

SONNEST

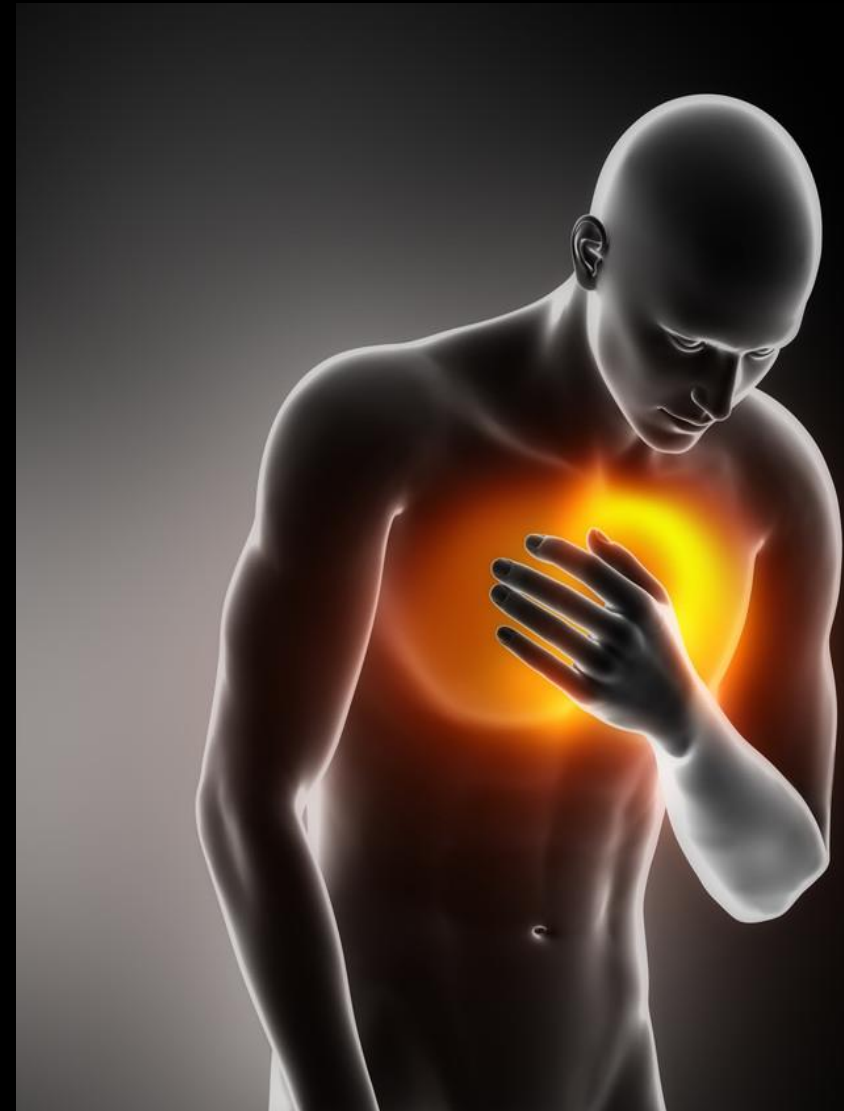
Voltage-Activated Ultrasound Agent
for Myocardial Perfusion Imaging

CONFIDENTIAL



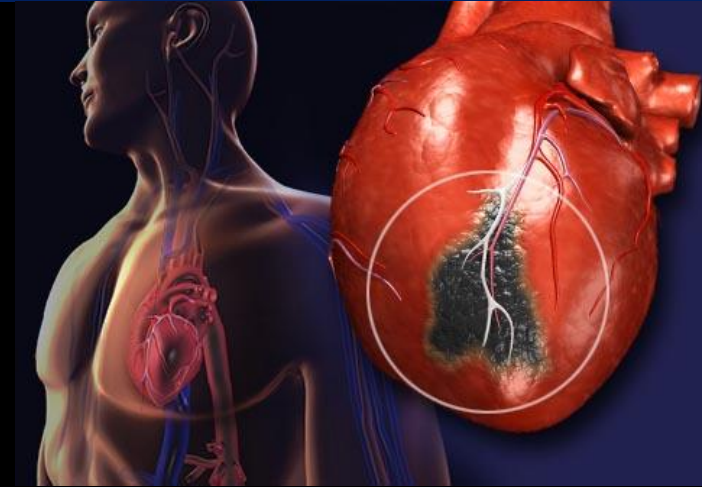
“Is my patient at risk for a heart attack?”

