

# HemoSonics Overview

October 15, 2012



## Our Business

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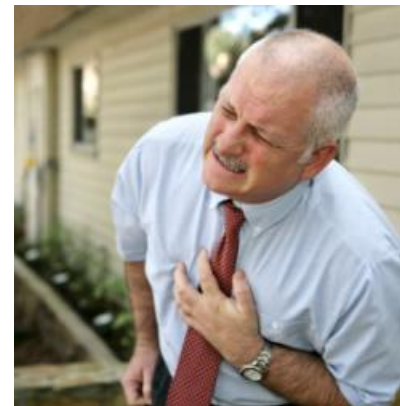
- We replace guesswork with data to manage bleeding and clotting
- A point of care in vitro diagnostic platform using an array of consumable test cartridges

# The Problem

- Bleeding is the #1 cause of lost life-years in the developed world<sup>1,2</sup>
- Blood clots are the #1 cause of death in the developed world<sup>3</sup>

Trauma

Labor &  
Delivery



Heart Attack

Stroke

Pulmonary  
Embolism

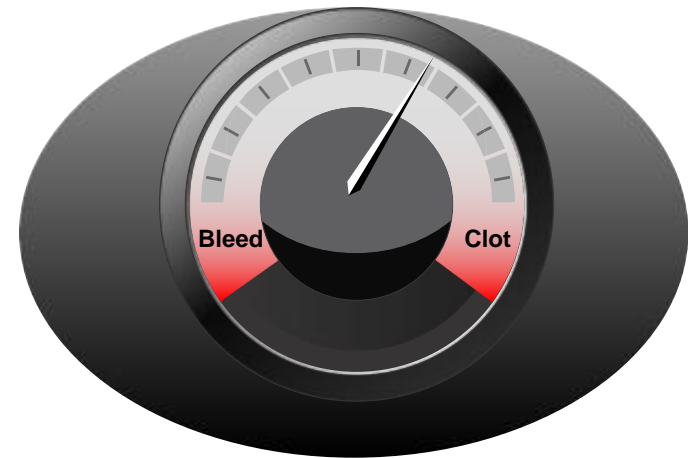
1. **Epidemiology and Modern Management of Traumatic Hemorrhage.** Critical Care. Vol 9 Supp 5:S1-S9 (2005)

2. **Maternal Mortality in 2000: Estimates by WHO, UNICEF, and UNFPA.** WHO. (2004)

3. **Deaths: Leading Causes for 2004.** NVSR Volume 56, Number 5. 96 pp. (PHS) 2008-1120

# The Path Forward

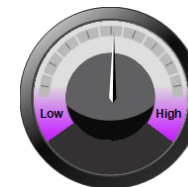
- Clotting and bleeding have systemic causes
- Targeted treatment saves money and improves outcomes<sup>1-6</sup>
- Improper treatment is harmful and costly
- Treatment is guided mainly by guesswork



**Coagulation  
Factors**



**Fibrinogen**



**Platelets**



**Clot  
Stability**

1. Relationship of blood transfusion and clinical outcomes in patients with acute coronary syndromes. JAMA, 2004.
2. Effect of peri-operative red blood cell transfusion on ... mortality following CABG surgery. Eur. J. Cardiothorac. Surg., 2005.
3. Blood Transfusion is Associated with Increased Resource Utilization. Annals of Cardiac Anesthesia 2008.
4. Cost reduction of perioperative coag. management in cardiac surgery: value of bedside TEG. Eur J Cardiothorac Surg, 2007.
5. The clinical and cost effectiveness of TEG/TEM. Health Technology Assessment Report 11, 2008.
6. Optimizing Cardiac Surgery Symposium. San Diego. 2008.

