

Faculty of Science Centenary Dinner

Monday 1 October 2018, Spier Wine Estate

Opening speech by Professor Louise Warnich, Dean: Faculty of Science, Stellenbosch University

This evening we are celebrating a 100 years, and more, of Science at Stellenbosch University. A 100 years of a *particular frame of mind*, which is also the title of the book that is launched tonight. This phrase was coined by Professor Samuel James Shand, professor of Geology, shortly after the establishment of the University of Stellenbosch in 1918, and I quote:

A university is not a lecture theatre, or a library, or a laboratory: it is not a building or a place at all; its essence is a frame of mind; the true character of a university is the 'will to knowledge'.

But it is not only the title of the book that I want to draw your attention to. The cover of the book features a model from the Department of Earth Science's collection. This is the molecular structure of almandine garnet, a red garnet. Thanks to Professor John Clemens, we now know that models such as this one, and I quote from the book, "were used to illustrate the unit cells of molecules of various minerals, and the nature and lengths of bonds between ions, The strong bonds and short bond lengths result in garnets being hard and having a high refractive index (giving it an almost diamond-like sparkle when broken or cut). This is why it is a prized gemstone."

In more than one way, this model of a garnet also proved to be an apt metaphor for the Faculty of Science and its people.

Through their research, and will to knowledge, our scientists reveal the beauty of the natural world when they, for example, investigate intricate cellular infrastructures under a confocal microscope at nanoscale resolution, or when they master a new mathematical proof. In Bertrand Russels' words: "Mathematics possesses not only truth, but supreme beauty".

But apart from being beautiful gemstones, garnets also have many other uses. They can be used as waterjet cutting abrasive blasting media, water filtration granules, and abrasive powders. Likewise, science is applied in an amazing array of applications in the faculty: such as using principles of Crystal Engineering to design new functional materials, or using machine learning to identify great white sharks according to the patterns on their dorsal fins.

This is what the scientific frame of mind is all about

What we have achieved over the past 100 years are due to the dedication and creativity of our staff, teachers, researchers and support staff AND our students who contributed to knowledge generation and knowledge sharing at Stellenbosch University, but also nationally and even internationally. We also need to acknowledge the support of Stellenbosch University's senior management and the professional administrative and support staff during all these years. We are extremely grateful to many stakeholders who supported us financially and in other ways, such as the Department of Science and Technology, most recently through the NRF, various industry partners, and many more.

It is hard to imagine that a hundred years ago, all the glassware and chemicals for Professor George Gordon's 'Laboratory for Experimental Sciences' were stored in two small cupboards in a two-room building in Ryneveld Street.

Today the Faculty has grown to more than 170 laboratories in eight academic departments, housed in 13 buildings, with access to state-of-the-art-analytical equipment. Every year, nearly 3 000 undergraduate and postgraduate students are trained in the natural sciences. We offer service modules to students from 6 other faculties.

Today, 119 or almost 70% of our academic staff hold NRF-ratings. Six of them are A-rated scientists. We host three centres of excellence funded by the National Research Foundation and the Department of Science and Technology, 11 research chairs, as well as various institutes and centra.

We are also extremely proud of the achievements of our alumni, many of them breaking new ground in fields such as nanotechnology, machine learning, biotechnology, and systems thinking, some of them are here tonight.

As we celebrate 100 years of science this evening, we all know the journey has not always been easy. We have lived through the South African War, two world wars, the Cold War, apartheid, and four global recessions.

Today we may face different challenges and new developments: the fourth industrial revolution, Artificial Intelligence, and genetic manipulation; also global change, with severe threats to biodiversity and ecosystem services. Now more than ever, the fundamental sciences have a role to play. By promoting research, including interdisciplinary research, we aim to address the complex challenges of our time, working hand in hand with partners in industry, and premiere research institutions internationally and locally, such as the CSIR and iThemba LABS.

In our centenary year we would like to reaffirm our commitment to strengthen science and higher education in South Africa. We are acutely aware of the injustices of the past, and we are working hard to redress these scars on the higher education sector. We are doing this through scientific excellence and relevance to society; and we are doing this by preparing our students to play a leading role in the future world of work. As an institution with the capacity and track record of successful MSc and PhD training, we remain committed to develop the next generation of South African scientists - men and women who will become catalysts in creating the knowledge-intensive economy that is so crucial to South Africa's growth and development. However, many talented young South Africans simply cannot afford postgraduate studies. Therefore the Faculty of Science has launched the [Catalyst Fund for Science](#) in our centenary year to support qualifying and deserving postgraduate students. This evening, our centenary book is offered at a special reduced price of R550. However, should you pay the full price of R780, the difference of R230 will be transferred to our Catalyst fund for postgraduate student bursaries.

To conclude: Over the past 100 years, many scientists, staff and students, have contributed to where we are today. As with the elements in this garnet structure, they were not all identical. But each one of them contributed to us being a faculty – one which today I would venture to say has become a precious gemstone amongst Stellenbosch University's faculties. Our success in future will continue to be dependent on exceptional people, and an environment wherein they can thrive.

Going forward, we remain committed to fostering a particular frame of mind, one with an insatiable quest for knowledge.

THE END.