Current techniques
(SPECT, PET, CT, Cath)
require:



Significant Unmet Clinical Need

Tens of millions of patients each year experience **symptoms of chest pain or shortness of breath** requiring functional or anatomical testing



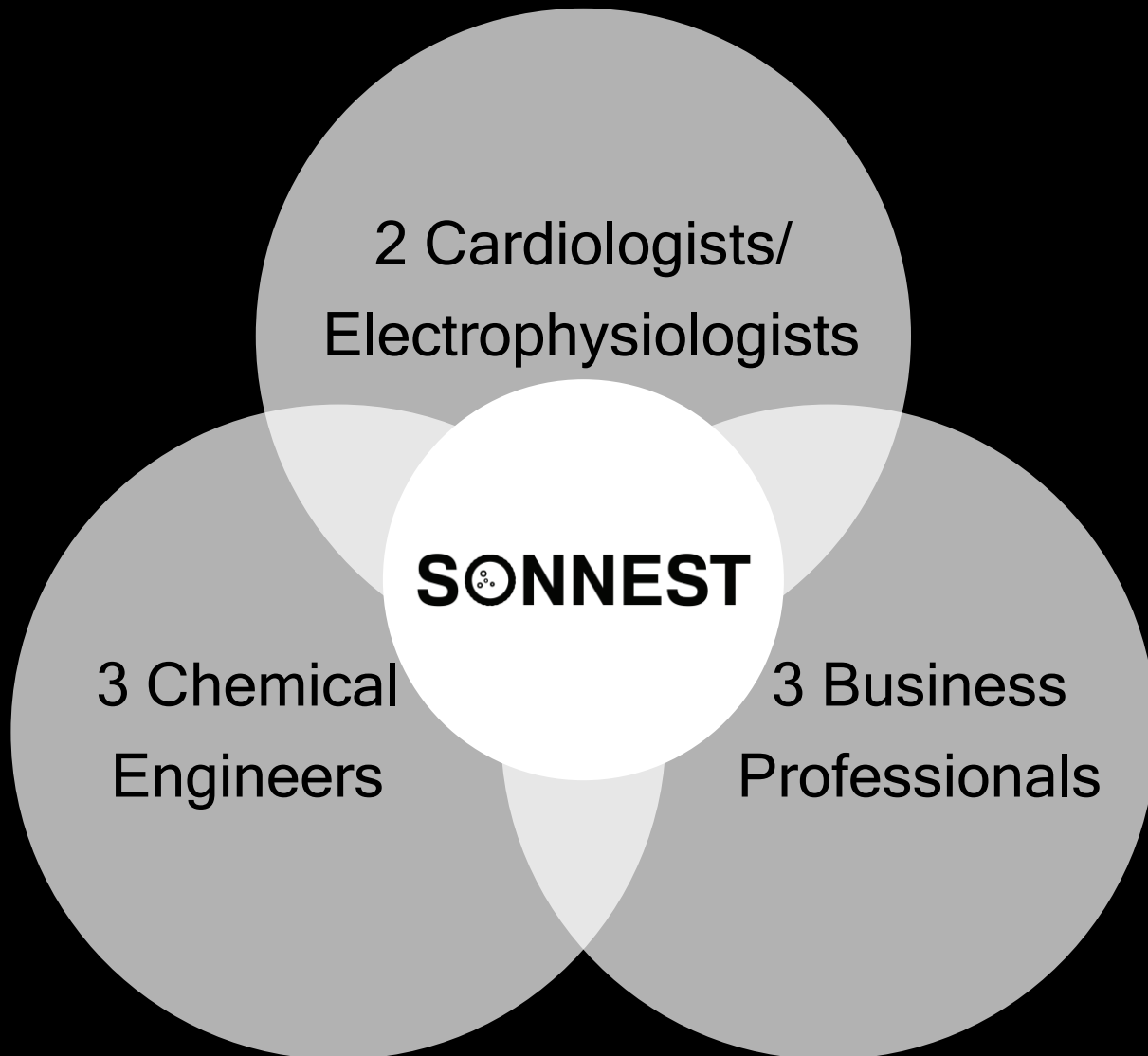
Doctors cannot see blood flow or lack thereof in capillaries of the heart muscle

Current Gold Standard Tests Require:

1. Precious time – >36 hours to rule out cardiac issue
2. Radiation – nuclear or X-ray
3. Invasive coronary angiography
4. Significant infrastructure – expensive, immobile equipment

NO current method can show point-of-care myocardial perfusion in real-time

Strong Cross-Functional Team



Talented engineering and clinical team has worked on project together for >3 years

Management team has worked together for >10 years

- Collectively secured > \$50M in dilutive and non-dilutive funding
- Sold multiple companies
- Founded Vapotherm (NYSE: VAPO) & Harpoon Medical (acquired by Edwards)

Clinical and Engineering Teams



Steve Wrenn, Ph.D.

