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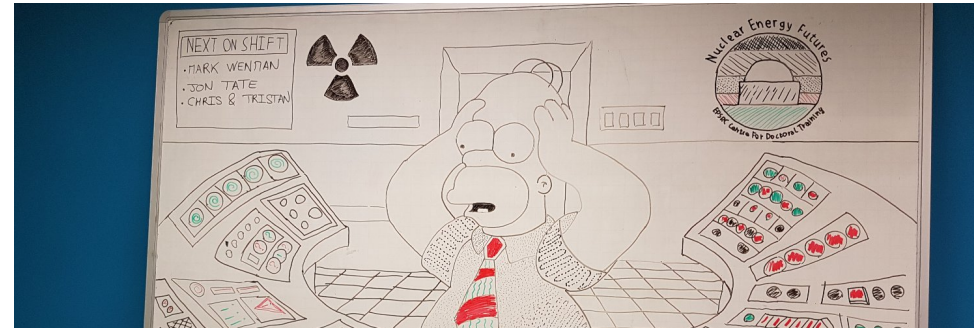
University of  
**BRISTOL**



# EPSRC CDT in Nuclear Energy Futures

*Nuclear Academics Discussion Meeting, 7<sup>th</sup> Sept 2021, Cambridge*

Mark Wenman  
Director



UNIVERSITY OF  
**CAMBRIDGE**

**Imperial College**  
London



**The Open  
University**

# Overview

- Addresses critical need for next generation of nuclear leaders and innovators for fission and fusion.
- Aim to train 70-80 doctoral-level subject matter experts by 2027 (likely to exceed 70)
- Four year PhD programme with integrated training modules, activities and professional development



# CDT Training/cohort Activities Calendar



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Y1	1	2		3				4	B	5	Reserved for holidays		
Y2		6		7	C	D	8	E		F			
Y3		G	A		H		I			J			K
Y4													

## TRAINING PROGRAMME

- 1 Introduction to Nuclear Engineering (res. IC)
- 2 Nuclear Safety Management (distance)
- 3 Reactor Operation and Design (distance)
- 4 Nuclear Materials for Reactor Systems (res. UoBr)
- 5 Nuclear Fuel Cycle, Waste Management and Decommissioning (res. BaU)
- 6 Responsible Research and Innovation (distance)
- 7 Nuclear Policy (distance)
- 8 Innovation in Nuclear Technology (distance)

## COHORT BUILDING

- A Winter School
- B TRIGA test reactor, Romania
- C Public Engagement Workshop
- D Cambridge Science Festival
- E SCK-CEN, Belgium
- F Great Exhibition Road Festival
- G Sellafield, Westinghouse and Culham
- H Entrepreneurship Training
- I Grand Engineering Challenge
- J Student Conference
- K US National Labs

# COVID-19 changes and impact

- Profound impact on delivery – especially cohort-building – no residential courses or site visits.
- Creative ways of maintaining Cohort 1 and inducting and building Cohort 2 remotely
- Ice-breaker role-playing crisis management scenario involving orphaned radioactive source
- Virtual Winter School with GREEN on co-generation
- Coffee mornings but fatigue with ‘organized socialising’ – incorporate more group work into teaching module assessments
- Joined forerunner ICO CDT for student conference July 2021 – plan more in-person activities



# Outreach

- Outreach is an important NEF mission – not only to attract more diversity into the industry now but also use our resources for the future
- Highly successful student-run outreach website – repository for outreach materials (e.g. Cambridge Science Festival), blogs, profiles, advise for applicants – [www.nuclearenergyfutures.org](http://www.nuclearenergyfutures.org)
- Local schools outreach – progress slow because of COVID but connection made (see newsletter)
- Women in Nuclear talk on careers in the nuclear industry
- Undergraduate research placements – emphasis on WP candidates



**Science**  
**Energy for the future**

One of the ways we can make our curriculum and the opportunities offered to our children more dynamic and exciting is to use the great expertise that exists within you, our parent body. This week Mrs Bleau and Miss Leach met with scientists and PhD students from Imperial College, London, where the father of Thomas W in Year 3 leads a team.

In developing our curriculum and thinking about what we teach and why, the social urgency of topics and themes is something we want our curriculum to reflect from the youngest age. This week we learned on the news of the hope to eradicate all gas boilers in the near future and the need to be aware about the differing sources of fuel and energy looms large for us all.

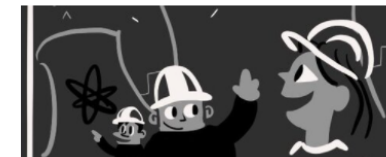
We want to develop some work with Imperial College to think about how we teach our children about energy and would like to start by getting you to sit with your child and think about questions your child might have for scientists e.g on climate change, energy, nuclear power. Please pop them on a slip of paper/post it note with your name and class and give to your class teacher. Thank You!

