

UKESM at the Royal Society Summer Science Exhibition, 3-9 July 2017 London

Alice Booth, NCAS and summer internship in CRESCENDO and UKESM

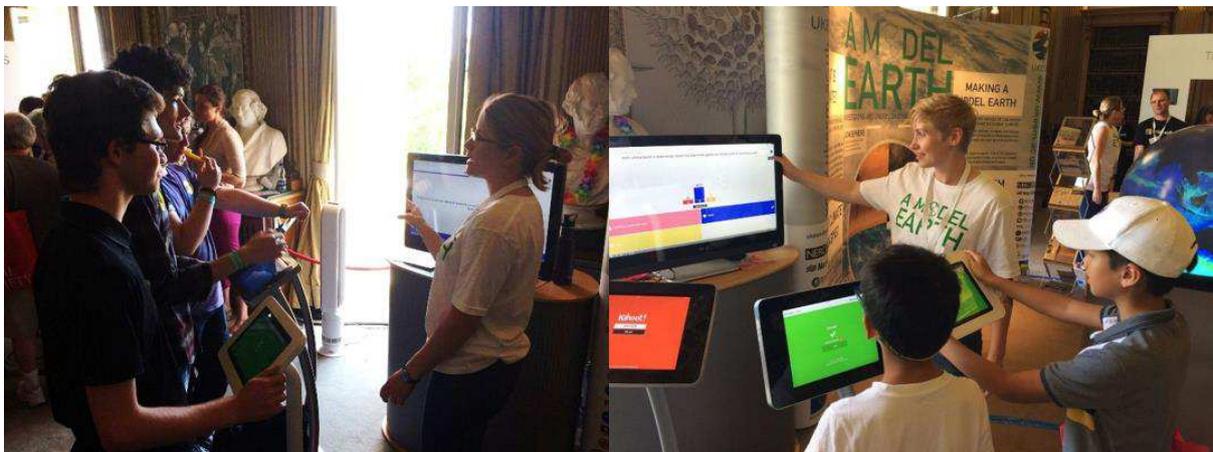
In the first week of July 2017, The Royal Society held their annual flagship Summer Science Exhibition, in the society's home in London. Consistently attracting tens of thousands of curious visitors each year, the exhibition remains as prestigious as it was at its creation, and an incredible opportunity for members of the scientific community to show off their work to the public and develop public understanding of the amazing work that these teams do. This year the UKESM project was lucky enough to be one of the 22 exhibits at the event, and the only one in the field of climate science. Our stand, 'A Model Earth' consisted of a brilliant display, puzzles, an interactive quiz, climate oriented games, information, and our crowd-pleaser: the interactive puffersphere globe, where we alternated in displaying 6 different videos to provide a visual explanation of different aspects of the Earth system. Members from all areas of the project pitched in to help on the stand throughout the week and although completely exhausting, I've yet to come across someone who didn't have an amazing and enjoyable experience.



Top: Alice Booth with the Puffersphere during the exhibition. Bottom: Team photo at the Royal Society exhibition on day 7. From left to right: Alice Booth, Shannon Mason, Till Kuhlbrodt, Lucia Hosekova, Lee de Mora, Colin Jones and Alberto Muñoz.

Bigger than previous events we have attended, the Royal Society exhibition was exceptionally well organised. Shannon Mason from NCEO and a new addition to UKESM, noted that the exhibition was 'flashier' than other conferences he had attended, showcasing 'the best of UK science'. As a higher profile event, the range of visitors was much broader, and whilst all had a general science interest and were clearly curious and intelligent, the 'general understanding of climate modelling or climate change science was relatively low probably due to the low exposure to research most people receive in their day to day lives', noted Jane Mulcahy, a Met Office member of the UKESM Core Development Team. Jane also noted how, although many visitors were not climate scientists themselves, their background in other sciences meant they understood far more than an average member of the public might be expected to. After all, 'it's all the same physics'. For Jane, engagement with younger audiences is a priority, and the Schools Day at the exhibition gave the team a brilliant opportunity to engage with children of all ages. 'If they learn even one thing then I'm happy' said Jane on the topic. Shannon also spoke about the satisfaction of speaking to A Level students about careers in science and knowing that he might have encouraged them to become scientists themselves.

