

Zille praises world's first open-source metabolic chamber in Stellenbosch

Stellenbosch has recently become home to one of approximately 20 metabolic chambers globally - and the first of its kind to be based on open-source technology.

This drew praise from the premier of the Western Cape, Helen Zille, who said: "HealthQ Technologies is a perfect example of a Silicon Cape start-up, and an illustration of the entrepreneurial spirit and scientific abilities of the Western Cape."

Enabling the tracking of human metabolism with an accuracy that far exceeds previous methods, this technology is set to revolutionise the way we think about exercise and nutrition.

Metabolic chambers are highly specialised scientific research tools used to learn more about human metabolic activity. They enable scientists to measure and characterise human metabolism under very specific controlled conditions over a broad range of activities, such as sleeping, eating, cycling, running, or the performance of various other forms of exercise. Data gathered from the chambers provide biological scientists with insights as to how human subjects react to different conditions at a metabolic level.

This type of information is of enormous value for the development of novel and increasingly accurate technologies for monitoring fitness, weight loss and general health and wellness. These are currently hot global investment topics experiencing explosive growth due, in part, to fast rising health care costs, coupled with a global obsession with achieving optimal health.

Help and support of a number of local businesses

Due to the complexity and high cost of construction, metabolic chambers are extremely rare. HealthQ Technologies, however, managed to build its chamber with the help and support of a number of local businesses willing to sponsor or provide at reduced cost to them some of the most expensive parts in the system. In an attempt to repay the goodwill showed to them, HealthQ Technologies decided freely to provide all information necessary to build such a chamber, following an open-source philosophy to enable the construction of similar chambers elsewhere on the continent and abroad.

Commenting on the open-source technologies incorporated in the metabolic chamber, Dr Riaan Conradie, co-founder and CEO of HealthQ Technologies, said: "We have constructed the chamber using several 'off the shelf' and easy-to-find components, including an Arduino-based micro-controller and accompanying source code, as well as the inexpensive Raspberry Pi microcomputer. Due to the use of these components and the gracious sponsorship of various local companies that share our goals to promote sport and scientific collaboration in South Africa, design and construction was achieved in record time - and this at less than one-tenth of the typical cost of other metabolic chambers."

Deep scientific expertise in the Western Cape

Showcasing the comparative strength of South Africa as a sports nation, HealthQ Technologies draws on the deep scientific expertise in the Western Cape in the fields of exercise physiology and sports medicine. The team boasts an impressive, interdisciplinary group of engineers, computational systems biologists, mathematicians and biochemists, including Dr Franco du Preez, co-founder and HealthQ Technologies' vice-president of science.

Laurie Olivier, US-based venture capitalist and lead founding funder of HealthQ Technologies is chairman to the company's board of directors and serves along with Conradie and leading investors Rachel Slack and Justin Stanford of 4Di Capital, from whom the company has just raised a substantial investment round. When asked to comment, Olivier said: "HealthQ Technologies is a model of cash efficiency for other local start-ups. The chamber has drawn heavily on the innovative can-do capabilities of an extremely entrepreneurial team and incorporates refurbished equipment sourced from online bidding sites. The venture was founded in the attic of Conradie's apartment - an ideal way to conceive a start-up."

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