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Science Forum South Africa 2021 Session Descriptions

"Igniting Conversations about Science"



01 to 03 December 2021



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA




Science Forum
SOUTH AFRICA

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Room 1

Room 1 Round 1 DSI WISTEM: Addressing the Gender Gap by Supporting Women in ISTEM in the African Continent

Addressing the Gender Gap by Supporting Women in ISTEM in the African Continent

South Africa

-Presents -

Investing in Women Tech Entrepreneurs as Pioneers of Transformation in the African Continent

01 December 2021 09:00-10:30

1. Background

Despite making up more than half the workforce in various STEM careers, women continue to dramatically lag behind their male counterparts in leadership roles. Latent beliefs about their inferiority often spill over into their educational and professional careers. Data proves that women account for 53% of the world's bachelor's and master's degree graduates and 43% of PhD graduates. However, they only make up only 28% of researchers in all fields with only 30% of women in higher education pursuing STEM-related career opportunities. This is reflected in Africa where only 30% of researchers in all fields are women and in STEM the numbers are dramatically low. Women are substantially underrepresented in higher education in science, technology, engineering and mathematics (STEM). This session aims to promote and fundraise for two Women in Science, Technology, Engineering and Mathematics (WISTEM) legacy initiatives that were established as South Africa's legacy initiatives for the AU Chairpersonship for the year 2020, namely:

- *AUKNASE Women Tech Entrepreneurs Category*
- *WISTEM Portal*

1.1. African Union Kwame Nkrumah Awards for Scientific Excellence (AUKNASE) Women Tech Entrepreneurs Category

South Africa has identified a new category of the African Union Kwame Nkrumah Awards for Scientific Excellence (AUKNASE) which recognizes Women Tech Entrepreneurs. This new AUKNASE category recognizes the pioneering work of both emerging and established women tech entrepreneurs in the African Continent. These are women who have demonstrated innovation, transformational leadership and eminent application of science and technology for development. The AUKNASE Women Tech Entrepreneurs initiative also responds to one of the priorities of the African Union (AU) Agenda 2063 aimed at promoting the advancement of

women's economic and financial inclusion, especially in male-dominated sectors such as STEM. The AU recognizes that women remain largely underrepresented in Africa's burgeoning tech sector. Literature also reveals that Women-owned Small, Micro and Medium Enterprises (SMMEs) tend to fail in the first two years of their existence, largely due to unconducive institutional conditions. As such some of the crucial components of minding the gender gap include supporting women-owned SMMEs and recognizing their innovative achievements.

The AUKNASE has played an important role in recognizing outstanding African scientists, by promoting scientific development, encouraging perseverance in research and academic careers and nurturing the ambitions of women in STEM. However, in the tech sector, women remain largely underrepresented. Therefore, there is a need to create this new award category recognizes the achievements of young women tech entrepreneurs up to the age of 40 who have demonstrated outstanding vision and inspiration and have overcome challenges to make a significant socio-economic impact. This award is intended to recognise women tech entrepreneurs in agriculture, renewable energy, water, manufacturing and digitalization. The award is supported and funded by the South African Technology Innovation Agency (TIA) and the South African Innovation Summit (SAIS).

Roundtable Fundraising Event

The African Union Commission (AUC) in partnership with the Department of Science and Innovation (DSI) invites prospective sponsors from industries, businesses, and government agencies, business development agencies and leading players in the tech business. The sponsors are invited to participate in the Roundtable Fundraising which acknowledges the role of Women Tech Entrepreneurs as pioneers of economic transformation. The sponsorships are to support the AUKNASE new category which recognizes Women Tech Entrepreneurs. The Roundtable Fundraising Event will include strategic industry leaders such as CEOs, Pioneering Entrepreneurs, Angel Investors, Venture Capitalists, and other distinguished leaders. The event will showcase the outstanding work of young women tech entrepreneurs who have demonstrated transformative innovation and have applied science and technology in developing innovative products and services with societal relevance and impact.

1.2. WISTEM Portal

South Africa has also identified the development of the Women in Innovation, Science, Technology, Engineering and Mathematics (WISTEM) Portal as one of its legacy initiatives from its Chairpersonship of the AU in 2020. The Portal is an online platform that aims to empower women in ISTEM in an effort to reverse the current trend of women exclusion and address years of gender inequality. This platform creates an enabling environment to foster mutual learning, collaboration, networking and exchange of best practices amongst women in the technology sector. The platform comprises various elements that will be implemented in phases, the first of which will showcase innovative technologies and services developed by women entrepreneurs in the technology space across the continent. The portal will also provide a database of Women in ISTEM.

The Portal was developed by the partnership of the Department of Science and Innovation, Republic of South Africa together with the African Union Commission, African Scientific Research and Innovation Council (ASRIC) and the South African Council for Scientific and Industrial Research (CSIR). The WISTEM portal will be a “One Stop Shop” database in Africa that provides online support for knowledge sharing, networking, career and business opportunities for WISTEM in Africa. The portal will achieve linkages and networks among women in STEM at national, regional and international levels, as well as in industry and innovation.

2. TARGETED AUDIENCE

Prospective Funders: Private Sector, Research Funding Agencies, Business incubators, Business support and development agencies, multilateral bodies (e.g. Africa Development Bank, UNESCO, UNIDO etc.)

Participants: Women Owned Start-ups and SMEs, Women Technopreneurs, Female researchers and Innovators, government bodies, universities, NGOs that support women

SESSION PROGRAMME

Date: 01 December 2021

Time: 09:00-10:30

Facilitator: Ms Jeshika Ramchund, Next Einstein Forum Ambassador

Time	Topic	Speaker
09:00 - 09:05	Opening Remarks	§ Ms Mmampei Chaba, Chief Director: Multilateral Cooperation and Africa, Department of Science and Innovation
09:05-09:15	Opportunities for Women Tech Entrepreneurs and Women-Owned Tech SMEs in the AfCFTA	§ Dr Monica Idinoba, African Union Commission
African Union Kwame Nkrumah Awards for Scientific Excellence (AUKNASE) Women Tech Entrepreneurs Category		
09:15-09:20	Why the Women Tech Entrepreneurs Award Category?	§ Mr Sigfried Tivana, Assistant Director: Africa Multilateral Cooperation, Department of Science and Innovation
09:20 – 09:30	What is currently on offer?	§ Dr Audrey Verhaeghe Chairperson: South African Innovation Summit

09:30-09:40	The role of Women Tech Entrepreneurs in Transforming Society	§ Dr Hazel Gooding ; Deputy Representative, UN Women, South Africa Multi-Country Office
09:40-09:50	Showcasing Transformational Innovation by Women Tech Entrepreneurs	§ Ms Thandeka Mhlanga , Nka Thuto Techno Propeller, South Africa
09:50 – 10:00	Showcasing Transformational Innovation by Women Tech Entrepreneurs	§ Ms Evelyn Namara , Vouch Digital, Uganda
Women in Innovation, Science, Technology, Engineering and Mathematics (WISTEM) Portal		
10:00 – 10:10	The WISTEM Portal	§ Ms Michelle Harding , Senior Project Manager: Council for Scientific and Industrial Research
10:10-10:25	Q&A	
10:25-10:30	A call to investors	Facilitator

Room 1 Round 2 AOSP: Implementing the UNESCO Recommendation on Open Science: The African Open Science Platform



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Implementing the UNESCO Recommendation on Open Science: The African Open Science Platform

Date: 1 December 2021	Time: 13:30
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Session Overview:

In November 2021, the Science Commission at the 41st session of the UNESCO General Conference unanimously adopted the Recommendation on Open Science. The UNESCO Recommendation on Open Sciences mobilises decision-makers, researchers, innovators, publishers and civil society to make open access to scientific data, research results, educational resources and research facilities. It is aimed at making multilingual scientific knowledge openly available, accessible and reusable for everyone; increasing scientific collaboration and sharing of information for the benefit of science and society; and opening the process of scientific knowledge creation evaluation and communication to societal actors beyond the traditional scientific community.

In light of the above, both the Department of Science and Innovation (DSI) of South Africa, the National Research Foundation (NRF), UNESCO Paris, the Committee on Data of the International Science Council (CODATA) and Tshwane University of Technology (TUT) will be organising a session during Science Forum South Africa 2021 aimed at answering the following questions:

1. What does the UNESCO Recommendation on Open Science mean to the science community in Africa?
2. What policies, systems, and infrastructure are needed by the African continent to effectively adopt and implement the UNESCO Recommendations on Open Science?
3. What is the role of the Africa Open Science Platform in facilitating the adoption of Open Science in Africa?

The programme for the Session will be structured as follows:

- i. Opening and Welcome by the Moderator: Ms Lindiwe Gama (5 minutes)
- ii. What is the UNESCO Recommendation on Open Science? How will it be implemented? Dr Peggy Oti-Boateng (10min)
- iii. What are the potential bottlenecks in effectively adopting the UNESCO Recommendation on Open Science in Africa? Professor Felix Dakora (10min)
- a. Practical approaches to adopting the UNESCO Recommendation on Open Science: A University perspective: Dr Thandi Mgwebi (10min)
- iv. The Africa Open Science Platform (AOSP), towards a regional Open Science vision: Dr Tshiamo Motshegwa (10min)
- v. The role of international bodies and networks in effective adoption and implementation of UNESCO Recommendation on Open Science: Dr Simon Hodson, Executive Director-CODATA & Advisory Council Member of the African Open Science Platform (10 min)
- vi. Question and Answer session led by the Moderator (30 minutes)
- vii. Way forward by the Moderator (5 minutes)

Moderator:

Ms Lindiwe Gama: Director of Africa Bilateral Relations at the Department of Science and Innovation of South Africa.

Speakers:

Dr Peggy Oti-Boateng is the Director of Science, Policy and Capacity Building in the Natural Sciences sector at UNESCO Headquarters in Paris (link to biography: <https://aims.edu.gh/person/dr-peggy-oti-boateng/>)

Professor Felix Dakora is the President of the African Academy of Sciences (link to biography: <https://www.tut.ac.za/rni/research/research-chairs/prof-dakora>)

Dr Tshiamo Motshegwa is an academic based at the Department of Computer Science, Faculty of Science at the University of Botswana where he is a lecturer

and leads the High-Performance Computing and Data Science Research cluster and the University-Industry-Government cocreation Platform. He received a BEng 1:1 (Hons) in Computer Systems Engineering and a Ph.D. in Computer Science- both at the School of Mathematics, Computer Science and Engineering, City,University Of London, UK (link to biography: <https://wacren2021.wacren.net/speaker/dr-tshiamo-motshegwa/>)

Dr Thandi Mgwebi is Deputy Vice-Chancellor responsible for Research, Innovation and internationalization at Nelson Mandela University in South Africa. She was the former Deputy Vice-Chancellor Research and Innovation at the Tshwane University of Technology (TUT), Director of Research at the University of the Western Cape (UWC). Prior to her appointment at UWC, she was the Executive Director of the South African Research Chairs and Centres of Excellence at the National Research Foundation
<https://www.smu.ac.za/students/graduations/dr-thandi-mgwebi/>

Dr Simon Hodson is the Executive Director of the Committee on Data (CODATA) of the International Science Council (ISC). He is an expert on data policy issues and research data management and contributed to scores of influential reports on big data best practices (link to biography: <https://ceds.arizona.edu/person/simon-hodson>)

Session organiser(s):

Department of Science and Innovation of South Africa
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Room 1 Round 3 CNRS Africa: Building stronger and more equitable research relations between Africa, France and Europe



SFSA 2021 – Wednesday December 1, 15:30-17:00

Building stronger and more equitable research relations between Africa, France and Europe

Science, technology and innovation are perceived as key factors of transformation and progress by African countries, which consequently strive to develop new or strengthened partnerships with the academic, socio-economic and cultural worlds of their continent and on the international scene. The complexity of the issues at stake and the need to understand them through plural, systemic and multidisciplinary approaches make the CNRS a leading partner for equitable and sustainable cooperation, respectful of the diversity of science.

Involvement in this new African dynamic is fully in line with the CNRS's missions to advance knowledge and share it with societies throughout the world. It also resonates with its promotion of sustainable development embodied by its Objectives and Performance Contract. Along with many French, European and world institutions, the CNRS is determined to set up a new strategic cooperation with African partners, a commitment that will necessarily be implemented in different ways, taking into account the specificities and priorities in each country. Creating prospects is the goal of its Africa Strategy.

The CNRS can build on its position as first non-African co-publisher with African researchers during the period 2000-2019 and as a source of many projects and exchanges set up over the years, albeit not always formalized by institutional models. The potential for collaborations is large today, with all disciplines showing interest and determination in focusing on global challenges that include environmental and climate-related issues, health care, meeting rising food and energy demands, altogether contributing to the implementation of the United Nations Sustainable Development Goals.

This round table will provide the opportunity to examine different ways of establishing and developing contacts and partnerships in research. We will address concrete and operational issues, such as the search for new forms of equitable collaborations and the development of new mechanisms to support research, without forgetting the transfer of knowledge and innovation. We will look for ways to add training actions for and through research to our scientific collaborations. Finally, this event will be an opportunity to reflect on different approaches that we can use together to co-construct long-term scientific projects, in synergy with African partners and other French and European operators.

Participants

- Prof. Antoine Petit, CEO of CNRS
- Prof. Himla Soodyall, Executive Officer, Academy of Science of South Africa
- Prof. Felix Dapare Dakora, President of the African Academy of Sciences
- Ms. Nienke Buisman, Head of Unit International Cooperation Policy in the European Commission, Directorate-General Research & Innovation
- Prof. Fulufhelo Nelwamondo CEO of NRF
- Prof. Barry Green, Director of AIMS South Africa

Panel moderator:

- Dr. Christelle Roy, head of international affairs (DERCI) at CNRS

Prof. Antoine Petit, CEO of CNRS

Antoine Petit obtained a Master Degree in Mathematics from University Paris Sud (1981) and then an agrégation of Mathematics (1982). He received his PhD in Computer Science from Paris Diderot University (1985).

He joined Orléans University as an assistant professor in 1984, and then Paris Sud University as a senior lecturer in 1989. In 1994, he joined ENS Paris-Saclay (formerly ENS Cachan) as full Professor and became head of the Computer science department from 1995 to 2001.

In 2002, he was appointed as Deputy Director of the French Ministry of Research, in charge of Mathematics and Information and Communication Sciences and Technologies. In 2004, he was seconded to the CNRS, first as scientific director of the Information and Communication Science and Technologies Department, before becoming interregional director for South West France. In 2006, he joined the French National Institute for Computer Science and Applied Mathematics (Inria) as head of the Paris-Rocquencourt research center. He was appointed Chairman and CEO of the Inria in 2014, after serving as deputy CEO.

Since January 2018, he is President and CEO of CNRS.

Antoine Petit is Knight of the French Legion of Honour and Officer of the National Order of Merit.

Prof. Himla Soodyall, Professor at Wits, Executive Officer of The Academy of Science of South Africa

Professor Himla Soodyall is Executive Officer of the Academy of Science of South Africa (ASSAf). She is a Research Professor in Human Genetics at Wits and was Principal Medical Scientist at the National Health Laboratory Service previously.

Soodyall has done groundbreaking genetic research into the peoples of sub-Saharan Africa in which her studies have identified some of the oldest DNA found in living people today, adding weight to the theory that modern humans evolved in the area now known as southern Africa. She was awarded the National Order of Mapungubwe: Bronze, by President Mbeki (2005) for contribution to science. In 2005, she was appointed the sub-Saharan African principal investigator on the Genographic Project – a five-year, worldwide project undertaken by the National Geographic Society to map humanity's migratory history. In 2012, she was awarded the Gabriel Ward Lasker Prize for the best paper Mitochondrial DNA Variation in the Khoe-San published in Human Biology in 2012. In 2017, she was rated as one of the top-ten most visible scientists in South Africa in a study by the CREST at Stellenbosch University.

Soodyall is a profiled ambassador for science in South Africa and internationally, with experience in research and a knowledge of governance and public administration, as well as engagement at all levels of community in Africa and abroad.

Prof. Felix Dapare Dakora, President of the African Academy of Sciences

Prof. Dakora obtained his PhD in Botany from the University of Western Australia, Perth, 1989. He currently holds a South African Research Chair in Agrochemurgy and Plant Symbioses at the Tshwane University of Technology, South Africa.

His research has contributed to our current understanding of the signalling and protectant roles of legume molecules such as flavonoids, alkaloids, amino acids, terpenoids and isoflavonoid phytoalexins, as well as of rhizobial metabolites such as lumichrome, riboflavin and indole acetic acid, especially in plant functioning and the expression of bacterial nodulation genes. His research has i) identified legume species and their associated microsymbionts that can serve as biofertilizers for cropping systems in Africa, ii) selected legume varieties and super-smart soil microbes that are tolerant of drought, low pH, high salinity and high temperatures for use in a climate change scenario, and iii) isolated native soil rhizobia that promote increased trace element uptake and accumulation in food legumes for overcoming micronutrient deficiency in Africa.

He won the UNESCO-Equatorial Guinea International Prize for Research in the Life Sciences in 2012, and the African Union Kwame Nkrumah Science Excellence Continental Award in 2016.

Nienke Buisman, Head of Unit International Cooperation Policy in the European Commission, Directorate-General Research & Innovation

Since 2019 in this position, Nienke Buisman is in charge of developing and implementing the 'Global Approach to Research and Innovation', Europe's strategy for international cooperation, specifically focussing on Africa, Asia and the Middle East.

Previous jobs held in DG Research & Innovation: Deputy Head of Unit in charge of establishing public-private partnerships in research and innovation and preparing the delegation of program implementation to Executive Agencies and other Funding Bodies; Policy Advisor to the Deputy Director-General in charge of the climate change and sustainable energy research portfolios as well as financial and human resources management; Senior policy-officer in the international cooperation department, in charge of collaboration between the EU and South Africa and the African Union; and leading a team on knowledge management in the Resources Directorate.

Nienke started her career in the European Commission in 2002, in DG Transport and Energy as the assistant to the Resources Director. Before joining the European Commission, Nienke has been with UNICEF and the Assembly of French Chambers of Commerce in Brussels. Nienke holds a MSc in Development Studies from the London School of Economics and Political Science (LSE). She also holds a double French-British MA in European Public Policy.

Prof. Fulufhelo Nelwamondo CEO of the National Research Foundation of South Africa

Prof Fulufhelo Nelwamondo holds a PhD in Electrical Engineering, with specialisation in Computational Intelligence from the University of the Witwatersrand. He was a Postdoctoral Fellow at the Graduate School of Arts and Sciences at Harvard University, and was the youngest South African to receive the prestigious Harvard-South Africa Fellowship. Fulufhelo is a registered Professional Engineer, a Senior Member of the Institute of Electronic and Electrical Engineers (IEEE), a senior member of the Association of Computing Machinery (ACM), amongst others.

Prior to his current role, he held executive positions at the CSIR, and has served in several Boards, Councils, Ministerial Task Teams and Advisory committees. Fulufhelo is passionate about the Fourth Industrial Revolution, particularly in the potential impact its research and technologies can bring in the advancement of humankind, thereby addressing the social ills of poverty, unemployment and inequality.

He has been a recipient of many awards, for his contribution to Science, Engineering and Technology. In 2017, he was awarded the Order of Mapungubwe in Silver, the highest civilian honour bestowed by the President of the Republic of South Africa. Fulufhelo has worked in areas of advanced modelling, information security, data science, and artificial intelligence, and is a Visiting Professor at the University of Johannesburg's Institute of Intelligent Systems.

Prof. Barry Green, Director of AIMS South Africa

Barry Green holds a Professorship in the Mathematics Division of the Department of Mathematical Sciences. He is currently serving as the Director of the African Institute for Mathematical Sciences in South Africa and the Chief Academic and Research Officer for the African Institute for Mathematical Sciences Next Einstein Initiative (AIMS NEI).

He completed his PhD at the University of Cape Town in 1984 and lectured at Stellenbosch University before spending ten years as a research scientist at the University of Heidelberg in Germany. In 1996 he returned to Stellenbosch University, where he was appointed Chairperson of the Mathematics Department in 2002 and Executive Head of the Department of Mathematical Sciences from 2006–2009.

In 2007 he received the South African Mathematical Society's Award for Research Distinction. He has been Editor of the mathematics journal *Quaestiones Mathematica* from 2002 to 2015 and has served on the Editorial Board of *Afrika Matematika*.

Barry Green has been closely involved with the growth of AIMS since its founding in 2003 and was appointed the second Director in April 2010. He is passionate about promoting the growth of the mathematical sciences in the developing world, particularly in Africa, and has recently been elected the President of CIMPA, the International Centre for Pure and Applied Mathematics.

Christelle ROY, Director of European and International Relations at CNRS

After a master's degree in fundamental physics at the University of Dijon (1995) and a doctorate in nuclear physics at the University Louis Pasteur, now known as the University of Strasbourg (1996), Christelle Roy joined the CNRS in 1997 as a research fellow. She became research director in 2010.

In 2005, she was appointed deputy director of the Laboratory of Subatomic Physics and Associated Technologies, then in 2009 deputy director of the Institut pluridisciplinaire Hubert Curien (IPHC). She became director in 2011, a position she held until 2017. From 2012 to 2014, she was the vice-president of research and education for the Alsace BioValley competitiveness cluster and from 2017 to March 2021, the vice-president of strategy and development for the University of Strasbourg. From 2018 to March 2021, Christelle Roy was the strategy coordinator of the European University Alliance Epicur.

In 2006, Christelle Roy was awarded the Joliot-Curie Prize by the French Physical Society. She is a member of the Academia Europaea. She was a member of the 2012 Marie Curie Skłodowska class of the CNRS training program for high-potential managers. Since November 2020, she has been in charge of Europe for the CNRS Deputy CEO for Science, Alain Schuhl.

Christelle Roy became the Head of the European and International Department at CNRS in May, 2021.

Room 1 Round 4 CSIR 4IR: Establishing South Africa's Centre for the Fourth Industrial Revolution: shaping technology governance



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Establishing South Africa's Centre for the Fourth Industrial Revolution: shaping technology governance

Date: Thursday 2 December 2021	Time: 09:00
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The technological advances in the fourth industrial revolution (4IR) inevitably have both merits and risks. The extent to which the benefits are maximized and the risks mitigated depends on the quality of governance protocols. Governance must be stable, interoperable, predictable and transparent enough to build confidence among investors, companies, scientists and the general public, but also agile enough to remain relevant in the face of rapid advances in technology.

The South African government, through the Department of Science and innovation, and in partnership with the World Economic Forum (WEF) has established a Centre for the Fourth Industrial Revolution (C4IR South Africa) to lead the process of establishing a multi-stakeholder hub that brings together government, business and academia to lead the process of building a national capability in technology governance and developing quality technology governance protocols that aim to maximise the benefits of 4IR to the South African economy. C4IR South Africa is an affiliate centre to the global network of the centres for 4IR that was established and is led by the WEF. It is hosted by the Council for Scientific and Industrial Research (CSIR).

The core focus of the technology governance is three-fold;

- to support industry transformation across various sectors with the understanding that to survive every business will have to become a technology company
- to support government transformation with understanding that (1) governments need to embrace technology in its daily operations and that (2) governments who can develop and maintain robust and resilient technology governance protocols and frameworks will open the door to new economic opportunities.
- To support awareness and development of frontier technologies such as quantum computing and synthetic biology, will be critical to tackling the issues of climate change and health.

The key questions to be addressed by the session include; What are the roles of government, business in shaping the enabling environment (Regulation, policy & cultural readiness) for maximising the benefits mitigating the risks of emerging and frontier technologies in the economy and society? What digital transformation strategies and business models are required for business to survive in the 4IR era? How do we create a real-world impact through the digital inclusion and responsible adoption of technology? What types of networks do we need to keep up to date with latest developments in ecosystems and technologies?

Programme: (Description of the running order of the session – 90 minutes)

1. Welcome and introduction – CSIR CEO (10 minutes)
2. The establishment of C4IR South Africa: Government intent – Minister of Higher Education, Science and Innovation – could be delivered either physically or through recorded message) (30 minutes)
3. Introduction of C4IR South Africa focus areas – Centre Head & C4IR Affiliate lead at WEF (20 minutes)
4. Industry Fireside chat (30 minutes)
 - a. Guest speaker: Business Unity South Africa (5 minutes)
 - b. Discussants: Representatives from Automotive and logistics, Mining and Agriculture or Energy. (25 min)

Mr Andile Khumalo– alternate: Ms Khungeka Njobe

Speakers:

Dr Thulani Dlamini – He is the Chief Executive Officer of the Council for Industrial and Scientific Research (CSIR). He was appointed in this position in February 2017 from Sasol. He had previously served the CSIR from 2005 as the head of the National Laser Centre and from 2008 as the position of Group Executive: Research and Development, a position he held until 2011 when he left the CSIR to join Sasol.

Honourable Minister Dr Bonginkosi Nzimande - He was appointed as Minister of Higher Education, Science and Technology on 30 May 2019. He was Minister of Transport from 27 February 2018 to 25 May 2019. Dr Bonginkosi Emmanuel "Blade" Nzimande was the Minister of Higher Education and Training in the Republic of South Africa from 26 May 2014 until 17 October 2017. [More details](#)

Dr Ntsibane Ntlatlapa – He is the head of C4IR South Africa. He was appointed to this position February 2021. Prior to that he was the Impact Area Manager of the Networked Systems and Applications in the CSIR Next Generations Enterprises and Institutions. He is a computer scientist and research and innovation focus on communication technology ecosystems, from digital content generation across the value chain to user interface devices.

Mr Sebastian Buckup – He is the head of Head of Affiliate Centers, C4IR, World Economic Forum. Prior to that, he was leading the World Economic Forum's Annual Meetings in Davos and China, as well as its global expert communities; He is a certified facilitator, public speaker, regular commentator on issues at the intersection of technology, society, and the economy; He is a Professor of Practice at the University of Geneva and the Technical University of Munich, amongst others.

Mr Cas Coovadia/Mr Adam Craker – Mr Coovadia is the CEO of Business Unity South Africa (BUSA). Mr Adam Craker is the CEO of IQ Business (a member of BUSA), COBRA and SAtion (both initiatives of BUSA). He is a member of C4IR South Africa Pre-establishment Advisory Committee

Mr Mikel Mabasa – He is the CEO of naamsa – The Automotive Business Council and a member of C4IR South Africa Pre-establishment Advisory Committee

Mr Roger Baxter – His is the CEO of Minerals Council of South Africa and a member of C4IR South Africa Pre-establishment Advisory Committee

[Session organiser\(s\):](#)

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**Room 1 Round 5 CSIR WAITRO: Promoting intra-African collaboration
between research and technology organisations through WAITRO**



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Promoting intra-African collaboration between research and technology organisations through WAITRO

Date: Thursday 2 December 2021	Time: 11:00
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Purpose: WAITRO Africa Collaboration Initiative.

Africa remains the world's least industrialised region even though there is plenty of ambition to industrialise. With African markets growing and the new African Continental Free Trade Area signed, there are now major opportunities for African manufacturing to increase regional trade in services which in turn support industrialisation. However, unless African countries both individually and together, fully commit to an industrial transformation agenda that reflects the crucial role of industry in the continent's development, significant industrialisation may never take hold in Africa. Science, Technology and Innovation plays a crucial role as a foundation upon which industrialisation is built. Equally important is the role of Research and Technology Organisations (RTOs) as entities that are mandated and empowered to catalyse the industrialisation process through enhanced technology use and deployment of highly skilled manpower.

The RTOs in Africa can work even more efficiently and effectively if they were better organised to contribute to the development of the continent; to pool resources and share infrastructure amongst themselves; to support some intra-Africa collaboration initiatives; and to demonstrate their effectiveness through relevant research that is aligned with continental priorities in order to garner more support from African governments.

Objectives

The purpose of the WAITRO Africa Collaboration Initiative is to promote collaboration among African research and technology organizations (RTOs) in order to enhance their capacities for innovation that will lead to the improvement of the quality of life of the people and the economic competitiveness of the countries of Africa. The WAITRO Africa Collaboration Initiative coordinated by the Regional Focal Point (RFP Africa) with the support of the Regional Representative (RR Africa), and official partners (e.g. Department of Science and Innovation (DSI) in South Africa) will provide a platform to:

- coordinate African participation in WAITRO and create synergies with other RTO's globally;
- strengthen relations between African RTOs and improve cooperation with other regions and RTOs for industrial development;
- facilitate project proposals for international projects;
- secure national, regional and international funding for programmes; and
- strive to achieve institutional capacity building and research management.

These aims may be implemented by:

- facilitating the exchange of technical expertise and sharing of infrastructure amongst members in Africa
- facilitating training programmes for skills development and enhancement among members in Africa
- facilitating information-sharing meetings, webinars, and project development workshops with the main focus on the African development matters;
- creating continent-focused research, innovation, technology and policy discussion forums and special interest groups;
- serving as a link between research establishments and international associations
- providing assistance in finding financial sources in order to improve research for industrial development.
- actively engaging African RTOs to participate in (global) WAITRO programmes and services (e.g. SAIRA, Innovation Award, Capacity Development Program)
- regular information exchange with and supporting the Secretariat in designing and implementing the overall WAITRO Programs and Services
- lobbying for the African perspective in WAITRO meetings and in regular information exchange with the Secretariat and General Assembly to ensure the region's needs are included (e.g. support in needs design and implementation of needs assessment)

Programme: (Description of the running order of the session – *90 minutes*)

Moderator: Dr Mapitso Molefe, WAITRO Regional Representative for Africa, and Executive Cluster Manager: CSIR Advanced Agriculture and Food Cluster, and Next Generation Health Cluster.

Part 1 will focus on the background and history of the participation of African RTOs in WAITRO, and the history of the initiative to establish an Africa RTO Collaboration Initiative, as well as the process followed in consulting African RTOs, and the progress achieved to-date.

Part 2 will focus on the WAITRO Africa RTO Collaboration Initiative Overview, presentations and discussions on specific programmes centred around medical, technology, human capital development and infrastructure related collaborations between and among African RTOs.

The session will conclude on specific actions stemming from the discussions on the next steps to concretize the programmes.

Speakers:

1. **Welcome** – Dr Mapitso Molefe, Executive Cluster Manager: Advanced Agriculture and Food Cluster and Next Generation Health Cluster, CSIR; and WAITRO Regional Representative for Africa
2. **Background, process followed and progress to-date on the initiative** – Dr Ndumiso Cingo, Manager: Strategic Partnerships Manager, CSIR; and former WAITRO Regional Representative for Africa
3. **Overview of the WAITRO Africa RTO Collaboration Programme** – Prof Nnenesi Kgabi, Director: Research Support, North-West University; and WAITRO Regional Focal Point for Africa
4. **WAITRO Africa RTO Collaboration Programme 1: Possible medical-related collaborations** – Dr James Kimotho, Managing Director – Kenya Medical Research Institute (KEMRI)
5. **WAITRO Africa RTO Collaboration: Programme 2 – Possible technology-related collaborations** – Dr Bathsheba Mbongwe, Executive Director for Research and Partnerships, Botswana Institute for Technology Research and Innovation (BITRI)
6. **WAITRO Africa RTO Collaboration: Programme 3 and 4** – Possible human capital development and infrastructure-related collaborations – National Research Foundation (TBC)
7. **Closing Remarks** – Dr Emad Ewais, WAITRO Regional Representative for Middle East and North Africa (MENA)

Room 1 Round 6 CSIR AUDANEPAD: Delivering on Agenda 2063 aspirations through the AUDA-NEPAD Centre of Excellence in Science, technology and Innovation



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title:

Delivering on Agenda 2063 aspirations through the AUDA-NEPAD Centre of Excellence in Science, technology and Innovation

Date: Thursday 2 December 2021

Time: 13:30

Session Overview:

Background:

The African Union is committed to achieving its vision of “An integrated, prosperous and peaceful Africa, an Africa driven and managed by its own citizens and representing a dynamic force in the international arena” through its Agenda 2063.

To strengthen delivery, the African Union Development Agency (AUDA-NEPAD) is establishing five Centres of Excellence addressing key development priorities in Agenda 2063. The five Centres will be prime AU instruments for leveraging knowledge and science-backed innovations to support the strategy of accelerated implementation of Agenda 2063.

Through interventions, AUDA-NEPAD is mindful of the need to encourage countries to adopt strategies that seek out and adapt proven innovations to address development challenges, rather than investing limited resources in the development of new science and technologies.

Establishment of the AUDA-NEPAD CoE for STI.

The AUDA-NEPAD Centre of Excellence in Science, Technology and Innovation (STI) (referred to as the *AUDA-NEPAD CoE-STI*) is one of the five Centres of Excellence. It is established in South Africa, in cooperation with the Council for Scientific and Industrial Research (CSIR) and Stellenbosch University (SU) as the first, of several, participants to cooperate with the Centre.

A key element of the AUDA-NEPAD CoE-STI is to foster “real and active” two-way flow connection between science, policy and practice. AUDA-NEPAD CoE-STI will specifically be leveraging the Agenda 2063 implementation processes to gain the required knowledge resource (i.e., science- and evidence-backed innovations) as input in making critical and strategic policy and investment choices - underpinning the effective and impact-oriented implementation of Agenda 2063 goals and targets as domesticated in national development plans in the 55 African Union Member States.

Session outline:

During the session at the South African Science Forum, the following aspects will be presented:

- The rationale for establishing the AUDA-NEPAD Centre of Excellence in Science, Technology and Innovation
- Currently, the AUDA-NEPAD CoE in STI has identified 32 initial innovations at the CSIR and Stellenbosch University with a potential for upscaling to the rest of the African continent. During the session, examples of innovations based on four Agenda 2063 Impact areas which are 1) Industrialisation and Wealth creation, 2) Shared Prosperity and Transformed Livelihoods, 3) Human Capital Development and Transformed Institutions, 4) Innovations for Natural Resources management and Environmental Resilience
- The way forward

Programme: *(Description of the running order of the session – 90 minutes)*

Time	Description	Speaker
5 minutes	Welcoming	
15 minutes	The rationale for establishing the AUDA-NEPAD Centre of Excellence in Science, Technology and Innovation	AUDA-NEPAD
15 Minutes	Innovations for Industrialisation and Wealth creation	CSIR/ Stellenbosch University

15 Minutes	Innovations for Shared Prosperity and Transformed Livelihoods	CSIR/ Stellenbosch University
15 Minutes	Innovations for Human Capital Development and Transformed Institutions	CSIR/ Stellenbosch University
15 Minutes	Innovations for Natural Resources management and Environmental Resilience	CSIR/ Stellenbosch University
10 Minutes	Way forward	AUDA-NEPAD

Moderator:

Based on the item in the programme, the following moderators will facilitate the session

- AUDA-NEPAD - Mr. Martin Bwalya – bwalyam@nepad.org
- CSIR – Dr Ndumiso Cingo - ncingo@csir.co.za
- Stellenbosch University – Dr. Nico Elema ne@sun.ac.za

Speakers:

The speakers for the session will be Project leaders from both the CSIR and Stellenbosch University

Session organiser(s):

- CSIR – Dr Ndumiso Cingo - ncingo@csir.co.za

ncingo@csir.co.za

Room 1 Round 7 AFAS Astro: Leveraging South Africa's leadership for development of astronomy in Africa



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Leveraging South Africa's leadership for development of astronomy in Africa**

Date: Thursday 2 December 2021

Time: 09h00

Session Overview:

Astronomy has seen substantial investment by the South African Department of Science and Innovation (DSI) and as a result, several significant astronomy initiatives have burgeoned in the country and African continent at large. Using Southern Africa's geographic advantage of dark skies as a strategic driver for the development of globally competitive astronomy research programmes, South Africa is home to mega-science projects capable of producing cutting edge science such as the Meerkat telescope, MeerLICHT, Southern African Large Telescope (SALT), the Hydrogen Epoch of Reionization Array HERA, the Hydrogen Intensity and Real-time Analysis eXperiment (HIRAX), and the High Energy Stereoscopic System (H.E.S.S.) in Namibia. In addition, the SKA project is scheduled to commence construction in South Africa. Prospects for the future include the African Very Long Baseline Interferometry Network (AVN) and the Africa Millimetre Telescope (AMT), with the latter providing an essential link to the international Event Horizon Telescope (EHT). Further evidence of the rapid growth of astronomy in the continent can also be seen through the winning of the bid to host for the first

time, in Africa, the IAU General Assembly (IAU-GA) in 2024. Both the SKA and the GA 2024 were proposed by South Africa as “African” bids that will in time, benefit the continent as a whole.

