InnovationU

A Startup Case Study: SageSpectra

April 16, 2024

Texas A&M Memorial Student Center | Webinar

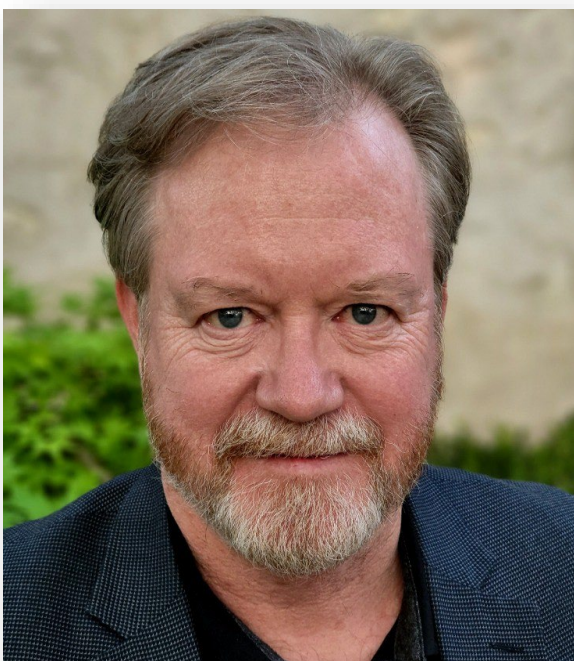**TEXAS A&M INNOVATION**

Welcome

Pete ONeill

Chief Innovation Officer
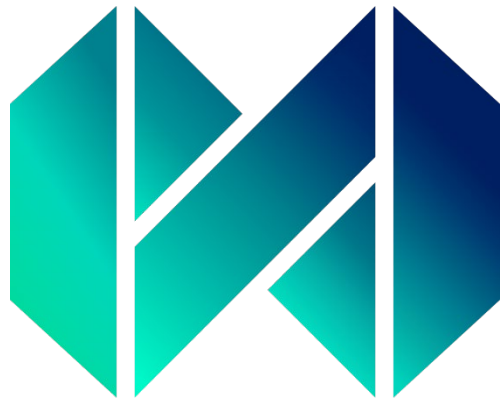Texas A&M Innovation

Panelists
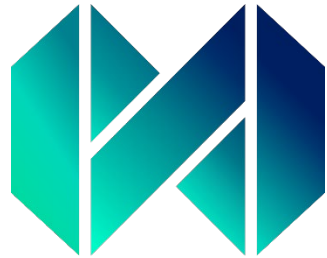

John Hanks
Founder and Inventor
SageSpectra

Madi Heck
Co-founder and CEO
SageSpectra

TEXAS A&M
INNOVATION

SageSpectra

Low-cost, fast Peripheral Arterial Disease screening

SageSpectra
Low-cost, fast Peripheral
Arterial Disease screening

Mission: Redefine healthcare through the fusion of multispectral technology, patient information, and AI, enabling proactive detection, personalized care, and revolutionary monitoring solutions for improved patient outcomes.