Fulltime CTO during sabbatical
Professor, Chemical Engineering
Drexel University



Brett Angel, MD

CMO & Chairman, Medical Advisory Board
Cardiologist Electrophysiologist
Drexel University, Medicine



Michael J. Cimorelli

Ph.D. Student & Fulbright Scholar
Drexel University & AMC Netherlands
Chemical Engineering



Andrew Kohut, MD

Clinical Advisor
Cardiologist
University of Pennsylvania, Medicine



Michael A. Flynn, MS

Full-time Research Scientist
Recently graduated from Drexel
MS Thesis on ELECTRAST



Aaron Fafarman, Ph.D.

Engineering Advisor
Associate Professor, Chemical Engineering
Drexel University

Wheelhouse Ventures - Management Team



Bill Niland, President & Executive Chairman

Serial Entrepreneur, successfully founded & exited four companies

Sold last company (Harpoon) to Edwards for \$100M + \$150M with \$6.5M of dilutive capital (>100% IRR)

Prior company (Vapotherm, VAPO) went public in 2018 and has treated >1.5M patients



Peter Boyd, CEO (JD/MBA)

Serial Entrepreneur with strong business and legal background

Sold last company (Harpoon) to Edwards for \$100M + \$150M with \$6.5M of dilutive capital (>100% IRR)

Participated in >\$150M in financings & \$6.5B in strategic transactions as an attorney at Latham & Watkins



Mark Collins, CFO (CPA)

Serial Entrepreneur with strong finance and operations background

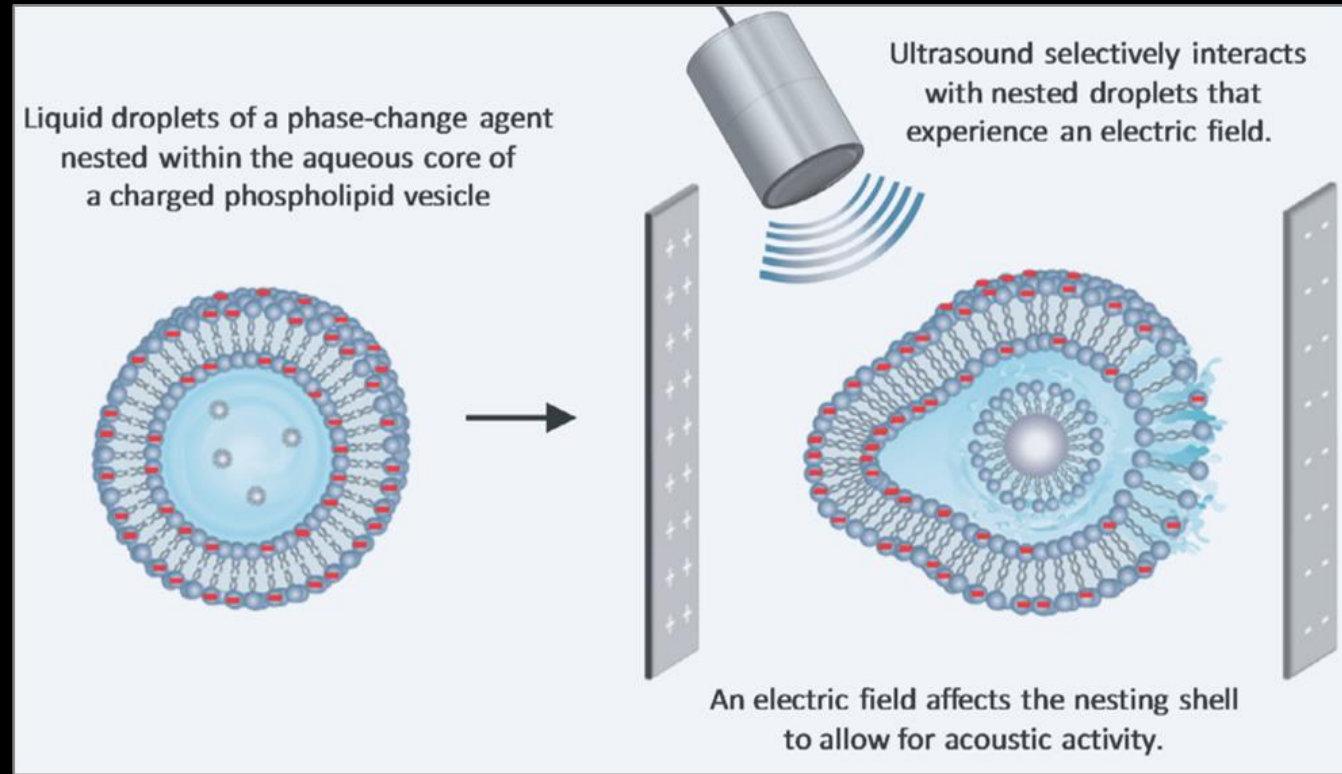
Sold last company (Harpoon) to Edwards for \$100M + \$150M with \$6.5M of dilutive capital (>100% IRR)