The DSI has supported the various initiatives mentioned above through the South African Radio Astronomy Observatory (SARAO), the South African Astronomical Observatory (SAAO), as well as implementing training efforts through various Human Capital Development (HCD) programmes such as the National Astrophysics and Space Science Programme (NASSP). In addition to this, the DSI supports the Office of Astronomy for Development (OAD), a joint project of the International Astronomical Union (IAU) and the South African National Research Foundation (NRF), that aims to further the use of astronomy as a tool for sustainable development globally. The DSI also recently committed to hosting and supporting the Secretariat of the African Astronomical Society (AfAS) which is a voice of astronomy on the continent and is working to address the challenges faced by Africa through the promotion and advancement of astronomy.

This session offers an opportunity for the key role players to demonstrate how the various initiatives mentioned above are facilitating the development of astronomy in Africa as well as future plans which will ensure that Africa becomes one of the leaders in astronomy internationally. It will also allow the role players to interact with one another and demonstrate how the plans of the various institutions that are involved, are in alignment.

Presentations and discussions during the session will focus on:

1. *Current and planned initiatives to grow and connect the African Astronomical community;*
2. *Flagship projects and involvement of participating stakeholders in science and outreach;*
3. *Potential roll-out and benefit of astronomy hubs on the continent;*
4. *Strengthening continental research collaborations through joint research projects, observations, MSc/Ph.D. student's joint supervisions, joint proposals, etc.*
5. *Vision and legacy of the IAU-GA 2024*

Programme:

- Working towards the development of Astronomy in Africa, The DSI vision (Takalani Nemaungani) – 10 min
- Astronomy in Africa and the African Astronomical Society (Jamal Mimouni) – 10 min
- Radio Astronomy – An African context – MeerKAT, SKA, AVN, DARA (Fernando Camilo) – 10 min
- Optical Astronomy and intelligent observatory – An African context – SAAO, SALT (Petri Vaisanen) – 10 min
- High Energy Astrophysics – An African context – HESS and towards CTA (Markus Bottcher) – 10 min
- Astronomy for Development (Sandra Benitez) – 10 min
- Africa-Europe Radio Astronomy Platform – AERAP (Declan KIRRANE) – 10 min
- Panel discussion

Moderator: (Name and maximum 100 words biographical summaries – URL link if relevant)

Dr B Fanaroff

Bernie Fanaroff was the director of the SKA SA project and the MeerKAT from its beginning in 2003 until the end of 2015. He has also been a radio astronomer (for five years), a trade union organiser (for 18 years), Head of the Office for the Reconstruction and Development Programme – the RDP, the Deputy Director General of President Mandela's Office of the President, the chairman of the Integrated Justice System Board and the Interdepartmental Committee for Border Control, adviser to the Minister for Safety and Security and recently the facilitator of the Steel and Steel Products Master Plan for the Minister for Trade, Industry and Competition. He is a Fellow of the Royal Society of London and has been awarded the Order of Mapungubwe.

Speakers: (Names and maximum 100 words per speaker biographical summaries – URL links if relevant)

Takalani Nemaungani:

Takalani Nemaungani is currently the Acting Chief Director for the Astronomy portfolio at the Department of Science and Innovation (DSI) in South Africa – Astronomy is a flagship project receiving the single largest investment in the budget within the DSI. Trained as an engineer from Wits University he began his career in 1994 in the private sector in companies such as Samancor and Sasol before joining the CSIR. He has played a pivotal role in the development of Astronomy in Africa and beyond as highlighted through his roles in projects like the Square Kilometer Array (SKA), the African Very Long Baseline Interferometry (AVN), the HESS telescope, the African Astronomical Society (AfAS), the IAU-OAD, NASSP, and providing strategic and funding support to developing the multiwavelength astronomy community in South Africa. He serves as the secretariat for the BRICS (Brazil, Russia, India, China, and South Africa) Astronomy Working Group. Before joining the Astronomy division, he was the Director of the Global Projects unit within the International Cooperation and Resources division of the DSI where he was the Project Coordinator of the Promoting Africa-Europe Research Infrastructure Project (PAERIP).

Jamal Mimouni:

Jamal Mimouni is an Algerian astrophysicist, who received his higher education partly in Algeria (B. Sc. in Theoretical Physics in 1977 from Algiers University) and partly in the States (Ph. D. in Particle Physics in 1985 from the University of Pennsylvania, Philadelphia). He is also an actor on the science, society, and the cultural dimension of the scientific debate in the Arab-Muslim world and has developed a keen interest in the philosophy of contemporary science, as well as to spreading scientific culture in societies of the developing world. On the "ground", he has acted as adviser and resource person to amateur astronomy associations in Algeria and is the head of the well-known Sirius Astronomy Association. He has been elected last year as President of the African Astronomical Society (AfAS) based in Cape Town, SA. He has been working closely with the Algerian Ministry of National Education as a scientific adviser, and has

conceived and directed various regional training workshops for both Elementary School and High School Physics Teachers: «From Geography to the Cosmos». Finally, he has authored along with N. Guessoum a popular science book in Arabic “The Story of the Universe : from Early Conceptions to the Big Bang” for an University educated readership, and contributed to an academic collective book «Science and Religion in Islam».

Fernando Camilo:

Born and raised in Portugal; Physics PhD at Princeton University; during post-doc at Jodrell Bank Observatory developed data acquisition system for Parkes radio telescope multibeam surveys, which discovered more than half of all known pulsars; spent ~20 years at Columbia University in New York doing a variety of pulsar-related research, serving during a 2-year leave of absence as director of astronomy at Arecibo Observatory; since 2016, chief scientist at the South African Radio Astronomy Observatory (then SKA South Africa), where main role (with a team of ~40) is to ensure that MeerKAT does the best possible science that it can.

Petri Vaisanen:

Prof. Petri Vaisanen is the Director of the South African Astronomical Observatory (SAAO) in Cape Town and the observing site in Sutherland. He obtained his PhD from the University of Helsinki on the topic of galaxy evolution. After spells in USA, and the European Southern Observatory in Chile, he came to South Africa in 2004 where he worked for the Southern African Large Telescope (SALT) as an astronomer and later as its Head of Astronomy Operations, before taking up his current SAAO position in 2018. The SAAO runs and hosts a large suite of optical and infrared telescopes and instruments and engages in technology development as well as post-graduate astronomy training.

Markus Boettcher:

Markus Boettcher obtained his Ph.D. from the University of Bonn, Germany, in 1997, having done his Ph.D. research at the Max-Planck Institute for Radio Astronomy in Bonn. He was a postdoctoral fellow at Rice University in Houston, TX, from 1997 - 2002, including a NASA Chandra Postdoctoral Fellowship from 1999 - 2002. He became assistant professor at Ohio University, Athens, OH, in 2002, associate professor in 2007, and full professor in 2012. In 2013, he moved to South Africa to take up the position of SARChI Chair of Astrophysics and Space Physics at North-West University, Potchefstroom. His area of expertise is theoretical high-energy astrophysics, with special emphasis on extragalactic sources, such as active galactic nuclei and gamma-ray bursts.

Sandra Benitez:

TBC

Declan Kirrane:

Declan Kirrane is the founder and Managing Director of ISC Intelligence in Science in Brussels. He has more than 25 years of experience disseminating scientific and research activities in Europe and worldwide from organizations and governments. He has been involved in the dissemination of the research activities funded by the European Union's Framework

Programme for Research and Technological Development and Demonstration (FP) since 1994, the former Horizon Europe.

With Financial Times, he was the launch editor of CORDIS, the European Commission's research information Service. He was Editor of the Commission's Innovation and Technology Transfer Newsletter and CORDIS focus. His expertise covers ICT, Health, Defence, Space, Science Policy, GPRD legislation, EU R&D and Innovation policies, programmes and funding instruments. He has worked extensively on science policy evaluation methodologies and technology options for policy, and decision-makers use investment in science for broader economic development and competitiveness. With the Office of Science in the US Department of energy, he Launched the Ford Foundation Bellagio process on science policy evaluation methodologies.

He is closely involved in EU-Africa science and innovation relations and investments, particularly the EU's investment strategy for Africa. He was closely involved in the South African government's bid to host the Square Kilometre Array Radio Telescope, the SKA, South Africa and its partner countries succeeded in securing the rights to build the SKA in South Africa. He manages the Africa-Europe Science and Innovation Platform, AERAP.

Declan has been actively promoting a more assertive role for science within the context of the United Nations General Assembly since 2010. This has culminated in the annual Science Summit within the context of the General Assembly, which he chairs.

Session organiser(s):

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Room 2

Room 2 Round 1 DSI Vaccine: Strengthening vaccine R&D and manufacturing capabilities in



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Strengthening vaccine R&D and manufacturing capabilities in Africa

Date: Wednesday 1 December 2021	Preferred time: 09:00
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Session Overview:

It has been two years since the first cases of SARS-CoV-2 emerged in Wuhan, China. In that time, the virus has not only become a public health crisis but has also affected the global economy. The death toll is estimated around 17 million, according to the model of excess deaths built by The Economist magazine. Vaccines against COVID-19 are not reaching many people in the global South. Less than 3.9% of people in low-income countries have received at least one dose as at 3 Nov 2021, compared with more than half in high-income countries. COVID-19 has pointed to the urgent need to build the infrastructure and technical capacity to break the cycle of dependency on a highly concentrated global vaccine market. The pandemic has demonstrated an urgent need to enable countries in the global South to make their own vaccine to ensure equitable access to COVID-19 vaccines.

In April 2021, the African Vaccine Manufacturing Summit pledged to ramp up capacity in manufacturing vaccines to be used on the continent from 1% to 60% by 2040. Manufacturing capacity already exists in a handful of countries on the African continent, albeit on a limited scale. In June 2021, an announcement was made by the WHO that South Africa will be the host country for the continent's first COVID-19 vaccine production facility. The hub consortium members, Biovac and Afrigen aim to create a sustainable mRNA technology and knowledge hub for vaccine production with a range of partners. In July, Pfizer-BioNTech announced that it was collaborating with Biovac, with plans to produce 100 million doses of their mRNA vaccine annually and for all doses to be "exclusively distributed within the 55 member states that make up the African Union." Thus, there has been some increased momentum and developments in recent months to strengthen the continent's capabilities to manufacture vaccines.

The aim of the session is to discuss the status of the South African vaccine manufacturing and to highlight existing strengths and challenges, and also to outline opportunities that can be exploited to strengthen vaccine production including, but not limited to, public-private-partnership models. The session will also discuss the various vaccine expression system, such as plant-based manufacture of vaccines. It will also feature a special guest, Dr. Shymaa Enany from Suez Canal University, Egypt who will share her insights on COVID-19 vaccinology landscape in Africa.

Programme: (Description of the running order of the session – *90 minutes*)

Facilitator to provide a brief overview of the session, introduce each panelist and ask the panelist 3 questions (please see draft questions below). There will be time for questions from the audience at the end of the session.

Panelists and questions

1) Prof Petro Terblanche

Q1: What is the mRNA Hub and what is the partnership model?

Q2: How will the mRNA Hub contribute to sustainable vaccine production in South Africa and the African Continent?

Q3: What is the key contribution that the mRNA Hub can make to innovation in vaccine research and development in Africa?

2) Professor Ed Rybicki

Q1: What is the advantage of plant-based manufacture of vaccines over conventional methods?

Q2: Is this established in South Africa or anywhere in Africa?

Q3: What sorts of products should be made in plant-based facilities?

3) Biovac: Dr Ebrahim Mohamed

Q1: What is the role of Biovac within the mRNA Hub?

Q2: Biovac announced recently a ground-breaking partnership with Pfizer/BioNTech to manufacture and distribute the Pfizer/BioNTech COVID-19 vaccine for distribution within the

African continent. Can you tell us more about this partnership and what steps and processes are required to ensure a seamless tech transfer of the Pfizer/BioNTech COVID-19 vaccine to Biovac? How soon are we likely to see the relevant vaccines coming out of your facility?

Q3: What should be done to ensure for vaccine equity in South Africa and the rest of African Continent, both in the short-term and long-term? How can we facilitate collaboration and partnerships within the continent looking at the entire vaccine value chain?

4) CSIR

Q1: What role do you see that the Future Pharma initiative of the CSIR will play in building capacity for vaccine manufacturing in Africa?

Q2: Which vaccine technologies are available through the CSIR for the development of vaccines components?

Q3: What collaborative partnerships can the CSIR offer with regards to Vaccine production?

5) Dr. Shymaa Enany: COVID-19 vaccinology landscape in Africa

Q1: What should be done to ensure for vaccine equity in Africa in particular, both in the short-term and long-term?

Q2: Given the limited supply and flow of COVID-19 vaccine into the African Continent, a few African countries, including Rwanda, Senegal, South Africa and Egypt have taken steps for the manufacture of COVID-19 vaccines through two approaches, one of which is the manufacture of vaccines currently circulating through partnerships with international companies, and the other is through the development of new local vaccines. Can you tell us more about Egypt's efforts in this area?

Q3: How will Egypt contribute to sustainable vaccine production on the African Continent?

Moderator: (Name and maximum 100 words biographical summaries – URL link if relevant)

Facilitator: Dr Mmboneni Muofhe / Ms Glaudina Loots

Speakers: (Names and maximum 100 words per speaker biographical summaries – URL links if relevant)

(i) Professor Ed Rybicki:

Professor Rybicki directs a large research group specialising in production of vaccine- and diagnostic-relevant proteins and high-value protein reagents via various expression systems, but mainly in plants. He develops improved expression systems related to glycoproteins, and are exploring novel replicating expression vectors for use in animal cells and plants.

He is the Director for the Biopharming Research Unit recognised by the UCT Research Committee since 2013. He is also associated with a company founded in Cape Town in 2018 - Cape Bio Pharms - that is licensing products from his Biopharming Research Unit (UCT), as well as developing their own.

(ii) Professor Petro Terblanche has a successful track record in the strategic and operational management of technology intensive organizations. She has played a key part in the design and implementation of South Africa's biotechnology strategy. She is currently the Managing Director of Afrigen Biologics (Pty)Ltd based in Cape Town, South Africa. Afrigen hosts the global mRNA technology vaccine Hub under the COVAX initiative. Prof Terblanche also holds a part time position as Professor in the Faculty of Health Sciences at the North-West University. Previously she held the position of Managing Director at Pelchem SOC Ltd. A considerable part of her career was in research and development at the South African Medical Research Council (SAMRC) as well as the Council for Scientific and Industrial Research (CSIR). She has several qualifications which include: a Master of Science in Medical Oncology and Cancer Biology (Cum Laude) from the University of Pretoria, a Doctorate in Oncology and Cancer Biology also from the University of Pretoria, post-doctoral she was a visiting scientist at Harvard University School of Public Health and thereafter, completing Management of Technology program at Massachusetts Institute of Technology. Prof Terblanche is the author of more than 200 scientific publications and conference papers in public health. She was recently acknowledged as one of the legends of science by the Academy of Sciences South Africa.

(iii) Dr Ebrahim Mohamed

AVMI, Director | BIOVAC, S&I Group Leader

Dr Ebrahim Mohamed is a Synthetic Organic Chemist by training with 15 years' experience in pharmaceuticals with expertise covering business development, product development, technology transfers, process optimizations and cGMP.

After completing his PhD from the University of Cape Town in 2009, he joined the Science and Innovation (S&I) Department at the Biovac Institute (BIOVAC) where he established his expertise in the development of glycoconjugate vaccines. As Group Leader, he currently manages all the CMC related activities with the Science and Innovation department. He has accumulated experience in both inward and outward bound technology transfers of clinical vaccine candidates and commercial products.

In 2015, Ebrahim became a key member of the secretariat team of the African Vaccine Manufacturing Initiative (AVMI) where he has played a pivotal part in assisting with the coordination of the AVMI Vaccine Manufacturing and Procurement in Africa (VMPA) study. He was elected as a member of the board, representing the Southern African Region in 2016. In 2021, he was also elected as part of the Scientific Working group of the Emerging Biopharmaceuticals Manufacturers Network (EBPMN). Ebrahim has published several publications in reputable peer-reviewed journals.

(iv) Dr R K Chikwamba

Dr Rachel Chikwamba is the South African Council for Scientific and Industrial Research (CSIR) Group Executive: Chemicals, Agriculture, Food and Health. In this role, she leads the implementation of the CSIR's research, development and innovation strategy in the respective sectors, working closely with local and international partners to contribute to improved sectoral competitiveness and socio-economic performance through innovation. She was also recently the Executive responsible for CSIR's current strategy across its multidisciplinary areas of focus.

Dr Chikwamba's technical experience spans the life sciences across many market segments, but her research focuses on plant metabolic engineering to produce affordable therapeutics against infectious and neglected tropical diseases. She is currently working on the production of broadly neutralising antibodies for use in passive immunisation and long-term therapy for HIV infected individuals, work which has advanced to macaque studies with international collaborators. Her group is currently working on potential antibody therapeutics against COVID-19. She has led and participated in several global research consortia supported by the European Union Framework programmes, the Rockefeller Foundation, the Bill and Melinda Gates Foundation, among others.

Dr Chikwamba is the author of many publications in the field of plant made therapeutics. She is a former Board Member of the South African Medical Research Council, member of the Board of the Wits Health Consortium, a former Honorary Research Fellow at St George's Hospital at the University of London, and member of the Academy of Science of South Africa (ASSAF). She is also a panelist on the African Union high-level panel on emerging technologies, which advises the AU and its Member States on harnessing emerging technologies for economic development.

She holds a PhD in Genetics from Iowa State University in the USA, a Master of Business Administration from the Gordon Institute of Business Science at the University of Pretoria in South Africa.

(v) Dr. Shymaa Enany is an associate professor of Microbiology, Suez Canal University, Egypt. She received her PhD from School of Medical Sciences, Niigata University, Japan. Her postdoc was in the USA and Japan. She was the first Arab scientist applying bacterial proteomic techniques helping in revealing good markers for microbes spreading in community. She received many awards for her scientific contributions. Recently, she won the International Science Council (ISC) Award for Early Career Scientist in Africa, 2021. She awarded the most prestigious award in Egypt; the state encouragement prize for women in the field of health and pharmaceutical sciences, 2019. Also, she was awarded The World Academy of Sciences (TWAS) Young Arab Scientist Prize 2018 for Scientific Achievement in Medical Sciences. This year, she was appointed the Arab Region Executive Board Regional Member of Organization for Women in Science for Developing World (OWSD). She was selected as a member in the Global Young Academy (GYA). She is an alumna of Egyptian Young Academy of Science, an evaluator on Academy of Scientific Research and Technology, a reviewer in International Exhibition of Innovation, and an affiliate of The World Academy of Sciences.

Dr Shymaa is also a member of the scientific committee of World Forum for Women in Science, a selected young leader in STS and WSF, a member in the global Open Science Group, and a collaborator in Global Burden of Disease. She is one of Microbiology National Committee working for achieving sustainable development goals for a better future. She was appointed as an Egyptian ambassador in Next Einstein Forum (NEF), which showcase the global contribution and potential of scientists from Africa that enable Africa to get onto the global scientific stage, and she is a selected member of COVID-19 Diagnostics group in Africa and the co-chair of the

COVID-19 Clinical Research Coalition platform (Immunology, Virology and Diagnostics Working Group) in low- and middle-income countries. Finally, she has been selected as an African science leadership program fellow.

Session organiser(s): (Names of institutions and contact details of contact person – URL links if relevant)

Ms Glaudina Loots – glaudina.loots@dst.gov.za

Director: Health Innovation (DSI – Technology Innovation)

**Room 2 Round 2 DSI IB: Innovation Bridge Digital Start-up Community-
Strengthening collaboration across the innovation and entrepreneurship
ecosystem**



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Innovation Bridge Digital Start-up Community-Strengthening collaboration across the innovation and entrepreneurship ecosystem

Date: 1 December 2021	Time: 13:30
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Session Overview:

The Department of Science and Innovation (DSI) and the World Bank signed a Memorandum of Understanding (MoU) to collaborate on furthering the science, technology, innovation and entrepreneurship agenda in South Africa and the region. Increasing regional knowledge, experience sharing and collaboration across Southern Africa on innovation and entrepreneurship is one of the cooperation areas outlined in the MoU. Hence, the establishment of the Innovation Bridge Digital Start-up Community developed as a digital platform which brings together innovation and entrepreneurship ecosystem actors and facilitates collaboration, knowledge and resource sharing and matchmaking amongst and between the ecosystem actors in South Africa, Botswana, Namibia, eSwatini and Lesotho. This start-up community will also focus on: building a pipeline of growth entrepreneurs focusing on inclusiveness and diversity; mobilizing financial resources for early-stage investing (pre-

seed/seed); and facilitating startup friendly policies and regulations through diagnostics, consultations, and policy dialogue.

The start-up community will be implemented in partnership with the Council for Scientific and Industrial Research (CSIR) through the Innovation Bridge Portal, which will be the technical lead of the project to provide the digital tools and technical support to establish and operate the e-community. This Innovation Bridge Digital Start-up Community is expected to partner with various other programs, communities and networks for added-value content and services and act as a bridge to the existing innovation and entrepreneurship networks and platforms that provide access to global, European, United States and Asian ecosystem resources.

The proposed session will serve as a pre-launch event with the aim to create awareness of this project, share information to showcase the work already done by the team, as well as to consult and solicit support from the broader innovation and entrepreneurship ecosystem actors (incubators/accelerators, angel investors, early stage venture capital firms, corporates, entrepreneurs, innovators, academia, and public sector). The following presentation will be provided during the session: Overview of the Innovation Bridge Digital Start-up Community project; Insights from ecosystem events: Corporate Innovation Challenge and AgTech & Food Tech Innovation Challenge; Improving Policy Regulatory Environment for Entrepreneurs; and the impact of technical assistance to Entrepreneurs (Thinkubate casestudy). Ecosystem actors from the SACU member countries will be provided an opportunity to react to the presentations and provide their inputs. An opportunity for discussions, questions and answers will also be provided to all participants. The contributions and inputs will be discussed and considered for inclusion in the project plan prior its launch. It is envisaged that the Innovation Bridge Digital Start-up Community will be launched early 2022.

Programme:

Opening Remarks – Ms Mmampei Chaba, Department of Science and Innovation (5 min)

Overview of the Innovation Bridge Digital Start-up Community Project – Ms Michelle Harding, The Council for Scientific and Industrial Research (10 minutes)

Insights from ecosystem events: Corporate Innovation Challenge - Ganesh Rasagam, World Bank (10 minutes)

Insights from ecosystem events: AgTech & Food Tech Innovation Challenge – Sinethemba Mafanya, World Bank (10 minutes)

Q& A, 15 minutes

Improving Policy Regulatory Environment for Entrepreneurs – Stephan J. Lamprecht, Venture Solutions (10 minutes)

Building an investible ventures pipeline via Thinkubate – Catherine Young, Thinkroom Consulting South Africa (10 minutes)

Q&A, 15 minutes

Closing remarks, Ganesh Rasagam, World Bank (5 minutes)

Moderator:

Senisha Moonsamy from Technology Innovation Agency (TIA)

Senisha is currently the Head of Innovation Skills Development and Enterprise Development at the Technology Innovation Agency. She holds a PG: Dip in strategic Management from UCT. In the past 7 years she headed up International programmes and raised R100m focusing on economic growth through entrepreneurship and Implementation of Accelerator Programmes in South Africa namely: Global Cleantech Innovation Programme (UNIDO) GCIP 2.0; Swiss SA Venture Leader Programme, (University of Basel); UK Newton Funded Programmes Leaders in Innovation Fellowship with Royal Academy of Engineering Oxentia and SOFI with Innovate and KTN with Nigeria and Kenya; and “ South to South collaboration” Brazil SA Cross Incubation Support Programme in Agritech.

Speakers:

Ms Mmampei Chaba is currently Chief Director responsible for Multilateral and Africa engagements within DSI. Her responsibilities include managing South Africa's global and African multilateral Science, Technology and Innovation relations with organisations such as the UN, SADC and the African Union. Her She is also responsible for managing the 26 Science, Technology and Innovation bilateral agreements that South Africa has entered into with strategic countries in the continent. Previously, she served as a Director: Multilateral Cooperation from 2006 – 2010 within the DSI and as a Deputy Director in Multilateral Cooperation from 2004 – 2006. She was also seconded to the UK in 2008 on DSI's behalf. Before joining the DSI she worked in the Department of Health for 5 years as a Medical Scientist.

Ms Michelle Harding is the Programme Manager for the Technology Utilisation Initiatives Programme at the Council for Scientific and Industrial Research. Since she started working at the CSIR in 2012, she has been responsible for managing a variety of projects ranging from research and development projects to the implementation of strategic initiatives on behalf of Government. She has a keen interest in managing the development of systems that create valuable data and enable efficiency and effectiveness. Her degrees in entrepreneurship and

business management supports her ability to contribute across industries and types of organisations. Recently Michelle expanded on her qualifications by completing a certificate in business analysis.

Khomotso Grace Legodi is a South African international all-round professional with vast experience working with corporates and startups in South Africa and the United States. She is currently the Africa Director at venture capital fund, Grindstone Ventures and consults to The World Bank Group, helping them execute on Entrepreneurship Ecosystem Development in Southern Africa. Prior to her current roles she was the Director, Country Manager for Plug and Play Tech Center. She also has work experience in Investment Banking and Gender-lens Impact investing. This experience was gained over 10 years, the last 5 years of which were spent working at Goldman Sachs based in New York and Johannesburg. She holds a Bachelor Business Science – Accounting and Finance (Honours) degree from the University of Cape Town and is currently enrolled in a Masters Degree, MSc Innovation and Entrepreneurship with HEC Paris.

Sinethemba Mafanya started his professional career at Proctor & Gamble in Johannesburg, having been successful at the UCT P&G challenge. As an investment professional he has since held numerous roles in financial service advisory leading engagement within global leading consulting firms Ernst & Young and Accenture and leading corporate venture investments on behalf of multinationals and institutions. More recently, he was the General Manager leading impact and early-stage investments at the Diageo SA Empowerment Trust. He served as the executive representative at board level for the Diageo SA Empowerment Trust Board of Trustees. He has also served as the corporate venture fund representative on the Investment Committees of two Section 12 J Venture Capital Companies (VCCs), Aurik's fund 'Linkmakers' and Grovest led 'WDB Growth Fund - Seed Engine'. Sinethemba is also an advisor to a number of technology start-ups.

Stephan J. Lamprecht is the founder of VS Nova, a South African based management consultancy advising clients on strategy and services in support of the development, funding and promotion of high-growth start-ups. He is a qualified industrial engineer with a masters degree in management (specialising in new venture creation and entrepreneurship). As an experienced and professional strategy and workshop facilitator, he has amassed a broad range of strategy development and planning experience in working with leading groups as a workshop facilitator, including corporate teams of leading SA enterprises as well as various public sector institutions and state entities. Clients include corporate executive teams, early stage investors and public support for start-ups both locally and abroad.

Catherine Young is an African entrepreneur with executive level experience across a number of businesses, including a successful corporate career, holding various senior and executive positions in companies including Deloitte, Chevron and SAP Ariba. Her capabilities are underpinned by deep engagement and care for people across her work career. As the founder of Thinkroom, she is involved in entrepreneurial ecosystem development across Africa and the UK, as well as acceleration programmes through her co-ownership in Grindstone Accelerator.

She is an SME ecosystem influencer in Africa and works with clients in the space of entrepreneurship development across the continent. Catherine also co-founded Grindstone Ventures, a post-seed, pre-series A fund for businesses in the Grindstone Growth Engine.

Ganesh Rasagam is currently a Lead Private Sector Specialist at the World Bank, based in Pretoria, South Africa since February 2020. Prior to this, he was based at the World Bank HQ in Washington DC where he led both regional and global teams as Practice Manager for Finance, Competitiveness and Innovation for the East Asia and Pacific Region, Global Practice Manager for infoDev and Global Practice Manager for Innovation and Entrepreneurship for the Trade and Competitiveness Global Practice. Prior to joining the World Bank in 2003, he was the Chief Executive Officer of an international consulting firm based in Penang, Malaysia that specialized in the design and implementation of national and sub-national competitiveness strategies

Session organiser:

Nondumiso Jwatya, Department of Science and Innovation (DSI)
nondumiso.jwatya@dst.gov.za

Room 2 Round 3 DSI Dialogue: Fostering multi-stakeholder dialogue to build resilience through science, technology and innovation responding to COVID-19



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Fostering multi-stakeholder dialogue to build resilience through science, technology and innovation responding to COVID-19

Date: Thursday 1 December 2021	Time: 15:30 – 17:00
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Brief Description

Since its arrival in late 2019, the COVID-19 epidemic has caused negative effects on the economies of countries and has had a disastrous impact on human health. The conditions and restrictions imposed in most countries to limit the virus’s spread among people, such as social distancing and quarantines, have led to distortions in the system of supply and demand for goods and slowed many countries’ economies. The repercussions of the COVID-19 pandemic have been felt across all economic sectors and institutions, including Small and Medium Enterprises (SMEs). Resilience requires businesses to thoroughly look at how they can bounce back from the collapse of markets and this could be done by sorting partnerships with government and investors across the globe.

The session seeks to bring together Small, Medium and Micro Enterprises (SMMEs), Start-ups, Multinational Entities and Government to engage in a dialogue that is aimed at addressing challenges they are facing and most importantly finding solutions. The pandemic (Covid-19)

has in many ways resulted in an economic slowdown, affecting trade, investment, growth and employment. The pandemic has open opportunities for government and businesses to work together in coming up with innovative ideas that will address some of the challenges.

Programme:

Moderator: Dr Anitha Ramsuran – Manager: Innovation for Inclusive Development at Technology Innovation Agency (TIA)

1. Introduction – 5min
2. Resilient mechanisms for SMMEs in dealing with the global pandemic – Mr Kizito Okechukwu – Executive Head (22 ON SLOANE) or Ms Mathlatse Tolamo (22 ON SLOANE) – 20min
3. How STI can encourage collaboration between government and businesses – Dr Anita Ramsuran – 20min
4. Investment trends and opportunities for Businesses, SMMEs and Investors during Covid-19 – Dr Zwelakhe Tshandu – Manager Innovation for Inclusive Development (Development Bank from Southern Africa) – 20min
5. Q&A – 20min
6. Closing remarks – 5min

Moderator Dr Anitha Ramsuran – Manager: Innovation for Inclusive Development at Technology Innovation Agency (TIA)

Speakers:

- Dr Anitha Ramsuran – Manager: Innovation for Inclusive Development at Technology Innovation Agency (TIA)
- Mr Kizito Okechukwu – Executive Head (22 ON SLOANE) or Ms Mathlatse Tolamo (22 ON SLOANE)
- Dr Zwelakhe Tshandu – Manager Innovation for Inclusive Development (Development Bank from Southern Africa)

Session organiser(s):

Ms Elelwani Ramabulana
Elelwani.ramabulana@dst.gov.za

Room 2 Round 4 ICGB PMB: Promoting agricultural sustainability through biotechnology: genome editing and plant microbiomes (1)



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Promoting agricultural sustainability through biotechnology: genome editing and plant microbiomes (1)

Date: Thursday 2 December 2021

Preferred time: 09h:00 10:h30

Session Overview:

Global climate change is a serious threat for agriculture and in turn for food security. Indeed, events such as severe droughts or floods, as well as an increase in the intensity of pest attacks are becoming more frequent and will likely increase further. Natural tolerance, resistance or treatments for these afflictions are rare, and best practices still rely on prevention of these stresses (rather than cure). Rapid developments in agricultural biotechnology offer a solution for a more sustainable agriculture. New breeding technologies, such as genome editing with CRISPR, have recently emerged as possible solutions. CRISPR is based on an innate (yet adaptive) archaeal and bacterial immune system, that has been developed to its current commercial status by manipulating the *Streptococcus pyogenes* system. The technology allows for the editing of genomes with unprecedented precision, efficiency, and flexibility, and has found applications in disciplines ranging from medicine to agriculture. Crops that have been bioengineered by CRISPR and field-tested include maize, wheat, rice, sorghum, soybeans, cucumber, potatoes, tomatoes and oranges. Most of the traits can be summarized as agronomic traits, followed by food and feed quality, and biotic stress tolerance.

In this session we are going to showcase some exciting and interesting examples of recent research in agriculture (as well as other disciplines) from Italy and South Africa, in order to give an idea of the potential applications of new breeding technologies. An overview of what is currently occurring around the world in terms of products and regulations will be given. This will be viewed in the African and in particular the South African context.

The aim of the session will be to explain what is genome editing technology, and what are the potentials for this new technology. How it can benefit agriculture and what are the possible challenges in the future?

Programme: (Description of the running order of the session – 90 minutes)

Short intro by the moderator 5 min max

Presentations by the panelist (5-8 min each)

- Dr Lorenza Dalla Costa (Foundation Edmund Mach (FEM), Italy)
dallacosta.lorenza@gmail.com
- Prof Dave Berger (Department of Plant and Soil Sciences and the Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, South Africa)
dave.berger@fab.up.ac.za
- Dr Piyel Pivval (CSIR, South Africa) ppillay3@csir.co.za
- Mrs Chantel Arendse (CropLife, South Africa) chantel@croplife.co.za
- Mr Josphat N. Muchiri (Kenya National Biosafety Authority)
jmuchiri@biosafetykenya.go.ke
- Dr Julian B Jaftha (GMO Executive Council Chairperson, South Africa) (To be confirmed) julianj@dalrrd.gov.za

Or

- Dr Hennie Groenewald (Biosafety South Africa), hennie@biosafety.org.za

Discussion

Moderator

Dr Manuela Campa
mcampa@sun.ac.za

Dr Manuela Campa

Manuela Campa is a researcher at Stellenbosch University. Dr Campa obtained her PhD in Biotechnology at the University of Insubria, in Italy in 2007. Following post-doctoral fellow positions at a few Italian universities and research institutes, Manuela joined the research group of Prof Johan Burger at the Genetics department of Stellenbosch University in 2014. Her research covers most aspects of plant biotechnology and she recently started to expand her experience in genome editing technology to crops like grapevine, wheat and potatoes in order to improve resistance to biotic and abiotic stresses.

Speakers

Dr. Lorenza Dalla Costa,

PhD, Researcher at Foundation Edmund Mach (FEM), Italy

Dr. Lorenza Dalla Costa deals with genetic improvement of grapevine using gene transfer techniques in order to modify traits involved in resistance/tolerance to pathogens or related to the fruit quality. In recent years, she has applied new plant breeding technologies (NPBT) such as Zinc Finger nucleases (ZFN), cisgenesis, CRISPR/Cas9. She also developed innovative analytical methods for the molecular characterization of genetically modified plants. She is the author of several publications in the plant biotechnology sector.

ORCID 0000-0001-5915-5582

RESEARCHGATE <https://www.researchgate.net/profile/Lorenza-Dalla-Costa>

LINKEDIN [linkedin.com/in/lorenza-dalla-costa-35aa5467](https://www.linkedin.com/in/lorenza-dalla-costa-35aa5467)

Prof. Dave Berger

Dave Berger is a professor in the Department of Plant and Soil Sciences and the Forestry and Agricultural Biotechnology Institute (FABI) at the University of Pretoria. As a plant biotechnologist, he conducts collaborative research on crop diseases of economic importance in Africa and globally. His main research aim is to develop sustainable management strategies for long-term food security. He holds a B2 rating ("internationally acclaimed researcher") from the National Research Foundation of South Africa, and in 2013 was a USDA Norman E. Borlaug International Agricultural Science and Technology Fellow at the University of Arkansas, USA.

He was recipient of the 2016 Special Award for Crop Science and Food Security from the National Science and Technology Forum/South 32. Research website: <http://tinyurl.com/FABI-MPPI>

Dr Priyen Pillay

I am currently a Senior Researcher at the CSIR Chemicals Cluster, Technology Demonstration group under Dr Tsepo Tsekoa. We are involved in metagenomics as well as plant biopharming. Our team has developed technologies for purifying and formulating genome editing enzymes, Cas9 and a novel T7 endonuclease, at Trl 6. We also conduct research on genome editing in bacteria, *Rhodococcus* and *Lactobacillus* and plants, *Nicotiana benthamiana*. We are currently employing the Cripsr/Cas9 technology for metabolic pathway engineering in *Rhodococcus* and *Lactobacillus*, and recombinant protein production enhancement in plants. I have a strong network and I wish to build upon it.

Chantel Arendse

Chantel Arendse is the Plant Biotechnology Lead at CropLife South Africa, where she represents the interests of industry members by supporting the successful commercialisation of plant biotech products as well as trade of biotech commodities into and out of South Africa. Prior to this appointment, she held various positions at the Department of Agriculture in South Africa and more recently, the United States Department of Agriculture - Animal and Plant Health Inspection Services (USDA-APHIS) where she was responsible for regulatory policy issues such as Biosecurity, Biotechnology and Plant Improvement.

