

Graduation ceremony – Rhodes University

George F R Ellis

April 12th 2019

1. Welcome

The Chancellor, Justice Lex Mpati

The Vice-Chancellor, Dr Sizwe Mabizela

The Chairperson and members of the Rhodes University Council

Deputy Vice-Chancellor, Dr Peter Clayton

Deputy Vice-Chancellor, Dr Chrissie Boughey

The Public Orator, Distinguished Prof Paul Maylam

Deans, academics, support staff, and students

Distinguished guests, ladies, and gentlemen

And, not least, new graduates, and families and guardians of graduates

it is a great honour to be here today. I am delighted to receive an honorary degree from Rhodes University, which is such an illustrious institution with such a proud history. Thank you for this award, which I will treasure.

I want to start by congratulating all the graduating students. You have worked hard and proved you can do well, and are receiving a degree which recognizes that you now have valuable specialist knowledge and abilities. You are an expert in some area of thought, and your degree certifies that this is the case. Congratulations on this achievement, and for persevering with all the commitment that this entails.

Your family and friends are proud of you for this achievement. A graduation is always a joyful occasion – you have finished one stage of life and are moving on to another, and this ceremony recognizes both your achievements and the transition you are making. Opportunities and possibilities are opening up before you, decisions will have to be made, life will be different from now on. It may be a bit intimidating but hopefully also exhilarating. It is a great step in life.

2. World class university

I want to emphasize that you are being awarded your degrees by a world class institution. What this means is that they will be recognised everywhere in this country, and indeed anywhere in the world. The degree has such value because of the status and recognition the university has achieved through the dedicated work of hundreds of academics and staff over the course of more than a century. They

have built up an institution of real worth, whose imprimatur is on your degree certificates. This gives you access to many further opportunities both here and abroad. In my own case I was able to go to Cambridge and be accepted into a PhD program there because those at Cambridge knew my BSc degree from UCT was world class. Because of it, I have been able to contribute to the development of scientific knowledge in my own society and with research groups around the world. Treasure what it means to be awarded your degree from this institution and that your academic achievement will be recognised anywhere in the world, as well as by businesses and other institutions in South Africa.

The international recognition your degree will receive is part of a significant theme: students from Africa and in particular South Africa can have the same success as students from anywhere in the world. In intellectual terms, we form part of a global community and can produce intellects and abilities that are amongst the best in the world. That is what this University and my own University stand for and are part of. Our graduates are equal to those in other parts of Africa, in India, England, the United States and France and Germany in every way. Let's rejoice in this worldwide connection and recognition.

This is particularly demonstrated through the PhDs that will be awarded today. The undergraduates here have demonstrated their depth of understanding of their subject, which is a great achievement, but a PhD is something more. Each PhD degree represents research work that has extended human knowledge to where no one has ever been before. Each graduating PhD student has become a world expert in some specific area because they are at the cutting edge of creating new understanding that has never before existed in the history of the Earth. The whole PhD examination process by experts in your subject verifies that this is indeed so. You are trail-blazers in your topic, leading the way in human understanding, and you have tamed some part of the unknown. Human knowledge is a little bit greater now because of your work. It is a wonderful achievement.

You have of course built on the work of countless others that has created the amazing structure of human science and technology – a vast cooperative enterprise that has achieved extraordinary results such as aircraft and dams, iPhones and the internet. Isaac Newton said that he achieved what he did because he stood on the shoulders of giants. That is indeed true. But the extra point he did not say is that when he stood on the shoulders of giants, he then looked in the right direction! That capacity – to see where the new developments will arise, what is the direction that needs investigation and will produce new results – is at the heart of human creativity and achievement. Incidentally South Africa is a world leader in radioastronomy through the development of the Square Kilometer Array radio telescope in Carnarvon in the Karoo. Rhodes University has played a significant role in that development of that project.

3. Technical capacity

You are graduating with degrees in science. This is a subject that has the ability to change the world. It is common in history to focus on rulers and their subjects, armies and battles, the rise and fall of empires - political leaders and political issues. These are of course important. But in the broader view of things these are the users of what makes the deeper changes to human history. This, in a real sense is about the rise and use of science and technology.

Let me illustrate by some specific example. Isaac Newton was the first to understand the laws of motion that govern how objects move. This underlies all engineering, such as the design of motor cars and aircraft, and will continue to be the foundation of mechanical engineering as long as we design and make them. James Clerk Maxwell discovered the way that electricity and magnetism work together to create light, and this led to the recognition of the possibility of radio signals and so the existence of radio and television, iphones and GPS systems. This will continue to be the basis of radio technology for all time. He has transformed everyones life. Alan Turing worked out how general purpose computers could be constructed and so laid the foundations for all digital computers and the huge revolution in our lives that that entailed.. John Bardeen discovered how to make transistors and so laid the possibility for all the digital devices in the world today. Charlie Townes worked out the possibility of the laser, and so made the existence of CDs and DVDs possible, as well as transforming experimental physics and even parts of engineering. Alan Cormack worked out the theory of the CAT scanner and constructed the first working model of one at the University of Cape Town, transforming medicine forever: CAT scans, PET scans, and MRI scans are now a routine part of medicine and are transforming neuroscience. Grace Hopper transformed computing by developing the first compiler ever. It is because of her that you can enter easily understood commands on your computer, instead of having to tell it what to do in binary code – which is an almost impossible task.

In each case (and many more I could mention) these discoveries were then adopted by all countries in all parts of the world, irrespective of their political systems or philosophical ideologies. They are the common property of all humanity and will remain so until life on Earth ceases. They are the truly transformative forces in society.

