

# Orations relating to the conferment of Doctor of Science honoris causa to Professor William Bannister

Godfrey LaFerla

We are gathered here today to recognise a distinguished international scientist and alumnus of this University and it is indeed my honour and privilege to present Professor William Bannister for the award of the degree of Doctor of Science *honoris causa*. His career spans almost six decades and during this time he has helped shape numerous individual careers, whole Departments and our understanding of several branches of Physiology.

William Bannister was born in Senglea in 1935. He was educated at Lyceum and subsequently at the Royal University of Malta. Precisely 59 years ago to this day there was a student sitting in the front rows here in this Church, about to graduate in Science and Pharmacy. Both degrees were conferred on William Bannister as he was placed first and being always first academically was to remain with him all his life. Three years on, in 1958 he was placed first in Medicine and a further three years on after proceeding as a Rhodes Scholar to Oxford University he obtained a first in Animal Physiology. He remained at Oxford as a Junior Research Fellow to carry out high quality research work opting to work on disproving the current thinking at the time, that acid secreted by the stomach came from the dissociation of carbonic acid after hydration of carbon dioxide by carbonic anhydrase. He developed the experimental model necessary to prove that the generated ATP drives the pump that secretes acid from the gastric mucosa. He was awarded the Doctorate in Philosophy for his work.

Today, William Bannister, stands before you, about to receive his sixth degree, the fourth from his first Alma Mater. But this degree has been earned in a different way, without (he will be pleased to know) any examination; rather, we are here to honour William Bannister as a distinguished international scientist and alumnus of this University.

For those of us who learned from him, it was not difficult to mark William Bannister out as an exceptionally talented and highly motivated person whose love was teaching and carrying out research. Unfortunately those who taught him are no longer with us but he had the distinction of serving as a young Houseman to the late Professors Alfred Craig and Walter Ganado at St Luke's Hospital. It was however the great clinician Walter Ganado who instilled in young William for the first time the idea of doing research. A study on Brucellosis earned him his first paper in the acclaimed British Medical Journal and this introduction to research was the first step on a long distinguished academic journey. At Oxford, he was tutored by the two formidable fellows; JRP (Percy) O'Brien, the Reader in Clinical Biochemistry, who became a determinant factor in his career and a life-long family friend, and the great Neuroscientist Max Cowan who tutored him extensively in Neuroanatomy and Neurophysiology.

Despite being offered a Fellowship at Oxford on the completion of studies, William Bannister decided to return to Malta in 1964 and a year later became Professor and Head of Department of Physiology and Biochemistry until his retirement in 1999. Subsequently, in the year 2000, Council of the University of Malta honoured him with the title of Professor Emeritus and created him a Senior Fellow of the University. I should say that his retirement was from the payroll but not from active scientific research which continues today through various collaborators in Malta and abroad carrying out advanced computing in biological data analysis. He had also a brief interlude back at Oxford University between 1978 and 1982 as a Wellcome Trust Senior Research Fellow.

When William Bannister became Professor and Head of Department His industry, his tenaciousness, his capabilities and his keen sense of direction was recognised by all even in his early days in the Chair. I remember Professor William Bannister very well

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between the period 1972-1977, as I was a medical student at the time. I remember very clearly his lectures about the excitation of the Purkinje cells of the cerebellum and ion transfer across the axon in neurophysiology lectures. He was deeply passionate about tissue fluids and the perfusion pressures in the hind limb of animals as described by Pappenheimer. Of course, as 18-year-olds we hardly understood the significance of all these fundamental physiological principles because we were probably more interested in his drawings rather than the actual deep physiological meaning these concepts had and which many of us had to revisit many a time during our further postgraduate studies in the various disciplines.

By nature, Professor Bannister is the epitome of kindness and gentlemanly conduct. He was always prepared to listen to us students with whatever problems we presented him. He was very keen on hands-on teaching during our physiological practicals and took great pains to clearly explain the fundamental concept to each individual student as he paced incessantly up and down the corridors of the laboratory. He was certainly a welcome sight during the Physiology practical examinations as he would go around asking each individual student how he was performing during the exam and if the student had any problems he would just turn round and mutter in his soft voice "this is a serious shortcoming, but I'll tell you what to do."

However, apart from his qualities as a teacher, William Bannister on becoming Professor of Physiology, soon realised the importance of high quality research for the University to gain an international standing. In his Foundation Day Oration in October 1969 entitled "How much research?" he emphasised the pursuit of excellence in research. This created quite a stir as his ideas on far going research were unheard of at the time. The University actually published the oration to instigate support for research which was non-existent at the time. Instead, rather than facing the reality of the time, William Bannister sought external funding and was able to obtain significant funding over a period of time from the Nuffield foundation and the Wellcome Trust in the United Kingdom. This funding enabled William Bannister to establish international research at the University. Collaboration through consanguinity played a major role in this development as William was joined by his brother Joe Bannister following the latter's return from Oxford in 1974. The work on copper proteins established an international reputation for our University and this collaboration continued at Oxford in 1978 with the work being extended to free radicals. Unfortunately the link was cut when William returned to Malta in 1982 to write a number of publications and Joe moved to become Professor of Biological Chemistry at Cranfield University. William was recalled to the University in 1987 but Joe did not return until 1994 and by then he

had decided to pursue other pastures but not before they produced a paper on the discovery of superoxide dismutase which has a chromosome linkage with Down's Syndrome. This paper became famously known internationally as the Bannister and Bannister paper.