Josphat N. Muchiri

Mr. Josphat Muchiri is the Deputy Director, Technical Services and Head of Biosafety Risk Evaluation Department at the Kenya National Biosafety Authority. He is also Kenya's National Focal Point for the Biosafety Clearing House (BCH) and Contact Person for Emergency Measures for the Cartagena Protocol on Biosafety.

Mr. Muchiri received his Bachelor Degree in Agriculture from University of Nairobi (2000), Master's Degree in Horticulture, University of Nairobi (2005) and Master's Degree, Biosafety in Plant Biotechnology from Marche Polytechnic University, Italy (2013).

Prior to his current position, Mr. Muchiri has held entry and mid-level positions at the National Biosafety Authority since 2011. Previously, he worked with the Kenya Plant Health Inspectorate Service (KEPHIS) as a seed specialist and plant examiner. Mr. Muchiri was a member of the Ad Hoc Technical Expert Group (AHTEG) on Risk Assessment and Risk Management of LMOs between year 2014 and 2016. He has facilitated in various fora nationally and internationally as an expert on biosafety regulatory frameworks in Kenya and other diverse topics related to biotechnology, biosafety and emerging technologies.

Dr Julian B. Jaftha

GMO Executive Council Chairperson

Chief Director: Plant Production & Health

Or

Dr Hennie Groenewald (Biosafety South Africa)

hennie@biosafety.org.za

Session organiser(s):

Dr Pierguido Sarti, Italian Embassy, Pierguido Sarti - pretoria.scienza@esteri.it

Dr Manuela Campa, Stellenbosch University, mcampa@sun.ac.za

Dr Vittorio Venturi, International Centre for Genetic Engineering and Biotechnology,
Vittorio.Venturi@icgeb.org

Room 2 Round 5 ICGEB GE: Promoting agricultural sustainability through biotechnology: Genome editing and plant microbiomes (session 2)



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Promoting agricultural sustainability through biotechnology: Genome editing and plant microbiomes (session 2)

Date: 2 December 2021	Time: 11:00 12:30
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Session Overview:

Microbiome research is gaining momentum in plant science with next-generation-sequencing and computational biology unravelling the different microbial groups populating plant microbiomes. Plant associated microbial communities play key functions in biotic and abiotic stress tolerance as well as nutrient acquisition and carbon and nitrogen cycling. Biotic and abiotic factors as well as plant genotype are the major drivers of the plant microbiome assembly and structure. Plants establish associations with microbes principally at the leaf aerial parts in the phyllosphere and at root level in the rhizosphere. The rhizosphere, which is the nearest soil area to the roots, hosts a rich and a very important microbial plant community providing a series of beneficial outcomes related to plant health and growth. Plant roots recruit their rhizosphere microbiome mainly from bulk soil and a small proportion of the microbes in the rhizosphere then enter the plant colonising the rest of the plant. Biodiversity of plant microbial communities is very important which is being threatened by the extensive use of pesticides and herbicides. An important challenge for sustainable agriculture is the identification and use of microbial species

in agroproducts that could either promote plant growth by increasing the nutrient/water assimilation capacity of the roots, or act as bio-pesticides, thus supporting persistence of the beneficial effects of plant microbiomes. Plant-microbiome also play a role in the establishment of the human the gut microbiota through the food chain, which therefore has implications on animal and human health.

Programme: (Description of the running order of the session – *90 minutes*)

Short intro by the moderator 5 min max

Presentations by the panelist

1. Prof. Alessio Mengoni (University of Florence, Florence Italy), alessio.mengoni@unifi.it
2. Prof. Olubukola Babalola (North-West University, Mmabatho, South Africa), olubukola.babalola@nwu.ac.za
3. Dr. Pooja Singh (Monash University, Selangor Darul Ehsan, Malaysia), pooja.singh@monash.edu
4. Dr. Joseph MK Mulema (CABI, Nairobi, Kenya), j.mulema@cabi.org
5. Dr. Lara Donaldson (ICGEB, Cape Town, South Africa), lara.donaldson@icgeb.org

Discussion

Moderator:

Dr. Vittorio Venturi (ICGEB, Trieste, Italy)

Vittorio.Venturi@icgeb.org

Title: Group Leader of the Bacteriology Group of ICGEB and ICGEB Scientific coordinator

Brief Biography: Dr. Venturi has over 25 years of experience in rhizospheric bacteria research. His scientific interest is cell-cell signaling in bacteria and in plant-bacteria communication with particular attention to the formation and dynamics of plant related microbial communities. Inside ICGEB he also leads the facility Strains4Plants for the study of plant microbiomes and the development of microbial products for a more sustainable agriculture.

Speakers:

1. Prof. Alessio Mengoni

Title: Associate Professor Genetics at the Department of Biology of the University of Florence, Italy.

Brief Biography: Alessio Mengoni graduated in Biology in 1997 and obtained a PhD in genetics from the University of Pavia, Italy in 2000. He is associate professor of Genetics at the Department of Biology of the University of Florence, Italy, and has been visiting professor at the Intercollegiate Faculty of Biotechnology MUIG&GU, Gdansk, Poland and at the School of Sun-Yat Sen University, Guangzhou, China. Main research interests deal with the study of the interactions between plants and microorganisms, related to plant growth-promoting bacteria and plant microbiome for applications in agricultural and environmental biotechnology.

He is the author of over 170 scientific articles and founding partner of a spin-off company of the University of Florence for microbiological and genetic analysis (EcolGene S.r.l.)

2. Prof. Olubukola Babalola

Title: Professor Olubukola O. Babalola, Pr.Sci.Nat., FASLP, MASSAF, MTWAS, Vice President: Org. for Women in Science for the Dev. World (OWSD, Africa) Director: Food Security and Safety Niche Area, Principal Investigator: Microbial Biotechnology Group, Faculty of Natural & Agricultural Sciences, North-West University, Private Bag X2046, Mmabatho 2735, South Africa.

Brief Biography: Professor Olubukola Oluranti Babalola (Pr.Sci.Nat, MASSAF, FASLP, FTWAS), an NRF rated scientist, is a graduate of NWU Business School, South Africa. She obtained Ph.D. in Microbiology with IITA Fellowship & the Postgraduate Training Fellowships of OWSD. Olubukola had two postdoctoral experiences from standard laboratories in Israel and South Africa. She has always advocated the use of biofertilizers over & above chemical fertilizers for plant health management. Her effort for SDG 2 “Zero Hunger” in the continent of Africa for food security & sustainable agriculture is helping farmers, women, & all food lovers. Olubukola has over 20 years of research experience focusing on rhizosphere metagenomics. She is the incumbent Research Director of the Food Security & Safety Niche Area at NWU, the VP of OWSD. Without reservation leading, as the head and Principal Investigator, a Microbial Biotechnology Research laboratory. Her laboratory is a mini united nation, with students from within and outside Africa, making a substantial contribution to Science, her original research motivation. Olubukola is a member of the editorial board for BMC Microbiology (Elsevier) and Biochemistry and Biophysics Reports (Elsevier). Her team has received many awards, including being the finalist, GenderInSite 2020. Olubukola joined NWU in 2009; at NWU, Olubukola is passionate about capacity building and has graduated 22 doctoral fellows, 21 masters, and numerous Honors students. Prof Babalola is a prolific author with over 250 publications. In 2018, she delivered her professorial inaugural lecture. She has over 56 certificates in her professional interest areas from the University of California, Berkeley, USA, University of Mauritius, Reduit, North-West University, South Africa, and Bradford University, UK, to mention a few. She is an AAAS-TWAS Science diplomacy 2014 alumnus, impacting the

world after the eye-opening awareness on policymaking, diplomacy and diplomatic engagement. She is now taking action using the gender lens and forging collaborations with diplomats. She is a fellow of The World Academy of Sciences (TWAS) and Academy of Science of South Africa (ASSAF). Her wealth of international experience spans the Americas, Asia, Europe, and Oceania. She enjoys international collaborations, research grants, and many awards.

3. Dr. Pooja Singh

Title: Research Fellow, School of Science, Monash University Malaysia, Jalan Lagoon Selatan, 47500 Bandar Sunway, Selangor Darul Ehsan, Malaysia.

Brief Biography: Dr. Pooja Singh is a plant biologist and her research is focused on plant-microbe interactions. She completed her Ph.D. (Plant Pathology) from School of Bio Sciences and Technology, Vellore Institute of Technology, India. She was awarded a research fellowship from the Department of Science and Technology, Government of India to pursue her doctoral thesis on exploring the role of MYB transcription factor in response to sheath blight in rice. She joined CEBAR, University of Malaya, Kuala Lumpur in the year 2015 and completed her three years of Postdoctoral fellowship and was later appointed as a Research Fellow. Her work at CEBAR was focused on plant stress related studies and utilizing rhizo- and endophytic bacteria to overcome stress condition. She joined School of Science, Monash University as Research Fellow in 2021 and her current research interest are in plant microbe interaction and applied microbiology to enhance plant and soil health. Pooja is an active researcher and has published an impressive number of peer reviewed publications, invited book chapters and popular magazine articles in 'Science Trends' and 'Atlas of Science'. She has also presented and achieved best paper award at International Conferences. She has been recently awarded with Advancing Women's Success Grant 2022 from Monash University, Australia for her work in microbes for improving soil health in heavy plastic mulched agricultural fields.

4. Dr. Joseph Mulema

Title: Senior Scientist, Research CABI (Centre for Agriculture and Biosciences International), Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya

Brief Biography: PhD in Molecular and Cell Biology; MSc in Crop Science; BSc in Agriculture
. About

At CABI, Dr. Mulema supports the development and implementation of projects and programmes including PlantwisePlus, Plantwise and Action on Invasives. Have more than eight years of experience working in both developed and developing countries on a range of projects, mainly in plant health, and spent more than four years working with various stakeholders in Uganda and Zambia to establish all-inclusive plant health systems through the Plantwise Initiative. Current areas of focus include pest surveillance and associated studies, pest risk analysis, horizon scanning to document risky invasive alien species, metagenomics and microbiome research to understand the effect of smallholder farming practices on species

richness and diversity and enhancing youth capacity to exploit opportunities in the agricultural sector.

5. Dr. Lara Donaldson

Title: Group Leader, International Centre for Genetic Engineering and Biotechnology (ICGEB), Cape Town, South Africa.

Brief Biography: Dr. Lara Donaldson joined the International Centre for Genetic Engineering and Biotechnology in March 2021 where she leads the Plant Systems Biology group. Her current research interests lie in understanding how plants specifically adapt to salinity stress and how the microbiome of sorghum can be harnessed to improve food security for Africa. Prior to her appointment at the ICGEB, Lara worked at Roche sequencing solutions developing DNA library preparation kits for Illumina sequencers. She plans to use her experience in 'omics' research towards a holistic understanding of the interaction between plants, the soil and its microorganisms and the environment. Lara is currently a fellow in the Africa Science Leadership Programme where she is gaining leadership skills for working toward "Agenda 2063: The Africa We Want."

Session organisers:

Dr Pierguido Sarti, Italian Embassy, Pierguido Sarti - pretoria.scienza@esteri.it

Dr Manuela Campa, Stellenbosch University, mcampa@sun.ac.za

Dr Vittorio Venturi, International Centre for Genetic Engineering and Biotechnology, Vittorio.Venturi@icgeb.org

Room 2 Round 6 DSI Precarity: Reducing the Precarity of Academic Research Careers



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Reducing the Precarity of Academic Research Careers

Date: Thursday 2 December 2021	Preferred time: 13:30
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Session Overview:

In May 2021, the OECD published a Report on *Reducing the Precarity of Academic Researcher Careers*. The report analyses academic research careers, with a focus on the postdoctoral researchers holding fixed-term positions without permanent or continuous or tenured employment prospects. The report identifies policies and practices that aim to improve researchers' well-being, develop more diverse, equitable and inclusive research systems, attract and retain the best talent in academia, and ultimately improve the quality of science. South Africa's participation in this OECD study was led by Prof. Roseanne Diab. Prior to the OECD report, South Africa, through the Department of Science and Innovation (DSI), commissioned USAf to project manage a study on building the next cadre of emerging researchers in South Africa. This study, also called the 'Silent Majority' study, unearthed a number of challenges facing emerging researchers, particularly black and women researchers. The study findings further highlighted the precarity of academic research careers and issues around the attraction and retention of the best talent in academia. Subsequent to the study,

the DSI commissioned USAf on a project on the implementation of some of the recommendations of the “Silent Majority” study. The USAf will share the “Silent Majority” study findings, recommendations and the interventions planned in the short term to build the next cadre of emerging researchers.

The DHET has been addressing the problems of the Precarity of Academic Research Careers through a comprehensive, seamless framework aimed at the renewal and the regeneration of the academic research workforce, namely, the Staffing South Africa University Framework (SSAUF). The DHET will reflect on the programmes and their progress in address the precarity question.

Lastly, the DSI commissioned CREST at the University of Stellenbosch to conduct *A Cross Sectoral PhD Tracer Study* tracing PhDs who graduated between 2002 to 2018. This study tracked the employment prospects, careers and mobility of PhD students who graduated in the period between 2002 and 2018 from South African university. The study will add value to the discussion on the precarity of academic researchers, at least at entry level.

Programme:

Introduction and Welcome: Session Chair

- Prof. Roseanne Diab: The precarity of academic research careers – perspective/s from the OECD study;
- Prof. Stephanie Burton: A study on building the next cadre of emerging researchers – findings, recommendations and interventions;
- Dr Thandi Lewin: Staffing South Africa University Framework – Policy responses to the precarity of academic researchers; and
- Prof. Johan Mouton: The employment prospects, careers and mobility of PhD holders – A Cross Sectoral PhD Tracer Study.

Moderator:

Dr Daniel Adams

Dr Daniel Adams is currently the Chief Director: Basic Sciences & Infrastructure at Department of Science and Innovation (DSI). He led the stakeholder engagements on the OECD Precarity of Academic Research Careers study findings during his tenure as Acting DDG: Research Development and Support at the DSI.

Speakers:

Prof. Roseanne Diab

Prof. Roseanne Diab is a Researcher, and Director of Gender in science, innovation, technology and engineering (SITE), a [UNESCO's](#) programme unit hosted by [The World Academy of Sciences](#) (TWAS). Prof Diab is a former Executive Officer of the [ASSA](#), a Fellow of the [University of KwaZulu-Natal](#) and Emeritus Professor in the School of Environmental Sciences at the same university.

Prof. Stephanie Burton

Prof. Burton is a Research Fellow of USAf and recently completed two terms as the Vice-Principal for Research and Postgraduate Education at the University of Pretoria. Professor Burton is an NRF B-rated scientist, a Vice-President of the ASSAf and a Chair of the editorial board of the South African Journal of Science.

Dr Thandi Lewin

Dr Thandi Lewin is currently the Acting Deputy Director-General: University Education Branch in the Department of Higher Education and Training (DHET). Among other things, Dr Thandi Lewin provides the strategic leadership for the implementation of the Staffing South Africa University Framework

Prof. Johann Mouton

Prof. Johann Mouton is the Director of the DSI-NRF Centre of Excellence for Scientometrics and STI Policy and Professor at CREST. Prof. Mouton has led several evidence-based studies in the higher education and research sector, including two studies of interest to this topic, namely, the Silent Majority Study and the Cross sectoral PhD study. Prof Mouton is on the on the editorial board of five international journals including *Science and Public Policy*, *Science, Technology and Society* and *Minerva*.

Session organisers:

Mr Bheki Hadebe

bheki.hadebe@dst.gov.za

Ms Mmampei Chaba

mmampei.chaba@dst.gov.za

Department of Science and Innovation of South Africa

Room 2 Round 7 DSI SADC: Implementing the Recommendations of the SADC Engineering Needs and Numbers Study

Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Implementing the Recommendations of the SADC Engineering Needs and Numbers Study

Date: 2 December 2021	Time: 15h30
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Session Overview:

In June 2019, the SADC Ministers responsible for Education and Training and Science, Technology and Innovation (ET-STI) endorsed the regional report on the engineering needs and numbers capacities study. The overall objective of the study was to get a better understanding of the Engineering Technologist and Engineering Technician capacities in the SADC region to allow for better planning and implementation of infrastructure programmes to support the SADC Industrialisation Strategy (2015-2063). The SADC Industrialisation Strategy identifies lack of adequate infrastructure and lack of adequate skills and capacities in science, technology, engineering and mathematics (STEM) among others as the constraints for industrial development.

Some of the key recommendations from the study include the need to address the ever-growing challenge of unemployed graduates, whereby a regional approach to developing graduates must be established and adopted. The study reveals that without investment in infrastructure and maintenance, economic growth cannot take place.

As part of implementing the recommendations of the study, the Department of Science and Innovation (DSI) in partnership with the Federation of African Engineering Organisations (FAEO) and the Southern African Network of Water Centres of Excellence (SANWATCE) will be host a virtual “*capacity building training on water and sanitation infrastructure assets maintenance*” during the first quarter of 2022. The training is meant to equip municipal workers responsible for the maintenance of water and sanitation infrastructure assets within their respective municipalities with skills required to do so.

In addition, UNESCO published the second Engineering Report; *Engineering for Sustainable Development: Delivering on the Sustainable Development Goal* in March 2021. The report highlights the crucial role of engineering in achieving each of the 17 SDGs. It shows how equal opportunities for all is key to ensuring an inclusive and gender balanced profession that can better respond to the shortage of engineers for implementing the SDGs.

The DSI in partnership with the SADC Secretariat and UNESCO will convene this session during the Science Forum to unpack the implementation of the recommendations from the SADC Engineering Needs and Numbers study as well as to launch the UNESCO Science Report. The session will deliberate on the following:

- What are the key recommendations from the SADC Engineering Needs and Numbers study;
- Which regional engineering initiatives are being implemented that respond to the SADC Engineering study; and
- What are the key recommendations from the UNESCO Engineering report and their implications on the SDG's.

Programme

Time	Topic	Speaker
15:30-15:35	Opening remarks	Facilitator
15:35-15:55	Key Outcomes of the SADC Engineering Needs and Numbers study	Ms Allyson Lawless
15:55-16:20	UNESCO Engineering report: Delivering on the SDG's	UNESCO
16:20-16:40	Engineering Capacity building initiatives to implement the SADC Engineering study: Ø Regional perspective Ø Continental perspective Ø National perspectives	Ø Ms Anneline Morgan, SADC Secretariat Ø Mr Martin Manuhwa, FAEO Ø Mr Joa Karisutu, Engineers Registration Board, Botswana Ø ECSA, South Africa
16:40-16:55	Discussion	All
16:55-17:00	Conclusion	Facilitator

Moderator:

Ms Mmampei Chaba, Chief Director: Multilateral Cooperation and Africa, DSI / Ms Mandry Ntshani, Acting Director: Africa Multilateral Cooperation, DSI

Speakers:

- Ms Anneline Morgan, Senior Programme Officer-Science, Technology and Innovation, SADC Secretariat
- Ms Allyson Lawless, Managing Director, SAICE Professional Development and Projects
- Mr Martin Manuhwa, Federation of African Engineering Organisations (FAEO)
- Mr Joa Karisutu, Engineers Registration Board, Botswana
- Representative from the Engineering Council of South Africa (ECSA)

Ms Mandry Ntshani, Department of Science and Innovation of South Africa
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Room 3

Room 3 Round 1 AERAP Plant: Developing plant-based platforms in support of Africa's health revolution



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title:

Developing plant-based platforms in support of Africa's health revolution

Date: 1 December 2021

Time: 09h00-10h30

Session Overview:

Production of pharmaceutically relevant proteins is scarce in developing countries such as many in Africa, leading to most of them relying on importation at increased prices, as well as long lead times to receive these vital proteins (Tsekoa et al., 2020).

The recent pandemic highlighted the shocking disparity in access to diagnostics and vaccines for Africa and the fact that Africa requires it's own manufacturing capabilities cannot be ignored any longer. The question then becomes, what platforms are suited to the unique environment of the African continent. The Plant-based system has been proposed as a boon for developing countries and has just reached maturity. It is affordable, quick and easy to set up and scalable. This session discusses the vision for Africa becoming self-sufficient in terms of research and diagnostic reagents, as well as therapeutic proteins and vaccine manufacturing capacity. Health

requirements specific to Africa and how the plant-based system is primed to respond to these will be highlighted. The challenges and opportunities, as well as the regulatory environment will also be discussed.

South Africa and Argentina have historically been at the forefront of developments in molecular farming for developing countries. Both countries have a high level of expertise in the area, connections with local research and veterinary centres and focus on region specific ailments (Rybicki et al., 2013).

Transgenic plants ultimately offer the most cost effective strategy to address the issue of global access to healthcare. This is due to the economy of scale and low technical and scientific expertise required, the medicines could be home grown by local farmers (Paul et al., 2013).

A 'Boon' is defined as 'a timely benefit: blessing' and this definitely applies to the fit between plant molecular pharming (PMP) and developing nations such as most African countries, India and Brazil. The timing aspect is ripe-PMP has finally reached maturity as a field and many patents have lapsed in both the technology and many protein products that could be produced. This technology is a blessing due to its ease of set up and running to produce various proteins that can improve human health and life, as well as the relatively low costs to do so that make it accessible to developing countries.

Key questions are the benefits of the Plant-based platform compared to other platforms, what are the top African specific health needs to focus on and what are the hurdles to overcome in terms of implementing in Africa.

Programme:

Prof Kurt Zatloukal: Introduction to the Plant-Based platform and green medicines for future project (15 minutes)

Prof Ed Rybicki: Overview of the One Health Concept - successes and trials in producing proof of concept reagents and vaccine candidates in plants (15 minutes)

Dr Tsepo Tsekoa: Producing therapeutic proteins for Africa- the landscape of African specific requirements and bioprocessing. (15 minutes)

Francisco Pera and Scott de Beer: Producing reagents and diagnostic proteins in plants and co-development of diagnostic test kits in Africa (15 minutes)

Dr Maureen Dennehy: Large scale Plant-based Production – ISO and cGMP (15 minutes)

Declan Kirrane: Policies and regulatory environment (10 minutes)

Declan Kirrane: Questions and discussion session (5 minutes)

Moderator:

Declan Kirrane

AERAP African-Europe Science Platform / Chair SSUNGA76

Belgium

<https://aerapscience.org/>

Declan Kirrane is the founder and Managing Director of ISC Intelligence in Science in Brussels. He has more than 25 years of experience disseminating scientific and research activities in Europe and worldwide from organizations and governments. He has been involved in the dissemination of the research activities funded by the European Union's Framework Programme for Research and Technological Development and Demonstration (FP) since 1994, the former Horizon Europe. With Financial Times, he was the launch editor of CORDIS, the European Commission's research information Service. He was Editor of the Commission's Innovation and Technology Transfer Newsletter and CORDIS focus. His expertise covers ICT, Health, Defence, Space, Science Policy, GPRD legislation, EU R&D and Innovation policies, programmes and funding instruments. He has worked extensively on science policy evaluation methodologies and technology options for policy, and decision-makers use investment in science for broader economic development and competitiveness. With the Office of Science in the US Department of energy, he Launched the Ford Foundation Bellagio process on science policy evaluation methodologies.

He is closely involved in EU-Africa science and innovation relations and investments, particularly the EU's investment strategy for Africa. He was closely involved in the South African government's bid to host the Square Kilometre Array Radio Telescope, the SKA, South Africa and its partner countries succeeded in securing the rights to build the SKA in South Africa. He manages the Africa-Europe Science and Innovation Platform, AERAP.

Declan has been actively promoting a more assertive role for science within the context of the United Nations General Assembly since 2010. This has culminated in the annual Science Summit within the context of the General Assembly.

Speakers:

Kurt Zatloukal

Medical University Graz

Director of the Diagnostic and Research Center for Molecular BioMedicine, Director BBMRI.at
Graz, Austria

<https://medunigraz.at/en/research-centers-and-institutes/diagnostic-and-research-center-for-molecular-biomedicine>

Kurt Zatloukal, M.D. is professor of pathology at the Medical University of Graz, Austria and is head of the Diagnostic and Research Center for Molecular Biomedicine. His research focusses on molecular pathology of diseases as well as biobanking and related technologies. Furthermore, he led in the FP7-funded large integrated project SPIDIA the development of new European standards and norms for pre-analytical processing of tissue samples for molecular testing. He has published 238 scientific papers and was co-inventor of 25 patent applications.

Prof Ed Rybicki

Director URC Biopharming Research Unit (BRU), Professor in Microbiology, Molecular and Cell Biology Department, Faculty of Science, & Member, Institute of Infectious Disease and Molecular Medicine (IDM), University of Cape Town.

http://www.idm.uct.ac.za/Ed_Rybicki

His research interests are in the area of vaccine biotechnology, and in developing mainly plant expression systems as platforms for the production of a wider range of proteins. His expertise includes vaccine and viral biotechnology.

The BRU has as its mission the expression of pharmaceutically relevant recombinant proteins in plants.

Ed has authored or co-authored over 120 articles and 19 reviews in peer-reviewed journals and about 20 book chapters.

Tsepo Tsekoa

CSIR principal researcher and research group leader for biomanufacturing technology demonstration

<https://www.csir.co.za/dr-tsepo-tsekoa>

Tsekoa's research focuses on developing production processes for biologics manufacture at bench and pilot scale. He pursues an applied research programme in the combined fields of applied biochemistry, enzymology and structural biology, and their application to biomanufacturing problems.

His expertise is in the recombinant production of biologics, including reagent proteins and vaccines, as well as originator and biosimilar antibodies. He has expert knowledge of downstream processing (including filtration and chromatography) as applied to biomanufacturing development at these scales.

His track record includes publications in peer-reviewed journals, technology disclosures and technology demonstrators. He trains students and serves as reviewer, examiner and moderator for various local and international institutions.

Francisco Pera and Scott de Beer

Francisco and Scott completed their Masters degrees at the Bio Pharming Research Unit (BRU), in molecular pharming and began working at the BRU to help commercialize their plant technology. They are founding members of the spin off company Cape Bio Pharms, which has produced a variety of research and diagnostic reagents in plants over the last 4 years. As their roles as Head and Lead R&D scientists at Cape Bio Pharms and Cape Biologix, they have successfully produced over 70 different proteins in the plant-based system and played a critical role in setting up a commercially viable platform, as well as scaling up the technology to match production needs. Over the last year, their focus has been on producing SARS-CoV-2, Ebola and Malaria antigens/antibodies and developing diagnostic test kits in collaboration with South African, Senegalese and Indian diagnostic test kit manufacturers.

Dr Maureen Dennehy

Quality Manager at Cape Biologix, IRCA-certified Lead Auditor, ISPE Certified Pharmaceutical Industry Professional. Maureen has around 25 years of experience in pharmaceutical and medical device manufacturing. Her specialist areas are Quality Assurance, Quality Control and Qualification/Validation. She started at the State Vaccine Institute in tuberculosis and rabies vaccines. This transitioned into Biovac, where she was Quality Manager for many years. She then spent 5 years consulting for international Non-Governmental Organizations and local pharmaceutical and medical device manufacturers, before returning to her biotechnological roots at Cape Biologix. She has a PhD in biotechnology and an MBA (Operations focus).

Declan Kirrane

AERAP African-Europe Science Platform / Chair SSUNGA76
Belgium

<https://aerapscience.org/>

Declan Kirrane is the founder and Managing Director of ISC Intelligence in Science in Brussels. He has more than 25 years of experience disseminating scientific and research activities in Europe and worldwide from organizations and governments. He has been involved in the dissemination of the research activities funded by the European Union's Framework Programme for Research and Technological Development and Demonstration (FP) since 1994, the former Horizon Europe.

With Financial Times, he was the launch editor of CORDIS, the European Commission's research information Service. He was Editor of the Commission's Innovation and Technology Transfer Newsletter and CORDIS focus. His expertise covers ICT, Health, Defence, Space, Science Policy, GPRD legislation, EU R&D and Innovation policies, programmes and funding instruments. He has worked extensively on science policy evaluation methodologies and technology options for policy, and decision-makers use investment in science for broader economic development and competitiveness. With the Office of Science in the US Department

of energy, he Launched the Ford Foundation Bellagio process on science policy evaluation methodologies.

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Session organiser:

Declan Kirrane, ISC Intelligence
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Room 3 Round 2 AERAP Humanity: Ensuring science is relevant for all humanity



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Ensuring science is relevant for all humanity

Date: 1 December 2021	Time: 13h30-15h00
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Session Overview:

Scientific Research and Digital Innovations must identify and address the problems of most concern to us as humans: How can our children grow up safely? Can future generations be able to depend on planet earth? How can people thrive and flourish by removing obstacles to economic and social opportunity? Leadership is needed and women everywhere are stepping up. What are the policy instruments and decisions that will allow the world to harness the unstoppable energy and power of women?

The [UNESCO Science Report 2021](#) highlighted the under-representation and called for strenuous efforts at government, academic and corporate levels to address this gender imbalance. Women-led Start-ups received [2.3% of venture capital](#) in 2020, while women in academia were also found to receive less grant funding despite being twice as productive. In 2015, across 69 national science academies, women made up 10% or less of members in 30 countries, 6% in mathematics and 5% in engineering. COVID-19 prompted changes in work-

life balance and policies must count the “care Economy” where women are the vast majority doing unpaid care work, educators and home-makers.

AERAP Women in Science are catalyzing the movement of women ready to be tapped, and can be harnessed to design future science and innovation policy which is highly oriented to developing opportunities for people of all genders, indigenous, rural and urban backgrounds. AERAP Women in Science can be instrumental in forming and leading the multi-disciplinary, multi-stakeholder teams that are required to advance progress towards the UN Sustainable Development Goals. By prioritizing and actively encouraging the engagement of women scientists in myriad, national and global associations, networks and forums, we can engage high caliber high potential, high energy women to be involved. As voices for the unheard humanity, women as creators, designers and decision makers in the policy development process, are deeply needed to improve science and technology developments for the benefit of humanity.

The session will stress the urgency of having clear policies focused on bridging the large gender gap in science research and digital innovation that we are facing worldwide. We must bring clear measurements for tracking the progress of all efforts underway for improving the engagement and expanding the impact of women and girls in science and digital transformation of countries underway post-Covid. Several initiatives and examples will be presented, including the World Summit on the Information Society (WSIS) Forum, the South African case study on women's contribution to science policy, and the African Network of Women in Astronomy (AfNWA-AfAS). Finally, a list of recommendations will be given to help in co-designing science policies in the future to empower women and girls in science and help to achieve sustainable development goals.

Programme:

0 Welcome – Mei Lin Fung

05 Fireside Chat Zeinab Osman with Mei Lin Fung

15 Panel on Policy Recommendations for Gender Equality

-- Frauke Alves

-- Brenda Namumba

-- Nabla Kennedy

-- Joy Malala

35 Gender Mainstreaming at the World Summit on the Information Society - Gitanjali Sah

45 Future of Women and Science Policy in South Africa – Lucienne Abrahams

55 Achieving Gender Equality in Science – Mirjana Povic

65 The hopes of the first Ugandan PhD in Astrophysics – Priscilla Mukehi

75 Mega Science and the Contribution of Women to Science Policy - Carla Sharpe

90 Close

Moderator: *(Name and maximum 100 words biographical summaries – URL link if relevant)*

Mei Lin Fung, Chair of the [People Centered Internet](http://www.peoplecentered.net), MS MIT where she studied under future Nobel Economics winners, worked at Intel and Oracle, originally from Singapore. Socio-technical lead for US Dept of Defense initiative on the Future of Health. Convenor of the Digital Cooperation and Diplomacy Informal network, chaired by Vint Cerf. www.peoplecentered.net She initiated the micro Small Medium Enterprise Digital Financing project after speaking at the Global SME Financing Forum, and nurtured the Global Help Desk prioritizing local community needs and aspirations for the [Vaccine Equity Coalition](https://www.linkedin.com/in/meilinfung/) <https://www.linkedin.com/in/meilinfung/>

Speakers:

Professor Zeinab A. Osman is Director General of the National Center for Research, Sudan, earning her PhD from University of Lorraine, France in Science and Industrial Technologies. She trained MSc and PhD students in Sudan and is participating in supervisory committees at University Putra, Malaysia and University Pau and Lorraine, France. She co-chaired Women in Science and technology subgroup, AERAP, EU. Her research is on the interaction of the fibers and the thermoplastic matrices to cope with the needs of the global market in producing the biodegradable composites to be as prosthetic materials adapted to the conditions of Sudan.

Prof. Dr. med. Frauke Alves, heads the interdisciplinary group "Translational Molecular Imaging" located at the Max-Planck-Institute of Experimental Medicine, Gottingen, she heads the [UMG](http://www.umg.gwdg.de), Department of Hematology and Medical Oncology and the Institute for Diagnostic and Interventional Radiology. Her special focus is on the translation of preclinical results into clinical application through the interdisciplinary working environment and close cooperation with the clinical departments of the University Medical Center Göttingen as well as internationally through participation in various EU projects. Prof. Alves is the current President of the European Society for Molecular Imaging (ESMI, <http://www.e-smi.eu/>).

Brenda Namumba is one of these women who break glass ceilings. In Zambia, her country, she has been the first woman to obtain a PhD in Astrophysics. Her preparation and passion for astrophysics earned her the [Science by Women](http://www.sciencebywomen.org) fellowship offered by the Women for African Foundation which is granted to those African female scientists for which she thanks the collaboration with the most prestigious Spanish research centers. She carries out her investigation in the [Instituto de Astrofísica de Canarias \(IAC\)](http://www.iac.es).

Dr Nabla Kennedy obtained her PhD in Microbial Ecology from University College Dublin in 2004. She worked as a Postdoctoral Fellow at the University of Northern British Columbia (UNBC) in Canada (2005-2010) in the area of soil microbiology. From 2011-2012 she was an Irish Research Council Enterprise Partnership Scheme Postdoctoral Fellow at IT Carlow, studying decomposition processes in municipal solid waste. Since 2013 she has been a Lecturer in Microbiology in the Department of Science at Waterford Institute of Technology.

Dr Joy Malala, Lecturer at Aston University Law School is researching financial regulation and supervision, the legal accountability of regulators, corporate governance, as well as the regulation of financial innovation and technology. She focuses on the legal and regulation of mobile payment systems which she examines in her book, *Law and Regulation of Mobile Payment Systems: Issues Arising 'post' Financial Inclusion in Kenya*. She examines financial sector reform through the consideration of the role of Central banks, and systemically important financial institutions and their impact on emerging economies.

Ms Gitanjali Sah is the Coordinator of the World Summit on the Information Society. An experienced International Civil Servant at ITU, UNESCO and UNDP in the field of ICT on Development related policy and implementation issues at an international, regional and national level. Since 2015, one of the core activities is to strengthen the alignment of the WSIS Process with the 2030 Agenda for Sustainable Development to ensure that ICTs play the enabling role in advancing the Sustainable Development Goals. Her MPhil in Development Studies is from the University of Cambridge, UK, Masters from the Jawaharlal Nehru University, India.

Luci Abrahams (PhD, Wits), Director of the LINK Centre <https://www.wits.ac.za/linkcentre/>, does research on digital innovation, how digital technologies and processes influence change, and on human-centred digital transformation. Luci serves on the Board of TENET. She has served on the Board of the National Research Foundation and the Ministerial Review Panel on the Science Technology and Innovation Institutional Landscape. From 2003 to 2008, she was Chairperson of the Science Engineering and Technology for Women (SET4W), a committee of the National Advisory Council on Innovation (NACI), and a Council Member of NACI 1999 – 2009.

Mirjana Pović, Assistant Professor at the Ethiopian Space Science and Technology Institute (ESSTI), earned her PhD at the Instituto de Astrofísica de Canarias (Spain). She is the founder of the African Network of Women in Astronomy (AfNWA) under the African Astronomical Society (AfAS). She received several international awards for her scientific achievements and contributions to society, including the inaugural Nature Research Award for Inspiring Science in 2018 and Jocelyn Bell Burnell Inspiration Medal in 2021. Through education, science, and technology we can fight poverty in the long term and make in the future a better place for everyone, everywhere.

Carla has been with the South African Square Kilometre Array (SKA) project for several years. The SKA is an international effort to build the world's largest radio telescope, the sheer scale of the SKA represents a huge leap forward in engineering, technology and research & development. She is responsible for planning, negotiating and implementing strategic and funding solutions for the Africa programme across the eight African Partner Countries (APCs),

inclusive of the African VLBI Network (AVN) programme, conceptualising and implementing the African Colocation Programme and associated activities.

In 2009 Carla founded the [Foundation for Space Development](#) and in 2011, Women in Aerospace Africa, in addition she acts as an adviser to [OFF-WORLD](#).