An amazing local example is Siyabulela Xuza who began experimenting with rocket fuels in his mother's kitchen. This passion turned into a serious science project that culminated in him developing a cheaper and safer rocket fuel.. Siya's science project won gold at the National Science Expo and the Dr Derek Gray Memorial award for the most prestigious project in South Africa. This led to an invitation to the International Youth Science Fair in Sweden in 2006, where he presented his project to the King and Queen of Sweden and attended the Nobel prize ceremony in Stockholm. Xuza's field of expertise is energy storage and he is currently developing a sustainable model for energy storage based on micro fuel cells in South Africa. He says "I'm motivated not by material things but by

achieving significance.” His long-term goals centre on creating his own energy solution company, something he says will help harness Africa’s potential in the energy economy.

So as you go out and enter your new life, be creative: imagine what can be done, work out how to do it, make it happen. You have the power to make a real difference at either a fundamental level, or in the applications of what we know to society around us. Treasure that opportunity and use it.

4. Values: what is worth doing

But as well as developing and using your technical capacity, what matters crucially are your values as you lead your lives. What contribution you will make will depend on the values that underlie your work and your life. There are two specific issues I want to mention in this regard.

Firstly, there is the basic issue of the direction one’s life takes. Martin Luther King said

“An individual has not started living until he or she can rise above the narrow confines of his or her individualistic concerns to the broader concerns of all humanity. Every person must decide whether he or she will walk in the light of creative altruism or in the darkness of destructive selfishness. Life’s most persistent and urgent question is, “What are you doing for others?”

In the end there is only one real question facing us: are we living our lives just for ourselves, or for the common good? Are we concerned just with our own welfare, or with the welfare of others?

This is the key individual choice we all make: to live selfish or selfless lives. And if we choose just to work for our own welfare, we won’t contribute to making this country a better place. We won’t be playing the role we ought to in making South Africa place worth living in for everyone.

Secondly this issue arises also in societies and in the world at large. Globally we are experiencing a crisis of rising anger and resentment. Inequality and cultural differences are leading to group conflicts based in polarisation and the idea of us against them, leading to devaluing the other and, in extreme cases, to xenophobia. We are staring into an abyss of conflict and destruction as sectional interests divide us and generate hatred and fear.

You have to choose where you stand in facing this situation, and how it will work out in your working life. Your actions will make a difference. The future of this country in particular depends on a values renewal in public life: the need for a change to a spirit of caring for others, caring for the poor and valuing the humanity of all. This is indeed taking place in many cases, many individual actions and

wonderful NGO projects across the country, but it is often not the spirit of the country at large where many people are sowing division: telling people its us against them.

We are all in this together in South Africa, and the challenge now is for us to resist stereotyping as we challenge inequality. We will do this if we give one another the chance to be part of the change for the better for all, rather than working against groups we designate as outsiders, for whatever reason. We each have one life and one chance to do something worth doing, and it is crucial in creating a better life for all that we rise above the temptation to stereotype, treating everyone around us with respect and dignity, no matter what group they belong to, insisting on our common interests and common humanity. Following the clarion call by Bishop Tutu, we must resist denying anyone's humanity, or demeaning them: while not tolerating racism and other prejudice, we must still see the common humanity of each of us, as is so beautifully entailed in the traditional African spirit of Ubuntu. Then we will be building a country worth living in.

5. Understanding context

We must of course do this with a sound understanding of the context in which we live: of being part of Africa but also part of the wider world, contributing to and benefiting from both. And we must understand our South African historical context of achievement and failures, of repression and struggle, as well as its present context of inequality and possibility which is the challenge we face.

As to this history, there is just one thing I wish to say. The struggle against Apartheid had many aspects, carried out by a variety of people. I think it should be better known that UCT and WITS and Rhodes are part of a strong tradition of resisting injustice, with students and staff having stood up against Apartheid for decades. Yes they were largely restricted to White students but that was forced on them by the Government against their will: they were not antiblack, as some have stated. I remember clearly marching through Cape Town with thousands of UCT staff and students to protest the Separate Education Bill; the way UCT struggled to admit black students using various stratagems; the introduction of mixed residences when it was still not allowed by Government policy. I also remember UCT students protesting on de Waal drive about police brutality, with a police helicopter hovering overhead, police sharpshooters on the roof of the Kramer building, and teargas rising over the maths building as the riot police charged up the steps to disperse protesting students. Many of us fought to oppose Apartheid in different ways, and were hated by the Government of the time for that reason.

As to the present, we are a country in a state of crisis because of massive poverty and inequality, a dysfunctional school system, massive corruption in the public sphere, and the undermining of public

institutions for sectional interests and to protect corruption. We face a significant housing and employment crisis, which need urgent action. And we are in much pain and anger about this situation. This is the context in which you will be working and seeing what you can do.

6. Constructive way forward

Despite these negatives, we are also in a country of possibility.

As I have suggested, the country needs a renaissance of sound values in public life, resisting corruption, working for the common good; recognising hurt and poverty and inequality, working to counteract these baleful residues of the past; and supporting those working to create the values needed for a better life, often at considerable cost. As well as your technical role there is an important role to be played in building up a country that can work economically and socially. The creative challenge is to see how to do this.

I will make just one comment here. It has always been my experience that in working together on a joint project with people of integrity and good will, 'race', religion, and gender become irrelevant. A spirit of good humour, tolerance, respect and problem solving is possible, and does happen when people trust one another's integrity and work together for the good of the whole.

I wish you all well as you make your way into the future. You have the ability to make a sound contribution to correcting what is wrong in society and improving life for all.

George Ellis