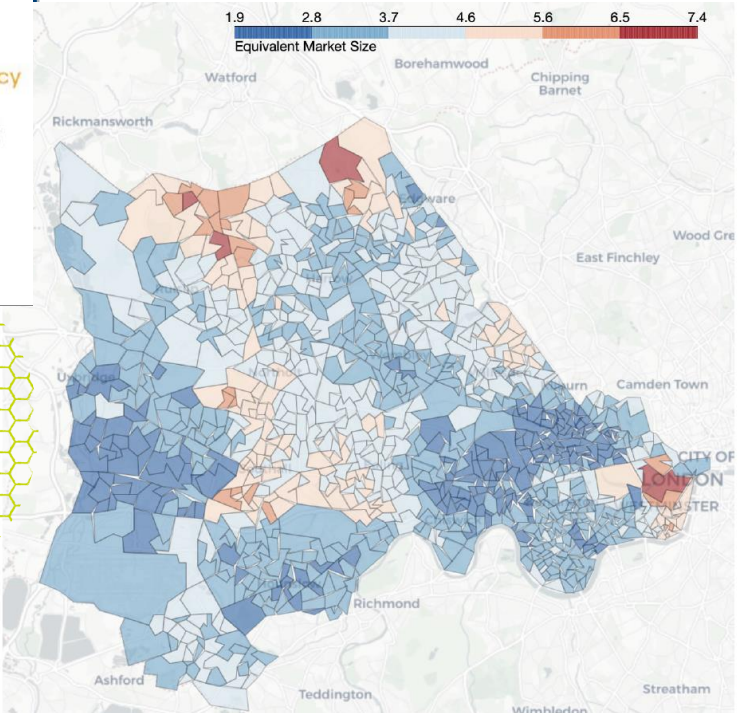
Jonathan Clarke (he/him)

Department of Mathematics

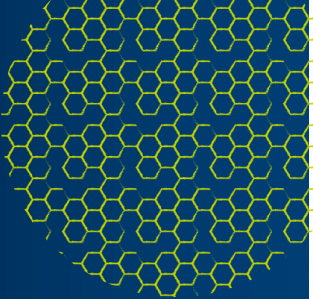
Does your doctor know your name (and does it matter)?

Passed from pillar to post, from doctor to doctor, even from hospital to hospital, retelling their story over and over again. It's a common story for residents of northwest London with its multiple hospitals and healthcare providers. Many factors that determine patient satisfaction may have little to do with the medical treatment they receive and instead rest on how well their care is organised.

What would be the benefits of more 'joined-up' healthcare?



In this engagement activity I created a series of interactive online maps exploring the healthcare geography of North West London. Through participation in an Open Science session run by the Open Age charity, I shared these visualisations with over twenty residents aged 65 years and over. In the session we explored participants' experiences of continuity of care and the importance of clinical information being available to doctors when they need it.



Ana Lucia Cruz Ruiz (she/her)