Dr.Priscilla Muheki is the first female in the department of physics to attain a PhD, making her the 1st Ugandan to attain a PhD in astrophysics. She is a teaching assistant at the Mbarara University of Science and Technology Her research included Investigating the effect of disc twist and tilt on the accretion disc warp in Hercules X-1, and she is a member of the ICT and Library committee, Faculty of Science and a Member of the Forum for Women in Science and Technology, MUST.

Carla Sharpe, Africa Program Manager of the South African Square Kilometre Array (SKA) project, an international effort to build the world's largest radio telescope. She is responsible for planning, negotiating and implementing strategic and funding solutions for the Africa programme across the eight African Partner Countries (APCs), inclusive of the African VLBI Network (AVN) programme, conceptualising and implementing the African Colocation Programme and associated activities. In 2009 Carla founded the [Foundation for Space Development](#) and in 2011, Women in Aerospace Africa, and is an adviser to [OFF-WORLD](#).

Session organiser:

Declan Kirrane – ISC Intelligence - <http://www.iscintelligence.com/>

Contact - declan.kirrane@iscintelligence.com

Room 3 Round 3 AERAP Biobanks: Leveraging biobanks as enabler for collaborative science



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Leveraging biobanks as enabler for collaborative science

Date: 1 December 2021	Time:15h:30-17h00
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Session Overview:

A rise is expected in non-communicable disease burden, particularly cancer, in Africa over the next 20 years. Stratified medicine treatment and target therapies promise to ensure better selection and response to drugs and exclude adverse effects, but in Africa the genetic background is rarely addressed as a biomarker. Good health is a global right and global health can only be achieved through the creation of a sustainable health care system for all. This can only be achieved through application of validated research results based on internationally obtained quality samples and data. Biobanks have long been a foundation platform for good research, ensuring the availability of quantified quality samples and associated data to guarantee valid reproducible research. This requires the existence of quality biobanks of samples and data from the African continent to ensure that research and validation include the genetically diverse groups that inhabit the African continent to guarantee the clinical relevance of this research for Africa.

Covid-19 has outlined the important role that biobanks can play not only in the management of samples and data but also in the means in which these samples and data are shared availing of their long-standing quality standards. Biobanks are the currency for representation of LMICs' populations in scientific research. They can provide populations in these regions with the equitable opportunity for research to include their particular genetic and environmental make-up and provide solutions that are also applicable to them and facilitate research collaborations that in turn increase economic investment, training, collaboration, publications, technology transfer, and health care improvements.

The session will present several initiatives of African collaborative networks to create research infrastructures as the basis for further research and how investment in these infrastructures can advance critical clinical research. These initiatives include: the IARC/WHO-driven Biobank and Population Cohort Network (BCNet); the current WHO/LSHTM-driven work on the ethics of pediatric biobanking and downstream research in African Settings; the H3Africa consortium; and the Wellcome Trust Sanger Institute educational opportunities and collaborations within Africa.

Programme:

5m – Introduction and Moderator presentation of the topic and context

15m – Speaker 1

15m – Speaker 2

15m – Speaker 3

15m – Speaker 4

15m – Speaker 5

10m – Discussion

Moderator:

Rita Lawlor – Dr. Rita Lawlor runs a cancer biobank and coordinates research at the ARC-Net applied cancer research centre that she co-founded. She is a Computer Science graduate with a doctorate in Oncological Pathology and is an IAPP fellow of Information Privacy. She is vice chair of the Science Policy Committee of ISBER, International Society for Biological and Environmental Repositories and chair of the International Cancer Genome Consortium ARGO Ethics and Governance Committee. She is a board member of the Italian Foundation for Pancreas diseases and her research interests are molecular diagnostic markers and therapeutic targets and the molecular characterization of samples for personalized medicine.

Declan Kirrane - Declan Kirrane is the founder and Managing Director of ISC Intelligence in Science in Brussels. He has more than 25 years of experience disseminating scientific and research activities in Europe and worldwide from organizations and governments. He is closely

involved in EU-Africa science and innovation relations and investments, particularly the EU's investment strategy for Africa. He was closely involved in the South African government's bid to host the Square Kilometre Array Radio Telescope, the SKA, South Africa and its partner countries succeeded in securing the rights to build the SKA in South Africa. He manages the Africa-Europe Science and Innovation Platform, AERAP.

Speakers:

Zisis Kozlakidis – Dr Zisis Kozlakidis is the Head of Laboratory Services and Biobanking at the International Agency for Research on Cancer, World Health Organization (IARC/WHO). He is responsible for one of the largest and most varied international collections of clinical samples in the world, focusing on gene–environment interactions and disease-based collections. Dr. Kozlakidis is a virologist, with a PhD in microbiology from Imperial College London. He is a Fellow of the Linnean Society of London, the Royal Academy of Sciences, UK, and a Turnberg Fellow of the UK Academy of Medical Sciences. He serves as editor-in-Chief for the journal 'Innovations in Digital Health, Diagnostics and Biomarkers'

Vikash Sewram – Professor Sewram is the Founding Director of the African Cancer Institute (ACI) and Professor of Public Health at the Faculty of Medicine and Health Sciences, Stellenbosch University, South Africa. He is a cancer epidemiologist and serves on the Ministerial Advisory Committee on the Prevention and Control of Cancer in South Africa and serves on the Permanent Scientific Committee in the Oncology Section of the World Organization for Specialized Studies on Diseases of the Esophagus (OESO). He also serves on the Pharmaceutical and Analytical Committee of the South African Health Products Regulatory Authority (SAHPRA).

Alice Matimba – Alice Matimba is the Overseas Courses Development Officer based at the Wellcome Genome Campus, United Kingdom. Her role is to coordinate and expand the portfolio of overseas courses and to develop links with networks and centres in Africa, Asia and South America. She graduated with her PhD in Human Genetics from the University of Cape Town, South Africa. Thereafter, she pursued a pharmacogenomics postdoctoral research fellowship at the Mayo Clinic, USA before joining the University of Zimbabwe College of Health Sciences in 2012, where she focused on health education and research in non-communicable diseases, pharmacology, genomics and ethics.

Moses Joloba - Prof. Moses Joloba is the current Dean School of Biomedical Sciences, Makerere University College of Health Sciences. He graduated as a physician at Makerere Medical School and later as a clinical microbiologist at Case Western Reserve University after which he returned to Uganda to take a faculty position. He helped to establish a TB laboratory for the Tuberculosis Research Units and became its scientific director site. He established Molecular Biology, immunology and mycobacteriology laboratories and a Biorepository at the University within the H3Africa consortium. He became the Director of the National TB Reference laboratory now a supranational laboratory.

Jennifer Kealy - Jennifer Kealy is a core member of the WHO Access to Medicine and Health Products division. She has 25 years' experience in all phases of drug development for therapeutic indications in cardiovascular medicine, oncology, neurology and infectious diseases. She is a lecturer at the University of Basel, University of Geneva, DIA and ECPM. Jennifer worked with the World Health Organization to build research capacity in Liberia, Uganda and many other resource-restricted settings.

Kurt Zatloukal – Professor Zatloukal, professor of pathology at the Medical University of Graz, Austria and is head of the Diagnostic and Research Center for Molecular Biomedicine. His research focusses on molecular pathology of diseases as well as biobanking. He coordinated the preparatory phase of the European biobanking and biomolecular research infrastructure (BBMRI) within the 7th EU framework programme and heads the Austrian national node. He is member of the scientific board for genetic testing and human gene therapy at the Austrian Ministry of Health, and of the Austrian Standards Institute. He was member of the OECD task force on biological resource centres and contributed to their best practice for biological resources.

Session organisers:

The session is organized by AERAP in partnership with the Biobank and Population Cohort Network (BCNet) at the International Agency for Research on Cancer/World Health Organization (IARC/WHO).

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ARC-Net Applied Research on Cancer Centre
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Zisis Kozlakidis
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International Agency for Research on Cancer
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Room 3 Round 4 WB MSMEs: Increasing Support for Underserved Micro, Small and Medium Enterprises



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Increasing Support for Underserved Micro, Small and Medium Enterprises

Date: Thursday 2 December 2021	Time: 09:00
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Session Overview:

The World Bank alongside the South African Chamber of Commerce and Industry (SACCI); Business Unity South Africa (BUSA); Department of Small Business Development; Department of Science and Innovation (DSI) will host a joint multistakeholder engagement on increasing support and identifying interventions for MSMEs, with a special focus on those based in townships and are within the informal sector.

During this webinar we intend to present the COVID-19 Business Pulse Surveys, findings from engagements with entrepreneurs, and also get private sector present on the challenges and further support required from the DSBD (SEDA) and DSI (TIA).

This session will also serve as a platform to announce the MOU between the World Bank and SACCI.

Programme: (Description of the running order of the session - 90 minutes)

- o Opening Remarks: World Bank Group
- o Opening Remarks: SACCI, President Advocate Mtho Xulu
- o Presentation: Insights from COVID Business Pulse Surveys
- o Q&A

- o Presentations: BUSA, DSBD, DSI, Private Sector Representatives
- o **Q&A** (in-between each Presentation)
- o World Bank, SACCI MOU

- o **Closing remarks**

Moderator:

Grace Legodi, STC: World Bank or **Pearl Maphumulo**, The Business Development Agency

Speakers: (Names and maximum 100 words per speaker biographical summaries – URL links if relevant)

Representatives from the following organisations:

- o Department of Science and Innovation (DSI)
- o South Africa Chamber of Commerce and Industry (SACCI)
- o Department of Small Business Development (DSBD)
- o Private Sector Representative(s)
- o Business Unity South Africa (BUSA)
- o World Bank

Session organiser(s):

Pearl Maphumulo, The Business Development Agency Pty (TBDA)

pearl@thebda.co.za

071 506 6553

AND

Ganesh Rasagam, World Bank Group

grasagam@worldbank.org

Room 3 Round 5 FSAGRI: Promoting agricultural research and innovation partnerships for food justice: South Africa and France



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Promoting agricultural research and innovation partnerships for food justice: South Africa and France**

Date: Thursday 2 December 2021

Time: 11:00-12h30

Session Overview:

Food justice is a holistic and structural view of the food system that sees healthy food as a human right and addresses structural barriers to that right. It includes food security, which is a measure of food availability and the ability of individuals to access it. It can also be seen as communities/people exercising their right to grow, sell and eat healthy food. Food justice enables all people to have physical, social, and economic access to sufficient, safe and nutritious food that meets their food preferences to lead an active healthy lifestyle.

An increasing number of countries are facing growing levels of acute food insecurity, reversing years of development gains. Even before COVID-19 reduced incomes and disrupted supply chains, chronic and acute hunger were on the rise due to various factors including conflict, socio-economic conditions, natural hazards, climate change and pests.

In South Africa, food insecurity affects 14 million people, mostly in townships and rural areas. The organization of the agricultural and agro-food sectors plays a key role in reducing food insecurity. In order to reduce food insecurity, the organization of the food chain must be efficient in all provinces of South Africa, including the previously disadvantaged areas.

Sustainable solutions to this public health problem can only be achieved through capacity building in all South African provinces. This is one of the challenges facing the French South African Agricultural Institute (F'SAGRI). Based in the Eastern Cape and Limpopo provinces for the past 6 years, this institute aims to support the development of local skills in the fields of agriculture and agribusiness.

This session will address the following issues:

How can we capacitate the actors of the food chain in rural areas? What institutions are the key role players in the process?

What are the challenges faced by this institution to achieve the capacity building goals? What possible solutions?

What benefits can these institutions get from a bilateral cooperation program?

Programme:

The moderator, who represents the department for Agriculture, Land Reform and Rural Development (DALRRD), will first take stock of the current situation in terms of rural development in South Africa and focus on the current land reform and its implication in terms of capacity building.

Professor Maiwashe, F'SAGRI Program director, will present the Institute and its goals. He will also present some of the key achievements of the institute, including the innovation prize challenge, which is its third year of existence.

Professor Jessica Singh, Deputy vice-chancellor at the University of Limpopo, will then talk about the challenges that are faced by the Communities and the universities in rural areas and how a program like F'SAGRI can support the capacity building process.

Francois Davel, Director: Development Partnerships at the Department of Science and Innovation (DSI), will present the perspectives for the future of the Institute in terms of growth, development of educative tools for all kinds of attendance from universities to communities. He will also highlight some outstanding interventions, such as the role of F'SAGRI in innovation.

Mathilde Vivot, the attaché for innovation at the French Embassy, who chaired the last session of the innovation challenge, will give her feedback about the competition and present how innovation can help fast track the development of sustainable food chains.

Finally, one of the laureates of the F'SAGRI innovation challenge will testify about the support he can get from the Institute.

A short video will present the competition.

Moderator:

Ms Jenetha Mahlangu Chief Director from Department of Agriculture, Land Reform and Rural Development, began as an agricultural extensionist before monitoring the implementation of Co-operatives and agriculture development finance programmes. In 2002, she joined the Department of Agriculture and was involved in international relations. From 2011 to 2015, she was Agricultural Attaché in France. During this mandate, she was awarded the Order of Merit in Agriculture by the Minister of Agriculture, Agrifood and Forestry, Mr Stéphane Le Foll for her outstanding contributions to agriculture. She is now Director: International Trade Development, in charge of facilitating, guiding, co-ordinating and supporting bilateral relations with governments, agriculture, forestry and fisheries organisations and forums in the rest of the world (America, Australasia, Europe, and the Middle East).

Speakers:

1. Prof Rachael Jesika Singh works at the University of Limpopo as the Deputy Vice-Chancellor: Research, Innovation and Partnerships. Her focus area is on Research Development of staff and postgraduate students. She has a doctorate in teacher education from the University of Johannesburg. Her career in education spans over 28 years. In basic education, she has worked as a teacher, head of department, deputy principal and principal. In higher education and training, she has worked as a senior lecturer in Geography Education; a head of department in languages and social sciences, research developer and Director of Research. Her publications are in the field of teacher education. She is widely published and is a supervisor of masters and PhD students. She is particularly dedicated to promoting women in research and management.

3 Prof. Norman Maiwashe started at the Agricultural Research Council (ARC) as a researcher in 2004 before becoming a research team leader in 2010. He works on technical responses to the South African livestock industry in the area of genetics (breeding methods, genomic analysis, pest resistance, diversity conservation, etc.) He has always been involved in various organisations related to South African livestock genetics and contributed, as a member of his committee, to the organisation of the 10th World Conference on Animal Production held in

South Africa. In 2016, he became Director of F'SAGRI, a Franco-South African cooperation organisation for postgraduate studies and research in agriculture.

4. **Mr François Davel** worked for the first nineteen years of his career in the private sector. He worked in the medical industry, mining and industrial sector, the financial services sector, information and communication technology, as well as small, medium enterprises sectors. He started his career as a government official when he joined the South African Department of Science and Technology in 2005. Between 2005 and early 2015, he worked in the office of the Deputy Director-General: International Cooperation and Resources, being responsible for the operational support in the office. Between 2015 and 2018, François was involved in organising the Science Forum South Africa, an event showcasing South African and pan-African science, technology and innovation. He is since 2019 responsible for the Development Partnerships Directorate. This directorate has rich and extensive experience in development assistance funding and international cooperation, including the successful F'SAGRI cooperation between South Africa and France.
5. **Ms Mathilde Vivot** is the attachée for innovation at the French Embassy from 01st September 2021, in charge of the innovation support policy and bilateral cooperation actions between France and South Africa. She manages a portfolio of projects in the field of social innovation, innovation challenges, applied research and collaborative research with French enterprises. As a political science and public policy specialist, Ms Vivot has been involved in the field of innovation policies and international cooperation since 2012, with various positions in Brussels, Switzerland and France. Before joining the French Embassy in South Africa, she has been previously in charge of the innovation cooperation between France and Germany for almost 4 years.

Session organiser:

Department of Science and Innovation of South Africa

Ms Mmapitso Mokotedi:
mmapitso.mokotedi@dst.gov.za

Room 3 Round 6 AERAP Data: Shaping Africa's contribution to global data regulations: Impact on Science Collaboration



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Shaping Africa's contribution to global data regulations: Impact on Science Collaboration

Date: Thursday 2 December 2021	Time:13h:30-15h00
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Session Overview:

This session will consider how emerging regulations in data protection, medical devices and in-vitro diagnostics influence cooperation between Africa and the European Union. The session will focus on the European General Data Protection regulation and its influence on the Global stage. Given that its scope already extends beyond the borders of the European Union, it is arguably becoming the template for global legislation. Therefore, the session is designed to impart up-to-date information on the European Union's GDPR; to look specifically at related research collaboration between South Africa and African and the European Union and the impact of the GDPR on those research activities, in particular in the area of health. The meeting will also raise awareness of the emergence globally of data protection regulations and related future developments in South Africa and more generally in the continent of Africa.

The GDPR also addresses the transfer of personal data outside the EU, including to African

nations. The GDPR aims to give control to individuals over their personal data, to ensure the free flow of personal data between Member States and to simplify the regulatory environment for international business by unifying the regulation within the EU. Because research involving human health, drug safety and clinical trials requires the processing of personal data, the GDPR has posed particular challenges to the research sector both within the EU and elsewhere. As the “Africa Initiative” is an integral part of the first Work Programme for 2021-2022 of the recently adopted “Horizon Europe”, it is important to consider how African Nations address should compliance and prepare for future data protection regulations in Africa.

Programme:

Susan Veldsman, Academy of Science South Africa

Kurt Zatloukal Medical University Graz, Austria

Rita Lawlor, University of Verona, Italy

Robin Frears, Federation of European Academies of Medicine, Brussels

Lydia Kline, National Institutes of Health, United States

Professor Jeffrey **MPHAHLELE**, South African Medical Research Council

Moderator:

Declan Kirrane

AERAP

Declan Kirrane is the founder and Managing Director of ISC Intelligence in Science in Brussels. He has more than 25 years of experience disseminating scientific and research activities in Europe and worldwide from organizations and governments. He has been involved in the dissemination of the research activities funded by the European Union’s Framework Programme for Research and Technological Development and Demonstration (FP) since 1994, the former Horizon Europe.

With *Financial Times*, he was the launch editor of *CORDIS*, the European Commission’s research information Service. He was Editor of the Commission’ *Innovation and Technology Transfer Newsletter* and *CORDIS focus*. His expertise covers ICT, Health, Defence, Space, Science Policy, GPRD legislation, EU R&D and Innovation policies, programmes and funding instruments. He has worked extensively on science policy evaluation methodologies and technology options for policy, and decision-makers use investment in science for broader economic development and competitiveness. With the Office of Science in the US Department of energy, he Launched the Ford Foundation Bellagio processon science policy evaluation methodologies.

He is closely involved in EU-Africa science and innovation relations and investments, particularly the EU’s investment strategy for Africa. The was closely involved in the South African government’s bid to host the Square Kilometre Array Radio Telescope, the SKA, South

Africa and its partner countries succeeded in securing the rights to build the SKA in South Africa. He manages the Africa-Europe Science and Innovation Platform, AERAP

Declan has been actively promoting a more assertive role for science within the context of the United Nations General Assembly since 2010. This has culminated in the annual Science Summit within the context of the General Assembly. The current version of SSUNGA76 takes place from 14-30 September 2021.

Speakers:

Kurt Zatloukal, M.D. is professor of pathology at the Medical University of Graz, Austria and is head of the Diagnostic and Research Center for Molecular Biomedicine. His research focusses on molecular pathology of diseases as well as biobanking and related technologies. He coordinated the preparatory phase of the European biobanking and biomolecular research infrastructure (BBMRI) within the 7th EU framework programme and is heading the Austrian national node BBMRI.at. Furthermore, he led in the FP7-funded large integrated project SPIDIA the development of new European standards and norms for pre-analytical processing of tissue samples for molecular testing.

He is member of the scientific board for genetic testing and human gene therapy at the Austrian Ministry of Health, and member of the Austrian Standards Institute. He was member of the OECD task force on biological resource centres and the Roadmap Working Group of the European Strategy Forum on Research Infrastructures. Moreover, he contributed to the OECD best practice guidelines for biological resource centres, the regulations for genetic testing of the Austrian Gene Technology Law, and was member of the Bioethics Commission at the Austrian Federal Chancellery. He has published 238 scientific papers and was co-inventor of 25 patent applications.

Rita Lawlor is a Computer Science graduate of Trinity College Dublin with a doctorate in Oncological Pathology from the University of Verona where she is co-founder of the ARC-Net (www.arc-net.it) applied cancer research centre where is director of the ARC-Net biobank and coordinates research activities. She is co-PI for the European funded project on “Integrative Analysis of Gene Functions in Cellular and Animal Models of Pancreatic Cancer” (<http://www.cam-pac.eu/>) and “Biomarkers of tumour recurrence in pancreatic cancer” (Bio-Pac) and coordinates the national Italian Cancer Research Association funded project “Clinically applicable biomarkers to early diagnosis, patient risk stratification and therapeutic response in pancreas cancer”. She is part of the working group to define the standards for Research Biobanks of the Veneto Regional Government of Italy and is part of the coordinating group to create a regional biobank network.

She is a member of the steering committee of BC-NET (Biobank Cohort Network of Low Middle Income Countries) of IARC (International Association for Research on Cancer) and is a member of the IT/LIMS working group. She is a former director of ISBER, International Society for

Biological and Environmental Repositories (www.isber.org) and is past president of ESBB, the European, Middle Eastern and African Society for Biopreservation and Biobanking (www.esbb.org). She is IAPP (International Association of Privacy Professionals) CIPP/E and CIPM certified for European data protection. Her current research interests are in molecular diagnostic markers and therapeutic targets and the role of cancer heterogeneity and molecular characterization of samples in the application of individualized medicine.

Lydia Kline, MPH, MS, serves as Team Lead, Clinical Research Policy in the National Institutes of Health's Office of Science Policy (OSP), where she oversees a portfolio that includes regulatory and policy issues related to research involving human subjects. Since 2018, she has advised the OSP and NIH Directors on the importance and impact of the European Union General Data Protection Regulation (EU GDPR) for NIH research, working as part of a three-person team to identify and address GDPR-related challenges to collaborative research with European partners. She has additional experience in bioethics, clinical research and public health capacity building, and health and human rights.

Robin Fears is the Biosciences Programme Director in EASAC (www.easac.eu). He holds a degree in biochemistry and a PhD in nutrition and had worked for the pharmaceutical industry in the UK for many years. For the last two decades he has been an independent consultant working for various groups within governments, industry, and the public sector. As a Programme Director for EASAC he has been involved in providing scientific support for a range of topics from agriculture and plant genomics through to human health and biomedicine. Throughout his career, Dr Fears has been interested in issues relating to sharing patient data for research.

Session organiser:

Declan Kirrane
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Room 3 Round 7 DSI Skills: Identifying critical skills requirement in support of science technology and innovation



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Identifying critical skills requirement in support of science technology and innovation

Date: Thursday 2 December 2021

Preferred time: 15:30 -17:00

Session Overview:

Globally governments have accelerated the diffusion of technology and the pace of innovation in response to upscaling the critical mass skills required to foster strong, sustainable and balanced growth in their countries. In these rapidly changing developments, new occupations are emerging and replacing others, the skills and competencies needed are evolving, as the knowledge content of production processes and technology services are just rising. Developing countries like South Africa need to catch up at a rapid pace on increasing their critical skills and engaging with other countries in retaining their skills development and being for continual learning mode of innovation.

The session will deliberate on South Africa's Critical Skills Report 2020/2021 focusing, on critical skills requirements and development to support science, technology and innovation. Apart from common traditional engineering skills requirements professions, discussions will

also look at the growing need for multidisciplinary engineers working in renewable technology, robotics, additive manufacturing, digitisation of industry and information and technology communications (ICT) in totality. The session will assist in coming up with different ways in which skills development can nurture a virtuous circle in where more and better education and training fuels innovation, investment, economic diversification and competitiveness, as well as social and occupational mobility in cooperating with countries that have traversed this route, and managed to address their critical skills.

Programme:

- (Opening Moderator and FSACCI – 10 minutes
- Presentations by French companies: Schneider Electric and [Saint-Gobain](#) (15 min each)
- 30 min
- Interventions required by DHET and Vaal University of Technology – 15 minutes
- Reflections and possible solutions by Tshwane University of Technology – 10 minutes
- Questions by the moderator – 5 min
- Q/A from the audience - 10 min
- Closing remarks by Tshwane University of Technology – 10 minutes

Moderator: Mr Cecil Masoka

Mr Cecil Masoka has worked in the private sector and consulted for government. He joined the public sector in 1999 working for Provincial departments and National departments including the Department of Public Service and Administration and National Department of Health. In 2003, Mr Masoka joined the Department of Science and Technology (DST) and was responsible for establishing its donor, private sector and philanthropic unit.

Between 2007 and 2012, Mr Masoka was seconded to the South African Embassy in Tokyo, Japan as the DST Senior Science and Technology Representative. He has worked closely with international funding agencies and championed some of the human capital development programs in the science, technology and innovation sector. Mr Masoka also established strong and sustainable relations between government and international private sector partners in supporting socio-economic impact programs that contributed to economic development and sustainable employment creation. He was Acting Chief Director: International Resources from 1 March 2020 to 31 August 2021.

Cecil.Masoka@dst.gov.za/ www.dst.gov.za

Speakers:

Melanie Rondreux

Ms Melanie Rondreux is a representative of the French-South African Chamber of Commerce & Industry (FSACCI), a private non-profit company that is the proud facilitator of a business platform made of more than 220 companies, evenly represented by French and South African multinationals, small medium enterprises (SMEs) and entrepreneurs across all sectors. Through quality engagements and a panel of services and activities, the Chamber fosters effective business support to its member-base whilst ensuring that trade between France and South Africa flourishes in support of South Africa's quest for increased job creation, investments, and economic growth. Melanie Rondreux is based in South Africa since 2015 and has previously worked at the Economic Cooperation Section of the European Union Delegation to South Africa, overseeing a number of projects on Science & Technology and Research & Innovation.

Zanélle Dalglish

Ms Zanélle Dalglish is working for Schneider Electric a leading the Digital Transformation of Energy Management and Automation in Homes, Buildings, Data Centers, Infrastructure and Industries. As the Director for Sustainable Development and Academy, Ms Dalglish is responsible for all of Schneider Electric's strategic sustainable development initiatives, as well as the Schneider Electric Academy in Anglophone Africa. Zanélle plays a leading role in the implementation of the company's Access to Education programme where her efforts are focused on improving access to practical training in the field of energy to empower youth and prepare them for the world of work in line with SDG 4 – Quality Education. She holds a B Com, B Com (Honours) as well as a Master's Degree in Human Resources Management obtained from the University of Pretoria, South Africa. She is also a registered industrial psychologist with the Health Professions Council of South Africa (HPCSA) and a full member with the Society of Industrial and Organisational Psychologists of South Africa (SIOPSA). She has previously worked at SHL amongst others and has been with Schneider Electric for the past eleven years.

Su-Anne van Wyk

Ms Sue-Anne van Wyk is currently the Head of Organisational Development, Talent, Learning and Academies for [Saint-Gobain](#) Construction Products Sub-Saharan Africa region. Saint-Gobain South Africa is a French multinational corporation, founded in 1665 in Paris and headquartered on the outskirts of Paris, at La Défense and in Courbevoie. Originally a mirror manufacturer but now produces a variety of construction, high-performance, and other materials. Ms van Wyk started her career as a management consultant for PricewaterhouseCoopers in mining, public sector and electricity. Before joining the employment of Saint-Gobain, she fulfilled roles in Human Resources and Organisational Development across the Financial Services industry.

Su-Anne.vanWyk@saint-gobain.com

Mamphoku Khuluvhe

Ms Mamphoku Khuluvhe is from the Department of Higher Education and Training working as a Director for System Monitoring and Labour Market Intelligence.

Prof David Katerere

Prof Katerere is working in the Faculty of Science at the Tshwane University of Technology (TUT). Prof Katerere is the Research Platform Chair of Pharmaceutical and Biotech Advancement in Africa (PBA) at Tshwane University of Technology and Chair of PharmaConnect Africa, a non-profit that is a premier convener of the pharmaceutical industry in Africa. He is also a board member at UI-Global and the Association of African Medicinal Plant Standards (AAMPS). Prof Katerere holds a PhD in Pharmaceutical Science from the University of Strathclyde, Scotland. He has worked in pharmaceutical and biotech practice and research in the past 25 years in 4 countries on 3 continents. He has several inventions to his name including the nutraceutical, Niselo and CovidConnect App for use in clinical trials and post-recovery.

Tshwane University of Technology: <https://www.tut.ac.za>

Prof Khumbulani Mpofu

Prof Mpofu is a Doctor of Technology in Mechanical Engineering based at the Tshwane University of Technology (TUT)/ Prof is currently a Gibela Research Chair in Manufacturing and Skills Development and DSI-NRF SARCHI in Future Transport Manufacturing Technology. Prof Mpofu founded the [Rail Manufacturing Centre for Entrepreneurship Rapid Incubator](#) (RMCERI) in 2018. RMCERI is a platform to take innovations to market creating entrepreneurial paths for young people. Prof has supervised more than 10 Doctoral and more than 30 Masters students were examined and passed their examinations.

Tshwane University of Technology: <https://www.tut.ac.za>

Session organiser:

Ms Mabatho Ndwandwa, Deputy Director: Global Projects
mabatho.ndwandwa@dst.gov.za/ www.dst.gov.za

Room 4

Room 4 Round 1 DSI PPP: Exploring options for Public-Private Partnerships for science, technology and innovation infrastructure



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Exploring options for Public-Private Partnerships for science, technology and innovation infrastructure

Date: 1 December 2021	Time: 09h00-10h30
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Session Overview:

Public private partnerships (PPPs) are long-term contracts between the public and private sector. The main objective of PPPs is to ensure the delivery of well maintained, cost-effective public infrastructure or services, by leveraging private sector expertise in which the private sector bears significant risk and management responsibility. Public private partnerships also allow for the sharing of resources and best practice as well as the enhancement of service delivery.

Flagship programme of interest to promote PPP investment

South Africa has over the years positioned itself as a strategic partner for STI and an attractive destination for global science infrastructures and projects. This is demonstrated by its active participation and leadership in a number of global initiatives which includes its hosting of the Square Kilometre Array (SKA) which is already attracting scientists from all over the world. Not only is it attracting scientists, SKA is viewed as a catalyst for science, technology and engineering business opportunities, jobs and innovation with the vast investment opportunities it presents. It has the potential to put Africa on the map as the world's big data and analytics hub.

Vaccine programme of interest to promote PPP investment

It is undeniable that COVID-19 has had a disastrous impact on the South African economy and very much evident that collaboration between the public and private sector is paramount to turnaround the negative impact of COVID-19 in the economy. PPP in the health sector is key to assisting in the turnaround of the economy. The production of vaccines locally to help mitigate the impact of the virus is essential. Generally, vaccines are produced by private companies who sell them under contracts. South Africa does not have a large-scale vaccine manufacturing capability. If South Africa is serious about supplying vaccines in the future, it needs to rethink the scale of financial, technical and strategic investment into vaccine production. A partnership between government and both local and international pharmaceutical companies is critical to augment the long-term capacity for the development and introduction of novel vaccines which will place a focus on the development of vaccines relevant to South Africa's particular needs.

PPP investment session at Science Forum

It is against this background that a session will be presented to deliberate on the issues as outlined above, with a primary focus on how PPPs can be encouraged to enhance capacity development, also zooming into some of the impediments hindering an increase in private sector investment in STI innovative programmes.

Programme:

- Presentations by the 4 Speakers (15 min each) -60 min
- Questions by the moderator – 15 min
- Q/A from the audience -15 min

Moderator:

Cecil Masoka, Director: Multilateral Cooperation
Cecil.Masoka@dst.gov.za / www.dst.gov.za

Speakers:

1. Mr Justin Jonas (SKA)
2. Dr Morena Makhoana (Biovac)
3. Mr Charles Wolf (Sanofi-Aventis)
4. Representative from DTIC/DSI

Session organiser:

Boitumelo Khutsoane, Deputy Director: Global Projects
Boitumelo.Khutsoane@dst.gov.za / www.dst.gov.za

Room 4 Round 2 DSI Hydrogen: Developing South Africa's hydrogen economy: next steps



Science Forum South Africa 2021

"Igniting conversations for World Science Forum 2022"

1-3 December 2021

Session Title: Developing South Africa's hydrogen economy: next steps

Date: Wednesday 1 December 2021	Time: 13h30-15h00
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Session Overview:

There has been expressed interest in the South African green hydrogen from major economies like Germany and the USA. The Department of Science and Innovation (DSI) has developed and implemented a Hydrogen Roadmap and supported research in universities. Sasol, one of the major players in the hydrogen and economy of South Africa, has signaled the need to decarbonize their operations and offerings. South Africa has exceptional endowments of platinum group metals, wind and solar natural resources, and mature mining, petro-chemical, iron and steel, industrial, agricultural and transportation sectors, coupled with low population density and the availability of relatively low-cost land. This provides a unique opportunity for decarbonisation, re-industrialisation and job creation around the green economy in South Africa.

The questions that need to be addressed include what are the next critical steps needed for South Africa to leverage identified opportunities at speed. Secondly, what are the possible partnerships and collaborations that are available from international partners. Lastly, what

partnerships are needed to assist South Africa build the appropriate and relevant skills-set suited for the whole green hydrogen value chain and spurring strong local SMMEs in the sector?

Programme:

- § Opening Remarks (moderator) – 5 min
- § Presentations by the Speakers (15 min each) – 60 min
- § Questions by the moderator – 10 min
- § Q&A from the audience -10 min

Moderator:

Cosmas Chiteme: Director Hydrogen
cosmas.chiteme@dst.gov.za

Speakers:

1. Professor Ken-Ichi Aika
Numazu College of Technology
Professor Emeritus Tokyo Institute of Technology
2. Dr Thembakazi Mali
Senior Vice President of Research and Technology
Sasol
3. Professor Dmitri Bessarabov
Director: DSI National Centre of Competence: Hydrogen Infrastructure
North West University/ CSIR

Session organiser

Cecil Masoka Director: Multilateral Cooperation and Global Projects
cecil.masoka@dst.gov.za

Room 4 Round 3 JRC Pandemic: Strengthening pandemic preparedness: knowledge transfer to Africa



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Strengthening pandemic preparedness: knowledge transfer to Africa

Date: 1 December 2021	Time: 15:30-17h00
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Session Overview:

The current Covid-19 pandemic showed the importance of strengthening pandemic preparedness worldwide and increasing international collaboration to fight global health emergencies. Still, pandemic preparedness is a complex issue, which requires a continuous process of planning, exercising and revising, and that involves a variety of elements (from the availability of treatments locally manufactured to the existence of specific regulatory frameworks).

Technology transfer and innovation (including skills development, strategic governance, coordination mechanisms and the establishment of sound legal and regulatory frameworks) arise as key tools for pandemic preparedness. Technology transfer and innovation can provide technical and strategic support for the diffusion of new solutions in the least developed areas and ensure equitable access to essential medicines, leaving no one behind.

The European Union (EU), in reinforcing its geopolitical profile, calls for a strategic partnership with Africa to tackle together these emerging challenges and to pursue common priorities and interests. To help address the existing barriers, EC's President von der Leyen announced the broader Team Europe Initiative (TEI) on Manufacturing and Access to Vaccines, Medicines, and Health Technologies in Africa (MAV+), at the G20 Global Health Summit in Rome this year (May 2021). This scheme is backed up by one billion € from the EU budget and the European development finance institutions (EIB, EBRD). The initiative encompasses interventions at country and regional level and is also linked with the main global health initiatives endorsed by the European Commission.

Aligned with the mentioned initiative, the European Commission's Competence Center of Technology Transfer is working closely with the EC Directorate General for International Partnerships (DG INTPA) and with international partners such as the Medicines Patent Pool (MPP) and the World Health Organization (WHO) to support the establishment of an mRNA Technology Transfer hub in South Africa. This undertaking will address the main challenges, by enabling an adequate transfer of new technologies and know-how to the African continent, and tackling the biggest constraints in terms of scaling up and manufacturing in Africa.

Key questions

The aim of the panel session is to discuss the following questions:

- What are the key elements for "pandemic preparedness"? What is needed in Africa to increase pandemic preparedness (availability of treatments locally manufactured; regulatory preparedness; IP framework, etc.)? How is EU supporting such preparedness?
- Why are mRNA technologies so important for future pandemic preparedness?
- What is the role of technology transfer for pandemic preparedness?
- What is needed to transfer mRNA technologies in Africa (IP; expertise; human assets; etc.)?
- What are the key elements of the technology transfer hub in South Africa initiative? What are the main challenges and barriers?

