

Thomas Bennett from the University of Cambridge, UK: Semester 1 2019

Where have you come from, and what do you teach?

I am a Royal Society University Research Fellow, based in the Department of Materials Science and Metallurgy, in the University of Cambridge. There, I lead a group of around 10 PhD students and Post-Doctoral Researchers. I am perhaps most well known in the field for my work on glasses, or disordered materials. Prior to 2015, only 3 categories were known: inorganic (window glass), organic (amorphous polymers) or metallic (used for surgical instruments and golf clubs). The group discovered a 4th category, which incorporates elements and molecules from across the periodic table, and much of our research concentrates possible applications in next generation display technologies, protective coatings and communications equipment. A second strand involves looking at the fundamental synthesis, properties and applications of porous materials. These materials can be thought of as tiny 'sponges' or 'sieves' capable of separating and storing greenhouse gas molecules such as CO₂, radioactive substances or drug molecules. They find applications as H₂ storage tanks for H₂ in cars, as additives in fruit packaging which prevent over-ripening, and as water harvesting devices for desert locations.



*Helena and Tom on the Mount Somers Circuit
– somewhere near Woolshed Creek Hut*

What interested you in the Erskine Programme/why did you want to come to UC?

I am always keen to expand my international experience, and to learn from different institutions – in order to transport knowledge on best practice back to the University of Cambridge and to my group there. I am particularly keen on utilizing research skills from across the world to solve truly global problems, and New Zealand in general has a rich history in innovation in fundamental science. The University of Canterbury has an exchange scheme with Cambridge, and, hosted by Prof. Paul Kruger, I am really grateful for the opportunity to come.

What have you been doing at UC?

I have just started a lecture course on porous materials, and am particularly excited about being able to factor in latest research in the area. The quality of both undergraduate and graduate students is high, and I am looking forward to working with them to produce an academic review of an unexplored area of the field, which we will aim to publish in an international scientific journal. Outside of the 15 hours of the week spent holding face-to-face and group meetings with members of my fantastic team back in the UK, I've met numerous students in the broad area of physical sciences here, and discussed some fascinating research taking place. My door is always open and I'm enjoying not only teaching, but also learning from students.

What have you most enjoyed about your time here at UC/Christchurch?

Outside of academia, I am an extremely keen trumper – most weekends you will find my partner, Helena, and I walking on a mountainside, wading in a river, or in backcountry hut with a packet of squiggles, playing cards and meeting other trampers! I've been to New Zealand several times before, though personal favourites this time around have been the Greenstone Caples track, Salisbury Lodge in the Kahurangi and the Mount Somers circuit. Evidently, working and living in Christchurch is very different to spending a few weeks in the backcountry, and I am really enjoying learning much more about Kiwi culture whilst here.