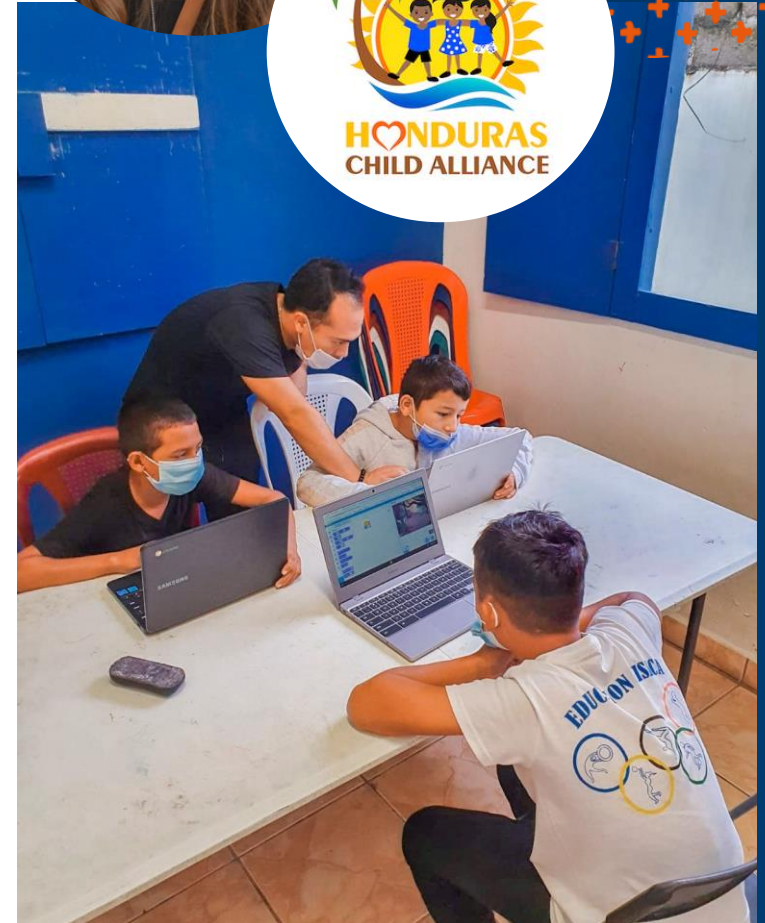
Department of Mechanical Engineering

Honduras Child Alliance

The Honduras Child Alliance (HCA) operates community-based programs that support educational enrichment and healthy living so that students can pursue education and employment opportunities that would otherwise be unavailable. Our programs reinforce academics, improve literacy in Spanish and English, build competency in computers, and cultivate explorations of science and the arts.

As part of HCA's Education Programming Committee, I designed a coding curriculum for children (ages 8+) which aims at democratizing access to essential 21st century skills, including creative thinking, collaboration, and problem solving through decomposition, pattern recognition, and abstraction.

The curriculum was built in collaboration with on-site staff, and today, it empowers HCA students as they build their own animations and stories using MIT's Scratch! Next steps will include the design of a coding workbook that will hopefully reach other low-income communities across the country and include topics such as sustainability, equality, global citizenship, Honduran culture, and Mayan heritage.





Tom Curtin (he/him)

Department of Computing

The Computing Showcase

My engagement activity centred around my role as Industrial Liaison Officer, in Dept of Computing. I created a showcase called The Computing Project Showcase to “show off” the varied and highly impressive work our Undergraduates do in their final year of the MEng Computing Degree. The showcase would include presentations and demonstrations of the work by some of the top students.

The intended audience were industry contacts and prospective computer science students. The audience would get an opportunity to vote for their favourite project and what they considered to be the best presentation. The event would include networking and questions from the audience. The activity hopes to engage our industry contacts to improve relations with the College, hoping to explore mutual beneficial activities, also engaging prospective students to excite young people about studying Computer Science, including at Imperial.



Hannah Gowland (she/her)

Department of Brain Sciences



Confront Educational Inequality

I have teamed up with researchers within the UK DRI who are mentoring students in a partner school Ark Academy in order to expand the scheme and set up partnerships which will allow the scheme to run successfully in future years too.

Mentoring: We are recruiting mentors from across Imperial to assist sixth-form students with UCAS applications and offer them opportunities to gain more scientific experience. The mentoring will last approximately 12 weeks and end with a poster session at Imperial for staff, students, mentors and family.

Outcomes: The scheme will provide invaluable assistance for the students applying to universities this year. Testimonies from the cohort along with the relationships we will be building during this scheme will assist in the streamlining of the programme for future years.





Juan Guzmán-Iñigo (he/him)

Department of Mechanical Engineering

Sound, flames, and rockets

Sound is present in our daily lives in many ways: from pleasant things such as music or our own voices to displeasing noises such as those produced by aircraft, cars, or hoovers. Sound also plays a relevant role in combustion systems because it can couple with flames and destroy the combustion chamber of, for example, rocket or jet engines.

But what is sound? How is sound produced? How can sound destroy a rocket? These questions will be explored in a workshop devised to engage young people with the field of Acoustics. This workshop will combine simple experimental demonstrations with a hands-on activity where the participants will create “musical instruments” with low-cost materials.

I will deliver this workshop to young people aged 10-16 from groups underrepresented in STEM disciplines. The aims of this workshop are twofold. The first aim is to inspire young students to choose STEM subjects. The second aim is to inform the public about the importance of research on Acoustics, especially for the development of the next generation of combustion technologies.



Anna Hankin (she/her)

Department of Chemical Engineering



What can sunshine do for hydrogen?

Hydrogen is a wonderful fuel – it burns without releasing carbon dioxide or other greenhouse gases into the atmosphere.