9+ years at Vapotherm (VAPO) building corporate foundation to support growth (\$1.37M to \$13.9M)

Worked together for 10+ years, co-founded 4 companies together, secured >\$50M in capital

How ELECTRAST™ Works

In vivo, ELECTRAST™ **activates** with echocardiography and the heart's local depolarizing electric field if tissue is **perfused and viable**



In Vitro Activation:

Ultrasound Parameters: 0.28mi, 0.2/0.4 MHz



Before Sample

2 mL Sample

+ Echo + 1.25 V/cm

+Echo+3.25V/cm

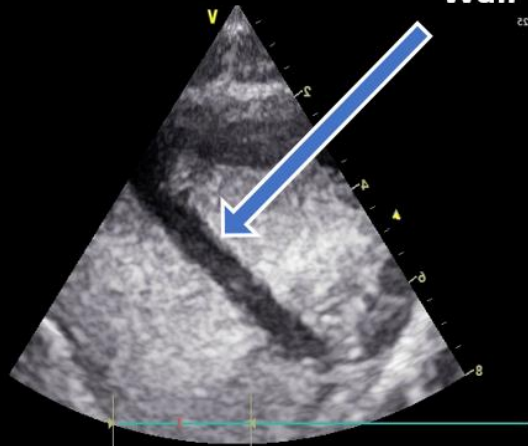
Selectively Activates in Perfused Myocardium

Why not just use other
Ultrasound Contrast Agents?