Programme: (Description of the running order of the session – *90 minutes*)

The proposed session would structure as follows:

Moderator/Chair:

- Representative from Joint Research Centre, European Commission.

Opening and Welcome speeches (5 minutes)

- Representative from Joint Research Centre, European Commission.

Panel of speakers (approximately 60 minutes)

We propose a panel composed by four panelists. Each panelist would have 7-10 minutes for a presentation, followed by 5 minutes to respond to one/two question(s) by the moderator. Potential speakers include:

- Representative from Directorate General for International Partnerships, European Commission.
- Representative from Medicine Patent Pool.
- Dr. Martin Friede, WHO.
- High level expert on technology transfer

Discussion and Q&A (approximately 15/20 minutes)

Closing remarks by the moderator (5 minutes)

Moderator:

Representative from Joint Research Centre, European Commission.

Session organiser(s): (Names of institutions and contact details of contact person – URL links if relevant)

NICOLETTI Barbara Barbara.NICOLETTI@ec.europa.eu

Competence Centre of Technology Transfer, Joint Research Centre, European Commission

Website: https://knowledge4policy.ec.europa.eu/technology-transfer_en

Contact details: EC-CC-TT@ec.europa.eu

Room 4 Round 4 SCICOM Policy: If COVID-19 is the 9/11 moment for global science advice, what needs to happen next?



Science Forum South Africa

09h00 – 10h30, Thursday 2nd December, 2021 = (02h00 in Montreal, 08h00 in Brussels/Paris, 09h00 in Tallinn, 16h00 on Tokyo, 20h00 in Auckland).

**If COVID-19 is the 9/11 moment for global science advice,
what needs to happen next?**

Context: Moderated by the Academy of Science of South Africa, this high-level panel brings together politicians, chief science advisors, presidents of science advisory bodies and science diplomats from five continents to examine how scientific advice feeds into effective policymaking, or not. Their premise is that if the 9/11 attacks changed all our lives from the perspective of state security, then Covid-19 must leave a similar legacy for the future of globally robust policymaking as a shared public good. Or must we be prepared to accept the dumbing-down of 'evidence' and a 'snapback to normal' in our post-pandemic politics?

For those who believe wholeheartedly in evidence and the integrity of science, the past two-years have been challenging. Information, correct and incorrect, can spread like a virus. We are certainly at a turning point, not just in this pandemic, but in our collective management of longer-

term challenges affecting us all. Speakers will argue that the importance of open science and access to data has never been more critical. They will underscore what is really at stake in the relationship between science and policymaking, both during crises and within our daily lives. From the air we breathe, the food we eat and the cars we drive, to the medical treatments or vaccines we take, and the education we provide to children, this relationship, and the decisions it can influence, matter immensely. It is much more than a philosophical debate.

To begin, the panel will unpick how science and politics share common features. Both operate at the boundaries of knowledge and uncertainty, but approach problems differently. Scientists constantly question and challenge our assumptions, searching for empiric evidence to determine the best options. In contrast, politicians are most often guided by the (short-term) needs or demands of voters and by ideology. When this necessitates *'not needing experts'* or *'we are following expert advice'* mantras the lines may become blurred. The panel will argue that this pandemic has brought to the fore a third force. What is changing is that most grass-roots citizens are no longer ill-informed and passive bystanders. They want to have their voices heard and are rightfully demanding greater transparency and accountability. This brings the complex contradictions between evidence and ideology into the public eye like never before.

On the upside, rapid scientific advances in managing the pandemic are generating enormous public interest in evidence-based decision making. Practically every country has a new, much followed advisory body. Many scientists have become public celebrities too. That said, does this carrier-wave for citizen engagement with science and the tremendous opportunities to advance the status of science and research funding (\$ trillions being poured in), not risk being derailed by the real threat of science and scientists being viewed as a political force? What does the playbook of science advisory systems teach us? The panel will assess the pros and cons.

In addition, speakers representing diverse continental views will examine the pandemic's legacy as not just a disease, but as an exemplifier of humanity's inhumanities and interdependences. From vaccine equity and the starkly highlighted fault-lines between rich and poor countries, the strength of international cooperation continues to be tested. The moderator will target specific questions that bring into sharp focus how societies worldwide both profess intolerance for 'inequality', while providing and even sometimes cherishing the legal and social settings that legitimatises it. From last year's blanket ban on alcohol and tobacco sales during lockdown in South Africa to today's anti-vaccination riots across Europe, the panel will tackle thorny questions around how civil liberties, taxation, jobs, sectoral interests and culture all come into play.

Looking forward, speakers will be asked to map-out from Montreal to Auckland and from Tokyo to Pretoria what reformed or new regional or global facilities and institutions might be needed, where and why? These expert interviews will be animated by panellists' concrete case-studies and personal anecdotes outlining successes and failures in our advisory systems. Their opinions and educated guesses on how the world of work, digital technologies and AI are reshaping the 'profession' of evidence-based policymaking itself will also be given.

In conclusion, the panel will weigh-up how lawmakers must navigate between the rights and responsibilities of individuals to look after themselves and the rights and responsibilities of states to look after their citizens, provide security and a milieu in which to live a satisfying life. Further

issues accentuated by the pandemic will be debated such as concepts of democracy and the rule of law, the influence of religious views and the pressing need for the acceptance of global public goods to be universally applied. While aiming to uncover points of agreement and potential disagreement in equal measure, the panel's shared goal is to help build and elevate open and ongoing public and policy dialogue about the role of robust evidence in sound policy making. Speakers may also question why the voice of African scientists is not nearly heard enough by policymakers inside Africa, as in most places in the world.

Moderator: Prof. Himla Soodyall (South Africa), CEO, Academy of Science of South Africa (ASSAf): himla@assaf.org.za

Organiser: Aidan Gilligan (Ireland), CEO, *SciCom – Making Sense of Science*: ag@sci-com.eu

Co-organiser & Speaker: Professor Rémi Quirion (Canada), Chief Scientist of Québec & President, International Network for Government Science Advice (INGSA): Remi.Quirion@frq.gouv.qc.ca

Speaker: Professor Ene Ergma (Estonia), Astronomist & former Politician & Speaker of the Estonian Parliament: ergmaene@gmail.com

Speaker: Sir Peter Gluckman (New Zealand), President, International Science Council & former Chief Science Adviser to the government of New Zealand: pd.gluckman@auckland.ac.nz

Speaker: Professor Derrick Swartz (South Africa), Advisor to Minister Nzimande Derrick.Swartz@mandela.ac.za

Dr. Miyoko O. Wantanabe (Japan), Executive Director, Japan Science and Technology Agency (JST), Director, Office for Diversity and Inclusiveness: miyoko.wantanabe@jst.go.jp

Room 4 Round 5 SB COP26: Asking if the world has climate research priorities after COP-26



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Asking if the world has climate research priorities after COP-26**

Date: Thursday 2 December 2021

Time: 11h:00-12h30

Session Overview:

Following the COP26 climate conference in Glasgow, research and innovation has never been more important in the fight against climate change. But for all the investment in climate research, do we have the right priorities?

For example, is the balance between climate mitigation and adaptation correct? Which climate solutions do researchers feel were neglected at COP26 but could potentially lead to major breakthroughs? And how do the climate research priorities of Europe and Africa differ?

Horizon Europe, worth €95.5 billion over the next seven years, is set to be one of the motors of international climate research - at least 35 per cent of the budget will go towards tackling global warming - and Africa is set to be a key partner. What areas of research will it prioritise, and are they the right ones?

Programme:

- Introduction of panelists by moderator
- Launch into structured panel debate, addressing the questions in overview
- Audience questions put by moderator.

Moderator:

David Matthews, international editor, *Science|Business*.

David covers global research and development topics such as artificial intelligence, biosecurity and the geopolitics of science. Previously he was Europe correspondent for *Times Higher Education*. David holds a degree in modern history from the University of Oxford, a master's degree in journalism from City, University of London, and studied Chinese at Shanghai Jiao Tong University. He lives in Berlin.

Speakers:

Maria Cristina Russo, Director for Global Approach & International Cooperation in R&I, DG Research & Innovation, European Commission

Anna Steynor, leader, Climate Services Analysis Group, University of Cape Town

Lamine Gueye, Director, International Research Laboratory "Environment, health and societies", UCAD-CNRS (Dakar)

Mahama Ouedraogo, Director for Human Resources, Science and Technology, African Union Commission.

Session organiser:

David Mathews

david.matthews@sciencebusiness.net

Room 4 Round 6 EDCTP: Advancing a collaborative African agenda for global health sciences: Africa - EU global health partnerships



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposal for Parallel Session organised by EDCTP

Session Title: Advancing a collaborative African agenda for global health sciences: Africa - EU global health partnerships

Date: Thursday 2 December 2021	Time: 13:30
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Session Overview:

The European & Developing Countries Clinical Trials Partnership (EDCTP) is a public-public partnership between 16 African and 14 European countries that aims to accelerate the development of new or improved medical interventions for the identification, treatment and prevention of infectious diseases, including emerging/re-emerging diseases. Launched in 2003 and renewed in 2014, EDCTP is the focal point of European Union (EU) support for global health research in Africa, and a palpable sign of commitment first to the Millennium Development Goals and then to the Sustainable Development Goals (SDGs). EDCTP actively contributes to research & development, and the strengthening capacity for health sciences research through institutional and human capital development to enable the environment for scientific investigations in Africa.

The extensive clinical research activities supported by the second EDCTP programme (EDCTP2; 2014-2024) involve international collaborations spanning across over 60 countries and 350 institutions in Europe and sub-Saharan Africa, with broader global collaboration. By October 2021, the EDCTP2 portfolio comprised 430 grants awarded through 60 Calls for Proposals, representing a total investment of EUR 814.25 million. Results from EDCTP-funded clinical trials are generating pivotal evidence which will be translated into policy and implemented in practice by the appropriate partners, ensuring greater global health impact. Due to launch in the first quarter of 2022, the next EDCTP programme (Global Health EDCTP3) will retain its focus on poverty-related infectious diseases affecting sub-Saharan Africa, and will have additional resources and a stronger commitment to community engagement and social justice. EDCTP works with global and regional partners to tackle existing and emerging infectious disease threats. It will also continue to strengthen the enabling environment for conducting clinical research capacity in the region. Building on the foundation laid by the two previous EDCTP programmes, the partnership will ensure that more people gain access to new medical interventions and help to protect and strengthen regional and global health security.

In 2022, South Africa will host the World Science Forum – the first African country to do so. In preparation for the World Science Forum 2022, Science Forum South Africa 2021 will ignite conversations around *Science for Social Justice* - theme for the World Science Forum 2022. The proposed parallel session for Science Forum South Africa 2021 will aim to advance the broader discussion on advancing the African agenda for partnerships for global health sciences.

The key questions to be interrogated are:

1. How does EDCTP-funded health research inform science for social justice?
2. What is the role of the EDCTP programme in promoting strategic partnerships and a collaborative African agenda for health research and innovation?
3. What are the major health research challenges in Africa, including the fight against COVID-19 and its impact on other infectious diseases in Africa?
4. How can health sciences address research ethics for social justice in Africa?

Programme: (Description of the running order of the session – 90 minutes)

Two keynote presentations followed by panel discussion involving four panelists (2 males and two females) moderated by the session moderator around the key questions to be interrogated.

- Moderator (EDCTP): 15 mins
- Keynote speaker (EDCTP): 20 mins
- Keynote speaker (Africa CDC): 20 mins
- Panel discussion (4 panellists- two men and two women): 30 mins
- Q&A: 20 mins

Moderator: (Name and maximum 100 words biographical summaries)

Dr Leonardo Santos Simão, EDCTP High Representative for Africa
(<http://www.edctp.org/about-us/edctp-secretariat/dr-leonardo-santos-simao/>)

Dr Leonardo Simão is a medical doctor and science diplomat. He is the Executive Director of the Joaquim Chissano Foundation in Mozambique, Chairman of the SADC Mediation Reference Group, and Chairman of the Board of Directors of the Foundation for the Improvement of the Business Environment. Dr Simão is also the Chairman of the Board of Trustees of the Manhica Foundation, which runs the Manhica Health Research Centre, in Mozambique. He is a member of the WHO Malaria Elimination Oversight Committee, and the Board of Patrons of the Barcelona Institute of Global Health (IsGlobal).

Speakers: (Names and maximum 100 words per speaker biographical summaries – URL links if relevant)

Dr Michael Makanga, EDCTP) (<http://www.edctp.org/about-us/edctp-secretariat/dr-michael-makanga/>)

Dr Makanga is the Chief Executive Officer of the EDCTP Association. He is a clinician-scientist with 25 years of professional experience working on health and poverty-related diseases in sub-Saharan Africa. He is medical doctor and scientist who has been involved in various clinical and research positions. He is also a Fellow of the Royal College of Physicians of Edinburgh, Scotland. Before joining EDCTP he was first in clinical practice and academia, and later clinical research where he served as Head of Regulatory Clinical Trials Facility and Outpatient Clinic at the Kenya Medical Research Institute – Wellcome Trust Collaborative Centre, Kilifi, Kenya.

Professor Nicaise Ndembu, Africa CDC (<https://africacdc.org/news-item/africa-cdc-appoints-editor-in-chief-for-the-journal-of-public-health-in-africa/>)

Senior Science Advisor to the Africa CDC Director and Research Professor at Kanazawa University School of Medicine and Adjunct Associate Professor University of Maryland, Baltimore, USA. As a virologist and public health expert and Editor-in-Chief for the Africa CDC *Journal of Public Health in Africa and AIDS Research and Therapy*. Dr. Ndembu is also an Associate Editor for *Frontiers in Public Health* and Section Editor for the *African Journal of Laboratory Medicine*. He has contributed as a member of numerous international review boards and is a Principal Investigator and Co-Investigator for US National Health Institute (NIH) grants.

Dr Margareth Ndomondo-Sigonda, AUDA NEPAD

Dr. Margareth Ndomondo Sigonda, is Head of Health and coordinator of the African Medicines Regulatory Harmonization (AMRH) programme of the African Union Development

Agency. Working with different partners, including the African Union Commission, the Bill and Melinda Gates Foundation, the AMRH has been able to deliver positive results in helping countries harmonize regulatory standards, starting with the registration of medicines and slowly expanding the scope from generic medicines to new chemical entities to vaccines. The scope was also expanded in terms of functions – such as safety monitoring, clinical trials.

Dr Barbara Kerstiëns, Head of Unit “Combatting Diseases” within the Directorate-General for Research and Innovation, European Commission, Belgium

Barbara Kerstiëns, MD, MPH is the Head of Unit in the unit responsible for ‘Combatting Diseases’ in the PEOPLE Directorate of the Directorate-General for Research and Innovation at the European Commission. She has a long experience in international public health, working for Médecins Sans Frontières, Johns Hopkins Bloomberg School of Public health and DG Development and Cooperation of the European Commission prior to joining DG Research and Innovation in 2012 where she has consistently worked in medical research and funding. Barbara Kerstiëns received her M.D. from the Katholieke Universiteit Leuven, a Postgraduate Certificate in Tropical Medicine from the Institute of Tropical Medicine in Antwerp and a Master of Public health from Johns Hopkins Bloomberg School of Public Health.

Session organiser(s)

Professor Moses Bockarie (<http://www.edctp.org/about-us/edctp-secretariat/professor-moses-john-bockarie/>)

Director of International Cooperation (Africa) and Head of Africa Office
European & Developing Countries Clinical Trials Partnership (EDCTP)
Medical Research Council, P.O. Box 19070, Francie van Zyl Street, Tygerberg, Cape Town, South Africa

Tel: +27 21 938 0915 **Fax:** +27 21 938 0569

Email: bockarie@edctp.org **Website:** www.edctp.org **Twitter:** twitter.com/EDCTP

Please return to: Thapelo.Kepadisa@dst.gov.za

Room 4 Round 7 JRC Water: Harnessing water science for policy-making and Green Transition in Africa

Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Harnessing water science for policy-making and Green Transition in Africa

Date: 2 December 2021	Time: 15h:30-17h00
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Session Overview:

The role of science as a driver of capacity building, knowledge and information is essential for good governance and cooperation initiatives. However, it is also recognised, particularly in the African context, that policy formulation requires more than knowledge derived from scientific evidence to improve policy effectiveness. Therefore, the use of scientific results in the implementation of the SDGs and programmes cannot be a mere technical process and must be driven by a strategic vision of the future that can only be provided by policy makers. To overcome these challenges, the UN Agenda 2030 (SDG 17) stresses the importance of creating partnerships between science and policy.

The interface between policy and research is still subject to tensions for several reasons, including different logics and time horizons and, consequently, the lack of mutual expectations.

The panelists will address key issues in this context: knowledge development and management; capacity building; policy definition and implementation; how scientific and technical information of an often multi-sectoral and complex nature can and should contribute effectively to decision-making processes and ultimately to the identification of sustainable intervention projects.

Programme:

1. Introduction to the Session (Moderator) – 10 min

2. Introduction of Panel Members (Moderator) – 5 min
3. Discussion with the Panel Members on the topics of the session:
 - a. Water Science and Knowledge Management (15 min)
 - b. Capacity Building (15min)
 - c. Cooperation and Development Programmes (15 min)
 - d. Water – WEFE Science and Policy Making (15 min)

Moderator:

Dr. Cesar CARMONA-MORENO – In 1991, he obtained a PhD in computer science and applied mathematics from the National Polytechnic Institute of Toulouse (France) and was awarded the Léopold Escande Prize for the best research thesis. In 1993, he received the Nature Prize for the best scientific publication of the year. As a Senior Expert of the European Commission, he currently leads the JRC's water resources management activities in developing countries and manages the JRC WEFE-AFRICA project.

Dr. Bern GAWLICK xxxx

Speakers: Dr. Abou AMANI (Director UNESCO – Water Sciences)

- 1- Dr. Rashid MBAZIRA (Executive Secretariat African Ministers' Council on Water)
- 2- Ms Chantal MARIJNISSEN (DG International Partnership, Head of Unit Environment, Sustainable Natural Resources) (TBC)
- 3- Dr. Ashwin SEETAL (IWRM specialist at the Council for Scientific and Industrial Research – CSIR, South Africa)
- 4- Dr. Stephanie BILGRAM (Global Nexus Secretariat, GIZ, Germany) (TBC)
- 5- Dr. Stephen PEEDL (African Knowledge Platform, JRC)
- 6- UNDP (??) (TBC)

Session organiser:

Barbara NICOLETTI (Joint Research Centre)

Barbara.nicoletti@ec.europa.eu

Room 5

Room 5 Round 1 NSTF Skills Research: Developing skills for pandemics: Specialised research areas to be prioritised



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Developing skills for pandemics: Specialised research areas to be prioritised

Date: Thursday 2 December 2021	Preferred time: 09:00-10h30
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Session Overview:

This is the first of two sessions proposed to be held at the SFSA by the National Science and Technology Forum (NSTF).

The SARS-CoV-2 pandemic is teaching humanity that it should manage outbreaks of diseases better, or prevent them altogether. What have we learnt from the current pandemic about the research areas that could be prioritised to enable South Africa to be better prepared? What specialists do we need more of? What should we do for South Africa to maintain its competitive edge in areas of scientific research? What should science and medicine graduates be encouraged and assisted to study?

This discussion flows from the online NSTF Discussion Forum on 25-26 February 2021 entitled: *Preparing for epidemics – human and animal*. See [Preparing for epidemics in South Africa – human and animal | National Science and Technology Forum \(nsthf.org.za\)](https://nsthf.org.za). That online event over two days, as well as this panel session/s at the SFSA, were conceptualized by the representatives of the science councils and statutory bodies in the NSTF.

It became clear in these previous discussions that certain areas of academia and research are becoming more important in the context of needing to be better prepared for outbreaks of epidemics/pandemics.

Programme:

Introduction by moderator (5 min)

Presentations by 4-5 panel members (of 5 minutes each)

Questions by moderator and answers by panel members (5 min each, total 30 minutes)

Discussion/Q&A with the audience (30 minutes)

Moderator:

Biographical summary: Executive Director of the NSTF (15 years) moderating discussion forums 4-6 times per year. Has a B(Ed) degree specializing in mathematics education from UWC, and a BA degree from UJ with mathematics and psychology as majors, as well as an education diploma. Has studied the basics of various subjects informally, ranging from African Politics to Literary Criticism, Mathematical statistics to Economics.

Speakers:

Virologist

Epidemiologist

Specialist in genomics

Specialist in zoonoses

Pharmacologist

Session organiser:

National Science and Technology Forum (NSTF):

Ms Jansie Niehaus jniehaus@nsthf.org.za and

Ms Siyabonga Jonga sjonga@nsthf.org.za

**Room 5 Round 2 NSTF Skills Monitor: Developing skills for pandemics:
Monitoring, modelling and communication**



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Developing skills for pandemics: Monitoring, modelling and communication

Date: Thursday 2 December 2021	Preferred time: 13h30-15h00
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Session Overview:

This is the **second** of two sessions proposed to be held at the SFSA by the National Science and Technology Forum (NSTF)

The SARS-CoV-2 pandemic is teaching humanity that it should manage outbreaks of diseases better, or prevent them altogether. What have we learnt from the current pandemic about specialist skills that could be prioritised to enable South Africa to be better prepared? What specialists do we need more of – **especially on the applied or practical side?** What should we do for South Africa to maintain its competitive edge in areas of scientific research? What should **school learners and graduates** be encouraged and assisted to study?

This discussion flows from the online NSTF Discussion Forum on 25-26 February 2021 entitled: *Preparing for epidemics – human and animal*. See [Preparing for epidemics in South Africa – human and animal | National Science and Technology Forum \(nsth.org.za\)](https://nsth.org.za). That online event

over two days, as well as this panel session/s at the SFSA, were conceptualized by the representatives of the science councils and statutory bodies who are members of the NSTF.

It became clear in these previous discussions that certain areas of academia, research **and practice** are becoming more important in the context of needing to be better prepared for outbreaks of epidemics/pandemics.

In particular, the following skills were found to be important;

- **Skills to communicate clearly to the public and engaging them**
- **Skills to do specialized monitoring for outbreaks of communicable diseases, including through the One Health approach**
- **Data management skills**
- **Mathematical modelling to monitor the trends of spread of infections and the success of interventions**

Programme:

Introduction by moderator (5 min)

Presentations by 4-5 panel members (of 5 minutes each)

Questions by moderator and answers by panel members (5 min each, total 30 minutes)

Discussion/Q&A with the audience (30 minutes)

Moderator:

Jansie Niehaus

Biographical summary: Executive Director of the NSTF (15 years) moderating discussion forums 4-6 times per year. Has a B(Ed) degree specializing in mathematics education from UWC, and a BA degree from UJ with mathematics and psychology as majors, as well as an education diploma. Has studied the basics of various subjects informally, ranging from African Politics to Literary Criticism, Mathematical statistics to Economics.

Speakers:

- Speaker from the Water Research Commission (WRC) on the monitoring of waste water
- Speaker from the SANBI re the importance of monitoring and the One Health approach
- Speaker from the CSIR about data and modelling
- A mathematical modelling specialist
- Communication specialist

session organisers:

National Science and Technology Forum:

Ms Jansie Niehaus jniehaus@nstf.org.za and

Ms Siyabonga Jonga sjonga@nstf.org.za

**Room 5 Round 3 DSI Youth KE: Youth in the knowledge economy
conversing with policy-**



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2021”

1-3 December 2021

Session Title: Youth in the knowledge economy conversing with policy-makers

Date: Wednesday, 1 December 2021

Time: 15.30 – 17.00

Session Overview

The Department of Science and Innovation (DSI) is embarking on a process to develop the *National System of Innovation (NSI) Youth Development and Employment Strategy*. This takes place against the backdrop of a deepening crisis in youth unemployment in South Africa, which has resulted in approximately 9.1 million people aged between 15 and 34 who are not in employment, education or training. Mindful of the resultant diminishing access to economic opportunities and driven by the call of the president of the Republic for concerted efforts towards job creation, the DSI appreciates the urgency of taking stock of the overall impact of programmes that are in place within the NSI and the need to take action towards a cohesive response by the NSI. At the heart of the multi-pronged process of developing the strategy will be engagements with young people, activists in the space and all relevant organisations. In part, the intention is to elevate the voices of the young people in policy formulation and to learn

from their lived-experiences. We take this route as we recognise the fact that policy formulation often leaves out the very people that it is meant to respond to.

The session marks the start of a new conversation that will be carried through a series of engagements with young people in the knowledge economy and related sectors whom the DSI will be speaking with over a period that will culminate in a more cohesive and comprehensive response to better deal with youth challenges.

The session will host a group of trail blazing young people - leaders in their respective fields, who are leveraging knowledge and information to produce services and products that are transforming communities towards a more economically, environmentally and socially sustainable society. Our panel of young people comprises innovators, business owners, social entrepreneurs, visionaries, change agents and gifts to South Africa. They will be holding a conversation with policy-makers to share their work, lived-experiences and some advice. The policy-makers will be keen to listen, prepared to keep an open mind and to take some counsel from these young people. We hope that the conversation will set the tone for many conversations to follow, which will shape the strategy and responses specific to the youth in this sector. It is our intention to use this initial engagement to surface real issues of young people and to lay the basis for further engagements.

Programme

1. Welcome remarks by the moderator: Ms Busisiwe Ntuli, 3 minutes
2. Young trail blazers sharing their work, lived-experiences & advice to policy-makers:
 - o Ms Nokulunga Zondi, 10 minutes
 - o Mr Allen van Der Meulen, 10 minutes
 - o Ms Abigail Kemper, 10 minutes
 - o Mr Nathi Mbele, 10 minutes
 - o Mr Joash Kisten, 10 minutes
3. Reactions from policy-makers:
 - o Mr Rudi Dicks, 10 minutes
 - o Mr Imraan Patel, 10 minutes
4. Discussions, 10 minutes
5. Closing Remarks and way forward by Mr Imraan Patel, 5 Minutes
6. End of session by moderator: Busisiwe Ntuli, 2 minutes

Moderator

Ms Busisiwe Ntuli is a Director in the Department of Science and Innovation responsible for policy, strategy and programming in the policy area of Science, Technology and Innovation for Local Economic Development. Her work experience spans academia, the non-governmental sector, the private sector as well as the public sector, where her main focus has been on programmes focused on advancing development in economically-marginalised spaces through

science, technology, and innovation. She received her academic training from the University of Cape Town, the University of the Witwatersrand, the University of South Africa and the University of Johannesburg in public policy & management, development studies and business management.

Speakers

Ms Nokulunga Zondi is a lawyer, avid innovator and passionate entrepreneur with 5 years' worth of experience in business start-up and leadership in real estate, hospitality and the agri-tech innovation space. She is a visionary, community-driven product developer and self-starter with education in research, public law and the socio-political environment. "I am a relentless optimist who believes there is no failure in an organisation, only feedback and opportunities to learn". She is the CEO of Spec Legacies Farming, an innovative company developing products powered by cost effective technologies to solve society's most pressing issues of food security, adequate housing and accessibility to water.

Mr Allan van Der Meulen is an impact-driven entrepreneur who graduated from the RLabs GROW Leadership Academy. He is the co-founder and CEO of Zlto (zlah-toh). **Zlto** is an award winning digital platform that was co-founded by social enterprise RLabs. It leverages the power of mobile and block chain technology to increase engagement, encourages and tracks positive behaviour through innovative rewards systems. With partners across 5 countries, Zlto has impacted more than **2 million people**. He works extensively with social enterprises enabling them to leverage technology and youth to drive impact. Allan is an Ashoka Changemaker and 1 of the 2020 Mail & Guardian 200 young South Africans. He is also an advocate for the "Trust Youth to Lead" movement.

Ms Abigail Kemper is co-founder of TaxiMap. Since 2011, Abigail has been searching for solutions to mapping minibus taxi routes and making this valuable information open and accessible to commuters in South Africa. Together with Andrew Kerr, they founded TaxiMap in 2014. This has been a side hustle while she consulted as an economist, energy sector specialist and started a PhD about electricity consumption and energy strategies in informal spaces. She is currently Research and Engagement Lead at Open Cities Lab, based in Durban. Abigail is curious - she asks a lot of questions. She strives to be compassionate, inclusive, critical and solutions oriented.

Mr Nathi Mbele is a telecoms solutions architect & CEO of AdNotes. AdNotes is licensed by ICASA to operate and provide internet services in South Africa. AdNotes has partnered with Old Mutual, Multichoice and others to rollout internet access in marginalised communities. Nathi is a graduate of the University of Cape Town with a Bachelor of Commerce degree. He is World Economic Forum (WEF) Global Shaper (since 2014) and a regular guest at the WEF Young Global Leader's Learning Modules. He lobbied the WEF to take the *Internet for All* project to South Africa after it was successfully launched in Rwanda. He is an active member of various provincial committees, councils and working groups in KwaZulu Natal.

Mr Joash Kisten is a young entrepreneur and innovator who has extensive experience in Grant Writing, Pitch Presenting, and Geospatial Data Science. He is the co-creator of the Hydro Blu system which was established to address the global water crisis using modern methods of Geographic Information Systems (GIS) and Machine Learning. The system predicts the probability of sustainable borehole sites at specific geolocations on a global scale. He has represented the Hydro Blu company at multiple innovation competitions including Space Technology Challenge 2021 (1st Place). His long-term goal is to build a global business that addresses challenges relating to water access, food security, and poverty.

Mr Rudi Dicks is the Head of the Project Management Office (PMO) in the Private Office of the President. He is responsible for supporting the implementation of the Presidential Employment Stimulus, the Presidential Youth Employment Initiative as well as unblocking regulatory challenges that impact on employment and economic growth. He jointly leads Operation Vulindlela which has been established as a joint initiative between the Presidency and National Treasury to accelerate structural reforms. Rudi studied at WITS Business School and completed the Management Advanced Programme and has a Post-Graduate Diploma in Economic Principles as well as a Master of Science (MSc) Finance from the University of London.

Mr Imraan Patel is a public policy and strategy manager with a focus on innovation, inclusive development, sustainability, social & economic development and public management and governance. At the Department of Science and Innovation, he is currently a Deputy Director-General responsible for strategically driving a portfolio of investments and policies that advance the social and economic development priorities of government through science and technology-based interventions. Particular areas of focus include science and technology for sustainable development, R&D-led industrial development, environmental technologies, and the Next Industrial Revolution. He represents the department on the social and economic clusters of government.

Session organisers:

Ms Busisiwe Ntuli
Department of Science and Innovation
busisiwe.ntuli@dst.gov.za

Mr Eric Watkinson
Department of Science and Innovation
eric.watkinson@dst.gov.za

Room 5 Round 4 HSRC TIPCS: Developing Transformative Innovation Policy: Perspectives from South Africa



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Developing Transformative Innovation Policy: Perspectives from South Africa

Date: Thursday 2 December 2021	Time: 09:00-10:30
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There is a general agreement that the complexity of current societal and environmental challenges requires systemic and transformative change. This requires new ways of doing things and new ways of framing problems and solutions.

The Sustainable Development Goals (SDGs) express shared global development goals – towards “*Transforming our World*”. Transformation implies a drastic shift towards low carbon, climate-resilient, green and inclusive economies and societies. With the pandemic halting and in some cases reversing progress towards realising the SDGs, we face ever greater urgency to “build back better”, to set humanity on a more sustainable path, and to avoid the worst impacts on society, economies and the environment.

System-wide transformation requires innovative solutions - but these complex problems cannot be solved by new technological interventions alone. They need social innovation as well. What is the role of science, technology and innovation policy in driving a transformative development agenda, and how can we rethink and reframe our approaches and models? Piecemeal, short-term-focused, and partial policy interventions can quickly reinforce persistent challenges, or even create new complexities.

Transformative Innovation Policy (TIP) proposes a new approach to support innovation that addresses societal and environmental challenges. It builds on the possibility of alternative futures, the potential of citizen movements, firms, governments, and knowledge organisations, and the co-creation of solutions through participatory approaches.

A Community of Practice on is growing in South Africa since 2017, using the TIP approach to give substance to a new focus for Science, Technology and Innovation (STI) policy oriented to 'transformative change'. Since South Africa became a founding member of the Transformative Innovation Policy Consortium (TIPC) in 2017, the Community of Practice has grown, with several public development initiatives using the ideas of transformative innovation policy, in areas such as water and sanitation, renewable energy, entrepreneurship, human settlements and education.

The aim of the session is to share the practice of these teams, to learn how they are adopting and adapting transformative innovation policy thinking to shape their policy interventions in South Africa. How does – and how can - TIP offer new models to inform our strategies to implement the Sustainable Development Goals?

The panelists will stimulate discussion, based on their real life engagements, to ignite a conversation around why Transformative Innovation Policy (TIP) is important in South Africa, what it means in our context, and how government plays a role. Finally, we will invite participants to become part of a Community of Practice that can grow more widely across development sectors, to co-create solutions to our greatest challenges.

Programme:

- Why is Transformative Innovation Policy important in South Africa? Reflections from a policy perspective – Imraan Patel (10 mins)
- Transformative innovation, transformative outcomes and the SDGs – Glenda Kruss/ Erika Kraemer-Mbula (15 mins)
- How does a transformative innovation approach inform innovation policy interventions to improve livelihoods in South Africa? Reflections from practitioners -
 - o Water & sanitation – Valerie Naidoo (10 mins)
 - o Hydrogen economy – Rebecca Maserumule (10 mins)
 - o Incubating entrepreneurship – Klariska Moodley (10 mins)
- Engagement and discussion with the participants – moderated by Glenda Kruss/ Erika Kraemer-Mbula (25 minutes)
- Closing remarks – (5 minutes)

Moderator:

- Glenda Kruss: Executive Head, Centre for Science, Technology & Innovation Indicators (CeSTII), Email: gkruss@hsrc.ac.za

- Erika Kraemer-Mbula: Chair, DSI/NRF/Newton Fund Trilateral Chair in Transformative Innovation, the 4IR and Sustainable Development; E-mail: erikakm@uj.ac.za

Speakers:

- **Imraan Patel**

Imraan Patel is a public policy and strategy manager with a focus on innovation, sustainability, social and economic development, and public management and governance. Employed since 2006 at the South African Department of Science and Technology, he holds the position of Deputy Director-General: Socio-Economic Partnerships and represents the department on the social and economic clusters of government and the advisory committee for the Green Fund. Areas of focus include Information and Communications Technologies, Sector Development, Climate Change and Biodiversity, Environmental Technologies, Advanced Manufacturing, Mining and Minerals Beneficiation, Chemicals, Technology Localisation and Innovation for Inclusive Development.

- **Glenda Kruss**

Dr Glenda Kruss is the Executive Head of the Centre for Science, Technology and Innovation Indicators at the Human Sciences Research Council. Over the past ten years, she has worked in the field of innovation studies, to understand the role of universities and public research institutes in economic and social development, and the determinants of skills and knowledge flows within sectoral, national and global systems of innovation. Her current research focus is oriented towards more contextually appropriate measures of STI for inclusive and sustainable development in sub-Saharan Africa. She has collaborated widely on comparative research projects in Africa, Latin America, Asia and Europe, and has led large scale projects for national government, building alliances and networks between researchers, policy makers and practitioners in South Africa.

- **Erika Kraemer-Mbula**

Professor Erika Kraemer-Mbula is currently the Chairholder of the DST/NRF/Newton Fund Trilateral Chair in Transformative Innovation, the Fourth Industrial Revolution and Sustainable Development, based at the College of Business and Economics (University of Johannesburg) and in partnership with ACTS and SPRU. Her research unit is formed by a dynamic team of researchers that engages in cutting-edge research; builds the capacity of younger scholars to help develop the next generation of African thinkers leading transformative change; and engages with policy makers, key stakeholders and research partners, to influence policy change. She specialises in the analysis of innovation systems in connection to equitable development and inclusive development and has done pioneering work on innovation in the African informal sector.

- **Klariska Moodley**

Currently serves as the Head of Experimentation at the United Nations Development Programme, where she leads the identification, piloting and scaling of innovative solutions that accelerate progress on the sustainable development goals (SDGs). Klariska completed her

graduate training at the Chevron (Caltex) Petroleum Refinery in 2008 and holds a Masters of Technology in Chemical Engineering (*cum laude*) from the University of Johannesburg. Her training also includes Product Management (Oxford University), Agile Product Owner (Think Agile), Design thinking (Duke Corporate Education), Root Cause Analysis (Thinking Dimensions) and Entrepreneurship for Innovators (Kio Group). Klariska's exposure to the innovation ecosystem spans research and market analyses, through prototype development and pilot trials, to product rollout.

- **Mandy Mlilo**

Mandy Mlilo is the director for Hydrogen and Energy at the Department of Science and Innovation, and the project manager for the Hydrogen Valley.