# The Solution

- Point of care test to guide therapy
- Ultrasound measures stiffness of a forming blood clot
- Instrument + consumable cartridge
- Target price:
  - Device: > \$20k  
(\$5k COGS)
  - Consumable: > \$50  
(\$5 COGS)



## Strong Protection

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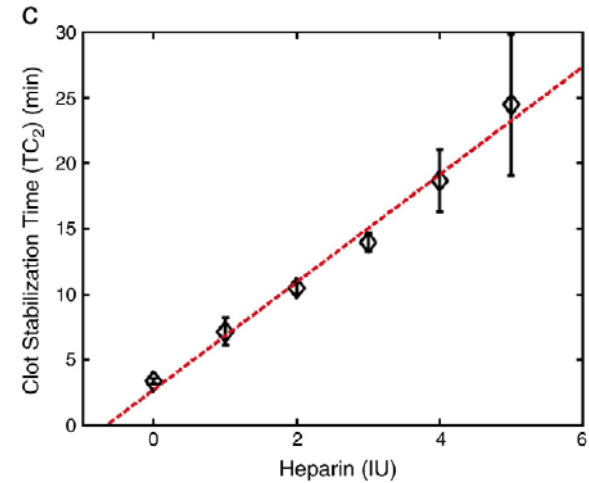
Protected by extensive know-how, **4 issued,**  
and **6 pending patents**

In the last year, developed IP around  
**consumable, user interface, display, and  
novel signal processing**

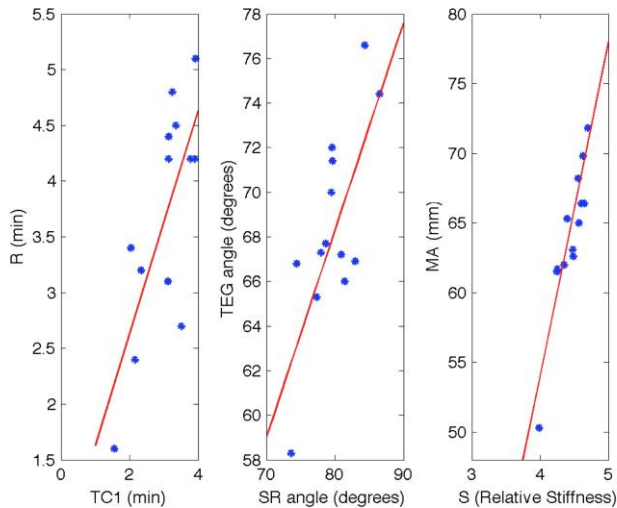
# Human Data

- Roughly 200 “Normals”
  - Extensive *in vitro* testing
  - Correlation with TEG
- 40 Bypass Patients

