4th ANNUAL AEROSOL SCIENCE CDT SANDPIT EVENT

Thursday 8th July 2021

University of BRISTOL

Welcome

Dr Adam Boies,
CDT Partnerships Director

Adam Boies is Head of the Energy Group within the Cambridge University Engineering Department and leads a group in Nanomaterials and Aerosol Engineering. His research focuses on characterizing the evolution, dynamics and impacts of gas-phase nanoparticles with an emphasis on energy applications, aerosol instrumentation and emissions. As Partnership Chair of the Aerosol Science Doctoral Training Centre his focus has been to ensure that the CDT brings value to our industrial and government partners through continued education, research and training of the next generation of aerosol scientists. We aim to ensure that the Aerosol Science CDT serves as a nucleus for industrial, academic and industrial research sparking new collaborations and partnerships.

Find out about our Partners—exploring the (Inter!)National Skills Gap in Aerosol Science.

If you are interested in representing any of the thematic areas (Health, Technology, Atmospheric Aerosols, Measurement Techniques and Basic Aerosol Processes) at our Partnership Board for year 2021-22 please contact our CDT Partnerships Administrator to put your candidacy forward.

Please view our event Code of Conduct here to ensure all participants have an enjoyable and fulfilling experience during our Sandpit 2021 event.

Guest Speaker

Prof Wendy Barclay

Prof Wendy Barclay
Chair in Influenza Virology, Imperial College London

We are delighted to welcome Prof Wendy Barclay as our Guest Speaker for this year's Sandpit.

After graduating from Cambridge University, Wendy's postgraduate study at the Common Cold Unit in Salisbury involved infecting human volunteers with cold viruses to understand why people keep getting colds year after year. In her two postdoctoral appointments, at the University of Reading and then Mount Sinai Medical Centre in New York, Wendy learned the molecular virology skills that would form the technological basis of her research career. Upon returning to Reading in 1995 to a junior lectureship, she set up her research group to study influenza viruses. In May 2007 she took up a Chair in Influenza Virology at Imperial College London.

She is particularly interested in the mechanism by which viruses can cross from animal sources into humans to cause new pandemics. She sits on several advisory boards, for example, offering advice about respiratory virus outbreaks and also works with the Science Media Centre, whose aim is to improve the relationship between scientists and the media.

One of her most notable work involved looking at cells infected with the influenza A virus and identifying physiological RIG-I agonists. This article was published in Cell in 2010, and has been cited over 270 times.

She has served on several editorial boards including *PLOS Pathogens*, *The Journal of General Virology*, *Virology*.

A Themed Collection of Training Resources on Bioaerosols

Prof Jonathan Reid, CDT Director

The CDT provides training across a broad range of topics in aerosol science, delivered in 16 distinct elements of our Core Aerosol Science units. With well over 100 hours of pre-recorded short video lectures, hundreds of worked problems and many additional materials, it can be quite hard to navigate through the resources to find exactly what you need on the training portal. To help support access for partners and students to training materials relevant for specific themed areas, we now provide our first themed collection on bioaerosols.

With the transmission of SARS-CoV-2 occurring by aerosols and droplets, there is a renewed interest in aerobiology, airborne pathogens, the microphysics of aerosol transformation relevant for disease transmission, and methods for sampling and detecting airborne microbes. We have drawn together lecture materials from a number of leading UK academics working in these related areas, including Prof. Ian Colbeck (University of Essex), Prof. Cath Noakes (University of Leeds) and Prof. Sheena Cruickshank (University of Manchester). These are supplemented by opportunities to "Go Deeper With....", problems to work through, and research webinars.

This themed collection can be readily accessed from the CDT e-portal (contact aerosol-science@bristol.ac.uk for more details). We hope it will be the first of a number of themed collections that will be used by partners and students.

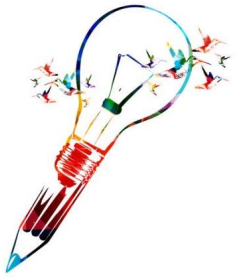
Schedule

TIME	EVENT	LENGTH
13:30	Welcome and Introduction	10 min
13:40	Guest Speaker Interview Prof Wendy Barclay	20 min
14:00	Overview of breakout sessions	5 min
14:05	Breakout session 1	45 min
14:50	Break	10 min
15:00	Breakout session 2	45 min
15:45	Break	10 min
15:55	Breakout session 3	45 min
16:40	A Themed Collection: Bioaerosols	15 min
16:55	Closing remarks	5 min

Breakout Rooms: Topics

SESSION 1	TOPICS	(45 min) 14:05-14:50

1. Aerosol Characterization and Measurement
2. Aerosol Charging
3. Aerosol Modelling
4. Aerosol Photochemistry
5. Aerosol Trapping
6. Aerosol-Lung Interaction
7. Aerosols and Human Health
8. Aerosols and Plant/Crop Health
9. Atmospheric Aerosol
10. Bioaerosol and infectious disease transmission
11. Ice and Aerosol Nucleation
12. Low-cost sensors and networks



SESSION 2	TOPICS	(45 min) 15:00-15:45

13. Aerosols and Chemical Reactions
14. Air Pollution Health Effects
15. Biological Detection
16. CDT Placements/Structure
17. Climate Modelling
18. Emerging Instrumentation
19. Environmental Aerosol Sources
20. Environmental and Urban Air Quality
21. Filtration
22. Hygroscopic Aerosols
23. Indoor Air and Air Quality

SESSION 3	TOPICS	(45 min) 15:55-16:40

24. Aerosols and Light
25. Microfluidics and Aerosols
26. Modeling Aerosol Mechanisms and Basic Processes
27. Non-exhaust Emissions
28. Particle Monitoring
29. Particle Synthesis and Manufacturing
30. Pharmaceutical aerosols and drug delivery
31. Radioactive Aerosols
32. Soft Matter Aerosols
33. Sprays and Droplets
34. Tailpipe Emissions

KEEP CALM AND SAVE THE DATE

Project submission deadline:
Monday 27th September 9 am.

Special Thanks

The Aerosol Science CDT team would like to thank our speaker for sharing their research, our partners and partnership board for their insight and support, and finally, all of our Sandpit 2021 event attendees for participating. Thank you for signing on, and we look forward to continuing these important conversations and to seeing you in person in Bristol soon.

Don't forget to connect and follow us on LinkedIn!

EPSRC Centre for Doctoral Training in Aerosol Science

Key contacts:

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