Chamber bright, wall dark



Long Axis View



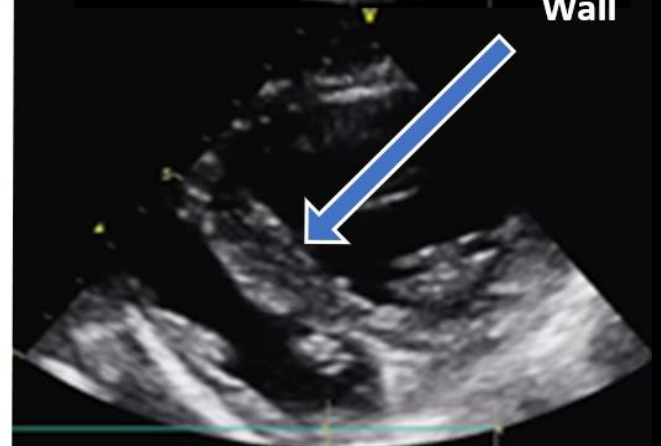
Pre Electrast

Chamber dark, wall dark



Post Electrast

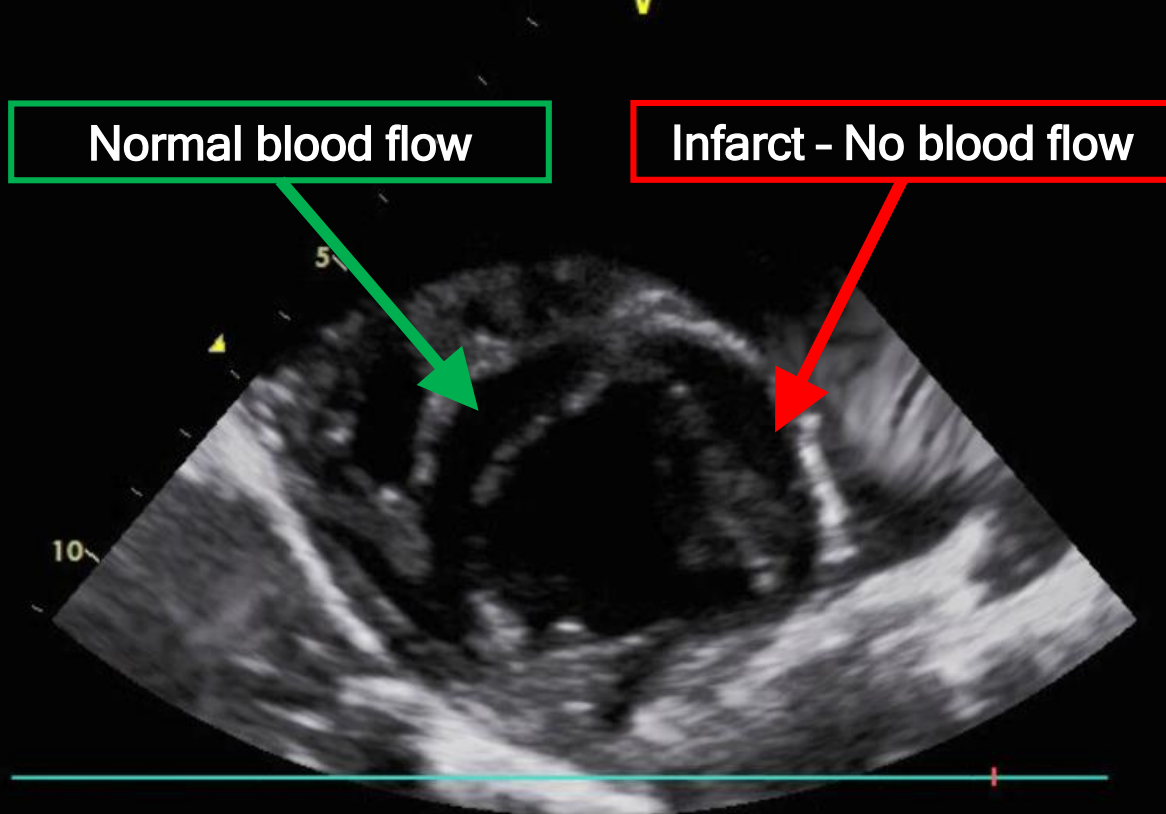
Chamber dark, wall bright



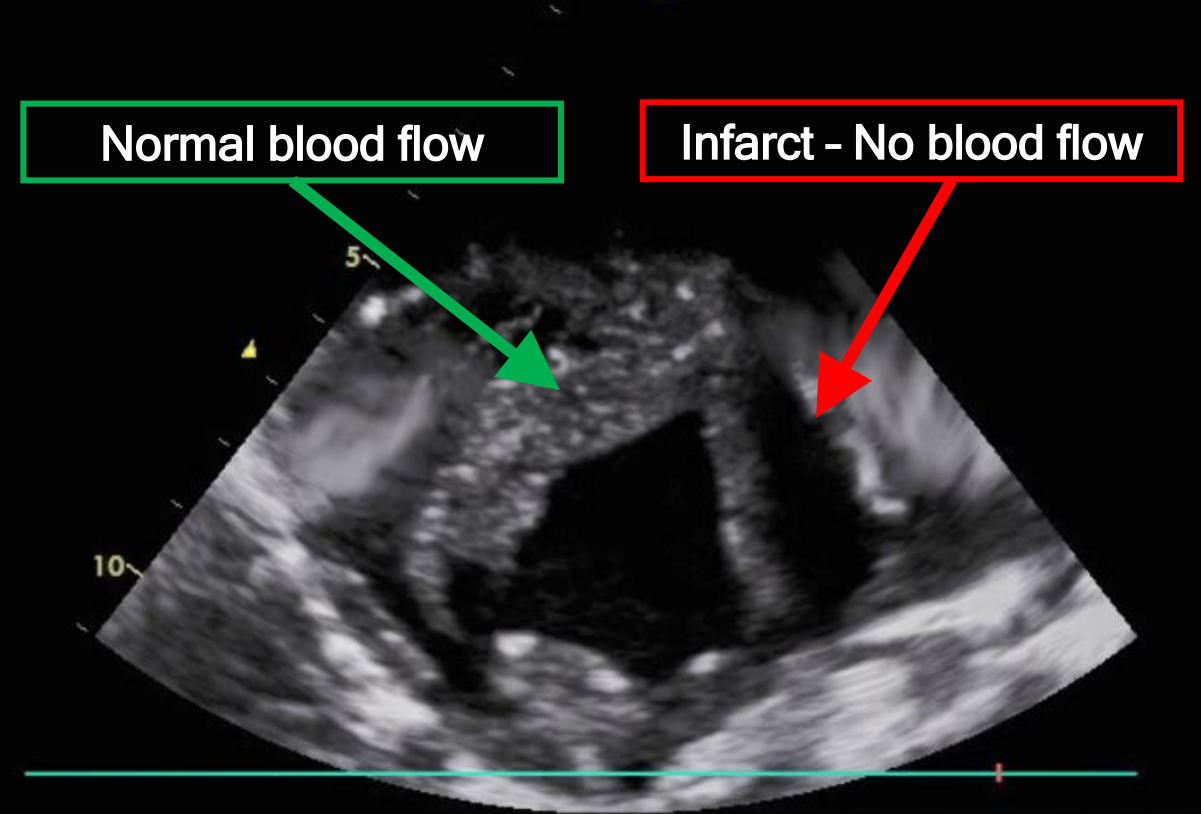
