

# Message from NSTF Executive Director

## Transforming the world one lab at a time

I had the unexpected and delightful opportunity to visit China for a week in September this year. I had never done so before, and did not know what to expect.

### Feelings about China

There are plenty of reports on recent developments and on the astounding progress China has made in its economy and the improvement of citizens' lives in just a few decades. However, I remembered reports on the sweatshops in (roughly) the 1950s to 1980s, and the severe repression of citizens' resistance to government.

I have also experienced the nervousness related to the rise of China as a superpower, and the general fears of South Africa and other African countries being subjected to a new colonialism.

These concerns remain. During the visit, however, I was inspired by the collaboration between a Chinese and South African university. It's a win-win situation (more about that below). If deals between our countries are brokered in a similar manner where both countries benefit, it could be very productive and allay some of South Africans' fears.

### Seeing a country prospering

I also got a glimpse of everyday life in Beijing and Shijiazhuang, and saw for myself what millions of others have seen – that the people seem to be prospering, at least in the big cities.

It is hard, coming from a country like South Africa, to grasp the size of the People's Republic of China. China's population is about 1.42 billion, which is about 20% of the world's population. This is four times the population of the USA, and twenty-five times the population of South Africa.

To have lifted the majority of the Chinese population out of poverty required political will and enormous determination. Currently about 70% of the population attends tertiary education. Although the manner in which China has achieved this remarkable transition cannot be transplanted to South Africa, we can nevertheless be inspired and learn from them.

### Sino-South African collaborations

Sino-South African collaborations have been taking place for some time, at various levels of society and academia. This is part of the 'great opening up' of the People's Republic of China over the past 20 or so years. Our respective Presidents, Cyril Ramaphosa and Xi Jinping, have had reciprocal state visits and agreed to our countries working together.

High-level science and technology delegations have paid reciprocal visits. It is not entirely coincidental then, that this collaboration between Unisa and Hebei University of Science and Technology was started in 2016, and launched on 25 September this year.

### International Joint Laboratory for New Energy

The 'International Joint Laboratory for New Energy' is a joint initiative between Hebei University of Science and Technology and the University of South Africa (Unisa). It is based in the city of Shijiazhuang, Hebei province. The lab provides a platform for the researchers from both universities to research green energy development. The two universities will carry out in-depth research on biomass utilization, carbon dioxide chemical storage, fuel ethanol, hydrogen utilization, etc. They will jointly train and supervise doctoral students.

### South African expertise – Prof Diane Hildebrandt

Although both parties are contributing to the establishment and success of the endeavour, the significant expertise comes from South Africa. This is in the person of Prof Diane Hildebrandt who is the Director of the new laboratory. Diane Hildebrandt is Professor of Chemical Engineering and the Director of the Institute for the Development of Energy for African Sustainability (IDEAS) at Unisa. She and the Head of the XTL/FTS research group in the Institute, Prof Liu Xinying, are based at the Unisa Science Campus in Roodepoort, west of Johannesburg.

Prof Hildebrandt received an NSTF-South32 Award in 2017 for Engineering Research Capacity Development. She is a member of the Royal Society of South Africa, the Academy of Science of South Africa (ASSAf) and the South African Academy of Engineering (SAAE).

### **Vision of a greener economy**

China is purposely attracting experts to assist them in their transformation to a greener economy. The national and provincial governments stimulate international academic collaborations that are relevant for this purpose. In 2017, Prof Hildebrandt was selected in one of the first programmes to bring 100 foreign lecturers/trainers to Hebei Province.

Although there is a clear agenda and wider vision on China's side, there is also common purpose with South Africa's stated national objectives as described in the National Development Plan and other policy documents, as well as the top-quality research being undertaken already by South Africa's universities and research institutions.

### **The launch and NSTF forming connections**

The South African delegation consisted of: Vice-Chancellor of Unisa, Prof Mandla Makhanya; Prof Hildebrandt; Prof Liu; two South African post-doc researchers, and myself (on behalf of NSTF).

The Chinese delegation that received us and launched the laboratory included the Vice-Chancellor of Hebei University, provincial officials, and Mr Wang Yuding who is the chairman of the Communist Party Committee of Hebei University.