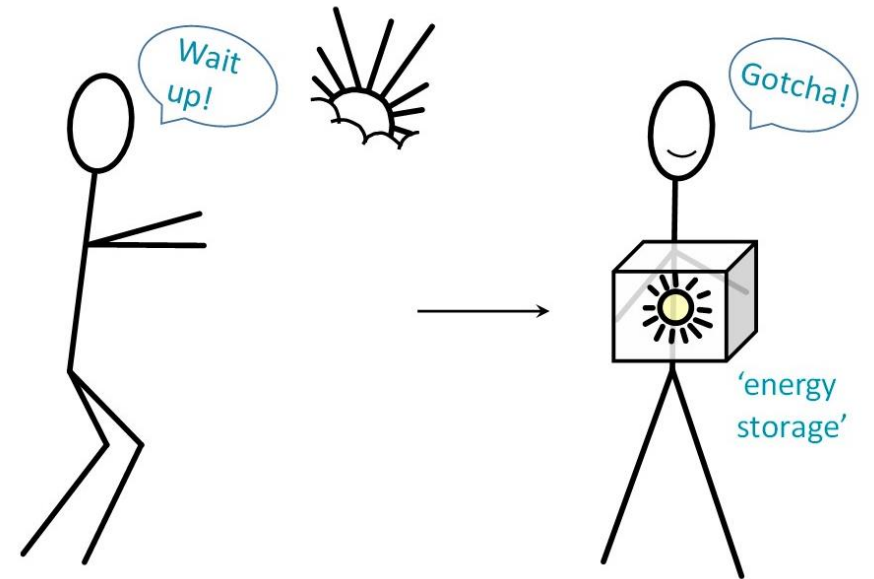
But at the moment it is being made from fossil fuels and that's not very clean! It can be made in a different, much greener way...from water and sunshine.

Sunshine and water are all the resources needed to make 'Solar hydrogen' or 'Golden hydrogen'. Indeed, interconversion between hydrogen and water is embedded in the Greek definition of hydrogen: "maker of water".

Can we help to save our climate by making and using solar hydrogen?

Hydrogen is already safe to use in hydrogen fuel cell cars and the first hydrogen powered train is now operating successfully. But how much solar hydrogen can we make and what would the devices that make it look like?

Our stall will give you a glimpse into the engineering involved in building our solar hydrogen world. Get inspired with us 😊





Anastasiya Kishkevich (she/her)

Department of Bioengineering

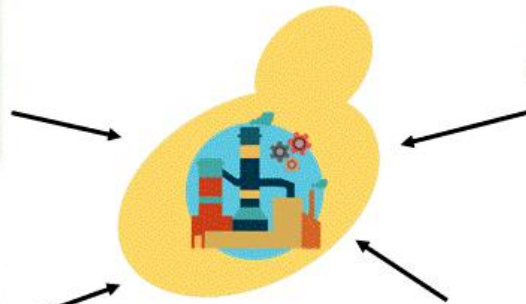
Baker's yeast as tiny factories

Every day we wear clothes of different colours and use cosmetics which smell of fruits and flowers. To make these, a lot of chemicals and resources are needed, including huge amount of fossil fuels and oil.

Yeast which are used for baking and brewing can be converted into tiny factories to produce dyes for shoes and clothes, scented liquids for cosmetics and food, and even dairy like products. Scientists work hard to change yeast building blocks and add blocks from roses, bananas or vanilla.

My engagement activity will introduce audience to the idea of using baker's yeast as tiny factories for more sustainable future. During the activity the audience will be invited to play a jigsaw to build a cell from different genes (almost like scientists do). We will also show real life examples of modified yeast and discuss what other compounds can be produced by yeast and safety issues public can have about the technology.

Baker's yeast factory



Anirudh Kulkarni (he/him)

