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NEW COLLABORATION AIMS TO STIMULATE BIOMEDICAL INNOVATION IN AFRICA THROUGH ACCESS TO HIGH-RESOLUTION

November 23, 2017 —Cape Town, South Africa—The Centre for Proteomic and Genomic Research (CPGR) today announced that it has entered into a partnership with The Sunflower Fund (TSF) to make best-in-class stem-cell typing solutions available on the African continent. In addition to providing high-resolution HLA typing, the partnership will create a data repository that integrates and makes available data generated through next-generation sequencing as well as complementary donor information.

For patients with debilitating blood disorders, such as Leukemia or sickle cell disease, stem cell transplants are often the only realistic chance for a cure. The tissue selection relies on the careful matching of a donor's immunological profile with that of a patient's to increase transplant success and avoidance of unwanted side effects.

Using state-of-the-art molecular techniques, this process can today be guided in a precise manner, akin to using high-resolution photography in search of a person's biological twin. While success rates are in the upper quartiles in the developed world, they remain dire in Africa for at least two reasons: (i) stem cell typing isn't routinely done at high resolution and (ii) the number of donors registered on existing registries is low.

The Sunflower Fund is a non-profit organization dedicated to creating awareness, educating the public and recruiting blood stem cell donors in South Africa. The group also raises funds to cover the tissue-typing test costs involved in the recruitment of donors.

CPGR is a non-profit organization dedicated to providing state-of-the-art 'omics' services to South Africa's life sciences and biotech communities, originating from an initiative by the South Africa Department of Science and Technology (DST). The organization has created a cutting-edge Genomics platform, including Next Generation Sequencing (NGS) technologies, and has opted to make high-resolution typing solutions available for donor typing in Africa. To date, it has implemented a high-resolution (6-loci) and highest-resolution (11-loci) application in its partnership with The Sunflower Fund.

“Based on our experience in running a diversity of NGS applications, we were in a good position for expanding our offering to include high-resolution HLA typing”, said Dr Lindsay Petersen, Genomics Manager. “Through our partnership with Lancet Laboratories, we are able to make this high-end solution available immediately across South Africa and in 15 African countries”, added Dr Petersen.

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‘Research shows that the genetic ‘distances’ between African populations are greater than those observed between European populations,’ says Alana James, CEO of The Sunflower Fund. ‘This genetic diversity poses practical challenges to find HLA-matched unrelated donors, a challenge that is very relevant in the context of South Africa’s rainbow nation’, Ms James continued. “Our partnership with CPGR enables us to test at higher resolution molecular (DNA) level testing which is in line with international best practice thereby reducing cost and time implications in the search for a match for a patient,” she added

‘The partnership with TSF allows us to transform our technical capabilities into a social-impact delivering value proposition. Through our interaction with The Sunflower Fund and the World Marrow Donor Association we realised the disparity between international best practice and the technologies used in Africa currently’, said Dr Reinhard Hiller, CPGR’s Managing Director. ‘Through the aggregation of information-rich sequencing data, we will unravel subtle genetic differences that were previously uncharacterized in particular in individuals with African and mixed ancestral heritage. This will facilitate the development of innovative solutions to further improve the quality of tissue typing and donor/recipient matching.’

About CPGR

The Centre for Proteomic and Genomic Research (CPGR) is one of Africa's first fully integrated 'omics' service providers, built to leapfrog South Africa's ability to conduct information-rich biomedical research onto a globally competitive level. Amongst others, the organization offers the following 'omics' capacity: Next-Generation Sequencing: NextSeq500 (1x), MiSeq (1x), MiniSeq (1x), IonTorrent PGM (2x), IonProton (1x), for sequencing projects; Microarrays: Affymetrix GS 3000 and Affymetrix GeneTitan for genotyping and gene-expression analysis; Mass spectrometry: Thermo Q Exactive, Waters Xevo TQS triple quadrupole, SCIEX API4000 triple quadrupole and ABI 4800 MALDI-ToF/ToF for MS-Proteomics; High-throughput PCR: QuantStudio 12K Flex Real-Time PCR System, QuantStudio 3D Digital PCR System and ABI 7900 for qRT-PCR and genotyping applications; Automated DNA/RNA QC, library handling and sample processing; dedicated IT infrastructure and bioinformatic applications for data analysis and interpretation.

The CPGR is a non-profit company located in Cape Town, South Africa, based on an initiative by the Department of Science and Technology (DST), and financially supported by the Technology Innovation Agency (TIA). The CPGR combines state-of-the-art information-rich genomic and proteomic ('omics') technologies with bio-computational pipelines to render services and support projects in the life science and biomedical arena in (South) Africa, all run in an ISO 9001:2015 certified and ISO 17025 compliant quality management system. Among others, the CPGR has recently launched an accelerator program to stimulate the creation of South African start-ups based on 'omics' technologies and set up Artisan Biomed to develop and implement Precision Medicine solutions in



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(South) Africa. The organization uses the open-source Baobab LIMS for sample and data tracking; and, it has recently implemented a DRAGEN platform to enhance the development and execution of high-speed/high-volume NGS data-sets.

Information about the CPGR can be obtained at www.cpgr.org.za and www.cpgr.org.za/blog.

About The Sunflower Fund

The Sunflower Fund, a South African Non-Profit Company (NPC), is dedicated to creating awareness, educating the public and recruiting blood stem cell donors.

The Sunflower Fund pays for the cost of the tissue-type testing. This is fundamental to saving the lives of South Africans who need a stem cell transplant. The chance of finding a matching donor is 1 in 100,000 – and as ethnic origin plays a significant role in the search for a donor, South Africa's rainbow nation is at a distinct disadvantage, requiring a large pool of prospective donors.

Should you wish to become a donor, support one of the fundraising projects or make a financial contribution, please contact The Sunflower Fund on toll-free number: 0800 12 10 82. Visit www.sunflowerfund.org.za to learn more or look out for the DONATE button to make a cash donation via the website.