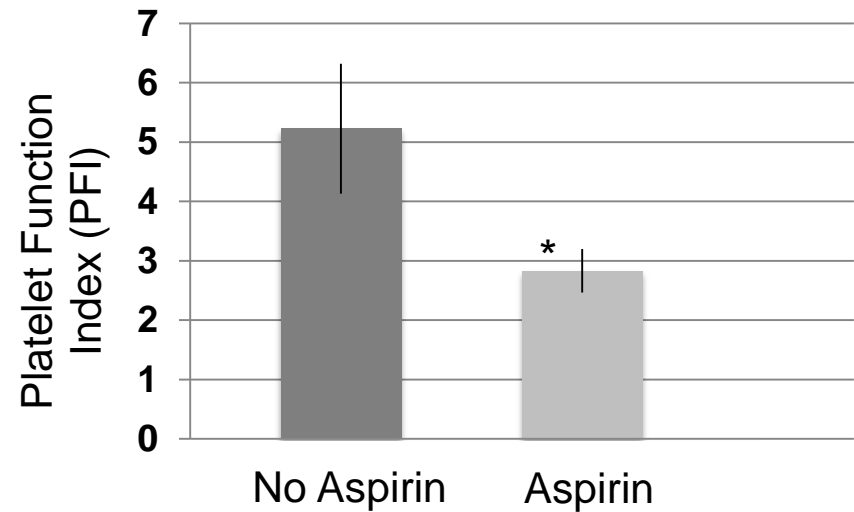
## Heparin



## TEG vs. HemoSonics

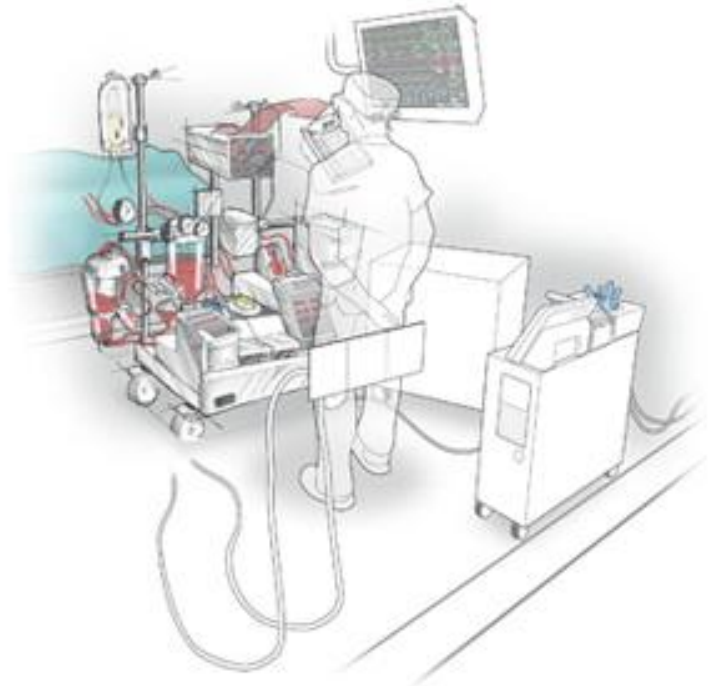


## CPB Patients



## Our Lead Market - Cardio-Pulmonary Bypass

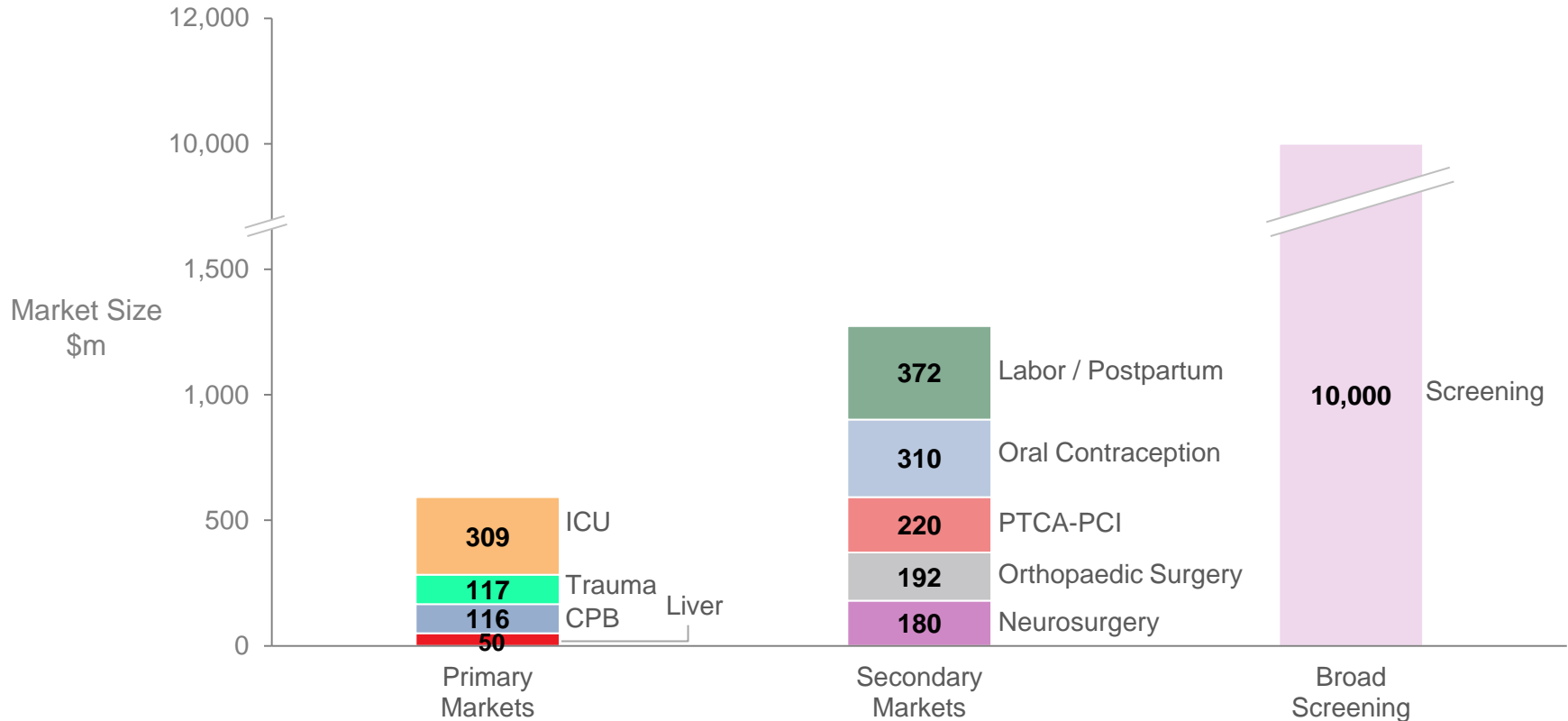
- Our lead market
- Bleeding in 25% of cases
- We transform guesswork to data driven medicine
- While guidelines encourage the use of POC, today no viable solution exists
- Many tests at few sites
- The US market for CPB exceeds \$116m