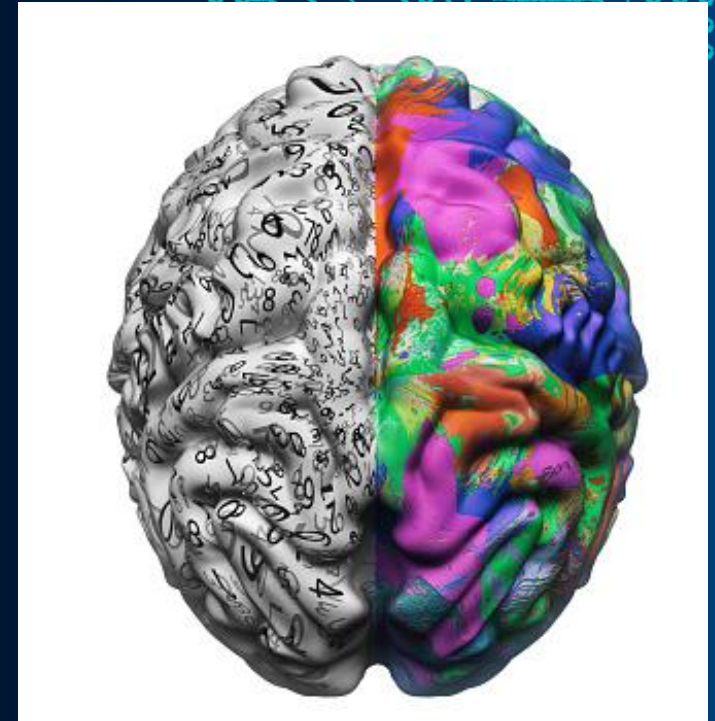
Department of Bioengineering

ScienceAsArt

ScienceAsArt is a gallery exhibition at Imperial that allows researchers to be creative while communicating their science to a broader audience. The project provides them with a platform to showcase research as artistic images, including examples ranging from the two-photon image of a single neuron, the microscopic picture of an atom and the telescopic view of a Saturnian moon. Apart from bringing this aesthetic beauty to a larger audience, we also seek to promote their research. To make it more engaging, this would be a competition with prizes to be won.

The participants need to send us a picture (high-resolution) of the artwork and a short text accompanying the image that addresses the following questions:

- What is the image showing?
- How was this image obtained?
- What is the broader research question behind this image?
- Why is the research important (from the point of view of the public seeing this image)?





Dez Mendoza (they/them)

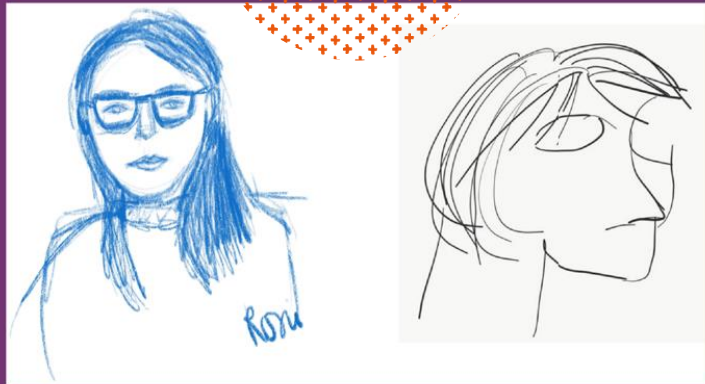
Library Services // Co-Chair: Communications and Events ABLE Disability Network

Celebrating Neurodiversity

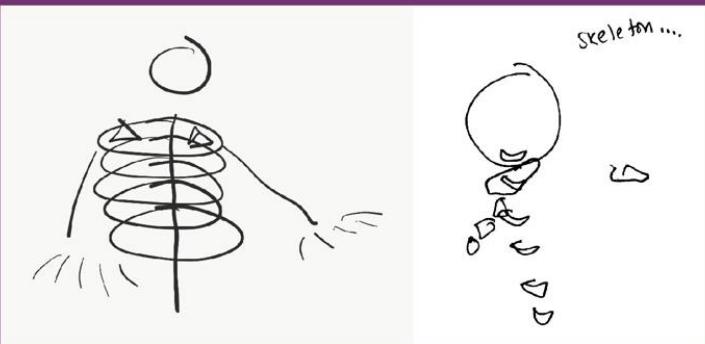
Planned as an engagement activity as part of **Disability Pride Month**, the one-day **Neurodiversity Festival** celebrates the achievements of neurodiverse individuals across a range of disciplines bringing together neurodiverse staff/students/stakeholders representing the institutes that take part in Great Exhibition Road Festival.

In collaboration with [Neurodiversity in Albertopolis](#), the **Neurodiversity Festival** will include practical workshops and panel discussions by neurodiverse practitioners in Art, Science, Technology, Music and Poetry. Opening the conversation around neurodiversity and promoting a neurodivergent culture, we aim to challenge the stigma arising from a deficit model of neurodiversity by showcasing the unique skills and talents of neurodiverse people, listening to and valuing neurodiverse experiences, and creating a community in a space where diversity can be embraced.

Meet your Neurotribe! Celebrate your difference! Gain a deeper understanding of what it is to be neurodiverse and inspire the next generation of neurodiverse scientists and creative practitioners!