The NSTF was invited in order to open up possibilities for communication and collaboration between other South African and Chinese institutions/organisations. Umbrella organisations such as the NSTF are highly regarded in China. For me it was an opportunity to do what NSTF does – to form connections and facilitate contact between possible partners in our respective countries.

### **News of the launch**

The following was reported in the online news platforms Chinanews.com and Sciencenet.cn (and translated into English):

“Mr Wang Yuding the chairman of the Communist Party Committee of Hebei University, said that the university wanted to achieve a sustainable, healthy and rapid development. It is actively contacting and cooperating with IDEAS at Unisa, with its leading edge and famous scientists to solve the issues affecting the economic and social development of Hebei province. Many honourable overseas scholars and experts are successfully introduced to work in Hebei University.”

“Prof Liu Ruijing of the Chemical Engineering School at Hebei University, said that Prof Hildebrandt was selected by Hebei in 2016 to build a collaborative academic team at the university. “The team is going to tackle certain major scientific projects” in the run-up to the 2022 Winter Olympics, and for the benefit of the economic development of Hebei province, for example the utilization of biomass, environmental protection, energy saving and emission reduction.”

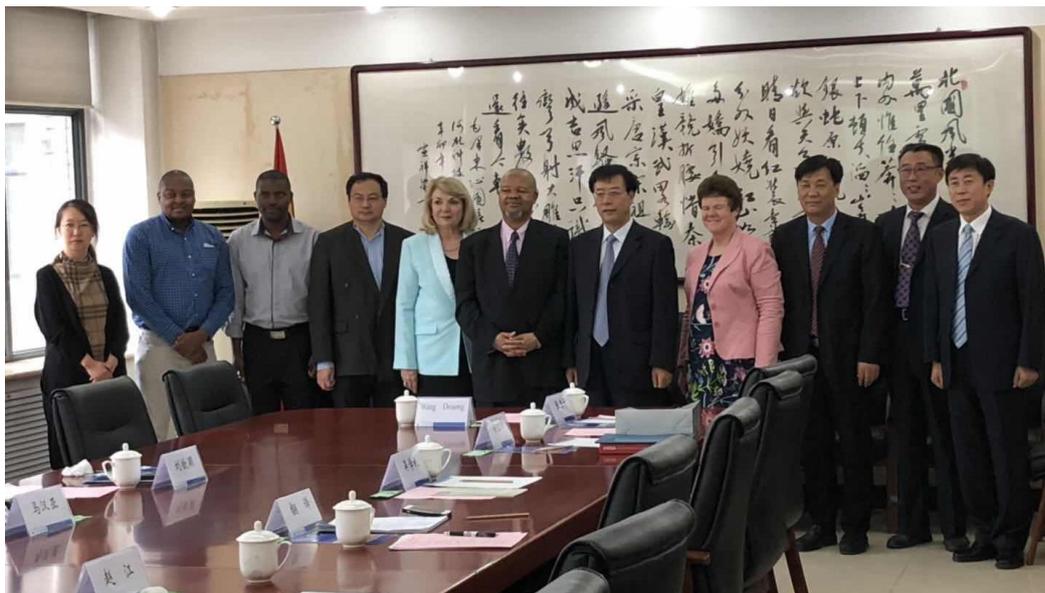
Although the above pronouncements sound like propaganda, they are not targeted at South

Africans. These appear in Chinese media targeted at their local audience – to show that the expensive initiatives are for the benefit of the province’s population.

### Launch of the ‘International Joint Laboratory for New Energy’ at Hebei University of Science and Technology, in Shijiazhuang, Hebei Province



Dignitaries unveiling the plaque.



From left to right: Individuals photographed included South African post-doc researchers; Prof Liu Xinying of Unisa, Prof Diane Hildebrandt of Unisa; the Vice-Chancellor of Unisa, Prof Mandla Makhanya; Ms Jansie Niehaus, and Hebei University professors.



The two translators sitting at the head of the table. The Hebei University senior management and academic staff on the left and the South African delegation on the right.

(The launch was reported on Chinanews.com and Sciencenet.cn, and in Unisa’s College of Science, Engineering and Technology news. The above photographs appeared in these news items.)

*The opinions expressed above are those of the Executive Director, Jansie Niehaus, and do not necessarily reflect the views of the Executive Committee or members of the NSTF.*