However, William continued with his work particularly in computational biology. William has published 156 publications of all kinds in international peer reviewed journals and for many years acted as a referee for these journals. His scientific visibility is well known internationally. Recently, Research Gate which analysis scientific visibility gave him a score of 95%. William's scientific work was not only on acid secretion, copper proteins and free radicals but extended to other areas particularly hemoglobin. Although William has a proclivity for going into a wide range of subjects, this has not gone into his head. He is the same modest person that we have always known. His great love was always the medical school and medical profession. Few people know that when an adult hemoglobin variant was discovered in his Department in 1970, he decided to name it hemoglobin St Luke's in memory of his introduction to scientific research at St Luke's hospital. The University is proud to recognise William Bannister's many achievements since he first graduated. He is a scientist of distinction, as well as being respected and admired for his ability to get on with everyone, regardless of their status or background.

Chancellor, it is my honour to present Professor William Bannister, for the award of the degree of Doctor of Science, *honoris causa*.

### **Professor William Bannister What is a university?**

Distinguished and honourable guests, I am deeply moved by this occasion. The University has already honoured me by according me the title of Professor Emeritus and Senior Fellow, and I was not expecting today's added honour.

It is customary to make an oration on these occasions. I propose to be brief and put before you some questions that have bothered me all my university life. My teaching vocation has been in Human Physiology and my research vocation has been in Biochemistry at this university and here I come to my first and primary question, 'What is a university?' The consensus of opinion is that a university is a centre of teaching and research concerned with the pursuit of excellence in both areas. To some extent that definition is idealistic. Furthermore, I have problems with the idea of excellence, which I find exceedingly subjective. I prefer to define a university as an institution of intensive teaching and research. The conjunction of teaching and research is very important. Teaching and research are mutually beneficial. I hope you will not find me making dogmatic or ex-cathedra statements. In any case, such

statements are not as bad as they may seem to be because they stimulate criticism and new thinking. I have no doubt this university is a teaching-intensive institution, which is its primary purpose, but I doubt how it can maintain that position in the long run with an ever increasing number of students and a stationary number of full-time teachers. On this point it is prudent for me to stop here because I am not qualified to speak on education policies and whereof one cannot speak thereof one must be silent. That, of course, is a little gem from Wittgenstein.

I wish to make a point here about teaching. I think our primary function as teachers is to point the way to students, which may make them think that we teach nothing. If that happens it is our fault. It means we have not encouraged them sufficiently to cultivate their minds. In plain language, we have not encouraged them enough to use their minds. If we train them to use their minds, a task that is by no means easy, they will find inexhaustible sources of interest in the subjects that we teach them and will not think that we teach them nothing. There is more to this. With a properly cultivated mind they will be more likely to succeed in their second-life after university, as they will be more likely to adapt effectively to rapid change. I have a thought from Stuart Mill that I rather like. Applying that thought to a university, we need to ensure that we do not create what he calls small men. What small men can do is obvious. They can do nothing.

A teaching- and research-intensive university is among the best assets that we can have and invest in. It essentially means that we are good in research and education and delivering the service to the nation that follows. Furthermore, co-existence of research and education is essential for technology transfer flow from a university. From what I observe, the university has started to create a critical mass of researchers and research students, appropriate infrastructure, and innovative spirit. This brings me to my second question here, which is 'How much research?'. First of all we need to agree on what we mean by research. It is commonplace to define research as systematic, critical and self-critical enquiry, which aims to contribute towards the advancement of knowledge. That is typical academic thinking which, however strange it may seem, I do not find very fruitful as such. To my way of thinking, there are two kinds of research, basic research and applied research, whether inside or outside academia. Basic research informs applied research. It is the bedrock on which applied research is built. This is strikingly evident in current medical science and biotechnology. A strong case can be made for basic research as indispensable for an institution of higher education with research students as it educates the minds of the future. It is minds enlightened by basic research that makes possible the advance of technology.

Now my question, 'How much research?'. I have been preoccupied with that question all my working life in experimental science, and I am returning to it again here in an oration after no less than 45 years. All scientific research depends on having ideas that work. Productive research ideas that extend existing scientific knowledge are not difficult to come by. They come surprisingly easily from knowledge of current science, sifting of that knowledge, and imaginative thinking. Unfortunately experimental scientific research is plagued by the problem of adequate funding. We cannot expect the university to provide us by itself all our requirements in what we undertake to do. We have to face reality and seek extramural funds which are by no means easy to obtain, but they are vital if we wish to attain visibility in the highly competitive international field of science. From what I observe the university is making strenuous efforts to obtain extramural funds from all sources available to it. Once we have funds for scientific research we need to make certain that we make proper use of those funds for productive work. I can only speak for the biomedical sciences and I have to say I have high respect for the admirable work of present members of the university currently making inroads into the area of internationally acknowledged biomedical science and achieving a reputation for themselves and enhancing that of the university.

Another aspect that I wish to mention in connection with facing reality is our need to collaborate with powerful research groups at other universities and research institutions to do broad ranging and deep scientific research. Fortunately, unlike extramural funds, this materializes almost by itself once we have made a valid start and achieved a respectable scientific position with what we have at our disposal. That can be done and should be done unless we want to resign ourselves to doing nothing. It is not in my nature to elaborate on the obvious, and I propose to stop at this point and thank you for bearing up with me.