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How Three Women Are Changing the Landscape of Medical Technologies for Emerging Markets

May 14, 2019

Carolyn Yarina, CEO of Sisu Global Health, and her co-founders Gillian Henker and Katie Kirsch, are three pieces of a puzzle coming together to combine their expertise to change the world and save lives. Their goal is to revolutionize the way that medical devices are designed for emerging markets by creating the best possible commercial success with their model. Because their company is seeking this kind of impact and social venture they are often associated with the non-profit strategy, however, Yarina says "A lot of our company is relatively similar to the US models, it's just the market is different."

After founding her first medical device company in India, CentriCycle, Yarina became disillusioned by the non-profit model and realized it's not an effective way to make a sustainable, long term change in developing worlds. She used seed capital from winning competitions and awards, like entrepreneur of the year at the University of Michigan, to start Sisu Global Health. Yarina reached out to Henker, a former

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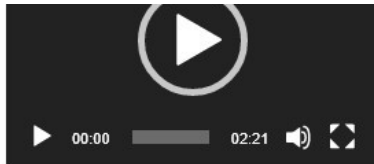
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engineering classmate at the University of Michigan, who had already founded a medical device company in Ghana and had experience in building these devices. Yarina wanted to combine their backgrounds of business and knowledge of the medical device industry.

Kirsch serendipitously joined the founders through a misspelled job posting. She had also previously worked in developing countries through the Fulbright Program in Rwanda and contributed her background in private-public partnerships to the group. The three women combined their backgrounds to fit these pieces of the puzzle together and create a groundbreaking mission.



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Many larger US companies have tried to break into the emerging markets by taking their medical devices, pairing off features, and selling them at a lower cost. This strategy doesn't work because the infrastructure and technology is completely different than that of the people they are trying to reach.

Sisu Global Health is changing the landscape of medical treatment in emerging markets by creating cutting-edge, life-saving tools for doctors and patients of the developing world, with their needs in mind. Their first product, Hemafuse, gained regulatory approval in Kenya and Ghana and has been helping to combat the 50-60% donor blood shortage across Africa.

Hemafuse is a device that is able to collect and filter a patient's own blood to be transfused back to the patient during surgery, without using electricity. Donor blood isn't always available in many parts of the world, and if it is, it's quite costly. Surgeries require at least two units of transfused blood for one patient. The cost of a Hemafuse device is comparable to one unit of donor blood, but the device can salvage multiple units for one patient. It can then be autoclaved and reused again over multiple surgeries for different patients, saving hundreds of dollars for every surgery.

Even if the funds for surgery are available, the blood is often not. The inspiration for Hemafuse came from Sisu's CTO, Gillian Henker, after she observed what happens in Ghana when donor blood runs out. In America, when there is no donor blood available, an option is to recycle and transfuse the patient's own blood. However, the large, costly, electrical mechanical equipment that powers this process in the US is not suitable for hospitals in Ghana.



Instead, doctors are using simple innovative techniques to recycle blood using ladles to scoop blood from a patient with an internal injury, filter it through gauze, and transfuse it back to the same patient. This technique is all that can be managed with their current technologies. It saves lives, but it is still dangerous to both the patient and the clinician.

Yarina spent time in Kenya this past summer where the device was being used in a large hospital. A woman with O- blood type sustained a traumatic injury that required



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surgery. The surgeons told Yarina that on average, it takes about 8 hours to get a unit of blood delivered, time the patient simply does not have. Using Hemafuse, surgeons were able to salvage 2 units of her blood from the internal injury to perform the surgery and save her life.

"If there is one message here, it would be to challenge the perceptions and biases that we have in regards to medical devices in Africa or other problems that exist in the world. Approach such issues from a lens of how can you create shared value? Building Sisu is creating a sustainable, scalable, profitable business. Just because we're focused on emerging markets and Africa doesn't mean that we don't have the same expectations in terms of margins or returns as any other for profit company."

Yarina, Henker and Kirsch have attracted several notable investors who are backing their business model. Baltimore-based **Camden Partners** has lead their last two rounds of investment, which also included AOL cofounder **Steve Case's Rise of the Rest Seed Fund**. Sisu received early funding from **TEDCO** through the **Technology Commercialization Fund (TCF)** as well as the **Abell Foundation** who was part of their early seed funding round.

Yarina has a very clear philosophy that has shaped Sisu's strategy and its early success. "You can 'do good' and do well at the same time...With Sisu and with other companies, the more commercial success you have, the more impact you will have."

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Alexis Taylor is the Science & Biotechnology Writer for BioBuzz, the Scientific Copywriter for Workforce Genetics and a Baltimore native. Alexis' content delivers the latest complex scientific ideas and concepts in a simple yet interesting way. Since graduating from North Carolina State University with a BS in Microbiology, she has worked in a variety of healthcare sectors including clinical research, biomanufacturing, regulatory compliance and has earned the Executive Certificate in Health Care Leadership and Management from the Johns Hopkins University Carey Business School.



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