

Mr Chancellor,

Today we are honouring Léo Heller, United Nations Special Rapporteur on the Human Rights to Safe Drinking Water and Sanitation. Léo Heller's life's work has been to establish access to clean and safe water as a basic human right across the world. His story, of how academics with a vision can change the world, should act as an inspiration to all those graduating today.

Newcastle University fully shares Léo's commitment to the right of all to have access to safe water. A human right. We are proud to support the United Nations Sustainable Development Goals, which, of course, include ensuring access to water and sanitation for all. Our Global Challenges Academy highlights our work in sustainable water. Our researchers are developing solutions for water challenges globally with a network that brings together experts in water engineering, energy, health and sanitation to ensure that water is managed and used in a safe and sustainable way.

The contribution of Newcastle to safe water goes back, however, over 150 years. This is a story of not one but 2 graduates who have changed knowledge, practice and policy in the area of safe water.

The other graduate is Dr John Snow. A number of you will now be scratching your heads. Did the "King of the North" in Game of Thrones really graduate in medicine from this university? For the slightly older amongst you the question might be did John Snow, legendary England fast bowler and scourge of the Australians and known, as only a cricketer could be, as "snowy" combine his 202 test wickets with a PhD in fluid mechanics? No. His contribution to mankind was much greater (although single-handedly beating

the Australians at cricket will always be special). A doctor practising in London, in 1854 he was caught up in a terrible epidemic of cholera. He recognised though that all the affected patients had one thing in common, they had drawn their water from a single public pump in Broad Street. Removing the pump handle to stop people drawing the water he, at a stroke proved that contaminated water was the cause of the epidemic and saved many lives. The power of water to harm and the right to be protected from that harm. A human right. The parallels with Léo's career and achievements are clear.

Léo was born in Bello Horizonte in the Brazilian state of Minas Gerais. He was both schooled there and went to university there studying civil engineering at the Federal University of Minas Gerais, a university of over 40,000 students. He went on to join the Faculty at his Alma Mater, developing a strong passion for educating the next generation, rising to the level of Dean of the Faculty. He is currently a researcher in the Oswaldo Cruz Foundation in Brazil. His power to inspire the next generation in the area of Civil Engineering is clear as two of his children followed him into this field. There the story might have ended. An intelligent and thoughtful man following an academic career.

However, the story didn't end there. His career path was very different, yet has very clear parallels with his predecessor John Snow. There are two striking aspects that our younger colleagues also graduating today would do well to think about as they embark on their own careers.

The first is a sense of the journey travelled. This journey can be partly measured in kilometres. For Léo, this journey was from Bello Horizonte to the United Nations building, via Oxford, including a stop-off in Newcastle one June which he remembers fondly, although the question as to whether he went

to the Hoppings in the rain will remain forever un-answered. John Snow's journey was from Killingworth where he first managed cholera as an apprentice physician to London where he remembered the terrible things that he had seen and had been powerless to prevent.

No, in both cases the journey was actually a strikingly similar intellectual one. In Léo's case this journey started in the field of Civil Engineering where he took his BA. He then moved into the science of engineering safe water provision taking a Masters in Water, Sanitation and the Environment. He felt, however, that there had to be more than just understanding engineering. He needed to understand the sheer impact of unsafe water provision on people because people have always been the focus of Léo's work. This took him to the science of epidemiology and a PhD in the area of water, sanitation and health outcomes. There is a quote, however, that says that "wishful thinking is not sound public policy". Understanding the harm caused by unsafe water and doing something about it through engineering at a local level is one thing. Helping everyone at risk is another thing altogether and requires understanding of policy and how it can be influenced. This led Léo on the next stage of his journey to Oxford where he did post-doctoral work on theoretical aspects of public policy and management in the water and sanitation sector. His interest in bad water and how it can kill people evolved into leadership in regional, national and international policy.

Léo's journey culminated in 2014 with his appointment as the 2nd United Nations Special Rapporteur on the Human Rights of Safe Drinking Water and Sanitation. Now when he speaks it is the world that is listening. Human rights and clean water. For John Snow the intellectual journey was from humble doctor to inventor of the sciences of epidemiology and public health. A direct connection to Léo Heller. Léo's message is don't be scared of the journey if

the journey is the right thing to do. If John Snow had only looked after his patients with cholera rather than solving the underlying problem he would have helped many people not millions. If Léo Heller had stayed working in civil engineering he would have helped many people, not the millions he has helped. Don't be afraid of the journey.

The second aspect in common is the burning sense of right and wrong and the overwhelming desire to do something profound to help people. Léo dates this desire from early in his undergraduate career. Realising that civil engineering was an important means to an end, but not an end in itself. An overwhelming sense of the need to make things better, to reach beyond the narrow confines of academic success and failure. I have had the good fortune to speak to a number of Léo's friends and colleagues. One word repeated by all was "care". Léo cares. Sometimes it really is as simple as that. His focus on the rights in particular of displaced people speaks to his caring ethos.

A second word repeated by all was "courage". Speaking up for those with no voice has risks. Brazil in the 1970s and 80s was not an easy place to criticise those in power. John Snow was ignored by government, by those who had allowed the pump to be placed next to a plague pit, who insisted that the pump handle was refitted after the epidemic had subsided. It took another epidemic linked to a pump which was controlled by the pump handle being removed to convince people. More lives needlessly lost. I would like to think that the world is a better place now. A place where the Special Rapporteur can speak truth to power. Where he can care.

Like many great men and women Léo is very modest and unassuming. Friends and colleagues are much more vocal about his achievements than he is himself! He is also a very private man. A loyal husband married to Lao for

LÉO HELLER: DEng

over forty years and proud father of Pedro, Diogo and Carolina. Now he cherishes his time with his four grand-children, at least three of whom are, on past form, destined for a career in civil engineering. The time he values most of all is the time he spends at his house in the countryside outside Bello Horizonte overlooking the mountains. The name? Casa Branca. If my Portugese is correct this means that he lives in the White House. If only!

Mr Chancellor, for his outstanding contributions to human rights and the freedom to have access to clean water I present to you Mr Léo Heller for the award of Doctor of Engineering, *honoris causa*.

Citation by David Jones, Public Orator

16th July 2019