1. Relationship of blood transfusion and clinical outcomes in patients with acute coronary syndromes. JAMA, 2004.
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6. Optimizing Cardiac Surgery Symposium. San Diego. 2008.
7. 2011 Update to The Society of Thoracic Surgeons and The Society of Cardiovascular Anesthesiologists Blood Conservation Clinical Practice Guidelines, 2011



# US Markets (60% of Global Market)



# Competition

	<b>Traditional Coagulation Tests</b> (PT, ACT) 	<b>Viscoelastic Tests</b> (ROTEM, TEG) 	<b>HemoSonics</b> 
At the point-of-care	✓		✓
Results in 10 minutes	✓		✓
Does not require a trained technician	✓		✓
Easy-to-interpret results	✓		✓
Provides data to guide treatment		✓	✓
Measures all treatable components		✓	✓

# The Team

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**William F. Walker, Ph.D.**  
Founder / Director / President  
(PocketSonics & UVA)



**Matt Hantzmon**  
Director  
(Multimedia Medical & Greenlight)



**Francesco Viola, Ph.D.**  
Founder / Director / VP Eng.  
(UVA)



**Jonathan Sackier, MD**  
Director  
(Adenosine Therapeutics &  
Rex Bionics)



**Megan Shaw**  
General Manager  
(Monitor Group & Purepay Capital)



**Mark Wheeler, MD**  
Director  
(Merrimack Pharm. & Ception Ther.)

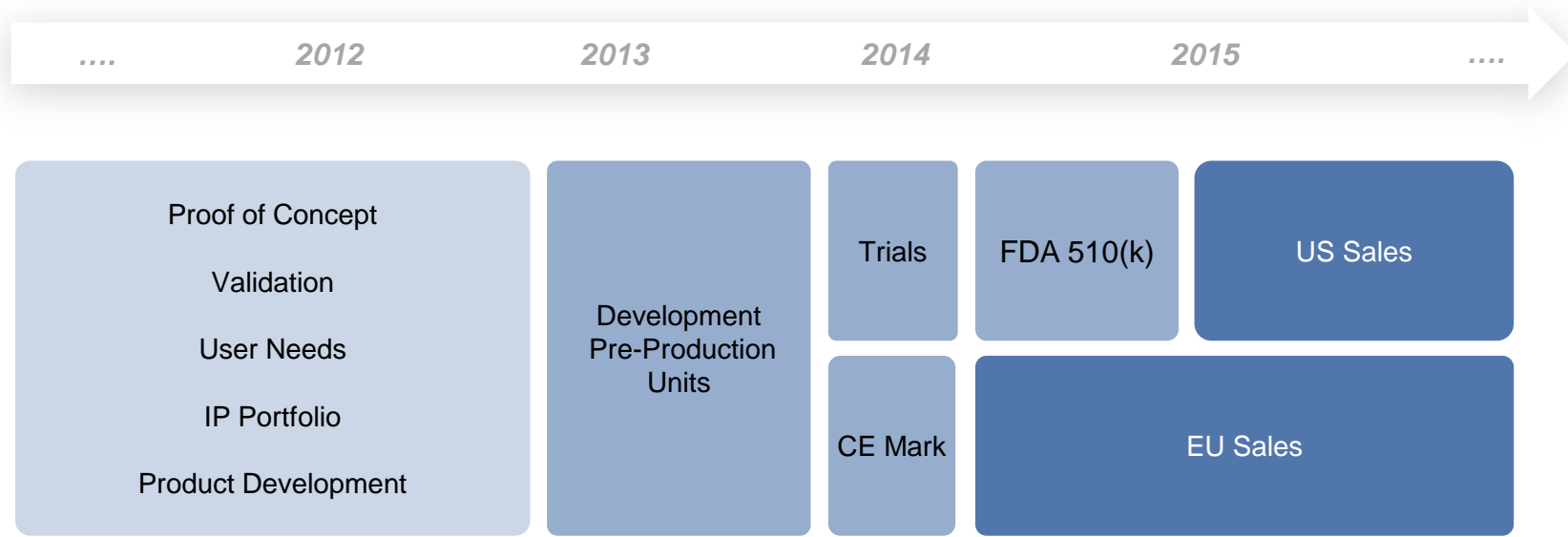
## Partnerships

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**Research  
Proteins Inc.**

# Product Development & Funding



Committed      Pending

# Potential Strategic Partners



## Summary

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Today's healthcare system demands **better care at a better value...**

... HemoSonics is poised to **deliver** on that mandate.

Francesco Viola  
Founder and VP Engineering  
(434) 202-1032  
fviola@hemosonics.com

## An array of consumable products

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### *Additional Tests*

FVIIa Dosing

Aspirin Sensitivity

Plavix Sensitivity

Heparin Titration

Protamine Titration

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### *Initial Tests*

Global - Fresh

Global - Citrate

Global - Heparinase

ACT - Fresh



# Growing Market Traction

## Medical Advisory Board

- Dr. Maureane Hoffman
- Dr. Bruce Spiess
- Dr. Linda Shore-Lesserson
- Dr. Pår I. Johanssen
- Dr. David Glass