'I thought the interactive quiz was brilliant. You were able to start a conversation with people; ask them questions; and get them to think about what they do know about climate change. People don't realise the breadth and depth of the research that we do. They've had limited exposure to the concepts of modelling or climate science beyond what they hear on the news. They don't see the work that goes into producing those results and predictions. I think helping at these events and being able to communicate your research to the public is really important. You're forced to explain in simpler terms, think outside your normal box, and have a good understanding of all areas of the project as you could be asked anything. I think it definitely makes you a better scientist'. – Jane Mulcahy



Jane Mulcahy (left) and Emma Suckling (right) during the exhibition playing the interactive quiz with visitors.

The variety of visitors meant we were also able to spend time talking to those outside our normal bubbles of similar-minded people and see contrasting viewpoints on the both the politics and science of climate change. 'People know about the concept of 2°C of warming, but they often haven't considered the spatial variation that this involves. It was amazing to see people's eyes light up at the complexity [of temperature change in the simulation of global warming on the Globe]' noted Shannon Mason. The challenge of answering difficult questions such as 'How do you know that your models are right and are actually representing the processes correctly?', a question we often ask ourselves, was also part of the excitement for many of the team as it forced them to think hard about their explanations in order to justify their research to someone who may need some convincing.

I myself was lucky enough to be one of the team who helped on the stand, spending the full week there as part of my summer internship with the project. Having just finished my second year of an undergraduate degree at the University of St Andrews, I'd had very little real experience with climate scientists or the work that they do, outside of the lecture hall. My internship was based around science communication and public engagement, an area I'm keen to be more involved in my future career, an intention encouraged by my time with the UKESM team and at the Royal Society. I'm not sure what I'd expected before going to the exhibition. I certainly hadn't expected talking to people or being on my feet 12 hours a day to be as tiring as it was. I also don't think I'd comprehended just how many interesting people I'd get to meet, from all areas of science and the public. My confidence in public speaking, particularly in explaining research to non-experts, has never improved as quickly as it did at the Royal Society exhibition. It was a pleasure to meet and talk to the rest of the UKESM team throughout the week, and an exciting, albeit daunting, experience to meet the fellows of the Royal Society, including the Vice President of the Royal Society, Professor Halliday, who turned out to have taught one of my own lecturers. Science is a smaller world than I'd expected!



Yongming Tang and Rich Ellis (left) and Cat Scott (right) explaining the simulations and movies shown at the Puffersphere to members of the public.

My main role at the exhibition was to collect responses to a survey I'd prepared before the event, the aim of which was to gauge how effective we were at communicating the project's research to the general public (to see the results visit the article [Results from the visitor's survey](#), in Newsletter no.6). I did this by asking questions on climate knowledge and opinions

to visitors who had been to our stand, and those who hadn't, along with some feedback, and then later comparing their answers to see if there was a trend. Whilst sometimes repetitive saying 'hello! Would you mind filling out this survey on climate change really quickly?' over and over, this did give me the opportunity to explore the rest of the exhibition, meet other exhibitors, and to advertise our stand. My wanderings also prompted several interesting conversations with cheery visitors, often very outspoken with their views on the politics of climate change. There were many who insisted we send our research to President Trump, several more who discussed the problems of short-termism in politics, and even one who, completely seriously, suggested that a cull on a proportion of the population was needed in order to avoid the worst effects of climate change. To this I pointed out that this policy was unlikely to be popular with voters.

When I wasn't surveying, I joined the other members of the team at our stand. This was an extremely enjoyable experience and it was wonderful to see such a range of people engaging in climate science research. I spent a while early on in the week explaining the videos on the globe to an extremely enthusiastic 5 year old who amazed me with her curiosity and interest – certainly a budding climate scientist in the making! A half hour debate with a mild-mannered climate sceptic and a lively discussion with a knowledgeable war veteran, were also among the highlights.

A big thank you to all who helped make the event possible – it was incredibly well-organised and a huge skills-builder for myself in particular. My time there and during the rest of my internship has certainly cemented my interest in outreach and making science accessible to the public. One of the main obstacles in making effective climate change mitigation and adaptation possible is the lack of public understanding of the causes, mechanisms, and impacts of climate change. Fewer still understand the methodology behind modelling or prediction, making effective communication of research to non-experts really important. I would highly recommend attendance of the exhibition next year.



Chris Wilson (left) and Colin Jones (right) talking and playing with the younger visitors at our 'climate games' table.

For more information on the Royal Society and its events see <https://royalsociety.org/>.

To see the results and read more about the survey undertaken at the exhibition visit the article: [Results from the visitor's survey](#), in Newsletter no.6.