Validation of the ELECTRAST™ Solution

Results of Infarct Validation Study in Swine

Without ELECTRAST™

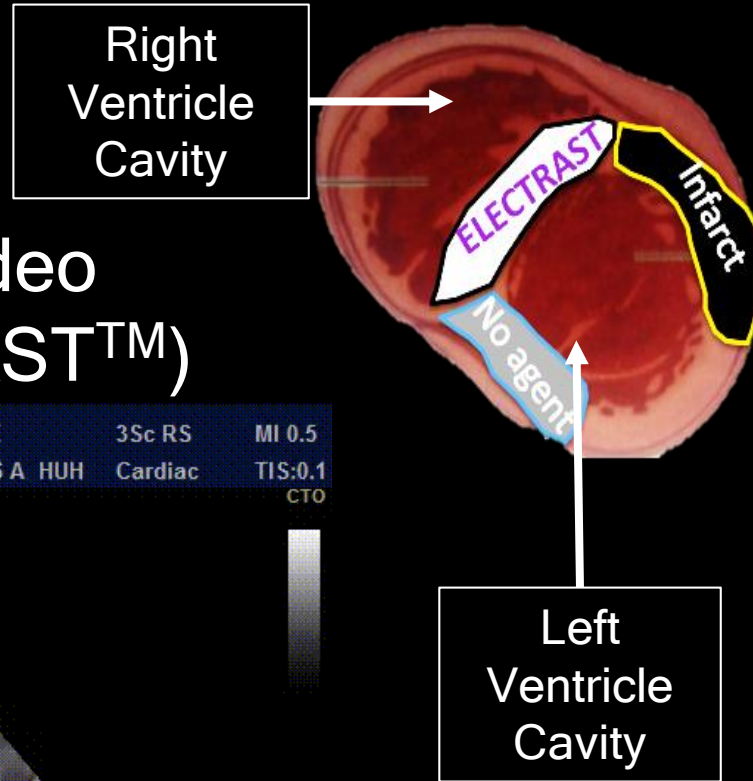


With ELECTRAST™

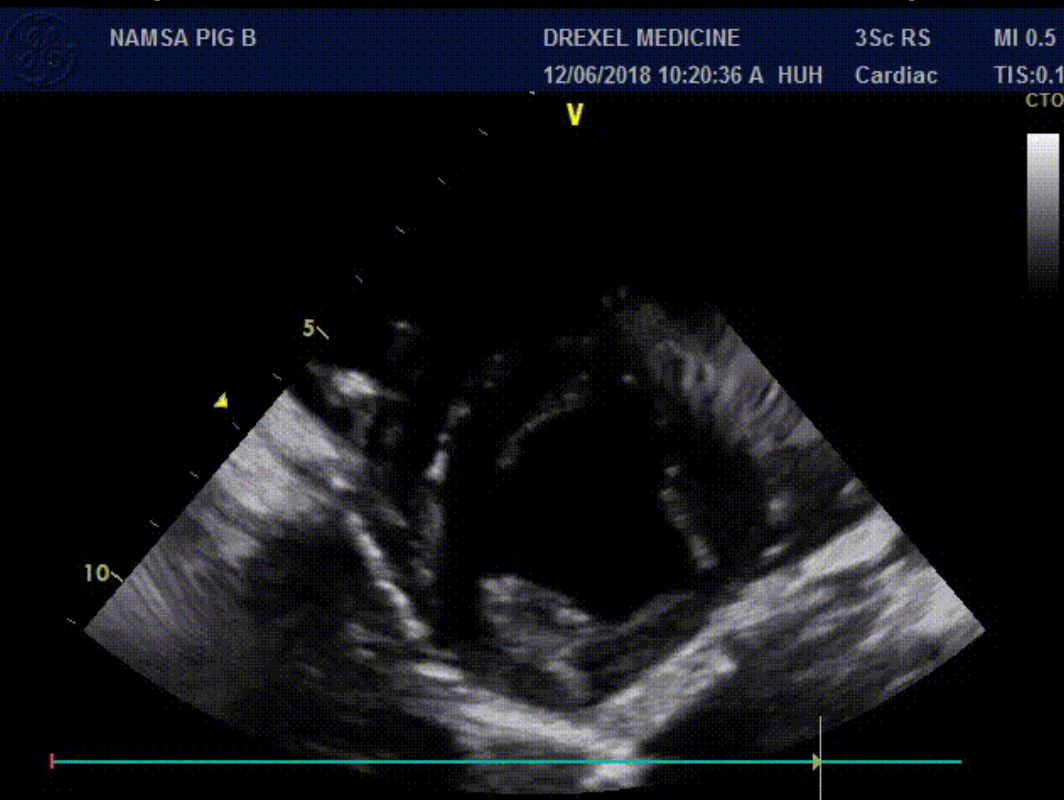


Short axis views of left ventricle (Identical imaging settings and conditions)

