

Mr Chancellor,

“It sounds corny, but every scientist wants to save the world in some way”. So said Patrick Gallagher to the Washington Post in 2011. Corny or not, it is a telling remark, for this man is one of the foremost public scientists and public servants of his generation. Throughout his life he has demonstrated a commitment to making a positive difference – to the quality of life, to commerce, and to education.

A physicist, he has led one of the world’s great science and technology organisations – the United States National Institute of Standards and Technology – known to us in the trade as ‘NIST’ – and as Acting Deputy Secretary for Commerce under President Obama. Now he leads one of the world’s great universities – and one of Newcastle University’s best friends – the University of Pittsburgh – known to us in the trade as ‘Pitt’.

When I asked one of his colleagues at Pitt to describe Chancellor Gallagher in a few words, there was a pause (it’s a difficult question!) and down the line came – ‘brilliant, diligent, ... and he understands people’. It is this rare combination of what my informant called the ‘intellectual chops’ with the capacity to inspire others that characterises his career.

Patrick Gallagher grew up in Albuquerque, New Mexico in the 1960s and 70s. These were decades of immense technological achievement and risk (think of the moon landings and the nuclear arms race). Nevertheless, he did not focus with neutron-beam precision on a career in science and university leadership from the outset. On vacations with his relatives in Pittsburgh he got to enjoy the city’s

PATRICK D GALLAGHER: DSc

museums and amusement parks, leading to a career ambition to design roller coasters.

He spent his summers volunteering with the Amigos de las Américas undertaking public health work in Latin America. He dug wells and installed latrines, but was soon leading projects, managing budgets and negotiating with the authorities. An enthusiasm for collective endeavour was there in Patrick before the calling to science.

At college in Atchison, Kansas, he majored in Physics and Philosophy, and describes his plans at graduation as “don’t go home yet, stay with friends, figure out what to do next. Maybe I’ll teach.” A demanding but rewarding year teaching high school science and mathematics in Missouri kindled the desire to teach in university. This took him back to Pittsburgh where by 1991 he had gained a new love for research, and a PhD from the university that he now leads. Of at least as much importance, this is where he met and married his wife Karen.

Following postdoctoral work in Boston, Dr Gallagher joined NIST as a researcher in 1993, but the leader in him came to the fore as he took on roles that promoted interagency cooperation, for example on neutron and light source facilities. In 2004 he became Director of the Center for Neutron Research. In 2006 he received the Gold Medal of the Department of Commerce – its highest award – for this collaborative work. In 2009 President Obama nominated him as the 14th Director of NIST.

NIST is the United States’ measurement laboratory, but it is also immensely skilled at bringing different interests together to make new technology a commercial reality by agreeing standards. Recent achievements include guidance

on the security of wireless infusion pumps, and creating industry formats for assessing software usability (we'd all like usable software!).

Leading NIST is a very public role. Let me give an example. On a February evening in 2013, amid congressional razzmatazz, President Obama delivered a State of the Union address containing a sobering passage on the need to tackle growing cyber-attacks on infrastructure, businesses and individuals. But how? The morning after, Pat Gallagher was in the spotlight, explaining that this would not be done by a single organisation imposing static standards – it had to be done collaboratively. A year later, NIST had brought industry, government and others together to release a Cybersecurity framework that adapts to this ever-evolving threat, that is available to anyone, and that directs them to as much or as little technology as they need. It remains a global benchmark today.

In 2014 Pat Gallagher was persuaded to return to Pitt as its 18th Chancellor. Like Newcastle, Pittsburgh is a northern city transforming from an economy dependent on heavy industry to one built on education and innovation. If ever there was a role suited to the collaborative, creative skills of Patrick Gallagher, this is it. In the midst of all this history, excitement and change, he can articulate his university's vision for everyone – the city, the state and region.

Dr Gallagher won't know this, but one of our graduates today – Dr Jeremy Revell – worked at Pitt during his doctoral studies. He remembers weather that veered from the mid-30s Celsius to minus 20 in a few months, “Cathy” – the 42-storey Cathedral of Learning whose perpendicular Gothic splendour is absolutely nothing like the Claremont Tower, and living in the large friendly community of Squirrel Hill. When that community was devastated by the horrific mass shooting at its synagogue last October, the images broadcast here of vigils – at Pitt and

PATRICK D GALLAGHER: DSc

elsewhere – showed the world the great heart and spirit that Jeremy felt even during his short time in the university and city.

In this environment, it's not surprising that many of Pitt's major initiatives are community-based and collaborative, whether it is the Pittsburgh Health Data Alliance that seeks to turn data into improved health, or the remarkable Panthers Forward program that aims to alleviate student debt by uniting alumni and current students.

Mr Chancellor, you may have observed that transatlantic diplomacy is not enjoying its finest hour, so it is up to us to build and maintain our friendships, classroom to classroom, faculty to faculty, student to student. As Pat Gallagher's achievements demonstrate, neither brilliance nor diligence alone will help us answer the great challenges we face today – they will not “save the world”. It is our ability to work together, as communities, across the borders of our nationalities, disciplines, organisations and roles, that will help us succeed. It is for his embodying these values, as well as for his exceptional contributions to science, technology and the public service, that I present to you Patrick D Gallagher as a candidate for the degree of Doctor of Science *honoris causa*.

Citation by Professor J S Fitzgerald

17th July 2019