## Available Now!



### Powerline

How much power does your toaster consume?  
Does it consume more energy than your kettle?  
What about your car, or the university and



### A School Trip to a Nuclear Power Plant

An Escape Room Adventure

During a tour of a nuclear power plant you suddenly find yourself completely lost and

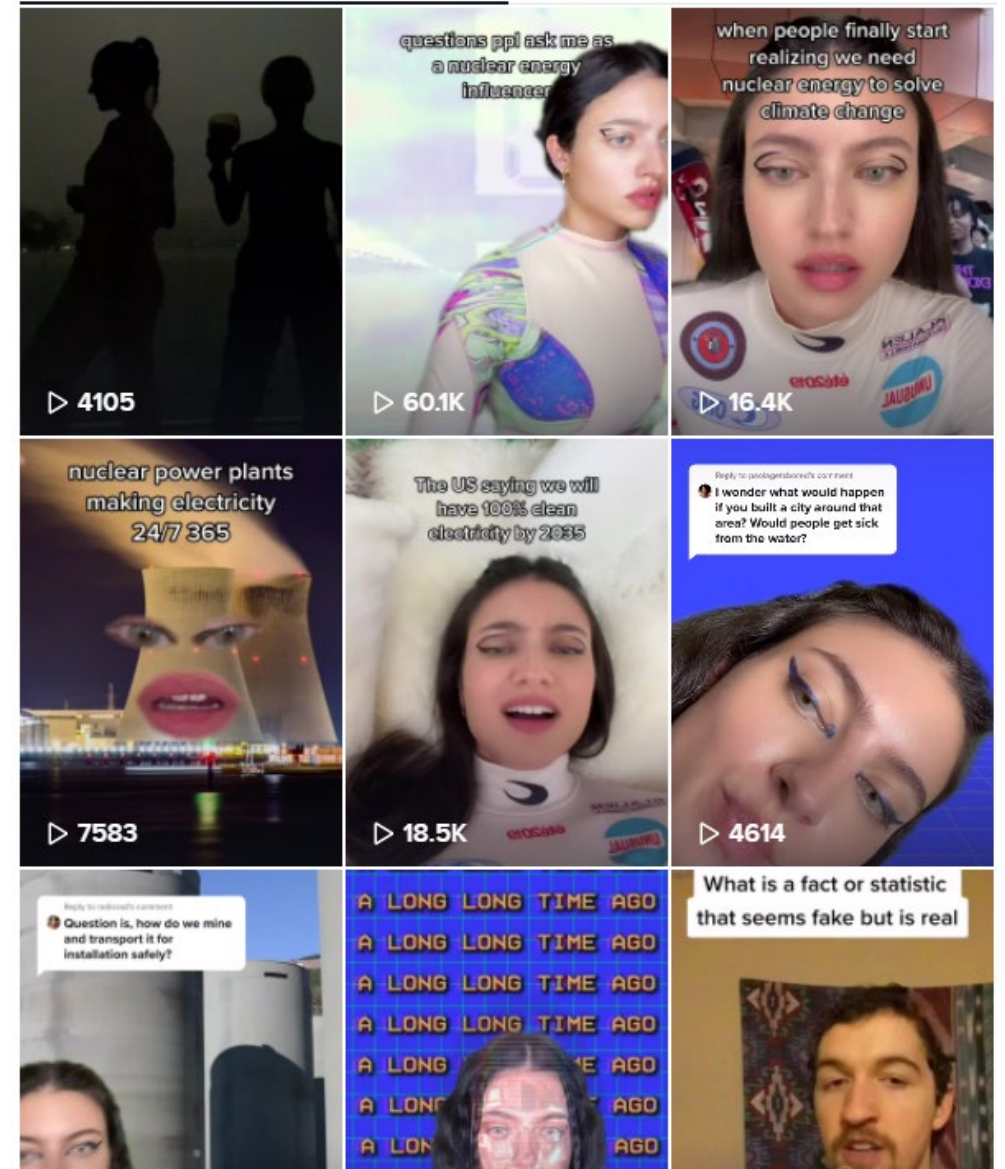


### Can We Avoid Nuclear Accidents?

Fukushima-Daiichi case study

# Outreach – new approaches

- But we need to evolve our approach to outreach if we are effectively going to get our message across to target audiences
- Use of TikTok, Instagram, podcasts etc.
- See for example Isabelle Boemeke, aka Isodope, for example of “*first*” nuclear influencer reaching teenage audiences.
- Meeting with **Titans of Nuclear** about a podcast
- Incorporate social media & public engagement into CDT programme?

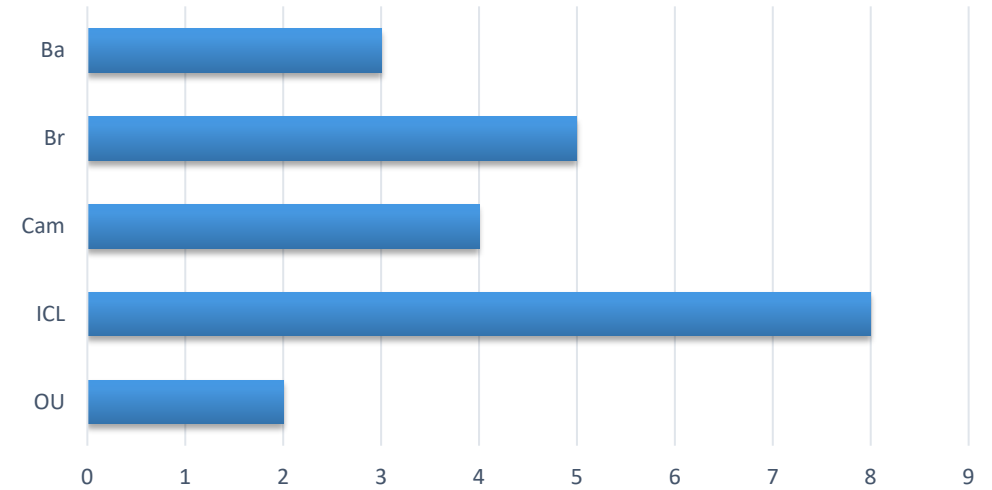


# Cohort 3



- 22 students recruited – taking total to 58 across the CDT’s three cohorts.
- Highest ever proportion of female students recruited - one-third (7) compared to 11% (2/18) and 22% (4/18) in 2019 and 2020 respectively
- Opened up new research theme in nuclear medicine

Student registration 2021/2



Research themes

