11 Professor Iris Moeller

Professor of Geography (1966)

→ "The vision around E3 was one of the things that really drew me to Trinity – that idea of bringing together natural scientists, engineers and computer scientists to proactively confront sustainability challenges resonated with me because I've always seen my discipline, geography, as really important in solving society's challenges. Another key factor was Trinity's emphasis on meeting the UN sustainability goals."

Professor Iris Moeller, recently appointed to the 1966 Chair of Geography, explains how her research fits with Trinity's agenda for E3 and sustainability. "I work in coastal geomorphology – where you can look at the action of physical, chemical and biological processes on the coastal landscape over time. I always seek to combine the discovery of fundamental underlying processes with application to key societal problems. Coastal geomorphology has obvious applications for erosion protection and supporting marine ecosystems and now we're discovering that coastal wetlands are also important for carbon capture – they can store carbon at twice the rate of inland wetlands. I think it's vital that, as a scientist, I give people insight into how the natural environment functions and how we, as humans, are part *of* – not apart *from* – the system. Our actions as humans change the way that the natural environment functions."

Her research is highly international, collaborative and comparative – "I've worked with groups in Australia, the US, China, and Europe looking at how research into wetland might help us better understand mangrove and saltmarsh systems. Also, with the Universities of Singapore and Berkeley finding solutions for world cities like San Francisco, London and Singapore that are adapting to sea level rise." Her research frequently feeds directly into policy – she has helped put together toolkits and handbooks for the UN Environment Programme, the UK Environment Agency, NGOs and private sector workers, including engineering companies tasked by governments to solve coastal flooding and erosion issues.

Her interest in sustainability goes right back to her teenage years – before that word was even coined. "I recently found my teenage diaries and I'm fascinated to see how concerned I was about acid rain and the degradation of Germany's forests. My dad, who was a Professor of Fine Arts, was very engaged in environmental activism around the River Elbe where we lived in Hamburg, so I had an early awareness of river pollution and the effect it had on fishing and on coastal systems – which is very related to what I work on now."

After attending a European School in Mol in Belgium, where her mother moved to teach, and "a gap year" in the Leibniz Kolleg in Tübingen, where she took a number of courses including physics and philosophy, she arrived in Oxford University to study geography in 1989 – "it was the year the [Berlin] Wall came down and shortly before the first Intergovernmental Panel on Climate Change, the IPCC report. I remember buying the hard copy and I still have it. I show it to my students to demonstrate that the scientists got it right – the predictions they made then on global temperature change and sea level rise have by and large proved right. That means that people should listen more to the scientists and take their predictions seriously."

After graduating, she did a Masters in the University of Wales, Swansea looking at the effect of forest fires in Portuguese eucalyptus forests, which was "interesting but slightly too botanical for me". She did her PhD, on how coastal saltmarshes act as wave buffers, in Cambridge University and remained there as a Fellow at Fitzwilliam College and lecturer until her appointment to Trinity. The past year has been taken up by online teaching – she has found the students "amazingly resilient, collaborative and constructive in their feedback" – and putting together a proposal for the 'European Green Deal' call in Horizon2020, and chairing the E3 Undergraduate Education subgroup.

"We will hopefully be welcoming the first students to the E3 Learning Foundry in September 2023. There is huge potential to move away from the traditional transfer of acquired knowledge and towards curiosity-driven teaching, motivated by the questions we are asking as a society. We are reconfiguring and rethinking our teaching and learning spaces – we will have spaces for experimentation, for testing, analysing, improving and designing technology, and other spaces for students to get together and explore ideas creatively. What we've discovered from lockdown is that students really want in-person teaching to be about interaction."

Her other goal for the next few years is to build up the coastal research profile of Trinity. "Cambridge has a really long history of coastal research which dates back to 1927 when Alfred Steers was appointed the first coastal geomorphologist – I'm his great granddaughter, academically speaking, since he was the supervisor of the supervisor of my supervisor. Now I want to set up a brilliant interdisciplinary research group here in Trinity, which will go beyond even E3 to include Arts and Humanities."

She and her family, including her teenage son, are looking forward to getting to know Dublin as it opens up. A once avid rower on the Ouse, she is currently replacing rowing with early morning runs along the Dodder, fortunately within her 5k. Her most exciting destination before lockdown and when restrictions were lifted was Bull Island. "I'm fascinated by Bull Island, which really pushes our definition of what is natural. It's an entirely anthropogenically initiated system, a 200 year old landform which now has an impressive set of ecosystems associated with it. There are many places globally trying to initiate the formation of the types of ecosystems we find on Bull Island and I'm gobsmacked by how little it's talked about in an international context. That's just one example of the huge potential here in Ireland for building up research excellence in coastal geomorphology."