- **Valerie Naidoo**

Dr Valerie Naidoo is a water and sanitation research, development and innovations (RDI) strategy expert specializing in business development and innovation at the Water Research Commission. Her key focus is to facilitate business development opportunities and create value and societal impact from RDI products and services. She co-established and manages 2 technology accelerators, WADER (Water Technologies Demonstration Programme and SASTEP (South African Sanitation Technology and Enterprise Programme) for the Water Research Commission. She sits on the board of UKZN WASH R&D Centre, advisory board of Future Water Institute of UCT, advises the Department of Trade Industry and Competition on the national commercialisation collaboration platform and is a member of the IWA Innovators Platform Steering Committee. She completed her PhD on wastewater treatment systems at the University of KwaZulu Natal.

Session organisers:

- Glenda Kruss: Executive Head, Centre for Science, Technology & Innovation Indicators (CeSTII), Email: gkruss@hsr.ac.za
- Erika Kraemer-Mbula: Chair, DSI/NRF/Newton Fund Trilateral Chair in Transformative Innovation, the 4IR and Sustainable Development; E-mail: erikakm@uj.ac.za

Room 5 Round 5 SACNASP Service: Exploiting Science and technology opportunities to address service delivery challenges



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Exploiting Science and technology opportunities to address service delivery challenges**

Date: Thursday 2 December 2021

Time: 11:00-12:30

Session Overview:

The National Development Plan (NDP) recognises science, technology, and innovation (STI) as critical drivers of economic growth, poverty alleviation, creation of employment opportunities and improving the quality of lives. According to the 2019 White Paper on Science, Technology and Innovation, STI plays a crucial role in enhancing service delivery and decision making for public policy, thus improving the quality of life of all South Africans. The White Paper also acknowledges the necessity for STI in all spheres of government, and the adoption of STI in municipal planning, delivery, and operational processes. New technologies and innovations continue to emerge and are aimed at addressing service delivery in the education, health, waste management, water and sanitation, green and renewable energy solutions, infrastructure and human settlement. The purpose of the discussion is to explore advanced approaches of service delivery and building capabilities to manage and adopt technology-based initiatives, establish service delivery challenges that may be resolved by technology and innovation as well as determine appropriate innovation-based solutions.

Moderator:

Prof Vanessa Steenkamp, Deputy Chairperson of SACNASP

Speakers:

1. Mr. Tshepang Mosiea, Director for Sustainable Human Settlements at the Department of Science & Innovation (DSI)
2. Prof Mamphweli, Director for the Centre for Renewable and Sustainable Energy Studies, Stellenbosch University
3. Dr Udesb Pillay, Director of the University of Free State (UFS) Business School
4. Prof Stanley Liphadzi, Group Executive Manager of Research & Development, Water Research Commission

Session organiser(s):

Dr Matshidiso Matabane

Information Officer

mbmatabane@sacnasp.org.za

Lientjie Mogano

Project Coordinator

Room 5 Round 6 ASSAf Predatory: Understanding the scourge of predatory journals and conferences in academia



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

2 December 2021

Room 8

Session Title:

Understanding the scourge of predatory journals and conferences in academia

Date: Thursday 2 December 2021

Time: 13:30 - 15:00

Session Overview

This session will highlight some of the key emerging findings and recommendations of an InterAcademy Partnership (IAP) study “[Combatting predatory academic journals and conferences](#)” which will report in early 2022. IAP is the global network of over 140 national academies of science, engineering and medicine who work together on policy issues of vital importance.

Predatory journals and conferences are pervading the research enterprise: they are driven entirely by profit and involve some form of deception, such as the false promise of rigorous peer review - a hallmark of academic research. What is more, their tactics are becoming increasingly sophisticated and that it is becoming more difficult to distinguish fraudulent practices from low quality or questionable ones. This means that poor science can find its way into the knowledge base and good science can be overlooked when it appears in low credibility journals: if left unchallenged, the implications are profound.

The IAP study has been informed by a unique survey of the global research community in which over 1,800 researchers participated. The survey gives a concerning insight into the extent and impact of these predatory practices across the world, what drives them and motivates researchers to use them. By understanding these dynamics and the relative vulnerabilities and exposure to predatory outlets, the survey can help identify the most impactful ways of combatting them.

African members of the international working group leading this work will provide a preview of the study's findings before it officially reports next year, including (i) emerging recommendations for key stakeholder communities who play their part in the knowledge ecosystem, such as researchers, research funders, publishers, academic leaders, libraries and indexing services; and (ii) a new spectrum tool designed to assist many of them. An African perspective will be prominent in the discussions.

The session will explore the following key questions:

1. What are predatory journals and conferences?
2. Why are they on the rise?
3. Why are they important?
4. What can be done to curb them?
5. What resources are available to help researchers and others minimise their risk?

The format of the session will be a c.20-minute presentation (possibly pre-recorded), followed by a moderated open discussion and Q&A with the registrants. The session will be as interactive as practicable.

Programme

13:30 - 13:35 Welcome and introduction –Susan Veldsman, Co-Chair of IAP Study

13:35 - 14:00 Introducing predatory journals and conferences: learning from the IAP study, led by IAP Working Group members [pre-recorded]

14:00 - 14:30 Panel discussion: predatory academic practices in the African research community

Up to five-minute interventions each on personal insights and/or national contexts, and response to the IAP study.

- [Professor Victorien Dognan](#), IAP Working Group member (Benin)
- [Professor Asfawossen Asrat Kassaye](#), IAP Working Group member (Ethiopia)
- [Dr Sepo Hachigonta](#), Director of Strategy, Planning and Partnerships at the National Research Foundation (NRF), South Africa.

A moderated discussion will explore:

- *ways to identify predatory journals and conferences*
- *what to do if you think you have been scammed by one*
- *why they are thriving (root causes) and how to curb them*
- *the threat of predatory practices to global and African science, if left unchallenged*
- *personal insights and experience*
- *what academies can do to help*

14:30 - 15:00 **Interactive questions and answers** with online registrants.

Moderator

[Susan Veldsman](#), Director, Scholarly Publishing, Academy of Science of **South Africa** and Co-Chair of the IAP Study on predatory academic journals and conferences

Ms Veldsman will provide welcoming remarks and moderate the session. She will also offer her perspective on South Africa's experience in combatting predatory publishing.

susan@assaf.org.za

Speaks

[Professor Asfawossen Asrat Kassaye](#), Professor of Mining and Geological Engineering, Botswana International University of Science and Technology (BIUST), **Botswana** and Professor of Geology at the School of Earth Sciences of Addis Ababa University (AAU), **Ethiopia**, and member of the IAP Working Group on predatory academic journals and conferences.

Professor Kassaye will reflect on Ethiopia's experience in combatting predatory practices, particularly enhancing quality local journals, through the efforts of the Ethiopian Academy of Sciences.

asfawossena@gmail.com

[Professor Victorien Dougnon](#), Senior Lecturer and Researcher in Microbiology, University of Abomey-Calavi, **Benin**, and member of the IAP Working Group on predatory academic journals and conferences.

Professor Dougnon will give an early career researcher perspective and reflect on efforts to curb predatory practices in Benin through the Academy of Young Scientists in Benin.

victorien.dougnon@gmail.com

[Dr Sepo Hachigonta](#), Director of Strategy, Planning and Partnerships at the National Research Foundation (NRF), **South Africa**.

Dr Hachigonta will give a research funders' perspective on how research funders in Africa and globally can play their part in combatting predatory academic practices.

SP.Hachigonta@nrf.ac.za

Session organiser(s)

[Bisma Fazeen](#), IAP Research Associate and member of the IAP study secretariat
bfazeen@nas.edu

[Tracey Elliott](#), IAP Project Director
telliott@iapartnership.org

Susan Veldsman, Co-Chair of IAP study and Director, Scholarly Publishing, Academy of Science of **South Africa**
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Room 5 Round 7 UCT OS C19: Mobilizing open science to respond to the health, social and economic challenges of Covid-19



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Parallel Sessions organised by SFSA partners

Session Title: Mobilizing open science to respond to the health, social and economic challenges of Covid-19

Date: Thursday 2 December 2021	Time: 15:30
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Session Overview

This book launch will centre discussion around the role of scientists and their work in meeting contemporary challenges. It will serve as a bridge between the SFSA 2020's focus on the DSI's science, technology and innovation (STI) partnerships initiatives and (2) the World Science Forum 2022's focus on Science for Social Justice. This session will highlight the role that open science can play in meeting the health, social and economic challenges of our time, such as COVID-19. In their discussions, the speakers will engage with: the role of scientists in Innovation Systems, how Intellectual Property interfaces with science in the innovation ecosystem, Open science and development, science diplomacy; Global Surgery and the SDGs, inclusive and sustainable cities.

Programme:

- **Dr Okorie** (UP) Moderator: Introduction and session overview. Thereafter each panelist will speak for 5 - 10 minutes on the aspects listed below.
- **Prof Ncube** (UCT): The book's overarching concept and content with a focus on open science and Intellectual Property
- **Prof Mammo Muchie** (UJ): STI and Innovation, international co-operation in STI, Science Diplomacy
- **Dr Wasiu Afolabi** (UCT): Insights from how university-based scientists work with industry and other funders to leverage their innovations to meet health, social and economic challenges of COVID-19
- **Prof Salome Maswime** (UCT): Global Surgery and the SDGs, inclusive and sustainable cities, and the notion of creating healthy cities to improve health outcomes
- **Dr McLean Sibanda** (Biogen): Intellectual Property; science and business including research commercialisation
- **Dr Okorie** : Q&A - engagement with panel participants, followed by session closure.

Moderator: **Dr Chijioke Okorie**

Dr. Chijioke Okorie is a Lecturer in the Department of Private Law at the University of Pretoria, South Africa. Prior to that, she was the inaugural postdoctoral research fellow under the South African Research Chair in Intellectual Property, Innovation and Development at UCT (2019 and 2020). Before becoming a full-time researcher and policy consultant, she was a Senior Associate in the law firm of CLP Legal (formerly, Consolox Legal Practitioners). She is also the Lead Advisor at Penguide Advisory, a firm that provides research, educational, legal and regulatory advisory services in copyright, Internet law and policy, and international development.

Full profile at www.chijiokeo.com

Speakers: (in order of presentation)

Professor Caroline Ncube

Professor Ncube is the holder of the DSI-NRF South African Research Chair: Intellectual Property, Innovation and Development in the Department of Commercial Law at the University of Cape Town (UCT). She is a B rated researcher. Professor Ncube is a member of the [African Policy, Research & Advisory Group on STI](#) and of the [Academy of Science of South Africa \(ASSAf\)](#). She also serves on the AU Scientific Technical Research Commission ASRIC Taskforce on IP Protection in Joint Research and Collaboration During Outbreaks. She has served as an expert for various institutions including the WIPO, ECA and SADC.

Full profile at <http://www.ipchair.uct.ac.za/IPChair-TheChair> and www.carolinebncube.com

Prof Mammo Muchie

Professor Muchie is the DST-NRF research chair in Innovation Studies at the Faculty of Management Sciences, Tshwane University of Technology and a C rated research Professor. He is a fellow of ASSAf, the African Academy of Sciences and the African Science Institute. He is also currently adjunct Professor at the Adama Science, Technology University, Arsi University, Addis Ababa University and University of Gondar, Ethiopia. He is also a Chief Editor of a new TUT Journal of Creativity, Innovation and Social Entrepreneurship (JCISE).

Full profile at <https://www.tut.ac.za/rni/research/research-chairs/prof-muchie>

Dr Wasiu Afolabi

Dr Wasiu Afolabi is the IP Specialist at the Research Contracts and Innovation (RC&I) department at UCT where he is responsible for managing a broad IP Portfolio of UCT technologies and research outputs, developing IP strategy, managing projects, and unlocking strategies for research commercialisation and knowledge transfer by working closely with UCT researchers, inventors, funders, and the industry. Prior to joining UCT, he worked with CPUT TTO, Savant technology incubator and Knife Capital. He is a specialist in value creation and value capture and consults on IP/business strategy. He received the 2019 AUTM's scholarship for technology transfer professionals from developing economies (Texas, USA). He is a Research Management and Leadership Programme Fellow at George Mason University, USA.

Full Profile at <http://www.rci.uct.ac.za/development-commercialisation-team>

Prof Salome Maswime

Professor Salome Maswime is an Associate Professor and the Head of the Global Surgery at the University of Cape Town, an Obstetrician and Gynaecologist, and the President of the South African Clinician Scientists Society. She was the Discovery MGH research fellow in 2018 at the Massachusetts General Hospital and Harvard Medical School, and a former lecturer at Wits University. She is recognized as a global surgery expert, because of her research contributions on caesarean sections. She is an advocate for women's health rights, and equity in surgical and maternal care. She is an advisor and consultant to several institutions, including the World Health Organization. She has received numerous awards for her tenacity and commitment to maternal health, and for ongoing research in maternal health.

Full Profile <http://www.globalsurgery.uct.ac.za/aprof-salome-maswime>

Dr McLean Sibanda

Dr McLean Sibanda is an accomplished patent attorney, engineer and internationally respected innovation promoter with a 23-year career in intellectual property and related fields. He is the regional Managing Director of Bigen Global and a member of the Bigen Board. Before joining Bigen, he was the CEO of The Innovation Hub South Africa, as well as Treasurer of the International Association of Science Parks (IASP) and President of the IASP African Division. He brings on board legal expertise with a specific proficiency in deal structuring and extensive experience in developing entrepreneurship, innovation, venture funding and incubation.

Full profile at <https://bigengroup.com/who-we-are/leadership/dr-mclean-sibanda/> and <https://sibandalegacy.africa>

Session organiser:

DSI-NRF South African Research Chair: Intellectual Property, Innovation and Development
<http://www.ipchair.uct.ac.za/>

Contact person: Prof Caroline Ncube

Room 6

Room 6 Round 1 UNISA Nano: Harnessing Nanoscience and Nanotechnology for the Sustainable Development Goals



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Harnessing Nanoscience and Nanotechnology for the Sustainable Development Goals**

Date: 1 December

Time: 09h00-10h30

Session Overview:

With the fast growing of the emerging Artificial Intelligence economy (AI), the Human society is being primarily driven by ICT and related technologies, themselves shaped by the advances in Science & Technologies at the nano-scale: the STI at the 1/billionth of a meter i.e. the nanometer (nm) scale. Hence, preparing the workforce of tomorrow with the necessary STI skills, especially those in the South and Africa particularly, is a priority if not an urgency. Several nano-solutions are being developed to address urgent societal prerogatives in line with the SDGs, specifically energy such as intelligent green air conditioning & minimization of fossil fuel consumption in addition to multi-functional nano-materials by green nano-chemistry & bio-inspired nano-engineering.

The multisectoral aspect of the SDGs landscape requires a multi-disciplinary approach and a global cooperation. Within the Science Forum South Africa, this session intends to explore the ways forward for the implementation of such international cooperation & a global alliance in nanosciences & nanotechnologies such as the ISTIC Global Initiative Research Consortium (GIRC) initiative.

Moderator:

Prof. Malik Maaza (UNESCO UNISA ILABS/NRF Africa Chair in Nanosciences & Nanotechnologies)/South Africa

<https://scholar.google.com/citations?user=e6kaeYMAAAAJ&hl=zh-CN>

Speakers:

Hon. A.Gurib-Fakim, 6th President of the Republic of Mauritius/Mauritius

[\[https://fr.wikipedia.org/wiki/Ameenah_Gurib-Fakim\]](https://fr.wikipedia.org/wiki/Ameenah_Gurib-Fakim)

•Prof. Dr Halimatun Hamdan (Chair, Governing Board, ISTIC-UNESCO)/Malaysia

[\[https://www.istic-unesco.org/v1/executive-committee/\]](https://www.istic-unesco.org/v1/executive-committee/), [\[www.maerogel.com\]](http://www.maerogel.com), www.nano.gov.my

•Prof. Dhanjay Jhurry, (Vice Chancellor, University of Mauritius)/Mauritius

[\[https://www.uom.ac.mu/vc/\]](https://www.uom.ac.mu/vc/)

•Prof. F. Dakora, President , African Academy of Sciences, Kenya

[\[https://www.aasciences.africa/fellow/dakora-felix-dapare\]](https://www.aasciences.africa/fellow/dakora-felix-dapare)

•Prof. S.S. Ray, Council for Scientific & Industrial Research CSIR/South Africa

[\[https://www.csirnano.co.za/about-us/the-director/\]](https://www.csirnano.co.za/about-us/the-director/)

•Prof. F. Rosei, Chair, Institut National pour la Recherche Scientifique INRS/Canada

[\[http://nanofemtolab.qc.ca/rosei/\]](http://nanofemtolab.qc.ca/rosei/)

•Dr. Amal Kasry, Director, UNESCO,Egypt

[\[https://www.linkedin.com/in/amalkasry/?originalSubdomain=fr\]](https://www.linkedin.com/in/amalkasry/?originalSubdomain=fr)

•Prof. Z. Shinwari, SG, Medical Research council of Pakistan /Pakistan

[\[https://scholar.google.com/citations?user=J1ldVRkAAAAJ&hl=zh-CN\]](https://scholar.google.com/citations?user=J1ldVRkAAAAJ&hl=zh-CN)

•Dr. J. Kennedy, Director, Nanocentre-GNS, New Zealand

[\[https://www.gns.cri.nz/who/staff/3098.html\]](https://www.gns.cri.nz/who/staff/3098.html)

•Dr. D. Nyanganyura Director (Executive Director at African Science, Technology and Policy Institute (ASTePI) Zimbabwe)

[\[https://www.linkedin.com/in/daniel-nyanganyura-77b58319/?originalSubdomain=za\]](https://www.linkedin.com/in/daniel-nyanganyura-77b58319/?originalSubdomain=za)

Session organiser:

Prof. Malik Maaza (UNESCO UNISA ILABS/NRF Africa Chair in Nanosciences & Nanotechnologies)/South Africa
iThemba LABS-NRF & UnISA

Maaza@tlabs.ac.za, Maazam@unisa.ac.za

Room 6 Round 2 UKZN Waste: Looking at future ecosystems: investigating waste and climate change



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Looking at future ecosystems: investigating waste and climate change**

Date: 1 December 2021

Time: 13h30-15h00

Session Overview:

The session will look on the wider theme of “waste and climate change”, focussing on how remote sensing, satellite imagery, participatory mapping and future ecosystems modelling can assist in building the African city of the future.

I would like to advance our project CAPTURE on mapping of plastic pollution in the uMgeni River, using the city of Durban to explore the nexus between waste and climate change. The common theme will be a look at the problem from a “sottosopra” point of view. Sottosopra is an Italian word that means “upside-down”, but also carries the double meaning of disruption/chaos. Hence, I would like to present how the advanced use of remote sensing from the very large (satellite imagery) to the microscopic (micro-plastic) to the imperceptible (human feelings/behaviour) can assist in creating evidence-based research that supports the decision-making process and urban planning, and our strive towards a more sustainable future.

Possible session topics:

- Building the sustainable African City of the future from space (SANSA (with the input of Prof. Cristina Trois (UKZN), Dr Thomas Mani (The Ocean Cleanup, Netherlands) and Dr Federico Monica (Placemarks, Italy))
- Placemarks: a Look at a Changing Africa (Dr Federico Monica (Placemarks, Italy))
- Presentation of the project CAPTURE and the methodology that we are following to map and model the macro-plastic pollution in the uMgeni River and the impacts that climate change has on the waste sector of the city of Durban (Dr Thomas Mani and Prof. Cristina Trois)
- The shape of water: how micro-plastics are changing our future ecosystems (Dr David Glassom (UKZN) will speak about micro-plastics and ecosystems and Prof. Margherita Ferrante (University of Catania, Italy) will speak about micro-plastics and human health
- Transitioning the African city of the future: from Resilient to smart to wise to sustainable (Dr Antonio Blanco-Montero, Spain/UKZN)
- The nexus waste, climate change and our future (Prof. Cristina Trois (UKZN), with inputs from all)

Programme:

5 presentations of 15 minutes each + 15 discussion

- Building the sustainable African City of the future from space (SANSA (with the input of Prof. Cristina Trois (UKZN), Dr Thomas Mani (The Ocean Cleanup, Netherlands) and Dr Federico Monica (Placemarks, Italy))
- Placemarks: a Look at a Changing Africa (Dr Federico Monica (Placemarks, Italy))
- Presentation of the project CAPTURE and the methodology that we are following to map and model the macro-plastic pollution in the uMgeni River and the impacts that climate change has on the waste sector of the city of Durban (Dr Thomas Mani and Prof. Cristina Trois)
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- Transitioning the African city of the future: from Resilient to smart to wise to sustainable (Dr Antonio Blanco-Montero, Spain/UKZN)

Discussion: The nexus waste, climate change and our future (Prof. Cristina Trois (UKZN), with inputs from all)

Moderator:

Prof. Cristina Trois

Full Professor in Environmental Engineering, and **NRF/DSI SARCHI Chair in Waste and Climate Change** at the University of kwaZulu-Natal, Durban, South Africa. Prof. Trois **has over 20 years** of experience in waste management and has been the principal investigator as well as the project coordinator of many feasibility and R&D waste management projects with municipalities in South Africa and Africa. Author of over 100 peer-reviewed publications in high-impact journals; she is a C1 rated scientist with the NRF. She developed and coordinates the first Master Programme in Waste and Resources Management in South Africa.

Speakers:

Prof. Cristina Trois: SARCHI Chair Waste and Climate Change (UKZN)

Dr Thomas Mani: Lead River Field Scientist at The Ocean Cleanup, Netherlands

Dr Federico Monica: Pr Architect and CeO of Taxi Brousse (Architectural Firm) and Creator of PlaceMarks: a Look at a Changing Africa. Pavia, Italy.

Dr David Glassom: Professor, Marine Biology Dept. UKZN

Dr Stewart Bernard: Chief Scientist (SANSA)

Dr Lerato Shikwambana

:

(SANSA)

Dr Antonio Blanco Montero, Senior Researcher, SARCHI Chair Waste and Climate Change

Prof. Margherita Ferrante (University of Catania, Italy) - TBC

Session organiser:

Prof. Cristina Trois

School of Engineering

University of kwaZulu-Natal

Centenary Bld

Howard College Campus

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Room 6 Round 3 HSRC Sero: Fighting COVID-19: launch of national seroprevalence survey in South Africa



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title:

Fighting COVID-19: launch of national seroprevalence survey in South Africa

Date: 1 December 2021

Time: 15h30-17h00

Session Overview:

There was a need for a nationally representative study to determine the actual prevalence of SARS-CoV-2 in the South African population to better characterize the pandemic in the country including community susceptibility, and to determine the proportion of COVID-19 cases that remain asymptomatic, to inform interventions to manage the epidemic including vaccinating strategies. Furthermore, it was also important to understand the immune responses and correlates of protection in the South African population to inform herd immunity and other estimations. Consequently, the purpose of the study was to estimate the actual number of previously infected persons and associated factors based on the presence of antibodies in the general population, both nationally and in each of the nine provinces in South Africa.

The primary objectives of the survey were:

- To determine the extent of the COVID-19 virus infection in the general population with age-specific infection prevalence, as determined by seropositivity;
- To determine the proportion of asymptomatic or subclinical COVID-19 infections.

The secondary objectives of the study were:

- To determine risk factors for COVID-19 virus infection
- To estimate the prevalence of Covid-19 antibodies in age and sex sub-groups
- To assess antibody levels quantitatively and neutralising antibody concentrations for future comparisons with correlates of protection for herd immunity estimations

The session will provide an overview of the state of the epidemic as well as provide the results of the survey and the implications thereof for planning and programming as the country tries to reach herd immunity

Programme:

Opening Remarks Chair: Prof Simbayi, Acting CEO, HSRC

Presentation of the state of the epidemic – Prof Adrian Puren, NICD

Presentation of the National COVID-19 antibody Prevalence Survey Findings - Prof Sizulu Moyo, HSRC

Implications for response - Prof Khangelani Zuma, HSRC

Comments: Dr Gugu Ngubane, Solidarity Fund

Comments: Prof Yonah Seleti, Department of Science and Innovation

Discussion: All

Closure Chair: Prof Simbayi

Moderator:

Prof Leickness Simbayi – Chair

Professor Simbayi is currently the Interim Chief Executive Officer of the Human Sciences Research Council of South Africa and an Honorary Professor in the Department of Psychiatry and Mental Health at the University of Cape Town. He holds a D.Phil. Degree in Experimental Psychology from the University of Sussex, UK. During the past two decades, his research has mostly been on the social aspects of HIV/AIDS and sexually transmitted infections (STIs) in South Africa. He was joint PI of the survey with Prof Moyo.

Speakers:

Prof Adrian Puren

Professor Adrian Puren is the current Acting Director of the National Institute for Communicable Diseases/NHLS and Head of the Centre for HIV and STIs. The main focuses of his work is the development and implementation of laboratory-based surveillance systems for infectious diseases with a particular focus on HIV-1 and has run key HIV vaccine trial endpoint studies for the HIV Vaccine Trials Network. Professor Puren has supported the use large data sets for the development HIV case surveillance. He has collaborated with the HSRC on the general population HIV prevalence and incidence surveys, and this has been extended to serosurveillance platforms for COVID-19.

Prof Sizulu Moyo

Professor Moyo is a Research Director in the HSC division at the Human Sciences Research Council (HSRC). She holds an MBChB, an MPH (epidemiology), a postgraduate certificate in Clinical Research Administration, and a PhD in Paediatrics and Child Health in the field of tuberculosis (TB). She has extensive experience in public health research where her work has focused on TB and HIV surveillance and now also includes COVID-19. She was joint PI of the survey with Prof Simbayi.

Prof Khangelani Zuma

Prof Zuma is an Executive Director of the Human and Social Capabilities division at Human Sciences Research Council (HSRC) and holds Honorary professorship from the University of the Witwatersrand with the School of Public Health. Professor Zuma is a qualified statistician holding a PhD in statistics from the University of Waikato, New Zealand, an MSc in Biostatistics from Hasselt University in Belgium. Prof Zuma has worked in several areas of public health for over 20 years ranging from being the chief statistician on research projects to being a principal investigator on large scale surveys and clinical trials. Since advent of COVID-19 pandemic in 2020, he has been involved in Covid-19 related knowledge and attitudinal surveys and undertaking research on national seroprevalence of COVID-19 antibodies in the country.

Dr Gugu Ngubane

Dr Ngubane is the Executive Head of the Health Response in the Solidarity Fund. A public health medicine registrar with UCT. Has been working in the field of public health for almost 20 years with government at national and provincial levels and with development partners and NGOs. Has led public health programmes such as Prevention of Mother to Child Transmission of HIV (PMTCT), Reproductive, Maternal, Neonatal and Child Health (RMNCH), and Strategic Health Information Management. Passionate about health systems strengthening. Has high interest in universal health access and coverage in developing countries like ours.

Prof Yonah Seleti

Prof Seleti currently works at the Department of Science and Innovation as Acting Deputy Director General for Research Development and Support. He exercises oversight over four Chief Directorates, namely: Astronomy, Basic Sciences and Infrastructure, Human Capital and Science Promotion and Indigenous Knowledge Systems; His seminar contribution to the Department has been leading the promulgation of the 'Protection, Promotion, Development and Management of Indigenous Knowledge Act of 2019. With the outbreak of the COVID-19 pandemic, he has played a central role in the establishment of the National Policy Data Observatory (NPDO) through which many research organisations share research findings with the government.

Session organiser:

Ms Yolande Shean, HSRC
072 325 9564
yshean@hsrc.ac.za

Dr Konosoang Sobane, HSRC
ksobane@hsrc.ac.za

Room 6 Round 4 BMBF Publics: Engaging global publics on science: challenges, values and opportunities views from South Africa and Germany



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title:

Engaging global publics on science: challenges, values and opportunities views from South Africa and Germany

Date: Thursday 2 December 2021

Time : 09:00-10h30

Session Overview:

Science plays a key role in addressing political, societal, and economic challenges that extend from local to global in nature. These include, for example, climate change, biodiversity loss, public health, inequality, poverty, and access to education. A critical bottleneck to the effectiveness of science in addressing them is the degree to which policy responses are understood, deliberated, legitimated, supported, and enacted by not only scientists and political elites but also wider publics. This especially includes those communities most affected by these issues and most likely to be central in enacting positive change. Collective engagement of researchers, key audiences and stakeholders is critical to widening this bottleneck and driving meaningful change. It can also contribute to better, more impactful research where inclusive public engagement becomes an integral part of the scientific process.

This roundtable will reflect on the 'how' public engagement contributes to and interacts with research, including at the individual, institutional and international levels. Contributors will discuss how we can support, recognize, and evince the value of public engagement for research. Contributors will also address institutional and individual experiences of 'how' and 'when' to engage wider populations, and how this lived experience and practical knowledge can extend beyond the silos of national communities of researchers and practitioners. Key questions include:

1. How can we foster exchange and sharing of best practices in public engagement and science communication across national contexts, and especially between Global North and Global South?
2. How can we support the integration of good public engagement into the research process across different institutional settings?
3. Where and how does African science and African experiences specifically contribute to this agenda?

Programme:

1. Welcome and Introduction by Mhairi Stewart: How does public engagement interact with and contribute to research?

2. Audience warm-up (8 min)

Invitation to think about their public engagement practice: is it disseminatory or dialogue based? Is it local, national or global? What aspects of their practice might be of value to others on an international basis?

3. Round table discussion: How can public engagement be supported across borders? (50 min)

Panellists will shortly introduce themselves, discuss from their professional perspectives, how public engagement can be supported across borders, and present the measures and projects of public engagement they work with.

Debate will focus on the questions outlined above.

- Introduction: short questions for each panellist after the impulse talk to learn more about the projects (5x5 = 25)
- Debate: 5 minutes each to address the points above by introducing their project/perspective/working culture (5x5 = 25 minutes)

4. Q&A with the Audience (20 minutes)

→ including audience questions invited through slido or similar tool

5. Final round of statements from panelists – key questions (6 min)

6. Sum Up/Wrap Up (Moderator, 4 min)

Moderator:

Dr. Mhairi Stewart, Berlin School of Public Engagement and Open Science/University of St Andrews

Mhairi will soon take up a position at the Berlin School of Public Engagement and Open Science. She previously served as Head of Public Engagement at the University of St Andrews. Her research background led her to positions in Scotland and Germany. Mhairi has significant experience in producing and directing engagement programmes, especially in co-production between external partners and researchers from multiple disciplines, and in facilitating the embedding of a culture of engagement in institutional, national, and international settings. Mhairi is the Chairperson of the Scottish Public Engagement Network and a member of the Royal Society of Edinburgh's Young Academy of Scotland.

Speakers:

- **Dr. Erik Hansalek**, Federal Ministry of Education and Research, Head of Unit Cooperation with Africa and the Middle East.
- **Dr. Alina Loth**, Berlin School of Public Engagement and Open Science
Alina is the Head of the Berlin School of Public Engagement and Open Science at the Museum für Naturkunde Berlin. She spearheads projects on professional development and institutional culture change, and aims to build bridges between the theory and practice of public engagement. Alina previously held roles in public engagement at the Universities of Cambridge as well as St Andrews, where she also completed her PhD. She is a member of the NCCPE-PEP and ScotPen networks.
- **Ms. Adivhaho Bridgette Mphaphuli**, UJ BEng. Civil Engineering graduate, winner of the Falling Walls Lab Johannesburg 2021, focusing on "Breaking The Wall of Water Leakages".
- **Prof. Johannes Vogel** (tbc), Director Museum of Natural History, Berlin and chair of the German Year of Science 2022 "Your question for science"
- (N.N.) **RSA Professional** on Public Engagement

Session organisers:

Federal Ministry of Education and Research, Cooperation with Africa and the Middle East
(nina.sartori@bmbf.bund.de) and
Museum for Natural History, Berlin

Room 6 Round 5 MISTRA 4IR: Presenting African perspectives on the Fourth Industrial Revolution: LEAP 4:0



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Presenting African perspectives on the Fourth Industrial Revolution: LEAP 4:0

Date: Thursday 2 December 2021	Time: 11h00-12h30
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Session Overview:

The book: Leap 4.0: African Perspectives on the Fourth Industrial Revolution, edited by Zamanzima Mazibuko-Makena and Prof. Erika Kraemer-Mbula, drew together scholars with various expertise to address how the African continent will be impacted by the Fourth Industrial Revolution (4IR), particularly for workers and marginalised groups. The session will delve into some of the key findings and discussions that can be taken forward by policymakers, academia, business and civil society.

The book argues that the impact of technologies is determined by how they are utilised and governed. In the 4IR era, policies should focus on economic competitiveness and employment and ensure alignment with our national imperatives of social justice and restitution. The question for Africa is not whether 4IR technologies will find systematic application, but rather

how and with what effect. If the process is haphazard, the continent could be forced to accept experiences that are out of step with its social settings.

According to the book, 4IR is firmly established in many parts of the world, with technological developments causing deep social and economic transformation however, 4IR may not provide the predicted "leap forward" for many developing countries, particularly in Africa. There is a risk that the continent will be ruled by experiences that are out of step with its social settings. Infrastructure, trained personnel, and suitable legislation are among the requirements for a successful implementation of the 4IR. The authors emphasise the importance of inclusive innovation, with the goal of creating new jobs and reducing inequality. The session will cover these themes with the aim to stimulate discussion

Programme:

- Welcoming remarks (10 min): Prof Susan Booysen (Director of Research: MISTRA)
- Overview of the research (15 min): Prof Erika Kraemer-Mbula (University of Johannesburg)
- A new digital deal rather than a Fourth Industrial Revolution policy? (10 min): Prof Alison Gillwald (Research ICT Africa)
- The impact of new technologies on labour relations and market structures in the economy: a case of Uber (10 min): Khwezi Mabasa (MISTRA)
- Discussion (40 min)
- Closing remarks (5 min)

Moderator:

Anelile Gibixego is an assistant researcher at the Knowledge Economy and Scientific Advancement Faculty at MISTRA. She holds a BSc from the University of KwaZulu-Natal and an honours degree from North West University in environmental and biological sciences. Gibixego has experience in microbiology, aquatic science and environmental management. Gibixego's research interests are in water resource management, river health and sustainable access to water resources and water governance. She forms part of projects in the Water Research Commission, in the low-carbon economy and the beneficiation of strategic minerals in South Africa.

Speakers:

Prof Susan Booysen is director of research at MISTRA. She is also a political scientist, author and analyst of South African politics. She is emeritus professor at the University of the Witwatersrand, Johannesburg, South Africa and visiting professor at the Wits School of Governance.

Prof Erika Kraemer-Mbula is a Professor of Economics at the University of Johannesburg. Her work focuses on alternative development paths for African economies. She specialises in the analysis of innovation systems in connection to equitable development and inclusive development and has done pioneering work on innovation in the African informal sector. Erika is currently the Chairholder of the DST/NRF/Newton Fund Trilateral Chair in Transformative Innovation, the Fourth Industrial Revolution and Sustainable Development, based at the College of Business and Economics (University of Johannesburg) and in partnership with ACTS and SPRU.

Prof Alison Gillwald is the executive director of Research ICT Africa. She serves as an adjunct-professor at the University of Cape Town's Nelson Mandela School of Public Governance and holds a PhD from the University of the Witwatersrand. She has advised the South African Presidency, the National Planning Commission, the Competition Commission and the Independent Communications Authority of South Africa, in addition to the African Union Commission, SADC, CRASA and the SADC Parliamentary Forum. She has been commissioned by the International Telecommunications Union (ITU), the World Bank and the African Development Bank to undertake research to inform policy across a number of Africa countries.

Khwezi Mabasa is the senior researcher in the Faculty of Political Economy at MISTRA and is a part-time lecturer in the Department of Political Sciences at the University of Pretoria. Mabasa obtained his MA in political science (political economy) from the UP. He is currently working on a PhD in development sociology at the University of the Witwatersrand focusing on a gendered analysis of South Africa's agrarian question. He served as the National Social Policy Coordinator at the Congress of South African Trade Unions (COSATU), programme manager at Friedrich Ebert Stiftung (FES), and junior lecturer in the Department of Political Sciences (UP).

Session organiser:

Mapungubwe Institute for Strategic Reflection (MISTRA)
Anelile Gibixego: anelileg@mistra.org.za

Room 6 Round 6 HSRC Cities: Putting new smart cities in the spotlight



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Putting new smart cities in the spotlight

Date: Thursday 2 December 2021	Time: 13:30-15:h00
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Session Overview:

The purpose of this special session is to raise public awareness and simulate debate about new cities in Africa. The idea of new cities has a long and checkered history in many parts of the world, including in many African countries. Within the last year, three new cities have been announced in South Africa – at Lanseria, Mooikloof (Pretoria East) and Port St Johns (E Cape). They could soon become the forerunners of at least one new city in every province. This happened with special economic zones.