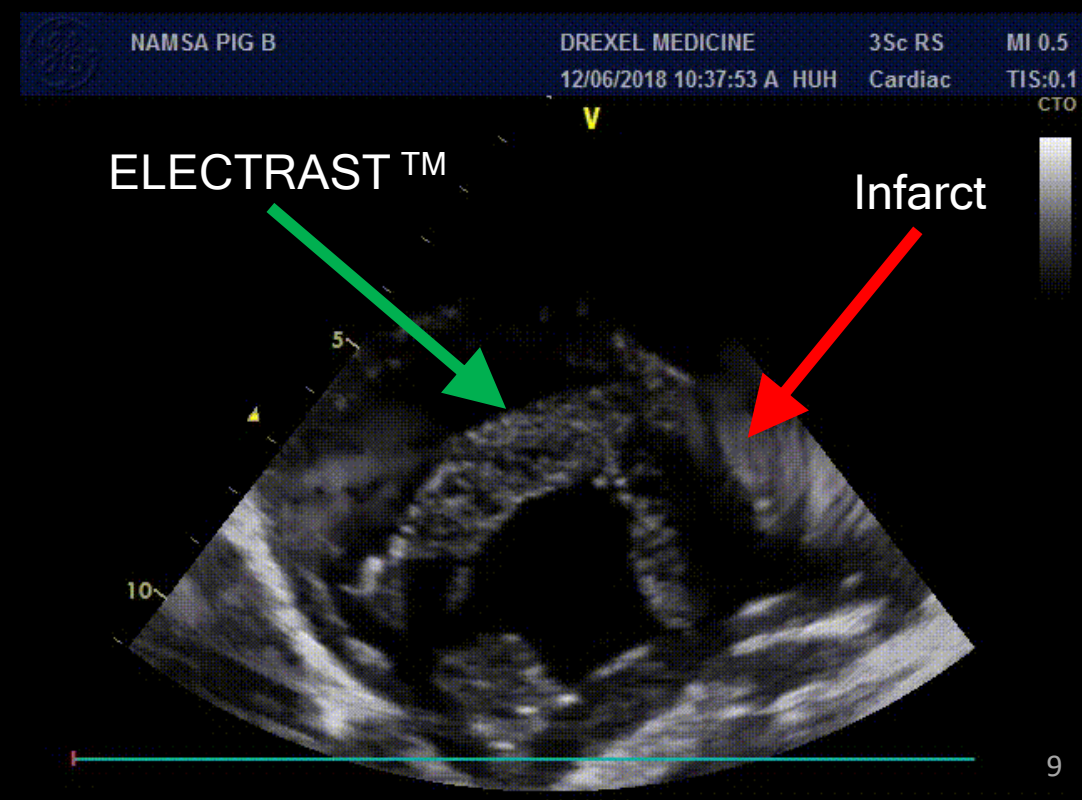
Video Results of Infarct Validation Study in Swine



Raw Clinical Video
(before ELECTRAST™)



Raw Clinical Video
(after ELECTRAST™)

