

An African mother with a child in a sling on her back

IMAGING THE WORLD

2013 Nominet Trust 100 Winner

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2013

USING NOVEL ULTRASOUND TECHNIQUES TO IMPROVE HEALTHCARE ANYWHERE WITH A PHONE SIGNAL.

Project URL: imagingtheworld.org

Project Twitter: [@imagingtheworld](https://twitter.com/imagingtheworld)

- Health
- Internet
- Mobile
- Physical Computing

In the early 1990s, radiologist Dr. Kristen DeStigter took a revolutionary medical technology to remote villages on the border between Kenya and Sudan: ultrasound. DeStigter had travelled there to research a parasitic disease but she soon found her magical ultrasound machine was being used to diagnose a wide variety of conditions, including life-threatening complications in pregnancy. She returned from that trip determined to find a way to develop a portable, low-cost ultrasound machine that could be used in the poorest communities in the world. The search took her almost two decades.

By the late 1990s, DeStigter had a portable ultrasound prototype which she took to Honduras after Hurricane Mitch as part of a medical outreach team. But though the machine itself was portable there was still a drawback. It needed a skilled technician to operate it and a specialist doctor to make sense of the results.

The breakthrough came in 2007 when DeStigter began working with Dr. Brian Garra, a specialist in digital signal processing who had been promoting a new technique called voluming scanning. Volume scans take many more images as the transducer is swept across a patient's body. As a result volume scanners do not need a skilled operator: someone with basic training can generate a usable image.

Yet Garra and DeStigter still had an unresolved problem: how to get those images analysed by a specialist. The solution, they hope, will come from the

mobile phone. By connecting the ultrasound to a mobile they believe they should be able to send the images to any one of a thousand specialists in the world to provide a diagnosis.

Imaging the World is the organisation DeStigter and Garra have created, to take this low-cost health technology to the world, using novel ultrasound techniques and the internet, to make the most sophisticated diagnostic techniques available to anywhere there is a phone signal.

The system is being trialled in Uganda, with plans to spread from there to the rest of sub-Saharan Africa and on to India and China.

Image 'Mother and child in Africa' courtesy of AIDS Vaccine

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