Initial Application: Early Screening for Peripheral Arterial Disease to prevent complications and avoid long-term acute care costs.
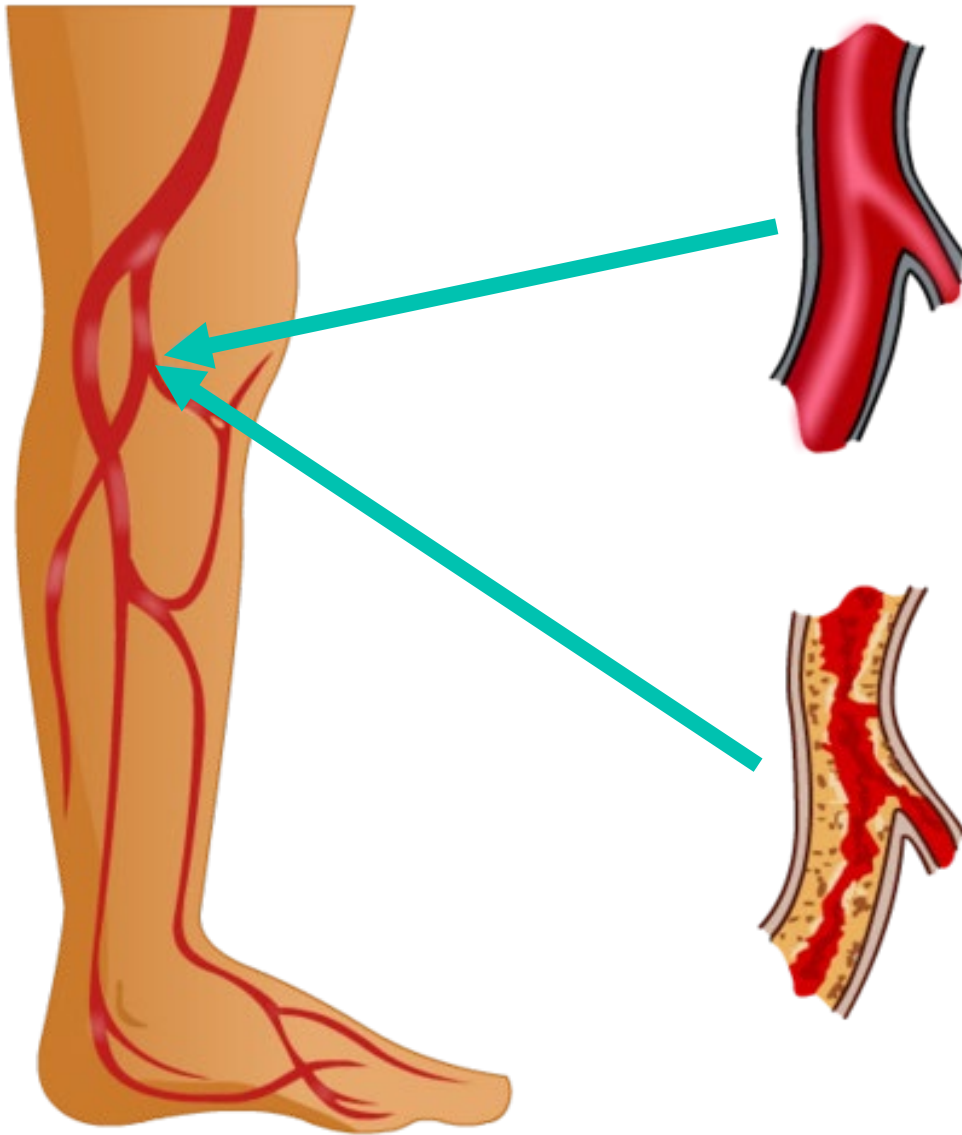
Peripheral Artery Disease (PAD)

Narrowing or blocking of the arteries that carry blood from the heart to the legs and arms.
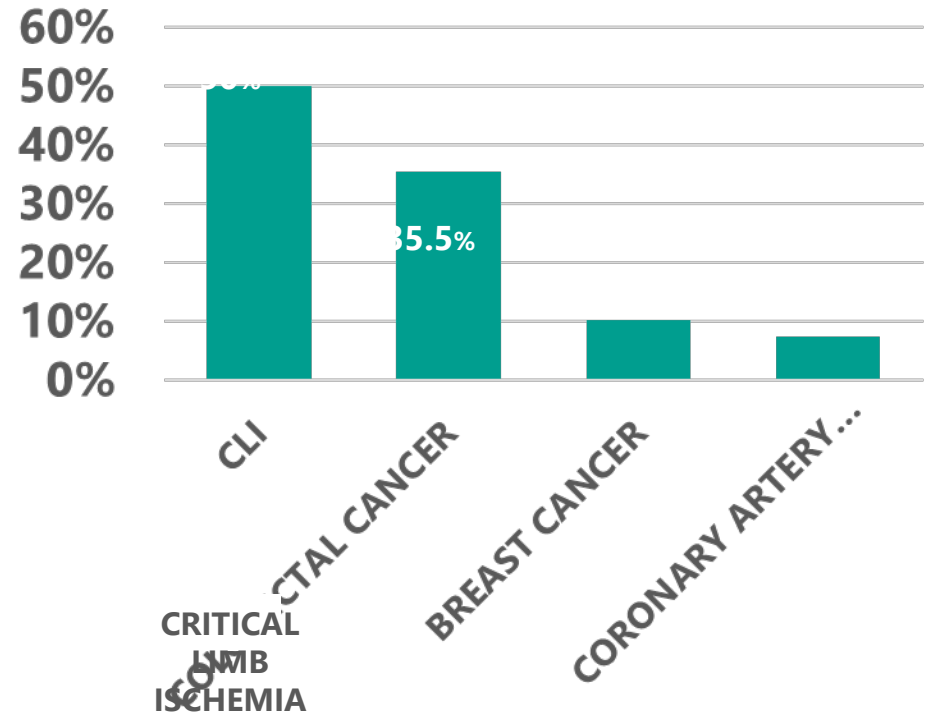
Without intervention the outlook is bleak

21%

PAD patients have 21% increased risk of heart attack, stroke, hospitalization, or death

Advanced PAD called Critical Limb Ischemia leads the 5-year all-cause mortality rates

5 Year All-Cause Mortality Rates

CRITICAL LIMB ISCHEMIA

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Early Diagnosis

With early diagnosis, treatment is low-cost, simple and effective

Early-Stage Interventions
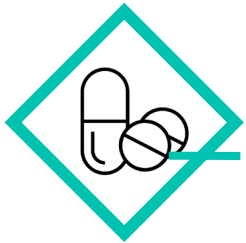
Statins, ACE inhibitors and Beta blocker therapy

Lifestyle changes

Results

Reduced mortality risk ranging from **20 to 54%** over 8-year period

Our Solution

SageSpectra is a low-cost, portable device **that accurately screens any patient at risk of PAD** in <3 minutes.

