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DR. PATRICK SOON-SHIONG AND NANTWORKS ANNOUNCE LAUNCH OF COVID-19 AND CANCER VACCINE INITIATIVE IN SOUTH AFRICA IN PARTNERSHIP WITH THE COUNCIL FOR SCIENTIFIC RESEARCH (CSIR) AND THE SOUTH AFRICAN MEDICAL RESEARCH COUNCIL

Dr. Patrick Soon-Shiong and NantAfrica, a division of NantWorks, today announced the official launch of an ambitious initiative to build capacity for advanced health care in Africa.

This initiative will entail partnership with the Council for Scientific and Industrial Research (CSIR) and the South African Medical Research Council (SAMRC).

NantWorks is a multinational, California-based conglomerate that is leading the digital revolution in healthcare, technology and media through the harnessing of science, digital infrastructure, supercomputing and communication.

NantWorks LLC has signed a collaboration agreement with the CSIR and the SAMRC that will initiate the transfer of biologic manufacturing technology for COVID-19 and cancer vaccines and next-generation cell-based immunotherapies. This will enable the rapid clinical development of next generation vaccines for infectious diseases and cancer at centers of excellence across the country.

"It has been a dream of mine, since I left the country as a young physician, to bring state-ofthe-art, 21st century medical care to South Africa and to enable the country to serve as a scientific hub for the continent," said Dr. Patrick Soon-Shiong, founder and CEO of NantWorks.

"There is such an unmet need to treat life-threatening infectious diseases such as AIDS, TB and now COVID-19. Of equal concern is the poor survival rate of patients suffering from cancer in South Africa and elsewhere in Africa. The astounding advances in science have enabled new paradigms of care involving activating the immune system and changing outcomes for these diseases.

"We are privileged to have the opportunity to bring 30 years of clinical, scientific and advanced biological know-how to the country and establish much needed capacity and self-sufficiency."

The partnership between NantWorks, the CSIR and the SAMRC will expedite and expand manufacturing of biologics, immunotherapeutics and vaccines in South Africa through technology transfer and state-of-the art advanced manufacturing facilities.

- NantAfrica, a division of NantWorks created to coordinate the initiative, and the CSIR will implement state-of-the-art biologics manufacturing capacity to expedite transfer of COVID-19 and cancer vaccine biologics within the next three months and scale up capacity in and for Africa by 2022.
- The launch of the Centre for Epidemic Response and Innovation (CERI) in collaboration with the SAMRC and Universities of Stellenbosch and KwaZulu-Natal, in tandem with the partnership, will enhance rapid genomic surveillance of and response to viral mutations occurring in Africa.
- The launch of clinical centres of excellence for the treatment of cancers and infectious diseases, such as COVID-19, HIV/AIDS and TB, will be established through a collaboration with the SAMRC and Universities of Cape Town, Witwatersrand, Stellenbosch and KwaZulu-Natal

NantWorks has entered into agreements to invest in large-scale manufacturing facilities and a biologics manufacturing campus in the Western Cape and will begin transfer of technology, know-how and materials for DNA, RNA, adjuvant vaccine platforms and cell therapy in the next three months in partnership with the CSIR and SAMRC.

President Ramaphosa welcomed this significant investment and the commitment of Dr. Soon-Shiong to South Africa as his birthplace.

The President said: "It was a homecoming moment when I met Dr. Soon-Shiong and we saw an opportunity to strengthen our scientific and technological capacity; an opportunity to address the public health challenges experienced in South Africa and the continent and leapfrog to cutting edge technology. This technology transfer, including manufacturing biologics, will reinforce vaccine equity sorely needed globally."

This initiative will build on existing capacities and expertise within South Africa. An extensive network of collaboration has now been established with Dr. Soon-Shiong's NantWorks and NantAfrica entities to build capacity and a knowledge base in South Africa; to expedite the development of 21st century immunotherapy for cancer and infectious disease, and to position South Africa as a science and medicine hub of innovation for all of Africa.

The South Africa-based collaborative network includes the Council for Scientific and Industrial Research (CSIR); South African Medical Research Council (SAMRC); the Centre for Epidemic Response and Innovation (CERI); the Universities of Cape Town, Witwatersrand, Stellenbosch and KwaZulu-Natal; the Network for Genomic Surveillance in South Africa (NGS-SA), as well as the cancer and infectious disease clinical centres of excellence.

Minister of Higher Education, Science and Innovation Dr Blade Nzimande said: "I am grateful about the prospects that this collaboration with the CSIR will have for South Africa's vaccine manufacturing capacity.

"We appreciate the acknowledgment of the educational and scientific excellence and potential in the African continent that this agreement will bring, particularly on our training and research capability."

The NantWorks agreement with the CSIR includes collaboration on manufacturing processes of certain vaccine and biological components, building on the existing capacity at the CSIR.

This will be enhanced with the transfer of technology and further research collaboration.

CSIR Chief Executive Officer Dr Thulani Dlamini said: "The CSIR is about improving the quality of life of the people of South Africa. However, the impact of our work extends beyond the borders of South Africa.

"We achieve socio-economic transformation through collaboratively innovating and localising technologies. The CSIR has a multidisciplinary capability that supports selected focus areas in the South African economy. Health and manufacturing are two such priority areas – areas that we believe are imperative to invest in to overcome the challenges of today and tomorrow.

"These are also areas in which our country has the potential to excel, and in which the CSIR has built deep capabilities and a solid track record. This collaboration presents us with a remarkable and value adding opportunity to help ensure that our work in these areas has maximum impact."