Proposals for new cities are seductive for various reasons, especially if linked with science and technology. They herald a break with the legacy of colonial and apartheid inequities and could symbolize a more distinctly African urban vision. They signal a fresh start from existing urban complexities, without having to grapple with sprawling informal settlements, decaying infrastructure and taxi disputes. They also offer the potential for technological modernization and social innovation – smart cities based on clean energy, green infrastructure and public transport. Finally, they hold out the prospect of kick-starting economic growth through a massive

construction boom and private investment in new industries, digital services, logistics, tourism, higher education and scientific research.

There may well be a case for undertaking planned extensions to several existing cities that are growing rapidly, but important questions need to be asked before the new city idea gathers momentum and a whole wave of such initiatives is launched.

- SA is already 70% urbanized, so how many additional cities are really required?
- What are the environmental costs and benefits associated with building new cities compared with expanding, consolidating and repurposing existing cities?
- What are the political risks associated with building new cities, bearing in mind the experience elsewhere of failed projects that undermined government credibility?
- Who will pay and who will benefit from new cities? Will they become more than middle class dormitories?
- How much new and additional private investment in real estate and productive economic activity will be leveraged that could not otherwise be secured?
- In current strained fiscal conditions, how much of the public investment in new cities will be diverted from maintaining and upgrading the physical and social infrastructure in existing cities?
- Will the smart technologies in new cities contribute to broad-based digital and technological transformation in SA or reinforce existing inequalities in access?

Programme:

The session will include two inputs that discuss (i) general principles concerning the rationale for new cities (20 minutes), and (ii) the pros and cons of current proposals for new cities in South Africa (20 minutes). These inputs will be followed by a panel discussion exploring the lessons learnt from new cities elsewhere in Africa. The panel discussion will include time for questions and discussion from the audience (50 minutes).

Moderator:

Prof Ivan Turok, DSI/NRF Chair in City-Region Economies, University of the Free State, and Distinguished Research Fellow at the HSRC. Former Executive Director at the HSRC, Editor-in-Chief of the international journal 'Regional Studies', and Chairman of the City Planning Commission for Durban. Honorary Professor at the University of Glasgow. Urban and regional economist/planner with over 30 years' experience. Occasional adviser to the United Nations, OECD, World Bank, African Development Bank, UNECA and several national governments. Author of over 150 academic publications, journal articles, book chapters and books.

Speakers:

Prof Philip Harrison, DSI/NRF Chair in Spatial Analysis and City Planning, Wits University
Philip Harrison has held various academic positions at Wits and UKZN and has worked across the three spheres of government. From 2006 to 2010 he was Executive Director in Development Planning and Urban Management at the City of Johannesburg. He also served as a member of the National Planning Commission from 2010 to 2015, participating in the formulation of the National Development Plan, and worked in provincial government in KZN. He has published widely in the fields of city planning and regional and urban development.

Prof Alison Todes, Professor of Urban and Regional Planning, Wits University
Alison Todes was previously a Research Director at the HSRC and a professor of Planning in the School of Architecture, Planning and Housing, UKZN. She has researched and published extensively on urban and regional development and planning. Recent books include the co-edited volumes: *Densifying the City? Global Cases and Johannesburg* (2020); *Changing Space, Changing City: Johannesburg After Apartheid* (2014). She is currently working on co-authored books on urban peripheries and on planning in SA.

Prof Taibat Lawanson, Department of Urban and Regional Planning, University of Lagos
Taibat Lawanson leads the Pro-Poor Development Research Cluster and serves as Co-Director at the Centre for Housing and Sustainable Development at the University of Lagos. She holds a PhD in Urban and Regional Planning. Her research focuses on the interface of social complexities, urban realities and the quest for environmental justice. She is particularly interested in how formal and informal urban systems synthesize in emerging African contexts. She is a member of the board of directors of Lagos Studies Association and a member of the International Advisory committee of the UNHABITAT flagship 'State of the World's Cities Report'.

Prof Daniel Inkoom, Department of Planning, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
Dan Inkoom is Chair of the Steering Committee, Association of African Planning Schools; Visiting Professor, University of the Witwatersrand; former Head of Department of Planning, and Vice-Dean of the Faculty of Built Environment, KNUST. He obtained a doctoral degree from the Technical University of Dortmund, Germany, and is a Fellow of the Ghana Institute of Planners (FGIP). He has been External Examiner to several universities in Ghana, South Africa, Sweden, Tanzania, and Zimbabwe. He has consulted in over 20 countries on four continents in several fields including organization development, project planning, and management, as well as monitoring and evaluation.

Session organiser(s):

Professor Turok, Harrison and Todes (joint organisers)
iturok@hsrc.ac.za

Room 6 Round 7 UJ GBV: Harnessing data analytics and Artificial Intelligence for a novel approach to counter Gender-based violence



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title:

Harnessing data analytics and Artificial Intelligence for a novel approach to counter Gender-based violence

Date: 2 December 2021

Preferred time: 15h30-17h00

Session Overview:

Privilege and an abuse of privilege are pre-cursors that can be used to evaluate the likelihood of the occurrence of individual gender based violence. The context of individual based violence and gender based violence. Individual based violence is being considered in the context of cyber–abuse via the explicit inducement of improper behaviour or outright cyber-bullying. Gender based violence in this case refers to the display of improper conduct towards individuals of the opposite gender. Data obtained from online and social media platforms can aid in the analysis of the occurrence of individual based violence and gender based violence with a view to prevent their occurrence. The multi–contextual data can be accessed from multiple platforms such as FaceBook, LinkedIn, YouTube (comments), Instagram, and Twitter. The comments accessible and the insights derived from analysis of multi – contextual data can be used to

evaluate the occurrence of abuse in different contexts i.e. individual based violence and gender based violence. This is done with the aim of prevention in the short, medium and long term. A micro-content analytic tool can be further developed incorporating algorithms that analyze fused information from social media platforms. The proposed tool utilizes artificial intelligence and considers different forms of abusive acts under each considered context. Such a tool meets the goal of protecting the vulnerable and the weak from acts contravening the tenets of social justice in society.

The key questions to be interrogated focus on:

The prevalence of individual i.e minor abuse and gender based violence in the society with a view to identify the types of acts and their frequency.

Suitability of social media for accessing data to be used in determining the likelihood of abuse. Are there pre-cursors, habits and behaviours that provide a basis for determining likelihood of abuse.

Which categories of minors and individuals are most susceptible?

To what degree can data from social media platforms be used for social justice without violating human rights and the tenets of data sovereignty.

Programme: (Description of the running order of the session – *90 minutes*)

Data Driven Tool and Social Media for Mining Information that is useful for Enhancing Social Justice

Moderator:

Ayodele Periola

Ayodele Periola has completed his PhD in Electrical Engineering from the University of Cape Town, South Africa. During his PhD, he was awarded the National Research Foundation Doctoral Innovation scholarship. He has a MSc (Distinction) in Mobile and Satellite Communications from the University of South Wales. Ayodele was awarded the University Merit Award in Mobile and Satellite Communications. His research focuses on the design of next generation wireless network and cloud computing platforms. He also conducts research focusing on the application of artificial intelligence.

Speakers:

A. A. Alonge (MIEEE) received the B.Eng. (Hons) in Electrical and Electronic Engineering from the Federal University of Technology, Akure, Nigeria in 2007. He thereafter received both the MScEng and Ph.D. degrees in Electronic Engineering at the University of KwaZulu-Natal, Durban in 2012 and 2015 respectively. He is a Senior Lecturer in the Department of Electrical and Electronic Engineering Technology at the University of Johannesburg. He has published over 40 research articles in leading journals and conference proceedings. His research interest lies in telecommunication and big data analytics in relation to futuristic 5G networks.

K. A. Ogudo (MIEEE) received the Dip, NHD, and B-Tech. Degrees in electrical and electronics engineering from Federal Polytechnic Auchi, Nigeria, and Master in Electronics and Doctoral Degree in Electrical and Electronics Engineering technology from the Tshwane University of Technology in 2010 and 2016, respectively. He received his Ph.D. in Electronics and Optoelectronics systems from the University of Paris Est, France in 2018. His research interest includes Electronics, Telecommunications and Data Analytics. He has published over 35 international ISI Journal articles and conference papers. He is an Associate Professor at the Department of Electrical and Electronics Engineering, University of Johannesburg.

session organiser(s):

AA Periola (University of Johannesburg, Department of Electrical and Electronic Engineering Technology (Research Fellow)

aaperiola@uj.ac.za

Room 7

Room 7 Round 1 CN BeiDou: Promoting BeiDou /Global Navigation Satellite System Applications in China and South Africa



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Promoting BeiDou /Global Navigation Satellite System Applications in China and South Africa

Date: Wednesday 1 December 2021

Preferred time: 09:00-11:00

Session Overview:

Navigation satellite systems are significant space infrastructure, which can provide all-weather, all-time and high-precision spatial and temporal information services, and have been widely used in such areas as transportation, land surveying and mapping, precision agriculture, power distribution, and mass consumption, as well as emerging fields. Therefore, they have played an important role in facilitating the development of human society and economy and advancing the progress of science and technology.

Under such an environment, the “**Workshop on BDS/GNSS Applications in China and South Africa**” is organized to widely apply and share the achievements of Global Navigation Satellite Systems (GNSS) including BeiDou Navigation Satellite System (BDS) with African

partners, and to better serve the economic and social development of South Africa and other African countries.

The “**Workshop on BDS/GNSS Applications in China and South Africa**” is jointly sponsored by the South African National Space Agency and the China Satellite Navigation Office, co-organized by the Space Operations Unit of South African National Space Agency and the International Cooperation Center of China Satellite Navigation Office, and supported by the Embassy of China to South Africa.

Participants will be previewed of the development and capabilities of the BDS, its service performance in Africa and related policies for cooperation with Africa, as well as developing strategy and implementation of Space Based Augmentation System for GNSS in Southern Africa as part of SANSA’s Space Infrastructure Hub. Discussions will focus on China-Africa satellite navigation requirements and possible cooperation, with thematic concentration on DUT space research program on GNSS research and applications, the African instrumentation network, education and training, application technologies in precision agriculture, such as high accuracy auto steering system, and other issues.

A signing ceremony will also be held on the MOU between South African National Space Agency and China Satellite Navigation Office on satellite navigation cooperation, which opens a new chapter for bilateral cooperation in the field of satellite navigation.

Programme: (Description of the running order of the session – 90 minutes)

09:00-09:05 Opening Remarks – by Moderator **Mr. Humbulani Mudau – South African Department of Science and Technology**

09:05-09:08 Video on China-Africa BDS Cooperation

09:08-09:20 Remarks by the invited speaker from the China Satellite Navigation System Committee

Remarks by the invited speaker from the South African Department of Science and Technology

Remarks by the invited speaker from the Chinese Embassy to South Africa

09:20-09:25 MOU Signing Ceremony between South African National Space Agency and China Satellite Navigation Office on satellite navigation cooperation

09:25-09:40 Development of BeiDou Navigation Satellite System and Considerations for Cooperation with South Africa: **Mr. CHEN Gucang – Deputy Director of China Satellite Navigation Office**

09:40-09:55 Developing Strategy and Implementation of Space Based Augmentation System for

GNSS in Southern Africa as Part of SANSA’s Space Infrastructure Hub: **Mr. Eugene Avenant – South African National Space Agency**

09:55-10:05	BDS/GNSS International Education and Capacity Building: Prof. WENG Jingnong – Director of International Exchange and Training Center of China Satellite Navigation Office
10:05-10:15	DUT Space Research Program - GNSS Research and Applications: Prof. Davidson –Department of Electrical Power Engineering, Durban University of Technology
10:15-10:25	Applications of BDS/GNSS in Precision Agriculture: Mr. WU Caicong – Associate Professor, Information and Electronics Engineering College, China Agricultural University
10:25-10:35	High Accuracy Auto Steering System Used in Agriculture: Mr. HU Ling, Business Development Manager of Shanghai Huace Navigation Technology Ltd
10:35-10:45	Development of BDS CORS Network and Other Infrastructure in Africa: Mr. XU Zhitong, Program Manager of ComNav Technology Ltd
10:45-10:55	The African Instrumentation Network: Mr. Jonathan Ward – South African National Space Agency
10:55-11:00	Concluding Remarks
Moderator: Mr Humbulani Mudau	
Speakers:	
Mr. CHEN Gucang Mr. Eugene Avenant Prof. WENG Jingnong Prof. Davidson Prof. Innocent Ewaen Agbongiague Davidson Mr. WU Caicong Mr. HU Ling Mr. XU Zhitong Mr. Jonathan Ward	
Session organiser(s):	
Sponsors: South African National Space Agency; China Satellite Navigation Office Organizers: Space Operations Unit of South African National Space Agency; International Cooperation Center of China Satellite Navigation Office Supporter: Embassy of China to South Africa Contact Person: Space Operations Unit of South African National Space Agency; Embassy of China to South Africa: Mr. PAN Xu	

ICChina Satellite Navigation Office:

Ms. TIAN Miao (E-mail: tianmiao@beidou.gov.cn, Tel: +8610 88102401; Fax: +8610 88102159; Mobile: +86 13811720944) at the International Cooperation Center of China Satellite Navigation Office

Room 7 Round 2 CN Trans: Promoting Africa-China smart, green and sustainable transport partnerships



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title:

Promoting Africa-China smart, green and sustainable transport partnerships

Date: 1 December 2021

Time: 13h30-15h00 (South Africa time)

Date: 1 December(Wed.) 2021日期

Time: 13:30 to 15:00(South Africa Time南非时间) 19:30 to 21:10 (Beijing Time北京时间)

Name: Forum of South Africa-China & Africa-China on Smart, Green and Sustainable Transport Innovative Partnership

名称: 南非-中国和非洲-中国智慧绿色可持续交通创新合作论坛

Aim: Promote smart, green and sustainable transport co-operations in South Africa & China and Africa on innovative technologies and capacity building on Global Sustainable Transport Innovation and Knowledge Activities by the Beijing Statement of the Second United Nations Global Sustainable Transport Conference held in Oct. 2021 ; Achieve the link between the Belt and Road Initiative (BRI) with the Forum of China-Africa Co-operation (FOCAC).

目标：促进南非-中国和非洲-中国在全球可持续交通和知识方面的创新技术和能力建设及智慧、绿色和可持续交通科技合作与技术转移；跟进落实2021年10月第二届联合国全球可持续交通大会北京宣言；为中非科技和教育及培训领域实质合作做铺垫，为“一带一路”倡议与中非合作论坛机制项目合作贡献力量。

Support: Minister-Counsellor Shen Long of the Chinese Embassy in South Africa

指导支持：中国驻南非大使馆

Host: South Africa-China Transportation Cooperation Center(SACTCC)

主办：南非-中国交通合作中心（SACTCC）

Co-Hosts: China-Africa Transport Strategy Research Institute at Chang'an University & University of Pretoria(CATSRI)

Southern Africa-China Science, Engineering & Technology and Education Association (SETEA)

合办：南非比陀大学中国长安大学中非交通战略研究院、南非洲中国科技教育协会

Programme 议程

13:30(South Africa Time) **19:30** (Beijing Time)

Moderators: Mr. Yuchen Wang (Director of the SACTCC) 南非-中国交通合作中心主任

Prof. Alex Visser(Advisor of the SACTCC) 南非-中国交通合作中心顾问

Panel members:, Prof. Kevin Wall, Dr. Jan Grundling, Dr. David Monyae, Mr. Tendayi Gondo, Mr. Liu Zhao(Zambia), Mr. Sergio Macamo (Mozambique) 南非工程院院士、大学教师和非洲专家

VIP Address: Each 5 minutes 贵宾致辞（每位5分钟）

1). Minister-Counsellor Shen Long, Chinese Embassy

中国驻南非大使馆沈龙公使衔参赞

2). DDG, Ministry of Science and Innovation, Republic of South Africa(RSA)

南非科学创新部国际合作司领导

3). President of China Academy of Transport Science, Ministry of Transport, PR

China

中国交通运输部交通科学研究院领导

4). DDG/Chief Director, Department of Transport, RSA

南非交通运输部领导

5). Prof. Sha Aimin, President of Chang'an University, China

中国长安大学校长沙爱民教授

6). Prof. Sunil Maharaj, Acting DVC of University of Pretoria, RSA

南非比陀大学校长全权代表Sunil Maharaj 副校长

7). Prof. Wang Jiaqiong, President of Beijing Jiaotong University

中国北京交通大学校长王稼琼教授

18:05(South Africa Time) 20:05 (Beijing Time) Presentations Each 10 minutes 专题报告

- 1) Report on the Beijing Statement of the 2nd UN Global Sustainable Transport Conference on Innovative Transport and Knowledge Activities 第二届联合国全球可持续交通会议北京宣言和科技创新和知识合作

Mr. Shi Baolin, President of China Academy of Transportation Sciences Ministry of Transport, China 中国交通运输部科学研究院院长石宝林研究员

- 2) Report on Modern Railway Technologies Development and Higher Education Co-operation, Virtual China-Africa Transport University 's Advantages 现代铁路技术发展和高等教育合作, 线上中非交通大学优势探索

Prof. Guan Zhongliang, Vice President & Prof. Xia Mingchao of Beijing Jiaotong University 中国北京交通大学副校长关忠良教授, 处长夏明超教授

- 3) Report on Joint Research Center on Smart Transport and Sustainable Infrastructure 智慧交通和可持续基础设施联合研究中心校际合作

Prof. Hainian Wang, Prof. Jiupeng Zhang & Prof. Zhuangzhuang Liu, Chang'an University, China 中国长安大学公路学院党委书记汪海年教授 副院长张久鹏教授

- 4) Report on the achievements of the China-Africa Transport Strategy Research Institute(CATSRI) 中非交通战略研究院工作成绩

5) Prof. Wynand Steyn, University of Pretoria, Prof. Alex Visser & Yuchen Wang, SACTCC, South Africa 南非比陀大学工程学院院长Wynand Steyn教授和Alex Visser院士

6) Report on Transport Infrastructure Projects in Africa and the Belt and Road Initiative 在非洲和“一带一路的交通基础设施项目开发”

Mr. Lv Jing, President of China Railway Construction Corporation (CRCC) International Investment Company 总经理吕晶高级工程师

14:55(South Africa Time) **20:55**(Beijing Time) **Discussions** 讨论

15:05(South Africa Time) **21:05**(Beijing Time)**Conclusion and Way Forward**总结

Session organiser:

Peter Pan: Peter Pan panx125@gmail.com

In copy: sactccwangyc@126.com

Room 7 Round 3 Brazil Agritech: Promoting cross-border incubation partnerships in agritech



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Promoting cross-border incubation partnerships in agritech

Date: Wednesday, 1 December 2021	Time: 15:30-17h00
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Session Overview:

Among the many similarities to be found between Brazil and South Africa is the vital importance of agriculture and a bustling startup environment, both of which are underpinned by the opportunities to be realized through the optimization of the agritech sector. Building on the strength and complementarities of Brazilian and South African expertise in agricultural research institutes and on the technological talent of young entrepreneurs, the Embassy of Brazil in South Africa, the Brazilian Association of Science Parks, Business Incubators and Accelerators (ANPROTEC), the Brazilian Micro and Small Business Support Service (SEBRAE), the Department of Science and Innovation of South Africa (DSI), and the Technology Innovation Agency of South Africa (TIA), with the support from the Innovation Diplomacy Program of the Brazilian Ministry of Foreign Affairs, launched the Brazil-South Africa cross-incubation program on agritech.

In September and November of 2021, 11 agritechs from each country, for an entire week, received privileged contact with each other's innovation environment, as an exercise dedicated to accelerating the internationalization of products, processes and services of innovative ventures. The program was virtual and offered opportunities for partnership, businesses and a better understanding of each country's environment.

The objective of this session is to share the results of the program and the impressions of participating companies and institutions, with a special focus on the many opportunities offered by South-South cooperation, challenges for agritech companies in each country, challenges for their internationalization, and how initiatives like the cross-incubation program can help them overcome these issues.

Programme:

Opening of the session:

- Welcoming remarks by the Ambassador of Brazil, H.E. Sérgio França Danese (5 min)

Panel:

- Dr. Vuyisile Phehane – Executive:Bio-Economy of TIA (10 min)
- Mr. Rodrigo Mendes – Director of International Relations of ANPROTEC (10 min)
- Representative from SA participating company - Retang Phaahla - Setšong Tea Range (10 min)
- Representative from Brazil's participating company – Nayana Machado – Naila IoT (10 min)
- Representative from SA participating company - Dr. Deon Neveling – Biotikum (10 min)
- Representative from Brazil's participating company - Neuvira Silva – BIA Technology - (10 min)

Open to Q&A – 25 minutes

Moderator:

Ms Senisha Moonsamy - Head of Innovation Skills Development and Enterprise Development & GCIP at the Technology Innovation Agency.

Senisha Moonsamy is currently the Head of Innovation Skills Development and Enterprise Development & GCIP at the Technology Innovation Agency. She holds a honours in strategic Management from UCT.

In the past 7 years she headed up International programmes and raised R100m focussing on economic growth through entrepreneurship and Implementation of Accelerator Programmes in South Africa namely:

- Foresight Leadership Innovation Programme with Sandford and ILB
- Global Cleantech Innovation Programme (UNIDO)
- Swiss SA Venture Leader Programme, (University of Basel) & newly formed Swiss African Science and Business Innovators SASBI Group

- UK Newton Funded Programmes Leaders in Innovation Fellowship with Royal Academy of Engineering Oxetia and SOFI with Innovate UK and KTN with Nigeria and Kenya
- Deepening the South to South Collaboration with the Brazil Embassy in SA through the “ Brazil-SA Cross Incubation Support Programme in Agritech” .

Speakers:

1- H.E. - Sérgio France Danese – Ambassador of Brazil in South Africa

Ambassador Sérgio França Danese is a career diplomat. He joined the Brazilian Ministry of Foreign Affairs in 1980 and during his career has held several positions, including Vice-Minister of Foreign Affairs (2015-2016). He has served as the Brazilian Ambassador to Algeria (2005-2009) and to Argentina (2016-2020) and is the Ambassador of Brazil to South Africa since December 2020.

2 – Dr. Vuyisile Phehane - Executive: Bio-Economy, at the Technology Innovation Agency

Vuyisile Phehane completed his doctoral studies at the University of Cape Town in the Department of Chemical Pathology. His working career started at SA Bioproducts, in 2002. He later joined the CSIR, as Process Scientist in the Biocatalysis Group of the Biotechnology Division. He joined the Innovation Fund as Programme Manager, and then Commercialization Manager. This was pursued further at BioPAD as Industrial Biotechnology and Bioprocessing Portfolio Manager. He then spent 7 years as the Senior Manager: Commercialization, at the Agricultural Research Council of South Africa. Vuyisile is currently the Executive: Bio-Economy, at the Technology Innovation Agency, responsible for driving the Bio-Economy strategy of South Africa.

3 – Mr. Rodrigo Mendes – Director of International Relations of ANPROTEC

Founder and CEO of Bridge4Global. Ecosystem Relations at CRIABIZ Ventures and Country Manager Brazil for UGlobally. He is the Director of International Relations of ANPROTEC. Expert Consultant for start-ups and innovation ecosystems internationalization. Angel Investor, Mentor and Startup Advisor. He was an Executive Manager of International Business Development at São José dos Campos Technology Park. Aerospace Brazil Program Manager in partnership with APEX Brasil. Also was Director of Innovation, and later Executive Director of the Sorocaba Technology Park. Co-founder and Executive Director of the Sorocaba Technology Business Incubator. He is a Post-Graduate lawyer in International Economic and Commercial Law and in Management and Execution of Technological Innovation Projects.

4 – Retang Phaahla - Setšong Tea Range

From 2011, Retang furthered her studies with University of Pretoria studying Bsc Quantity Surveying. Retang is a Quantity Surveyor by trade yet decided to pursue a career in Agriculture since 2016. She is currently the Managing Director of Summer Trading 87 (Pty) Ltd which is a value addition and distribution partner in the development of the Setšong Tea Range – which

is an indigenous tea brand – utilising untapped indigenous flora growing within the natural landscapes of Sekhukhune, Limpopo. Her unique professional experience stems from years of social activism, community development, cost planning and creative problem solving.

5 – Nayana Machado – Naila IoT

Nayana Machado, environmental engineer, Master's student in the area of environmental monitoring and hydrological modeling, has experience with environmental licensing and investigation of contaminated areas and risk characterization. She is currently a researcher for the Paraná State Government project on updating the greenhouse gas inventory and mitigation plan.

She is interested in social entrepreneurship and watershed management, currently co-founder of NAILA Environmental Monitoring, together with her partner Larissa Warnavin, seek to create an open environmental data base and help communities adapt to climate change.

6 – Dr. Deon Neveling - Biotikum

Dr. Deon Neveling is currently a Postdoctoral Research Fellow in Biochemistry at Stellenbosch University. He obtained his Ph.D. in Microbiology in 2018 from Stellenbosch University. He has 11 years research experience which focuses on bacterial taxonomy, probiotic development, antimicrobial drug discovery, nanotechnology, and biosensors development. He has published 14 peer-reviewed publications and 3 patents. Deon is the cofounder and CEO of Biotikum (Pty) Ltd. which is a spinout company of the University of Stellenbosch. Biotikum research, develops and produces microbial additives for the agricultural industry to promote sustainable farming.

7 – Neuvira Silva – BIA Technology

Neuvira Silva is a biologist and the International Representative of BIA Technology. The company helps milk producers to raise their income have a healthy herd and bring a better milk quality to consumers throughout an early diagnose of mastitis in the dairy herd.

Session organiser(s)

Embassy of Brazil in South Africa - Helena Lobato da Jornada. Head of the Science, Technology and Innovation Sector - helena.jornada@itamaraty.gov.br

Technology Innovation Agency – Senisha Moonsamy, Head of Innovation Skills Development and Enterprise Development - senisha.moonsamy@itamaraty.gov.br

Room 7 Round 4 RCN water: Supporting Research collaboration to ensure safe water: From toilet to sea water



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Supporting Research collaboration to ensure safe water: From toilet to sea water

Date: 2 December 2021	Time: 09h00-10h30
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Session Overview

South Africa and Norway have a long history of cooperation in research and innovation, as well as higher education. Through both bilateral and multilateral programmes, South African and Norwegian researchers and students have joined forces to explore themes of common interest. One of these themes is ocean and ocean-related research as both countries are endowed with long coastlines. The ongoing bilateral programme SANOCAN is an example of this.

Our oceans are on the receiving end for many of our daily used chemicals although most people seem to forget about it once they flush the toilet or pull the bath plug. Worldwide we are facing growing concerns due to the presence of emerging contaminants (ECs) in the aquatic environment. ECs make it to the aquatic environment from our homes and from industry. Compounds such as pharmaceuticals and personal care products are present in surface waters, mainly due to their inadequate removal by sewage treatment prior to discharge.

Many of these molecules have improved our lives (e.g. extended lifespan), but knowledge gaps exist on 1) how they affect aquatic species after they are discharged and 2) what risks they pose due to consumption of contaminated seafood. For example, concentrations of ECs have been observed in freshwater shrimp, fish, and shellfish commonly consumed at our tables. There is an urgent need to develop and apply water treatment methods that address the removal of ECs. In addition, ECs such as pharmaceuticals, pest control agents and personal care products should be designed so that they are more easily degraded under normal sewage treatment conditions.

Key questions include: How to generate public awareness of the effects of consumer choices on long-term human and ecological wellbeing, and awareness of the hazards of inadequate urban sanitation management. It is necessary to have a good insight into the fate and effects of pharmaceuticals and personal care products in surface water and coastal ecosystems, develop reliable and flexible strategies for their detection and monitoring in water systems, and finally work on Risk Assessment models. Hence, an open dialogue with stakeholders, decision makers and academia is fundamental.

Programme:

1. Opening by Ambassador Astrid Helle
2. Introductory statements by the panellists
3. Panel discussion with questions from the audience
4. Wrap-up and way forward

Moderator

Mrs Natalie Becker-Aakervik is a South African award-winning radio and television presenter living in Norway where she runs the storytelling and production company Thought Leader Global and the online space Intro.Africa with her husband Mikkel. As a speaker and Master of Ceremonies, Mrs Becker-Aakervik moderated a wide range of corporate, philanthropic and diplomatic events, among them the UNDP 50th anniversary Ministerial Meeting, the Nordic-African Business Summit and the EAT Foundation's Newscast. She has hosted and produced radio shows and hosted television shows on all major South African channels, including SABC and 'It's Africa's Time' for CNBC Africa.

<http://thoughtleader.global/our-journey/>, <https://intro.africa/>

Speakers:

Professor Leslie Petrik from University of the Western Cape (UWC), South Africa, has a PhD in Chemistry from UWC and is a leading and well-established expert in the field of material science, chemistry, environmental remediation, water treatment and beneficiation of industrial wastes. She is the leader of the Environmental and Nano Science group and has

been engaged in environmental monitoring, as well as developing advanced processes for removal of organics and inorganics from water, treatment of industrial effluents such as brine and acid mine drainage. Professor Petrik, together with Professor Sydnnes, are PIs for the SANOCEAN project entitled “Marine Sewage Outfalls – Environmental Impact Evaluation”.

<https://scholar.google.com/citations?user=AJpczE4AAAAJ&hl=en>

Professor Daniela M. Pampanin from University of Stavanger, Norway, has a PhD in Environmental Science. from the University of Venice (Italy). She is the leader of the Biological Chemistry group and the Ecotoxicology and Environmental Monitoring group. She has been leading environmental monitoring programs for both legacy and emerging contaminants in different countries and provided environmental risk assessment (ERA) to both companies and public administrations. Her expertise includes the evaluation of both chemical and biological measurements, the application of molecular and biochemical methods to better understand the sub-lethal effects of contaminants on marine organisms. She is part of the European consortium of the PHARMASEA project (JPI program), leading the Norwegian research group.

<https://www.uis.no/en/research/ecotoxicology-and-environmental-monitoring>

NN from the Norwegian Environmental Agency (Miljødirektoratet) - participant to be confirmed.

Caroline Marx, pharmacist, head of the environmental portfolio of Milnerton Central Residents Association. She is an accidental activist who has always been passionate about health, individual, community, and environmental health. Her battle on behalf of the Milnerton community has been to ensure that the City of Cape Town are held legally accountable for polluting the Diep River and Milnerton Lagoon and forced to remedy the problem. To this end she has partnered with the legal team of the Organisation Undoing Tax Abuse (OUTA), various individuals and community organisations and other branches of government.

Dr. Nikiwe Solomon is an environmental anthropologist working at the interface of science, technology, politics and urban river and water management. Her PhD dissertation research ‘The Kuils Multiple: An ethnography of an urban river in Cape Town’ explored the entanglement of the Kuils River with social, technical and political worlds in the context of urban planning in a time of climate change. Nikiwe has experience in consultancy and academic work, particularly focused on Green and alternative economies and water socio-techno-political worlds. Nikiwe is part of the Seed Box project, where she serves as a fellow in Feminist and Anticolonial Approaches to Environmental Humanities and Justice in the Global South <https://theseedbox.se/project/feminist-and-anticolonial-approaches-to-environmental-humanities-and-justice-in-the-global-south/> with research focusing on flows – of currents (water and capital), toxics and cement.

Professor Magne O. Sydnnes from University of Stavanger, Norway, has a PhD in synthetic organic chemistry from Australian National University. His research activities are focused on synthetic organic chemistry, medicinal chemistry, and environmental chemistry with focus on the marine environment where emerging contaminants such as pharmaceuticals is of particular

interest. Sydnes is together with Professor Petrik PI for the SANOCEAN project entitled “Marine Sewage Outfalls – Environmental Impact Evaluation”. He is also PI for an INTPART project entitled “Nor-SA2023: Joint Evaluation and Mitigation of Emerging Contaminant Risks”, another Norway – South Africa collaboration project, which is closely linked to the SANOCEAN project. <https://www.uis.no/nb/profile/1446>

Session organisers

Jan Monteverde Haakonsen jha@rcn.no, The Research Council of Norway;
Professor Leslie Petrik lpetrik@uwc.ac.za, University of the Western Cape; Professor Magne O. Sydnes magne.o.sydnes@uis.no, University of Stavanger

Room 7 Round 5 Ireland Tech: Presenting the South Africa – Ireland Tech Challenge Fund



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Presenting the South Africa – Ireland Tech Challenge Fund

Date: 02 December	Preferred time: 11:00 – 12:30
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Session Overview:

The Embassy of Ireland in South Africa, the Department of Science & Innovation (DSI) and the Technology Innovation Agency (TIA) have established the South Africa – Ireland Tech Challenge Fund to incentivise mutually beneficial partnerships between Irish technology expertise and South African entrepreneurs/businesses and to support innovation, technology development, and technology deployment/commercialisation in South Africa. The fund, which will be open for applications early next year, aims to assist South African Tech entrepreneurs;

- ü Access top tech-leaders' expertise in Ireland
- ü Build networks in Ireland, Europe and South Africa
- ü Receive up to EUR10k funding and,
- ü A Tailored hybrid business, eco-system networking opportunity Irish expertise

The consortium partners aim to host an information session as part of the Science Forum 2021 targeted at South African tech entrepreneurs, innovators and other interested stakeholders on how to access, apply, analyse the eligibility criteria and interact with the fund administrators.

The session will address themes of supporting technology innovation among women and young entrepreneurs in particular, and Ireland's experience of developing an innovation and knowledge economy, such that the top five Global Software Companies and nine of the top 10 US Technology Companies are based in Ireland.

Programme:

Proposed Timeline

A proposed agenda is as follows:

11.00am Remarks from Ambassador Gilsenan

11.10am Remarks from Department of Science and Innovation

11.20am Remarks from Enterprise Ireland / Irish tech stakeholders

11.50am – How to apply for the Tech Challenge fund – Impact Amplifier

12.00am — Questions and Answer session

12:15am: Closing Remarks

12:30am: Event Ends

Moderator: Paul Deane

Speakers:

H.E. Fionnuala Gilsenan- Ambassador, Embassy of Ireland, South Africa

Representative, Department of Science and Innovation

Mr. Patrick Krappie, Technology Innovation Agency/CEO

TBC, Enterprise Ireland

Representative of Irish tech industry

Session organizer(s):

Embassy of Ireland team

- Paul Deane, Embassy of Ireland (Paul.Deane@dfa.ie) – Challenge Fund Main lead
- Elias/Malose Ledwaba, Embassy of Ireland (Elias.Ledwaba@dfa.ie) – Challenge Fund Main support

Technology Innovation Agency team

- Senisha Moonsamy (Senisha.Moonsamy@tia.org.za) -Challenge Fund Strategic Lead

Impact Amplifier team

- Max Pichulik (max@impactamplifier.co.za)-Challenge Fund Strategic Lead
- Sandra Makuchete (sandra@impactamplifier.co.za) – Challenge Fund Project Manager

Room 7 Round 6 Spain Climate



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022” 1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Date: Thursday 2 December 2021	Preferred time: 09:00 11:00 13:30 15:30
<p>Session Overview: (Maximum 500 words providing short contextual background for the sessions and highlighting key questions to be interrogated)</p> <p>Global Change Grand Challenge (GCGC) is one of five Grand Challenges identified by the Department of Science and Innovation (DSI) in its Ten-Year Innovation Plan. The GCGC supports knowledge generation and technological innovation to enable South Africa, Africa and the world to respond to global environmental change, including climate change, in an informed and innovative way. This grand challenge has three main aspects namely: (i) enhancing scientific understanding of global change; (ii) developing innovations and technologies to respond to global change; and (iii) understanding the social context within which solutions will have to be implemented.</p> <p>This session aims at providing a holistic perspective of several aspects of global – climate – change. From flora and fauna individuals and species to threatened natural environments on both earth and oceans. The expertise of panelists in several institutions around the world, all of them now working in South Africa, would provide an interesting flavor of the different world-wide approaches to fight against such</p>	

challenges.
<p>Programme: (Description of the running order of the session – 90 minutes)</p> <p>Presentation – 5 minutes</p> <p>Dr. Alba Gomez Arias (Chair)</p> <p>Climate change as in Antarctic waters – 12 minutes</p> <p>Dr. Jan-Lukas Menzel</p> <p>Deserts and evolving biomes in Southern African and the Mediterranean environments – 12 minutes</p> <p>Dr. Saul Manzano Rodriguez</p> <p>African birds struggling in the twenty-first century beginning – 12 minutes</p> <p>Dr. Francisco Cervantes Peralta</p> <p>Profitable water treatments in Southern Africa rural areas – 12 minutes</p> <p>Dr Alba Gómez Arias</p> <p>Extinction debt and biodiversity collapses in island systems – 12 minutes</p> <p>Dr. Mario Mairal</p> <p>Big mammals reintroduction in endangered habitats – 12 minutes Dr. Fabiola Quesada Fernandez</p> <p>Questions, Round Table and Discussion – 20 minutes</p> <p>Final remarks – 5 minutes</p>
<p>Moderator: (Name and maximum 100 words biographical summaries – URL link if relevant)</p> <p>Dr. Alba Gomez Arias (PhD, General Secretary ACE South Africa) See below</p>
<p>Speakers: (Names and maximum 100 words per speaker biographical summaries – URL links if relevant)</p> <p>Dr. Alba Gomez Arias (PhD)</p> <p>Postdoctoral Researcher in Environmental Geology</p> <p>Institute for Groundwater Studies, University of the Free State</p>

Dr Gómez-Arias has developed in South Africa a water treatment system, named BDAS, that can be used worldwide to treat from acid to alkaline water produced by mines and other industries. It is an improvement of a system used in Spain to treat acid mine drainage (DAS). It has been proved in both countries thanks to a project funded by ERAMIN of the Horizon 2020. The synergy between both countries Spain and South Africa is the cornerstone of this system, recently patented internationally. And proven in pilot scale at several mines in South Africa. The first full-scale project is ongoing.

