

# | SIBUSISO SIBISI |

## TOP THREE AWARDS

- United Nations Scholarship
- National Order of Mapungubwe (Silver), 2007
- Fulbright Fellowship (CalTech), 1988

## DEFINING MOMENT

Being stimulated by parents and teachers in a “critical defining environment”.

## WHAT PEOPLE DO NOT KNOW

Dr Sibusiso Sibisi, Chief Executive Officer (CEO) of the Council for Scientific and Industrial Research (CSIR), is a runner, swimmer, cyclist, and he rows. This fitness for purpose, ability to perform, and to keep running (or rowing) until his goal is reached, are key characteristics that apply to many other aspects of his life.



## A FITNESS FOR PURPOSE

Born in Mariannhill, close to Durban in KwaZulu-Natal, Dr Sibusiso Sibisi attended St Francis College in Mariannhill where he completed his Matric, avoiding the worst of apartheid's system of Bantu Education, while not escaping apartheid's seriously negative effects on the rest of his young years. His interest in science was supported and stimulated by his parents (neither of whom was a natural scientist) who, as part of their support, bought him a weekly series of magazines titled *Understanding Science* which deepened his curiosity; and by his teachers, the nuns at St Francis, who were good educators and who also stimulated his existing interest in physics. Sibisi believes that time in his life, which included a strong sense of focus, was what he calls "a critical defining environment".

Sibisi left school at the end of 1973 and, at about that time his mother, who had studied abroad at the University of Cambridge, was offered an academic post in England. His family moved from Mariannhill to Birmingham where, with a United Nations Scholarship (which supported him through to the completion of his PhD) he attended the Matthew Boulton Technical College, studying for, and writing, his A-levels – and was admitted to Imperial College, London, as an undergraduate working towards a BSc in physics. His results were so outstanding that his next step was to enter the Department of Applied Mathematics and Theoretical Physics (DAMTP) at Cambridge, where he completed the Part III – a graduate level course that would lead into a Masters or doctors degree. Sibisi moved directly into the doctoral programme and completed his Cambridge PhD in physics in 1983 – at the age of 28.

In these years, his focus of interest was in the area of probability theory and analysis, which is used to help draw inferences from large data sets in a range of disciplines, including, for example the vast arrays of astronomical data that will stream earthwards from the Square Kilometre Array. He feels that a paper, which he and his supervisor co-authored on this topic, is probably the greatest single research contribution that he has made to scientific knowledge. In addition, he feels that his commitment to translating

research findings into commercial and social applications, his strong sense of the relationships between research and innovation, have become part of his contributions to the wider field of science.

By the time that he had completed his PhD, Sibisi had published articles in two internationally respected scientific journals (one of which was in *Nature*) – a clear indication that ensuring fitness for purpose, his ability to perform, and reaching his goal were characteristics well established in his approach to life.

On completing his PhD, Sibusiso returned to South Africa to take up a position as a lecturer in applied mathematics at the University of the Witwatersrand (Wits). Moving into applied mathematics was perhaps an indication that his thoughts were already turning towards the importance of linking the results of research to their applications in ways that would benefit society and the economy. A Fulbright Fellowship took him to the California Institute of Technology (Caltech) – a university that consistently ranks along with Cambridge in the top ten universities in the world.

Sibisi returned to Wits as a senior lecturer in 1989, again in applied mathematics, but before the end of the year, he had been appointed as Senior Research Associate back at the DAMTP at Cambridge. In 1992, he moved to the famous Cavendish Laboratory, also in the position of a Senior Research Associate. The "Cavendish" is noted for being founded on collaborative research and teaching, which help to expand its research into new areas in which physics can make substantive innovative contributions to scientific knowledge and practical applications.

After just one year at the Cavendish, Sibisi (at the age of 38) became an Executive Director of Maximum Entropy Data Consultants Ltd in Cambridge, a company devoted to delivering results in complex areas of research to companies in need of support in those areas. These included, for example, general image deconvolution synthetic aperture radar; mobile telephony location analysis; seismic imaging and mass-spray spectrometry. His transition into the world of research and its application to society at large in valuable ways, had been completed.



## AWAY FROM ACADEMICS

By this time, of course, Nelson Mandela had been freed from prison; the Convention for a Democratic South Africa (CODESA) was well advanced in its work, and the country was just a year away from its very first democratic elections in 1994. With a new government firmly in place, under now President Nelson Mandela, Sibisi was drawn back to South Africa to head research and development at the Cape Town headquarters of the continent-wide Plessey – one of Africa's major providers of ICT infrastructure that offers support to a broad range of elements in this complex arena. After two years with Plessey, Sibisi moved briefly back into academia, this time in a senior management position as Deputy Vice-Chancellor for Research at the University of Cape Town, before being appointed in 2002, to his current position as CEO of the CSIR – a moment that has probably been the most defining in his life. A researcher with applied and managerial knowledge; a firm commitment to tying together the worlds of research application and development; and the perfect leader for the 'cross-over' world of the CSIR. What is more, he is a CEO with the critical and essential characteristics that have been a clear part of his life from his youth.

For the past 22 years, Sibisi's work has effectively been in management positions, yet his commitment to and engagement in research have continued. He co-founded iThemba Pharmaceuticals (Pty) Ltd in 2001, which is focused on helping new technology businesses with analyses and strategies. His versatility also saw him provide the vision and leadership of a team that conceptualised, planned and established the Meraka Institute (African Advanced Institute for Information and Communications Technology) in response to President Thabo Mbeki's call in this regard.

Of all the positions he has held over these years, it is his role as CEO of the CSIR, a national asset of considerable significance, which has probably been amongst the most demanding.

## LEADING THE WAY

Asked how he has succeeded in balancing his commitment to research and management, he explains that, particularly in his present position, he sees himself as a leader. His highly competent managers deal with man-

agement, while he works with the researchers, supporting their work, making sure that he understands what they are doing, and finding ways of ensuring that the outcomes of their work find their way into practical applications.

Under Sibisi's leadership, the CSIR posted a profit of R52.4 million in the 2014/2015 financial year – despite operating in a particularly tough economic environment, and its contract research and development income increased by 12% to R1.6 billion in the same period. Projects of social and economic value in which the CSIR has been involved include the use of wave gliders to optimise fish stock surveys; a model to enhance the understanding of SA's transport sector to support decision-making; employing technology in the fight against rhino poaching; a new digital pathology database to train pathologists remotely; identification of renewable energy development zones for SA; using locally produced nanoclays for vastly enhanced plastics and a platform that will allow entrepreneurs to operate their own television stations over the mobile Internet.

Despite the demands of his working life, Sibisi commits time for national and social contributions beyond those of the CSIR. Currently, he serves on the Board of Liberty Life. He also serves on the Council of St Johns College in Johannesburg and the Board of the Mapungubwe Institute for Strategic Reflection (MISTRA), as well as the Advisory Board of the United Nations World Intellectual Property Organisation. On a more personal level, he has been a member of the Governing Board of Roedeian School in Johannesburg and was a Trustee of the Hans Merensky Foundation.

Returning to where we started: Sibisi has been a keen rower and cyclist for many years; has completed the Argus cycle tour several times, and in the past few years he has completed several marathons, including the Two Oceans, the Comrades, the London and Boston Marathons. It all comes back, then, to fitness for purpose, ability to perform, and to keep running, cycling, undertaking research, translating research into valuable social and economic currency – leading until his goal is reached. While much of this has been achieved, there is no doubt that there is a good deal more to come from this remarkable scientist from Mariannhill in KwaZulu-Natal.

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C. ASSAf Policymakers' Booklets

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# Legends of South African Science

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