Professor Glenda E. Gray, President and Chief Executive Officer of SAMRC said, "The SAMRC's mission is to fund and conduct research that impacts on the lives of South Africans. SAMRC has partnered with Dr. Soon-Shiong in launching COVID-19 clinical trials in South Africa and look forward to the development of next-generation vaccines and centres of excellence for patients with infectious diseases and cancer. This collaboration will increase resources and opportunities to do just that. Cancer and Infectious Disease contribute substantially to the burden of disease in our country. Finding innovative ways to curb mortality is critical to the health of our nation.

NantWorks and its affiliates have initiated a clinical Phase 1 / 2 / 3 COVID-19 T cell vaccine booster trial in healthcare workers in Cape Town. A second Phase 1 / 2 COVID-19 T cell vaccine trial will be initiated to evaluate the first heterologous RNA + DNA T cell vaccine. This heterologous vaccine has been shown to neutralize the beta and delta variants of the SARS-COV-2 virus in pre-clinical studies.

Prof Tulio de Oliviera, founding director of the Centre for Epidemic Response and Innovation (CERI) and professor at the Universities of Stellenbosch and KwaZulu-Natal, said: "CERI, established with the support of the Chan Soon-Shiong Family Foundation, will allow genomics technologies to be used in real time to trace and respond to epidemics and pandemics in Africa. We are really excited to partner with Dr Soon-Shiong to set up the large genomics facility on the African continent."

"Stellenbosch University is excited about playing a leading role in this important and ground-breaking COVID-19 and cancer initiative. Building on research excellence via its DST-NRF Centre of Excellence for Biomedical TB Research and African Cancer Institute, among others, the University is well-poised to make a meaningful contribution to the initiative."

Prof. Nana Poku, UKZN Vice-Chancellor and Principal said: "We are proud to have established the scientific foundation of CERI, which builds on the strong work of KRISP at UKZN on COVID-19. The consolidation and expansion of this work in partnership with Stellenbosch University and the Chan Soon-Shiong Family Foundation will create an impressive genomics facility in Africa, which will enable the continent to be a leader in epidemic and pandemic prevention and response".

"The University of the Witwatersrand (Wits) is honoured to partner with Nantworks, directed by Wits alumni Dr. Patrick Soon-Shiong, to advance the research and clinical development of vaccines, and training and technological innovation in oncology, infectious diseases, immunology, molecular medicine, and related disciplines, in Africa.," says Dean of the Faculty of Health Sciences, Professor Shabir Madhi.

Prof. Zeblon Vilakazi, Wits Vice-Chancellor and Principal said: "We look forward to this collaboration as it speaks directly to the priorities of Wits University as we approach our centenary – to improve healthcare using the latest technology and innovation, to benefit broader society, and to advance the public good.

"This relationship is particularly special, as both Patrick Soon-Shiong and his wife Michele are Wits alumni, who met on our campus. We look forward to working with the team to conduct research at the frontiers of science, that addresses the pressing challenges of the 21st Century, and that ultimately advances better healthcare for humanity."

Professor Mamokgethi Phakeng, the Vice-Chancellor of the University of Cape Town said, "UCT is proud of the excellence highlighted by the trust placed in our scientists and research centres by Dr. Soon-Shiong. The potential for advancement of the scientific and health sector through this collaboration is a special moment for the country."

About NantWorks

NantWorks, LLC applies new innovative approaches and new technologies to solving global problems. NantWorks is the parent company of various private and public entities focusing on three pillars: health & life sciences; energy & renewables; and connectivity & communications.

Founded by Dr. Patrick Soon-Shiong, scientist and inventor of the first human nanoparticle chemotherapeutic agent Abraxane, the core mission for NantWorks is convergence: to develop and deliver a diverse range of technologies that accelerate innovation, broaden the scope of scientific discovery, enhance ground-breaking research, and improve healthcare treatment for those in need. For more information: <u>https://www.NantWorks.com</u>.

About the CSIR

The CSIR, an entity of the Ministry of Higher Education, Science and Innovation, is one of the leading scientific and technology research, development and implementation organisations in Africa. Constituted by an Act of Parliament in 1945 as a science council, the CSIR undertakes directed and multidisciplinary research and technological innovation, as well as industrial and scientific development to improve the quality of life of all South Africans. For more information, visit <u>www.csir.co.za</u>.

About SAMRC

The South African Medical Research Council (SAMRC) was established in 1969 with a mandate to improve the health of the country's population, through research, development and technology transfer, so that people can enjoy a better quality of life. The scope of the organisation's research projects includes tuberculosis, HIV/AIDS, cardiovascular and non-communicable diseases, gender and health, and alcohol and other drug abuse. With a strategic objective to help strengthen the health systems of the country – in line with that of the Department of Health, the SAMRC constantly identifies the main causes of death in South Africa. For more information, visit <u>www.samrc.ac.za</u>

About CERI

The Centre for Epidemic Response and Innovation (CERI) primary goal is to challenge the status quo on epidemic response and innovation in Africa and allows Africa to control its own epidemics and pandemics. Our vision is to effectively respond to epidemics through pathogen genomic surveillance to enhance biomedical discovery, improve the treatment, diagnosis and prevention of human diseases in Africa. CERI founding academic partners in South Africa are Stellenbosch University and the KwaZulu-Natal Research Innovation and Sequencing Platform (KRISP) at UKZN. CERI will receive core funding from the Chan Soon-Shiong Family Foundation (CSSFF) to setup the largest genomics facility in the African continent. The Rockefeller Foundation pandemic prevention institute is also supporting CERI to significantly strengthen and expand genomic surveillance networks in Sub-Saharan Africa. The Foundation is support to African scientists establishing or expanding genomic sequencing in their home countries. The Rockefeller Foundation is also supporting CERI's focus on strategic sampling strategies, increasing the volume and timeliness of sequencing data and streamlining bioinformatics.More info: https://www.ceri.org.za.

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