Product

How it Works
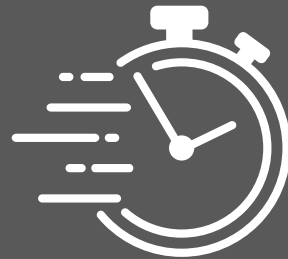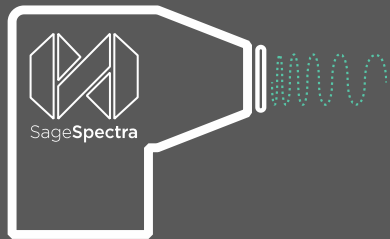
Multiple wavelengths of light projected into tissue measure tissue optical absorption and toe ppg.

Four total measurements on each leg. Each measurement takes ~15s.

Tissue absorption, toe ppg, and patient demographic data are used as inputs to predict PAD.

Our Method
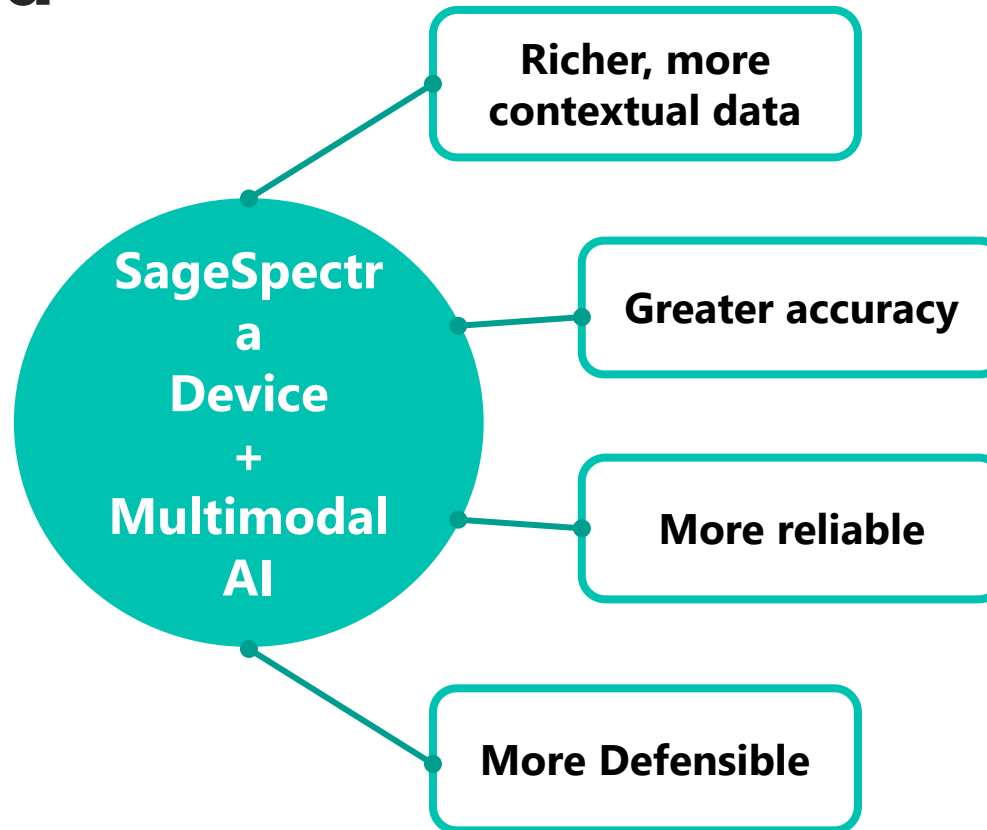
Validation Trial Results

Table 1: SageSpectra Preliminary Data Set

	n (limbs)
PAD: Monophasic or Biphasic in either Dorsalis Pedis or Posterior Tibial arteries	25
Without PAD: Triphasic in both Dorsalis Pedis & Posterior Tibial arteries	24
Total	49

	n (limbs)
Low ABI≤0.9	13
Normal 0.9<ABI≤1.4	22
Non-compressive or ABI>1.4	14
Total	49

Validation Trial Results

Table 2: Proprietary Algorithm Results for Predicting Obstruction[1]

	Accuracy
SageSpectra PAD Algorithm (n=49 limbs)	86.5%
Ankle Brachial Index (n=35 limbs)	62.8%