## Add'l Sites with Users Interested in Beta Testing

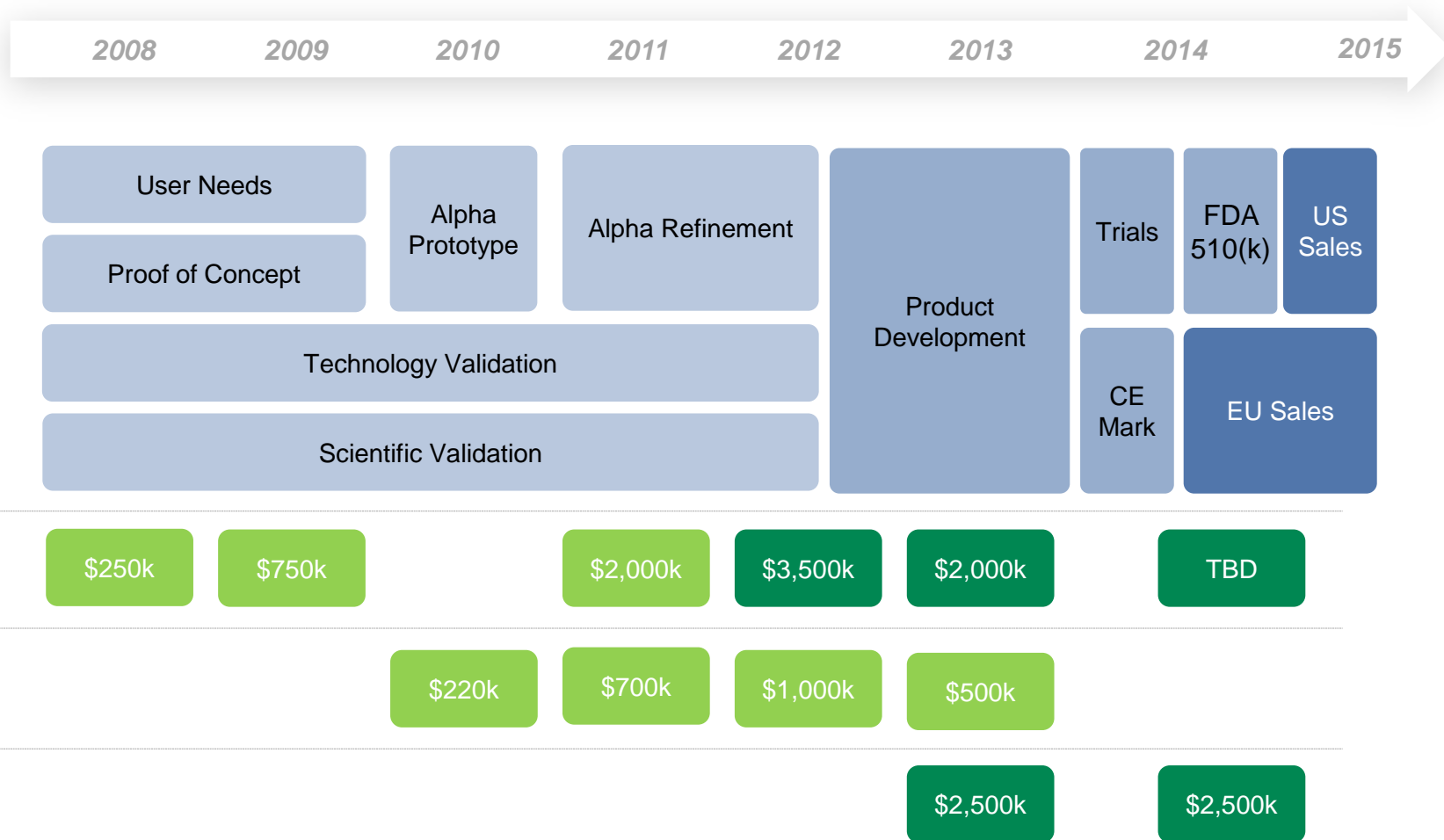


## Clinical Collaborators

- Dr. Gorav Ailawadi
- Dr. Steven Caldwell
- Dr. Neeral Shah
- Dr. Pat Northrup
- Dr. Gail Macik



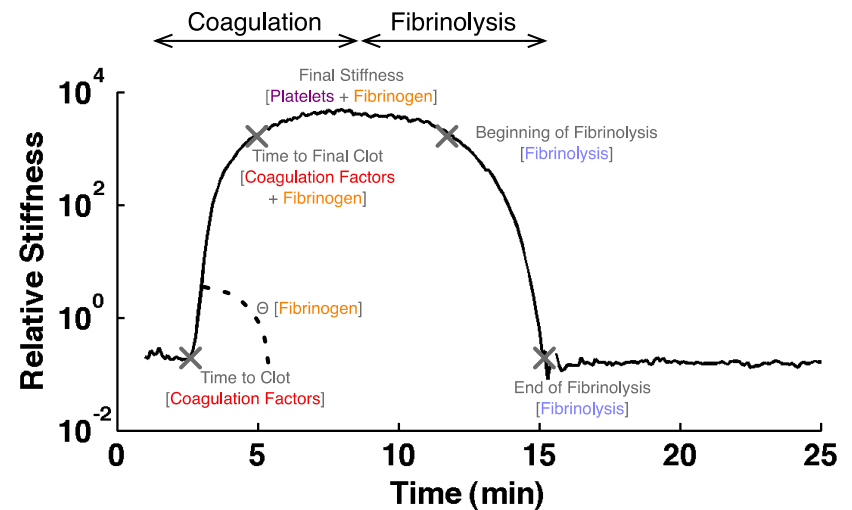
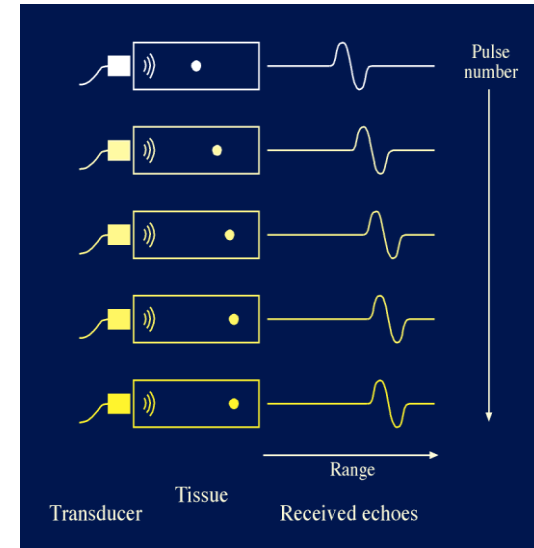
# Product Development & Funding