Improvised Drawing Workshop: drawing portraits from memory



Improvised Drawing Workshop: drawing with eyes closed while someone describes the object

Emma Pallett (she/her)

Department of Chemistry

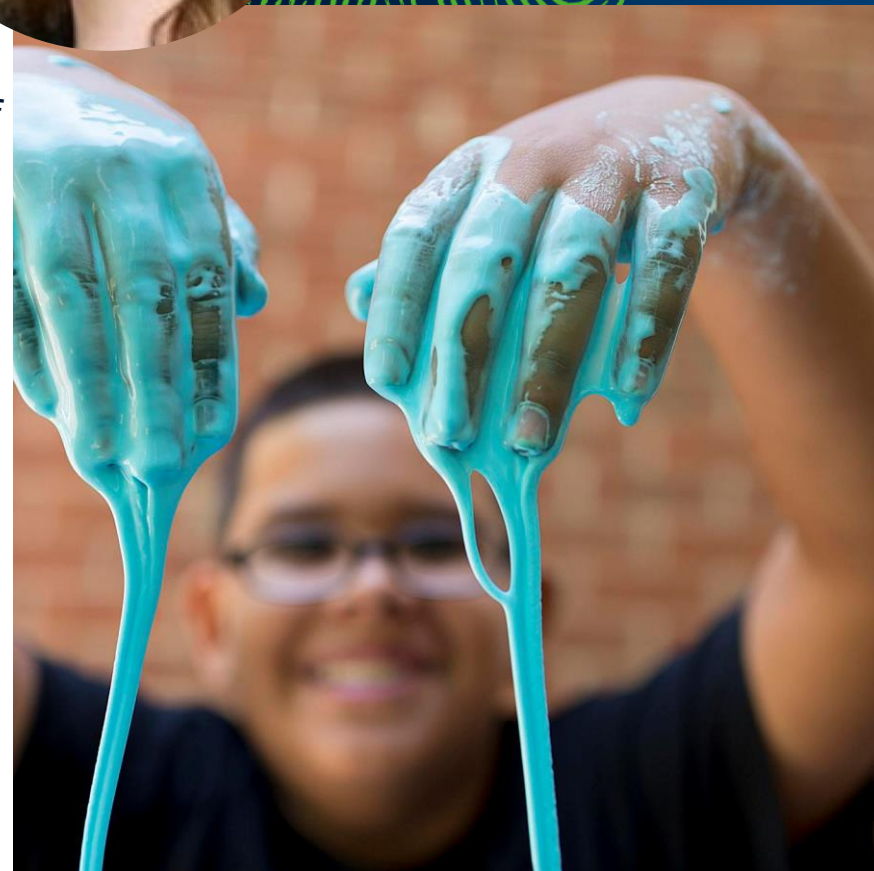


Discover STEM!

'Want to have fun, get messy and discover a whole new world around you? Dig for dinosaurs, mix up some slime, create a rainbow out of water, fight off bugs and watch a volcano erupt'

I would like to work with Researchers to design a programme to engage primary school age children in the wonderful world of STEM. I believe that engaging young people early is crucial to developing a lifelong interest in STEM subjects and would love to foster the enthusiasm of children for discovering new things.

I will also be working with a group of PhD students who are developing activities aimed at KS3 (11-14 years) level for a stall at the Great Exhibition Road Festival 2022.





Izhar Shah (he/him)

Department of Civil and Environmental Engineering

Carbon Calculator – Design a sustainable house

A large amount of steel, concrete, wood, etc., end up in housing construction. From materials used in construction to the energy used while we abode, our actions result in the emissions of carbon dioxide – a potent greenhouse gas trapping heat in the atmosphere – and climate change.

Aiming to build a sustainable house, a **Carbon Calculator** will be developed for different materials used in construction of homes and buildings. A prototype miniature house model and its parts will be displayed for participants to build – like a puzzle! The type and quantity of materials chosen to build the model house will be put in the **Carbon Calculator**. And there you go! You will have the carbon footprint of the house you just designed and built.



The activity will help participants understand how building design and material selection impacts our environment. Participants, mainly children and young adults, will be able to see how individual actions could translate into global impact mitigation for global warming and climate change. From house designing to material selection, creativity and sustainability will be invoked among all participants.

Jayne Shaw (she/her)

Department of Bioengineering



A degree – what next?

Universities have in place many initiatives, projects, targets related to widening access and participation, aimed at increasing applications from students under-represented on undergraduate courses. The focus for this engagement is further along the pipeline, raising awareness of MSc courses, specifically in bioengineering with the aim of informing, inspiring and enabling UG STEM students from under-represented backgrounds to consider applying to courses which would further enrich their education, and that they have the potential to enjoy and succeed on.

A student focus group informed discussions for engaging with our target audience. An online event was run as a ‘townhall’ involving a panel of current staff and students and our current MSc student reps enthusiastically produced an excellent video highlighting MSc Bioengineering courses which we launched at the event and amplified through social media platforms.

Initial evaluation has been positive. Next steps – to enhance and sustain engagement with this target audience.