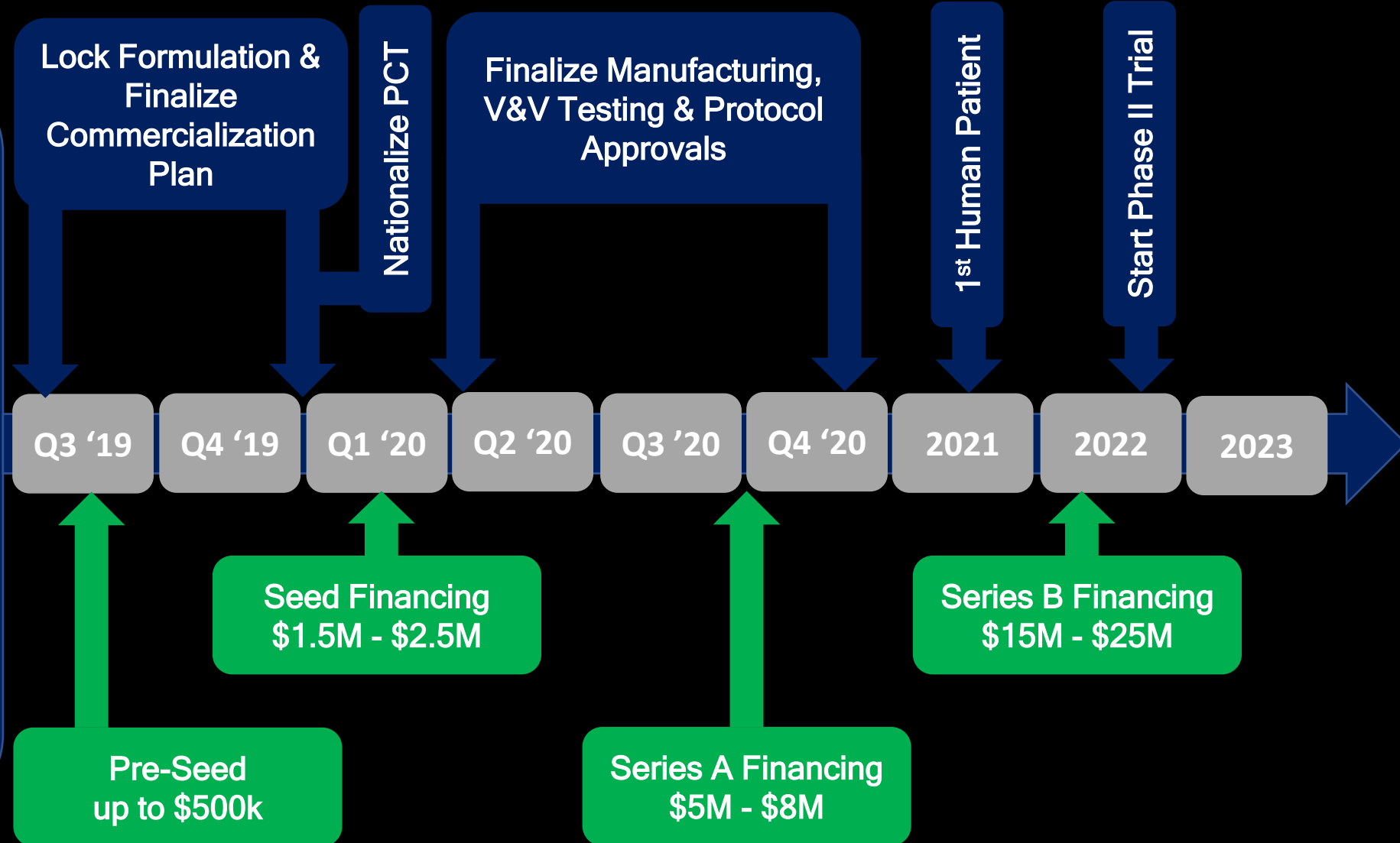


Competitive Landscape

	ELECTRAST	Coronary Angiography	SPECT	PET	CCTA	cMRI	EKG	Echo Contrast Agents
Image Blood Flow through Heart Muscle (microcirculation) in Real Time	✓	X	X	X	X	X	X	X
Direct Visualization of Myocardial Infarct/Ischemia	✓	✓	✓	✓	X	✓	X	X
Minimally Invasive	✓	X	✓	✓	✓	✓	✓	✓
Does not Require Ionizing Radiation	✓	X	X	X	X	✓	✓	✓
Quick Procedure (< 20 min)	✓	X	X	X	X	X	✓	✓
Low Cost	✓	X	X	X	X	X	✓	✓
Performed at Point-of-Care (bedside or clinic)	✓	X	X	X	X	X	✓	✓

Milestones & Fundraising Timeline

1. Secured >\$500k Drexel / Coulter grant funding
2. Advanced prototype developed
3. Proof-of-Principal in large animal studies completed
4. Developed robust IP portfolio
5. Formed Delaware C-Corp
6. Recruited talented cross-functional team



SONNEST Summary

NO cardiac imaging modality can image blood flow through cardiac muscle in real time

>10 million Medicare imaging cases per year that could benefit from ELECTRAST™ imaging (based on 2010 data). Medicare only represents a subset of all cardiac imaging cases for which ELECTRAST™ could be beneficial.

ELECTRAST™ is a simple, cost effective solution

- 1. Injectable liquid (FDA approved materials)**
- 2. Activated by the heart's own electric field**
- 3. Visible with current clinical ultrasound systems**
- 4. Validated by 3rd Party (contract research organization) in large animals, 2018**

Initial indication > \$2B per year opportunity