Committed      Pending

# Our Approach

- Push with ultrasound radiation force
- Measure induced displacement with ultrasound
- Assemble time-stiffness curves

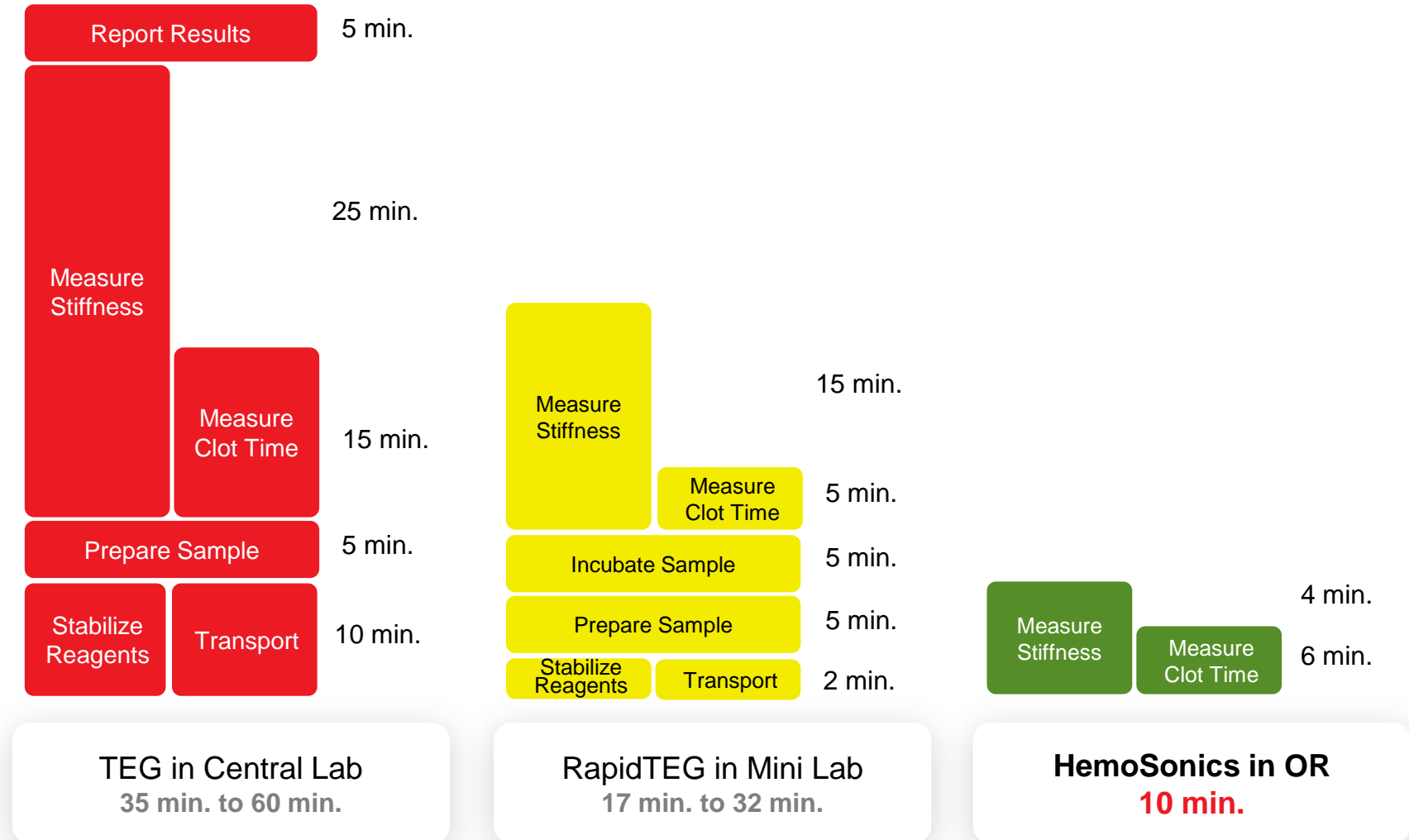


# Financial Projections

	2013	2014	2015	2016	2017	2018
<b>Total US Sales</b>	\$0	\$0	\$2,665,620	\$9,362,655	\$22,301,125	\$43,758,100
<b>Total EU Sales</b>	\$0	\$441,210	\$2,376,140	\$5,292,115	\$9,660,430	\$16,231,355
Other Revenue	\$495,991	\$0	\$0	\$0	\$0	\$0
<b>Total Revenue</b>	<b>\$495,991</b>	<b>\$441,210</b>	<b>\$5,041,760</b>	<b>\$14,654,770</b>	<b>\$31,961,555</b>	<b>\$59,989,455</b>
<b>COGS</b>	\$0	\$148,219	\$1,635,348	\$4,696,763	\$10,000,519	\$16,424,918
<b>Gross Profit</b>	<b>\$495,991</b>	<b>\$292,991</b>	<b>\$3,406,412</b>	<b>\$9,958,007</b>	<b>\$21,961,036</b>	<b>\$43,564,537</b>
<i>% of revenue</i>	100%	66%	68%	68%	69%	73%
<b>Expenses</b>						
Product Development	\$2,931,200	\$135,520	\$169,400	\$203,280	\$243,936	\$292,723
Payroll	\$723,897	\$842,483	\$1,639,244	\$2,228,078	\$2,483,374	\$2,608,872
Sales & Marketing (non wage)	\$36,000	\$285,781	\$1,869,797	\$4,283,228	\$8,004,096	\$13,792,698
Consulting	\$143,400	\$151,140	\$356,425	\$377,710	\$403,252	\$433,902