Table 3: Competitor Digital PAD Algorithm Results for Predicting Obstruction

	Accuracy
Competitor Digital PAD Algorithm (n=360 limbs)[2]	83.6%
Ankle Brachial Index (n=360 limbs)	75.6%

1. Accuracy reported using same k-fold cross validation method
2. *Non-invasive Detection of Vascular Disease of the Lower Extremity; Clinical Evaluation of QuantaFlo™ Compared to Doppler and Definitive Imaging, Schaefer, M. et al*

Future Potential Use Cases
Tissue Health

Potential for Wound Healing

Appropriate amputation site

Pressure Injuries

Surgical Flaps

Exclusive Licensing Agreement with Texas A&M University

Established partnership with The S.A.V.E. Clinic. Commitment from Espada Vascular, Hospitals of Providence, and Vascular Institute of Phoenix for future clinical trials.

First Feasibility Trial Completed. Next study underway January – April 2024.

Internal funding through licensing and contracting agreements for alternative applications expected to generate $120k in NRE revenue and additional contracting fees of $15k-$30k.

Working Gen 2 Prototype

Two patents:

US 11/847,294 Granted (Jan 2. 2024)

US 18/487,268 Pending

SageSpectra

Where Are We Now?

Board

Madi Heck
CEO
MBA, MEng

John Hanks
Director of Business Dev.
30+ years industry experience

Dr. Michel Saint-Cyr
CMO
MBA, MD Plastic Surgeon

Dr. Amir Zavareh
CTO
Ph.D. Electrical Engineering

Advisors

SageSpectra

Dr. Lyssa Ochoa
Official Advisor
Vascular Surgeon
Founder – The S.A.V.E. Clinic

Advisors listed have committed their clinics to serve as clinical sites for upcoming SageSpectra clinical trials

Dr. Jeffrey Martinez
Unofficial Advisor
Vascular Surgeon
Founder – Espada Vascular

Dr. Sandeep Rao
Unofficial Advisor
Interventional Radiologist
Hospitals of Providence

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Thank You

20M Americans affected by PAD

It's time to help them!

To further the conversation, contact Madi: Madi_Heck@sagespectra.com
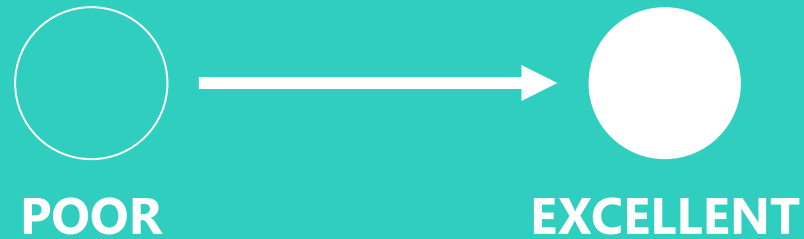
Appendix

Competition

User Needs:	Fast Measurements	Low Cost	Accurate	Portability	Nurse or MA

POOR → EXCELLENT

SageSpectra
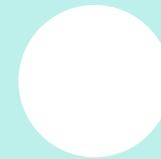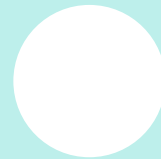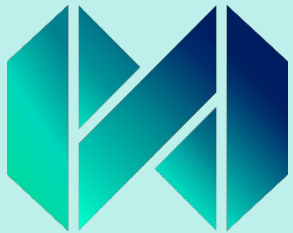
	Fast Measurements	Low Cost	Accurate	Portability	Nurse or MA
SageSpectra	●	●	●	●	●
QuantaFlo	◐	◔	◐	●	●
Ankle Brachial Index	○	◐	◐	○	○

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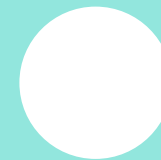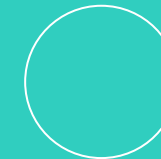
Business Model: Solution as a Service

Targeting Home Healthcare Companies

$220

Subscription/ Month

Customers pay a $220 subscription per month per device.

*Price is based on COGS and customers' price for services.

SageSpectra

Second feasibility trial

Design device for manufacturing & manufacture 10 devices
-Proposal & Quote Received from Paragon Innovations

'24 **Begin *preparation* for multisite clinical trials (n=300)**
-Commitment from four clinics to acts as clinical sites

Conduct multisite clinical trials (n=300)

'25 **Work towards 510k approval**

For Year 2024 activities, SageSpectra is pursuing $1.25M in funds

510k approval

'26 **Start making revenue**

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Questions & Answers

Texas A&M Innovation Future Events

- 10th Annual Texas A&M New Ventures Competition, May 21-22, 2024

- Innovation Connect, Summer 2024

- Innovation Forward "IF" Conference, November 11-12, 2024, Hall of Champions at Texas A&M University

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Thank you!

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