Dr. Jan-Lukas Menzel (PhD)

University de Stellenbosch, Centre for Trace and Experimental Biogeochemistry

Doctor in Oceanography specialized in marine biogeochemical cycles. Interested in the processes that regulate nutrient cycles in the ocean. He recently returned from Antarctica, where he has carried out research in these fields.

Dr. Saul Manzano Rodriguez (PhD)

Plant Conservation Unit, Department of Biological Sciences, University of Cape Town

Dr Manzano studies climate change and its impact on South African biomes. My research is oriented to the elaboration of policies for sustainable development, environmental management and ecosystem management in the face of an uncertain climate future in which the conflict between economic development and environmental protection is a matter of great social importance.

Dr. Francisco Cervantes Peralta

Centre for Statistics in Ecology, Environment and Conservation, University of Cape Town

Dr Cervantes studies animal movement models and their application in the study of the impact of wind farms on birds.

Dr. Mario Mairal

University of Stellenbosch

Mario Mairal is an evolutionary biologist and naturalist, focused on the study of island biodiversity, biogeography, conservation and biology, with an evolutionary and ecological perspective. He did his PhD Macroeolution and Microevolution in Island Systems at the Real Jardín Botánico de Madrid. Afterwards, he has made stays in several research centers on four continents and now he is a Visiting Professor at Universidad Complutense de Madrid (Talent Attraction Programme). Passionate

about the study of natural history, he has been especially interested in the study of biogeographic disjunctions and led expeditions in several remote places to study their biodiversity, with a special interest on oceanic islands. Mario has made relevant scientific contributions in the field of evolutionary biogeography and conservation, for which he has received several awards.

Dr. Fabiola Quesada Fernandez

Veterinarian

CEO Wild Spirit <https://thewildspirit.com/>

Founder and President of the Wild Spirit Foundation <https://wildspiritfund.org/>

Areas of work: Research, Training and Projects in the field

- Training of international veterinarians in veterinary medicine and wildlife conservation in Africa. Practical work in South Africa.
- Anthropogenic impact (climate change, species trafficking, etc.) on the health and conservation of wild fauna in Africa.
- Anthropogenic impact on the ecology of infectious diseases. How the breakdown of the natural balance increases the incidence of infectious diseases in humans and animals.
- One Health. An interdisciplinary approach in a conservation project, where local communities play a fundamental role.

Session organiser(s): (Names of institutions and contact details of contact person – URL links if relevant)

Embassy of Spain in South Africa Economic and Commercial Office Isaac Martín Barbero

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Diego Boter Artiach Diego.boter@comercio.mineco.es Tel: + 27 849425401

Society of Spanish Researchers in South Africa (ACE South Africa)

<https://acesudafrica.wordpress.com/>

Contact Person: Dr. Álvaro de la Cruz-Dombriz (PhD) President of ACE South Africa

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Room 7 Round 7 Team EU soc innov: Presenting Entrepreneurs for Social Impact Innovations



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title: Presenting Entrepreneurs for Social Impact Innovations

Date: Thursday 2 December 2021	Preferred time: 15h30-17h00
Session Overview: (Maximum 500 words providing short contextual background for the sessions and highlighting key questions to be interrogated) Science and Technology counselors from partner countries are witnessing a transition in research and innovation, moving away from a purist in capitalism to impact innovation that will address global societal challenges. By no means does this mean that the world is ready to dump capitalism and consumerism, but rather a convergence of sorts that impact innovation and investment is becoming the preferred option. In essence, the transition is from the current mode of production and consumption to a new energy model which is more sustainable and economical with societal beneficiation as the catalyst. “Tech for Impact wants to solve societal and environmental challenges with a positive impact. Such solutions are relevant on all levels of our community, different technologies can be applied across various sectors and the demand has a broad geographic span. Not only does this indicate the applicability of tech solutions in solving both social and environmental challenges,	

but also the relevance of such solutions in reaching many of the UN Sustainable Development Goals (SDGs).

According to the Business and Sustainable Development Commission, the SDGs open up global business opportunities of more than USD 12 trillion, with the potential to create 380 million jobs by 2030. Finance, education, construction, food, waste management and transport are just a few examples of sectors where Tech for Impact solutions have great potential. In the health sector, we also witness an increase of impact-oriented solutions”(SEIF).

This lively session will present eight social impact innovation pitches of 5 minutes each, followed by 10-minute feedback from the expert panel. The session will then follow with a 30 min panel discussion on the role of social impact innovation in society and how to measure social impact innovations and finally, allow audience to ask questions and give comments.

Programme: (Description of the running order of the session – 90 minutes)

Time	Topic	Country
3'	Introduction to social impact innovation	Veronique Haller
2'	One slide deck introducing the entrepreneurs that will pitch, and the panel	Iina Soiri
40 minutes social impact pitches from 8 countries, with each pitch being 5 min.		
5'	8 Social Impact Pitches from 8 countries = 40 min. Four Ferries/Block Solutions (tbc)	Switzerland
5'		Bulgaria
5'		Finland
5'		South Africa
5'		African Country
5'		France
5'		Belgium
5'		Italy (t.b.c)
5'	Audience Voting through Mentimeter	
10 min will be input from the experts on social impact pitches		
8'	1 Minute Feedback on the application of their social impact innovation	Dr. Audrey Verhaege
30 min panel discussion on the measuring and management of social impact innovations		
	Moderator	South African Ms. Senisha Moonsamy
	Speaker	Switzerland Prof. Mariana Christen Jakob
	Speaker	Finland Dr. Jyrki Pulkkinen

Potential Questions For the Panel.

- How do we achieve sustainable technological change?
- Is social impact innovation only applicable and relevant to developing countries?
- How do we establish a Tech for Social Impact Ecosystem?
- What is the interplay between purpose and profit in social impact innovations?
- What is impact management, and how do we achieve impact management?

Moderator:

Ms Senisha Moonsamy
Head Innovation Skills Development
Technology Innovation Agency

Senisha Moonsamy is currently the Head of Innovation Skills Development and Enterprise Development & GCIP at the Technology Innovation Agency.

She holds a honours in strategic Management from UCT.

In the past 7 years she headed up International programmes and raised R100m focussing on economic growth through entrepreneurship and Implementation of several Accelerator Programmes in South Africa such as Foresight Leadership Innovation Programme with Sandford and ILB; Global Cleantech Innovation Programme (UNIDO) and UK Newton Funded Programmes Leaders in Innovation Fellowship with Royal Academy of Engineering Oxetia and SOFI with Innovate UK and KTN with Nigeria and Kenya.

Speakers:**Social Impact Assessment for the 8 entrepreneurs**

Dr. Audrey Verhaege
Founder of the South African Innovation Summit

Dr Verhaeghe is Chairperson of Research Institute for Innovation and Sustainability (RIIS), Chairman of The SA Innovation Summit (SAIS) and championed the SA Innovation Network (Saine). She spearheaded the commercialisation of the SA Innovation Summit as a Southern African Institution and main innovation event for the country. SAIS runs Inventors Garage and Pitching Den Competitions, establish Tech Tribes through Hackathons, develop Female tech entrepreneurs, and leads conversations about Angel Investing. RIIS was born out of a passion for the successful implementation of innovation. Dr Verhaeghe championed Open innovation and established three open innovation platforms on the continent as *Great minds think outside*.

Switzerland

Prof. Mariana Christen Jakob
Founder and Managing Partner SEIF | Co-Founder SEIF invest

With over 20 years of experience in social innovation, CSR, and impact entrepreneurship, Mariana is an expert in impact investing and non-financial support. She founded SEIF in 2011, intending to professionalize the social entrepreneurship sector and provide impact startups with the necessary support to grow and scale successfully. Today, Mariana leads the early-stage Tech for Impact investing, finding solutions for the issues involved in initiating the first financing rounds.

Finland

Dr. Jyrki Pulkkinen, Ambassador for Innovation, Ministry for Foreign Affairs of Finland

Dr. Jyrki Pulkkinen is the Ambassador for Innovation at the Ministry for Foreign Affairs, Finland. Prior to this assignment, Dr. Pulkkinen was the Ambassador of Finland to Nigeria, Ghana, Benin, Cameroon and ECOWAS. Dr. Pulkkinen has worked in many other positions at the MFA such as Director of Development Evaluation in years 2013-2018 and a Senior Adviser for Information Society, Science, Technology and Innovations for Development since 2004. He was also the Chair of the UNESCO IPDC Intergovernmental Council in 2012-2014 and the CEO of an UN ICT Taskforce initiated partnership organization GESCI in 2008-2011, based first in Dublin, and later in Nairobi. Dr. Pulkkinen held several academic positions at the University of Oulu, Finland. He finished his PhD on e-Learning in 2004. During the Oulu years he was seconded to the Department of Education of South Africa as an ICT in Education Expert in 2000-2001.

Join Zoom Meeting: (LINK)

Session organiser(s):

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Room 8

Room 8 Round 1 Tokyo SustDev Respect: Advancing inclusive sustainable development with respect



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Advancing inclusive sustainable development with respect

Date: 1 December 2021	Time: 09h00-10h30
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Session Overview:

'Mottainai' - zero waste philosophy or spirit will bring a solution to our global environmental problems by reducing, reusing, recycling, and with Respect. We should respect others and also our land, ocean, and planet. This session will explore how we can bring solutions to achieve the Sustainable Development Goals with new technologies for smart cities, transportation, energy, water resources, and materials. The key question to be addressed is how new cities will provide solutions to achieve SDGs.

Programme:

1. City - Connectional Toyota's Woven City, TBD from Toyota Motors
2. Energy - Possibilities of Green Ammonium and hydrogen, Prof Ken-ichi Aika

3. Water - REMIX water project in eThekweni municipality, Ms Yukiko Ichige (
4. Material - Saving the oceans - alternative plastics, Dr Suzan Oelofse, CSIR

Moderator:

Dr Neville Sweijd, Acting Director and Operations Manager, Applied Centre for Climate & Earth Systems Science (ACCESS)

Ms Stacey Leigh Joseph, Executive Manager, South African Cities Network (SACN)

Speakers:

1. TBA, Toyota Woven City (<https://www.woven-city.global>)
2. *Prof Ken-ichi Aika*, Professor, National Institute of Technology, Numazu Kosen, Japan (<https://www.ammoniaenergy.org/organization/green-ammonia-consortium/>)
3. *Ms Yukiko Ichige*, Senior Manager, Hitachi, Japan (https://www.hitachi.com/businesses/infrastructure/product_site/water_environment/remix_water/index.html)
4. *Dr Suzan Oelofse*, CSIR, South Africa (<https://www.csir.co.za/south-africa-collaborates-japan-combat-plastic-pollution>)

Session organiser(s):

South African Embassy in Tokyo, JAPAN
daisuke.tanaka@dst.tokyo

Room 8 Round 2 NgGh Health: Strengthening health systems and innovation in Sub-Saharan Africa

Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Strengthening health systems and innovation in Sub-Saharan Africa

Date: 1 December 2021	Time: 13h30-15h00
<p>Programme:</p> <p>Session I: Optimizing a network of drone-aided healthcare services in rural Rwanda – by Chinasa I. Ikelu - <i>10 minutes</i></p> <p>Session II: Community-Oriented health resource persons and reduction in the risk of disease infection in the era of covid-19 pandemic in Nigeria by Henry T. Asogwa – <i>10 minutes</i></p> <p>Session III: Public health policy and covid-19 pandemic in Nigeria: Response, Recovery and Resilience by Jude O. Chukwu – <i>10 minutes</i></p> <p>Session IV: Knowledge and practice of eHealth as a way of promoting public health services in primary healthcare facilities in parts of southeastern Nigeria by Greg N. Iwuoha - <i>10 minutes</i></p> <p>Session V: Availability of primary healthcare service delivery for households in Nigeria by Theresa C. Isife - <i>10 minutes</i></p> <p>Session VI: Leadership style and motivation in Nigeria’s public health system: case of Nsukka in Enugu state by Jude O. Chukwu – <i>10 minutes</i></p> <p>Session VII: Policy Stringency and the incidence of Covid-19 in Africa by Chinonso V. Agu – <i>10 minutes</i></p> <p>Session VIII: Brazilian Emergency Aid for Covid-19 crisis: Impact on Informal Sector by Michele Romanello – <i>10 minutes</i></p> <p>Moderator: (Name and maximum 100 words biographical summaries – URL link if relevant)</p>	

Phillips E. Obasohan is a doctoral candidate at the School of Health and Related Research (ScHARR), University of Sheffield, United Kingdom. His research interest centers on determinants of maternal and child health-related outcomes especially in low and medium-income countries (LMIC) using multivariate techniques of multilevel, simultaneous, and structural equations in the analysis of inequalities in socioeconomic, demographic indicators, and their relationship with disease burdens. He is the current president, Institute of Operations Research of Nigeria (INFORN) and executive committee member of African Federations of Operations Research Societies (AFROS). He is a Chief Lecturer with the Niger State Polytechnic, Nigeria.

Session organizer(s): (

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Room 8 Round 3 JST Anxiety: Building an Inclusive Society: Reconsidering the Roots of Social Anxiety



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Proposals for Parallel Sessions organised by SFSA partners

Session Title:

Building an Inclusive Society: Reconsidering the Roots of Social Anxiety

Date: Thursday 1 December 2021

Preferred time: 15:30

Session Overview: (Maximum 500 words providing short contextual background for the sessions and highlighting key questions to be interrogated)

This session is an archived video of the session entitled "Building an Inclusive Society: Reconsidering the Roots of Social Anxiety" held at Science Agora 2021, which is one of the largest science open forums in Japan. We expect to collect feedbacks from the participants of the SFSA 2021 in the form of questionnaires and provide feedback for our planning thematic session to be submitted to the 2022 World Science Forum.

What are the roots of the issues that we need to reconsider in order to build an inclusive society? This session will focus on "social fragmentation," "social isolation," and "social anxiety" that have emerged in our society along with the socioeconomic development and growth, and will discuss this theme from the insights provided by invited experts from around the world. We will also discuss with participants from a variety of perspectives how Science and Technology as well as Humanities and Social Sciences can work together with society to take essential measures to address these issues common to many countries, and how we want to shape the future by moving our society forward.

<p>Programme: (Description of the running order of the session – 90 minutes)</p> <ul style="list-style-type: none"> - Introduction and opening (2min.) - Speeches from experts in the world (Approx. 12min per person×4) <ul style="list-style-type: none"> • Mr. Katsuhiko Fujimori, Department of Social Welfare and Business Management, Nihon Fukushi University / Mizuho Research & Technologies, Ltd. • Ms. Ravneet Viridi, Tackling Loneliness team, Department for Digital, Culture, Media & Sport (DCMS), UK • Mr. Kei Kudo, NPO Sodateage Net. • Ms. Tiziana Bonapace, Information and Communications Technology and Disaster Risk Reduction Division, UN ESCAP - Panel discussion and Open discussion (40min.)
<p>Moderator: (Name and maximum 100 words biographical summaries – URL link if relevant)</p> <p>Mr. Katsuhiko Fujimori</p> <p>*Biographical summary to be find the Speakers section below.</p>
<p>Speakers: (Names and maximum 100 words per speaker biographical summaries – URL links if relevant)</p> <p>Mr. Katsuhiko Fujimori: Professor at the Department of Social Welfare and Business Management, Nihon Fukushi University, Mr. Fujimori has concurrently served as Chief Research Associate, Mizuho Research & Technologies, Ltd. Specialized in social policy, Mr. Fujimori has been conducting policy research on poverty and social isolation for single households since having noticed the rise in the number of single households in Japan known as “Family-oriented welfare state”.</p> <p>Ms. Ravneet Viridi Head of Tackling Loneliness in the UK Department for Digital, Culture, Media and Sport. In this role, she leads the government's work to reduce the social stigma around loneliness; influence organisations across society to consider loneliness in service design; and improve the evidence base on loneliness. Prior to this role, Ravneet has worked in a range of roles in the UK Civil Service as a policy advisor, focusing on areas including volunteering, local economic growth and LGBT equality policy.</p> <p>Mr. Kei Kudo Chairperson of Sodateage Net., the Approved Specified Nonprofit Corporation in Japan. After graduating from Bellevue Community College in the U.S., he founded the organization in 2001 and has been involved in employment support for young people ever since. He is the author of "Working for an NPO: Solving Social Problems" (Toyo Keizai Inc.), "Even University</p>

Graduates Become Unemployed: Young People Stumbling into Work" (ENTERBRAIN) etc. Mr. Kei Kudo has served as an expert member of relevant committees within the Cabinet Office, Ministry of Health, Labor and Welfare, and Ministry of Education, Culture, Sports, Science and Technology. He is a father of four boys, including twins.

Ms. Tiziana Bonapace

Director of Information and Communications Technology and Disaster Risk Reduction Division, of the United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP). Prior to this, Ms. Bonapace was Head of the Subregional Office for North and Central Asia, UN ESCAP. Since 2016, Ms. Bonapace has led ESCAP's ICT and Disaster Risk Reduction programme which seeks to build resilience to disasters through improved connectivity and technological innovation.

Session organiser(s): (Names of institutions and contact details of contact person – URL links if relevant)

Session organizer:

Mr. Atsushi Arakawa, Director, Department for Promotion of Science in Society, Japan Science and Technology Agency (JST)

Contact person:

Ms. Kumiko Okawa, Project coordinator, Department for Promotion of Science in Society, Japan Science and Technology Agency (JST)

Email: kumiko.okawa@jst.go.jp

Room 8 Round 4 JST Enviro: Promoting collaborative research in environmental science among Japan and African countries



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Promoting collaborative research in environmental science among Japan and African countries**

Date: Thursday 2 December 2021

Preferred time: 09h00-10h30

Session Overview:

The dual threats to our society and planet are pushing sustainability issues to the top of the research agenda. Yet without proper communication and collaboration, our efforts will be doomed to failure. We need concerted STI action that will not only help us achieve the SDGs, but also ensure that research results can directly help those people living on the frontlines of current and incoming challenges.

This session introduces Africa-Japan Collaborative Research initiative AJ-CORE, a brand new joint research framework linking Africa, where good STI practices can have a huge impact on global sustainability, and Japan, a leader in sustainability technologies. It is a partnership between South Africa and Japan, and is a unique opportunity for multilateral collaboration between Japan, South Africa and other African countries, and for their academic communities – including natural sciences, social sciences, humanities and more – to join forces and leverage research results for the benefit of both African and global society. And just as AJ-CORE crosses

geographical and cultural borders, it also links a range of sectors and levels of society. We therefore invite a variety of stakeholders, including policymakers, NGOs and industry, to get involved in the discussion and help decide what direction our research should take.

In the first half of the session, project researchers from Africa and Japan will introduce the regional “environmental” issues they are tackling, explain how different countries’ members share roles in the project, and promote the benefits of the new AJ-CORE framework. In the second half, research funding agencies and experts will join to discuss how we can cooperate more closely across academic, sectoral and national borders to solve both local and global sustainability issues.

Participants in this session will have opportunities to interact with potential future collaborators, share best practices and discuss challenges, and contribute to the growth of the AJ-CORE framework. We look forward to seeing you there.

Programme:

1. Welcome remarks (3 min)
- *Embassy of Japan in South Africa*
2. Introduction of Africa Japan Collaborative Research program: AJ-CORE (10 min)
Japan Science and Technology Agency (JST) and National Research Foundation (NRF)

Speakers:

- KOBAYASHI Osamu, Director, Department of International Affairs, JST
- *NRF*

3. Presentations of the four ongoing projects from the AJ-CORE program (40 min)

The project researchers will introduce their collaborative research projects focusing on (10 min x 4 projects):

- Research objectives, challenge(s) to be resolved and expected research outcomes.
- How does the inter-national/sectoral research team achieve its research objectives? What are the merits and difficulties of inter-national/sectoral collaboration?

“Field and mechanism-based toxicity research on pesticides in Africa (ToRePs)”

-ISHIZUKA Mayumi, Professor, Faculty of Veterinary Medicine, Hokkaido University

“Assessing the Lake Kariba Catchment Environment for Sustainable Water, Energy, Livelihoods and Ecosystem health (WELCOME)”

-*recommended by NRF (TBD)*

“Food and Livelihood Resilience from Neglected and Underutilized Plant Species in Western Africa (FORENS)”

-recommended by NRF

“Development of Resilient E-farming for agro-climate risk management in African Multi-environments (DREAM)”

-TSUBO Mitsuru, Professor, Arid Land Research Center, Tottori University

4. Panel discussion (30 min)

Comments from panelists and Q&A with audience

Moderators of this discussion:

-KOBAYASHI Osamu, Director, Department of International Affairs, JST

- NRF

Panelists:

-UMETSU Chieko, Ph.D., Professor, Graduate School of Agriculture, Kyoto University (TBD)

-Expert recommended by NRF (TBD)

+Four presenting researchers

4-1. Discussions (20 min)

4-2. Q&A (10 min)

5. Closing remarks (3 min)

JST (TBD)

Moderator:

Department of International Affairs, JST

Session organiser(s):

Nahoko Ando, nahoko.ando@jst.go.jp, JS

Haruka Goto, haruka.goto@jst.go.jp, JST

Contact person on the proposal:

Nahoko Ando, nahoko.ando@jst.go.jp

*AJ-CORE: “Africa-Japan Collaborative Research” program is a multilateral research framework connecting researchers from three (or more) countries: Japan, South Africa, and at least one other African country. The program aims to help resolve local and global common challenges through innovative research by multilateral stakeholders.

Room 8 Round 5 UP postdoc: Advancing Early Career Development in the Post-PhD phase on the African Continent



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: Advancing Early Career Development in the Post-PhD phase on the African Continent

Date: Thursday 2 December 2021	Time: 11:00-12:30
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Session Overview:

Contextual Background

The need for effective post-PhD support programmes in Africa is evident from three global mega-trends, namely the demand for *higher-level skills in modern knowledge economies* (i.e., the human capital to drive domestic innovation and technological adaptation) that have been shown to be strong predictors of long-term economic growth; the *growing and increasingly competitive science landscape*; and the *stark increase in competitiveness in higher education*. Doctoral students and postdoctoral fellows are crucial actors in the knowledge-creation system through the important role they play in undertaking research. In the long term, they are the foundation of the future generation of researchers upon whom the sustainability of the scientific enterprise depends, and who can employ systems thinking, transcend disciplinary boundaries, communicate effectively, engage diverse stakeholders and communities, and connect science to innovative, actionable solutions.

Given the above, there is a strong imperative to increase the number of researchers in Africa to enable the continent to improve its research competitiveness, transition to a knowledge economy, and achieve sustainable development. In addition, postdoctoral fellowships and early career researcher programmes have been shown to benefit not only the early career researchers they aim to train, but also hold numerous institutional and macro-level benefits.

For purposes of this discussion, the focus is on interventions in a variety of forms for early career researchers in the post-PhD phase (although in the African context the term often includes those still working towards a doctoral degree), particularly those programmes that constitute the Peer-learning for Emerging Researchers' Knowledge & Advancement (PERKA) project. This joint participatory research project is funded by the Carnegie Corporation of New York (CCNY) and the National Research Foundation (NRF) of South Africa and implemented in collaboration with the Centre for the Advancement of Scholarship at the University of Pretoria (UP), South Africa. The session will position and announce the large end-of-project PERKA conference and investigate lessons learned on designing, implementing, and evaluating post-PhD programmes that help deepen research and other skills and enable the transition into independently established careers.

Key Questions to be Investigated

- What are essential factors to consider when designing post-PhD development programmes in Africa? (The purpose is not so much to make best practice 'recommendations' as ideally demonstrate how different programmes have solved common problems based on their specific context and constraints).
- What are the challenges in implementing impactful post-PhD programmes in Africa?
- What are some innovative models for early career development?
- What lessons can be shared about the monitoring and evaluation of impact regarding post-PhD programmes?

Programme: (Description of the running order of the session – 90 minutes)

Moderator: Introduction and setting the scene (15-20 minutes).

Speaker 1: Dr Marta Vicente-Crespo, Manager, CARTA programme, African Population and Health Research Center (APHRC), to provide a programme management perspective (5 minutes).

Speaker 2: Dr Sepo Hachigonta, Director, Strategy, Planning and Partnerships (SPP), National Research Foundation, to present perspective from a funding agency that features early career development in its own suite of programmes (5 minutes).

Speaker 3: Andrea Johnson, Programme Officer, Higher Education and Research in Africa and Peacebuilding in Africa, Carnegie Corporation of NY, to provide perspective from a grant-making foundation investing in knowledge that informs action in education (5 minutes).

Speaker 4: Prof Nana Aba Appiah Amfo, Vice Chancellor, University of Ghana, to provide an institutional/university perspective (5 minutes).

Moderator: To chair engagement with the audience (45 minutes).

Moderator: Concluding summary (5 minutes).

Moderator: (Name and maximum 100 words biographical summaries – URL link if relevant)

[Dr Melody Mentz-Coetzee](#) is a Senior Research Fellow at the [Centre for the Advancement of Scholarship](#) (University of Pretoria, South Africa). She has worked for a number of years as an independent monitoring and evaluation consultant undertaking projects at national, pan-African, and international levels. She focuses on theory-based mixed-methods evaluations and the evaluation of higher education initiatives, research capacity building, and leadership, with an emphasis on gender and agriculture in the context of development in Africa.

Speakers

Dr. Marta Vicente-Crespo, Programme Manager of the Consortium for Advanced Research Training in Africa (CARTA) at the African Population and Health Research Center (APHRC) is a biomedical researcher by training, dedicated to building research capacity in Africa. She has worked in research and higher education institutions in Spain, UK, USA, Uganda, and Kenya. She was the founding director of the Institute of Biomedical Research and the Grants Management Office at Kampala International University and in 2013, co-founded [DrosAfrica](#). She joined the CARTA Secretariat in October 2018, where she is the Program Manager overseeing the support, training and progress of 113 PhD fellows and 115 graduates who have moved on to take postdoctoral awards and research grants, within and outside of the Consortium.

Dr. Sepo Hachigonta is Director of Strategic Partnerships at the National Research Foundation (NRF) of South Africa. He holds a Masters and a Doctoral degree in Environmental Science from the University of Cape Town and has published widely in environmental and agriculture systems, with a specific focus on research to policy interface. He is the author, co-author/editor of more than 40 articles and books (20 in scientific international journals). Dr Hachigonta has extensive networks within the African Continent and beyond having worked with partners in more than 20 African countries. His expertise includes stakeholder engagement with the public and private sector.

Andrea Johnson is the Program Officer, Higher Education and Research in Africa and Peacebuilding in Africa at the [Carnegie Corporation of New York](#), where she oversees the strategy to develop and retain a new generation of African academics. Her experience includes strategy development to expand the pool of African peacebuilding scholars and enhance women's opportunities and gender equity in African higher education. She has managed

university-strengthening activities in Nigeria, and designed and implemented a capacity-building program for African universities on such themes as educational advancement and research management. Through the [Partnership for Higher Education in Africa](#), Johnson contributed to strategies for the improvement of access to Internet connectivity for higher education and research.

Professor Nana Aba Appiah Amfo is the Vice Chancellor of the University of Ghana. A PhD graduate in Linguistics from the University of Science and Technology in Trondheim, Norway, she received professional management training from the University of Applied Sciences, Germany, [INSEAD](#) and Harvard Business School. Prior to her appointment this year, she served as the Pro Vice for Academic and Student Affairs at the University of Ghana and as Acting Vice Chancellor. Amfo serves on the Advisory Board of Coalition of People Against Sexual and Gender-Based Violence and Harmful Practices (CoPASH) under the auspices of the [UNFPA](#) and is a member of several professional associations.

Session organiser(s):

Professor Frans Swanepoel.

Director: International Strategic Partnerships

and

Director and PI: Food Systems Research Network for Africa ([FSNet-Africa](#))

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Fellow: Institute for African Development ([IAD](#))

Cornell University, USA

and

Inaugural Fellow: Pan-African Scientific Research Council ([PASRC](#))

Room 8 Round 6 UKHC Agri: Strengthening Agrifood Systems – Harnessing research to support food systems policy



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: **Strengthening Agrifood Systems – Harnessing research to support food systems policy**

Date: Thursday 2 December 2021

Time: 15:30

Session Overview:

South Africa's Department of Science and Innovation (DSI) recently entered a new collaboration with the UK's [N8 Food Systems Policy Hub](#), supported by the British High Commission. The collaboration is aimed at enabling innovation in food security through identifying opportunities to better support and coordinate sustainable agri-food systems and generating evidence for policy making.

The [N8 Research Partnership](#) is an alliance of the eight most research-intensive Universities in the North of England (Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York). The [N8 Food Systems Policy Hub](#) is an initiative borne out of the N8 partnership, and is a platform enabling food systems thinking for a joined-up approach to food research and policy making across industry, government, third sector and civil society.

The DSI/N8 collaboration partners would like to host their second roundtable discussion during the SFSA 2021 to concretise the nature and format of longer-term collaboration that will: a) lead to a better understanding of enabling policies in food security; b) enable identification of joint priority areas; c) support the development of a joint workplan to tackle identified challenges; and, d) invite other potential partners at the SFSA 2021 to provide their perspectives and consider joining the collaboration going forward.

The focus of the discussions will be on ***Technologies for niche, indigenous and underutilised crops to support smallholder farmers, with both food and nutrition security and climate resilience***. The outcomes will lay the foundation for a follow-on engagement planned at the beginning of 2022 that will serve as a working group session to make specific recommendations on joint activities, as well as to nominate a team that will be tasked with the development of a joint Action Plan for implementation commencing in the 2022/23 financial year.

Programme: (Description of the running order of the session – 90 minutes)

1. Opening of session: Moderator: Dr Yolisa Pakela-Jezile, Agricultural Research Council/Dr Marinda Visser, University of Pretoria (5 Mins)
2. Collaboration background: Prof Bob Doherty, Professor of Marketing and Chair in Agrifood, University of York (7 mins)
3. Sessional presentations (approx.10 mins each)

Sessions speakers & topics

UK	South Africa
Prof Katherine Denby, University of York	Dr Michael Bairu, Senior Manager: Plant Breeding, Agricultural Research Council
Dr Justin Bend, Siyazisiza Trust	Prof Albert Modi/ Dr Tafadzwa Mabaudhi, University of KwaZulu-Natal.
	Prof Lise Korsten/Prof Ndiko Ludidi, Co-Directors: Centre of Excellence in Food Security, University of Pretoria.

4. Discussions/Q & A session
5. Recommendations and way forward
6. Closing remarks: Dr Maneshree Jugmohan-Naidu, Department of Science & Innovation (3 mins)

Moderator:

Dr Yolisa Pakela-Jezile, Senior Manager: Research: Tropical and Subtropical Crops, Agricultural Research Council (ARC): <https://www.linkedin.com/in/yolisa-pakela-jezile-a60b625b/>

Dr Marinda Visser, University of Pretoria:
<https://www.fabinet.up.ac.za/index.php/people-profile?profile=1529>

Speakers:

Prof Albert Modi: <https://caes.ukzn.ac.za/deputy-vice-chancellor-head-of-college/>

Prof Tafadzwa Mabhaudhi, UKZN: <https://www.linkedin.com/in/tafadzwanashe-mabhaudhi-37561159/?originalSubdomain=za>

Prof Lise Korsten

(<https://www.up.ac.za/plant-and-soil-sciences/article/2178435/prof-lise-korsten>)

Prof Ndiko Ludidi, CoE: Food Security (<https://foodsecurity.ac.za/people/professor-ndiko-ludidi/>)

Dr Michael Bairu, ARC (<https://www.arc.agric.za/arc-vopi/Pages/Plant-Breeding.aspx>)

Prof Katherine Denby, University of York

Dr Justin Bend, Siyazisiza Trust

NB: The speakers will be focusing on previous issues identified and building up on that e.g. research gaps, current activities, future challenges, stakeholder roles and responsibilities both national and international, funding sources, and knowledge sharing platforms and identify one organization that can do that.

Session organiser(s):

Mr Aidan Darker: aidan.darker@fcdo.gov.uk

Room 8 Round 7 BRICS: BRICS science, technology and innovation partnerships



Science Forum South Africa 2021

“Igniting conversations for World Science Forum 2022”

1-3 December 2021

Session Title: BRICS science, technology and innovation partnerships

Date: Thursday 2 December 2021	Time: 15:30
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Session Overview:

The Covid-19 pandemic caused by the coronavirus, SARS-CoV-2, continues to be a major global health challenge. BRICS countries, ie. Brazil, Russian Federation, India, China and South Africa account for more than 27% of the total global Covid-19 burden (<https://coronavirus.jhu.edu/>, accessed on 18 October 2021).

In response to this pandemic and in the absence of treatments and preventative vaccines at the onset of the disease, the BRICS STI Framework Programme (<http://brics-sti.org/>) launched a call for multilateral basic, applied and innovation research projects in an effort to facilitate cooperation among the researchers and institutions in the five BRICS countries.

In July 2020, a call for applications was published by the South African Medical Research Council (SAMRC) aimed at researchers based at research and development organisations, South African universities and science councils to submit suitable project proposals for funding. A similar process was undertaken in other BRICS partner countries.

In response to the call, a total of 111 eligible proposals were submitted across all five countries in five thematic areas, the majority of applications focused on the area of research and development of COVID-19 vaccines and drugs, including repurposing of available vaccines and drugs, followed by the thematic area of research and development of new technologies/tools for diagnosing COVID-19.

Following a closely monitored selection process which included a rigorous peer review process in all the BRICS countries, twelve joint projects were selected for funding, of which seven joint projects have a SA component.

Key questions:

- i. How the projects are responding to COVID-19?
- ii. How the BRICS countries are working together? and
- iii. What lessons we can learn for international cooperation in general?

Programme: (Description of the running order of the session – 90 minutes)

1. Opening remarks (Moderator) - 2 min

2. Remarks from Covid-19 funding agencies - SAMRC (2 min). Funders from BRICS countries (8 min)

3. COVID-19 funded projects - 60 min (18 min each)

Project title	Speakers
SARS-CoV-2 Network for Genomic Surveillance in Brazil, Russia, India, China and South Africa. <i>Partner countries: Brazil, Russian, India and China;</i>	Prof Tulio de Oliveira, Stellenbosch Univ
Multidisciplinary platform based on artificial intelligence for accelerating drug discovery and repurposing for COVID-19	Prof Kelly Chibale, Univ of Cape Town
Epidemiological features and geospatial evaluation of Covid-19: Correlation with comorbidities and prognostic biomarkers between SARS-CoV-2 and <i>Mycobacterium tuberculosis</i> . <i>Partner countries: Brazil and India</i>	Prof Uchechukwu Nwodo, Univ of Fort Hare
Epidemiological impact and intersection of the Covid-19 and tuberculosis pandemics in Brazil, Russia, India and South Africa. <i>Partner countries: Brazil, Russia and India</i>	Prof Anneke Hesseling, Stellenbosch Univ

4. Q & A (8 min)

Moderator:

Zoleka Ngcete
Senior Program Manager
Grants, Innovation and Product Development
South African Medical Research Council
email: zoleka.ngcete@mrc.ac.za

Speakers

See draft programme above

Session organiser(s): (Names of institutions and contact details of contact person – URL links if relevant)

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