Legal & Professional Services	\$76,340	\$83,974	\$159,593	\$96,511	\$115,813	\$138,976
Clinical Trials	\$479,433	\$276,267	\$10,000	\$10,000	\$10,000	\$10,000
IP	\$169,948	\$237,267	\$249,615	\$262,549	\$276,221	\$290,685
Rent & Utilities	\$73,300	\$80,630	\$100,787	\$120,944	\$145,133	\$174,160
Travel & Meals	\$108,350	\$85,350	\$382,350	\$606,000	\$703,500	\$742,500
Other	\$99,626	\$108,568	\$190,772	\$286,177	\$404,921	\$573,857
Research Subcontract	\$62,085	\$0	\$0	\$0	\$0	\$0
Depreciation	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000
<b>Total Expenses</b>	<b>\$4,910,579</b>	<b>\$2,293,979</b>	<b>\$5,134,982</b>	<b>\$8,481,477</b>	<b>\$12,797,247</b>	<b>\$19,065,375</b>
<b>Net Profit</b>	<b>(\$4,414,588)</b>	<b>(\$2,000,988)</b>	<b>(\$1,728,570)</b>	<b>\$1,476,530</b>	<b>\$9,163,789</b>	<b>\$24,499,163</b>
<i>% of revenue</i>	-890%	-454%	-34%	10%	29%	41%

# The GHA is Quick

Stiffness must be measured to quantify platelet function and fibrinogen



# Instrument Roadmap

<b>Central Lab</b>	N Channels 1 Test Bay
<b>OEM Module</b>	1 Channel
<b>Handheld</b>	2 Channels 1 Test Bay
<b>POC-2</b>	4 Channels 2 Test Bays
<b>POC-1</b>	4 Channels 1 Test Bay

