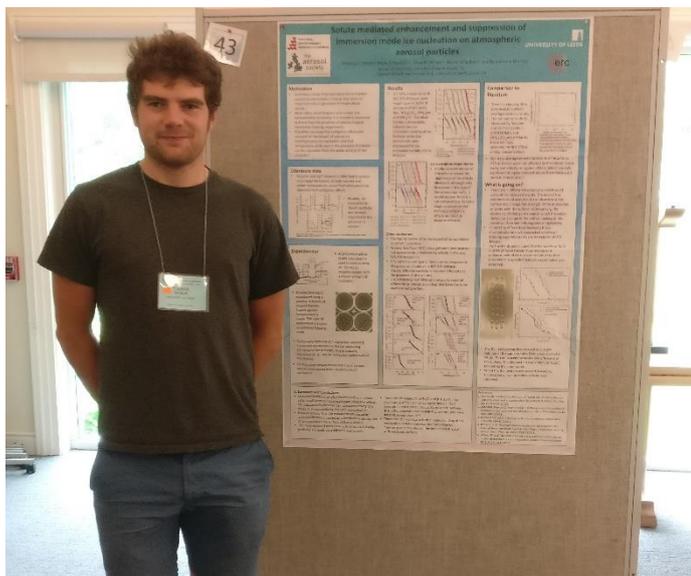


The Aerosol Society Early Career Scientist Travel Award Report

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Thanks to generous support from The Aerosol Society and the meeting organisers I was able to attend the Water and Aqueous Solutions Gordon Research Conference (GRC) held at Holderness School, New Hampshire from the 22nd to the 27th of July, 2018. The conference was a discussion focused meeting of around 170 scientists from all around the world, with an emphasis on presentation of unpublished research. As such, photography of talks and posters is usually prohibited so I had to get specific permission to take the attached



picture. Topics were extremely diverse, ranging from terahertz spectroscopy investigating the nature of individual bonds in water clusters to engineering approaches to water purification. There was a strong emphasis on topics of relevance to atmospheric aerosol, led by talks from Prof Thomas Koop and Douwe Jan Bonthuis on atmospheric phase transitions and charge at air/water interfaces respectively. The meeting was structured with a relatively small number of broad summary talks accompanied by long discussions in the morning, afternoon breaks for activities and discussion and extensive poster sessions in the evening, followed by more talks. The format was ideal for discussion of work and the breadth of the conference fostered cross-pollination of ideas across the many areas to where water and aqueous solutions play role.

I presented my poster, entitled 'Solute mediated enhancement and suppression of immersion mode ice nucleation on atmospheric aerosol particles' during the young-investigators' poster session. I summarised the content of my recent publication in *Chemical Science* 'The enhancement and suppression of immersion mode heterogeneous ice-nucleation by solutes' and some recent additional work. There was a great deal of interest, mostly from molecular dynamicists and theorists interested in heterogeneous ice nucleation some of whom indicated they will look to simulate ice nucleation in the presence of solute molecules. This may lead to the establishment of future collaborations and help to explain the findings of that paper, enhancing our understanding of the role of atmospheric aerosol in ice nucleation.

Additionally, I spoke extensively to other experimentalists, generating new ideas for upcoming experiments and equipment design. Looking forward, I will be investigating heterogeneous nucleation of alkali halides from solution, a process of great relevance to efflorescence of salt crystals in atmospheric aerosol. Surprisingly, there were posters on the simulation of salt solutions in contact with mica particles, which may me to understand future results on this topic.

The meeting has broadened my knowledge on diverse topics related to water and its role in the atmosphere, allowed me to take steps towards possible future collaborations and greatly aided the dissemination of my recent work to a wide audience. Despite the organisers paying my conference fee, I would not have been able to attend without the support of The Aerosol Society, which covered my travel to the meeting. I am very grateful for this support.