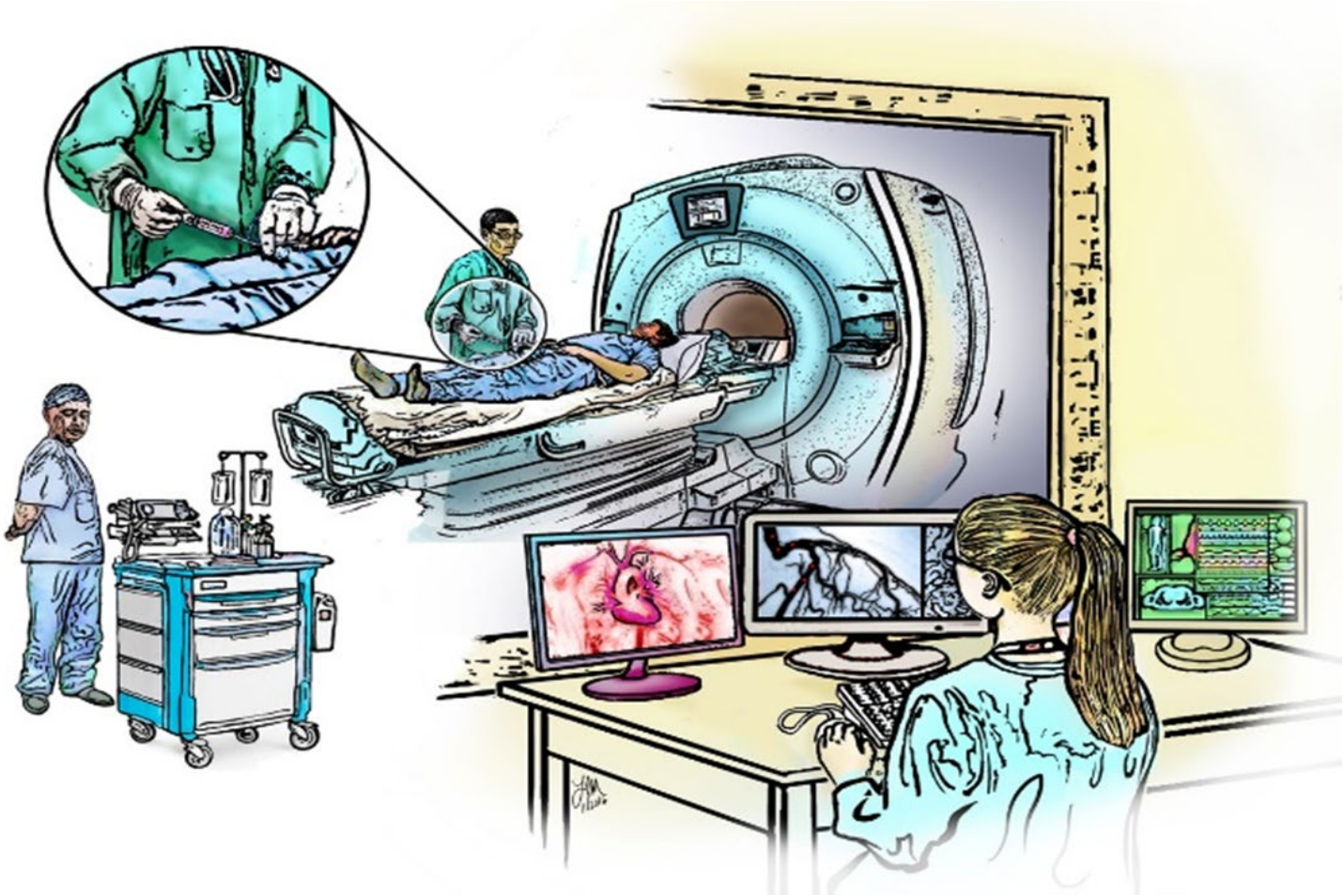
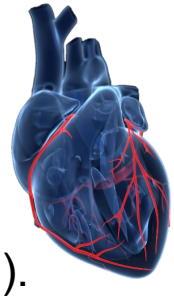
Vascular Devices, LLC



Implanted Vessel Clearing Modules & System

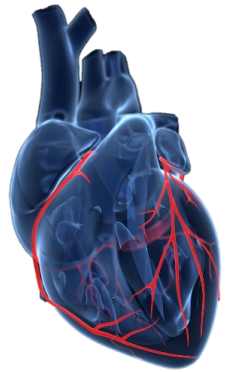
The Problem



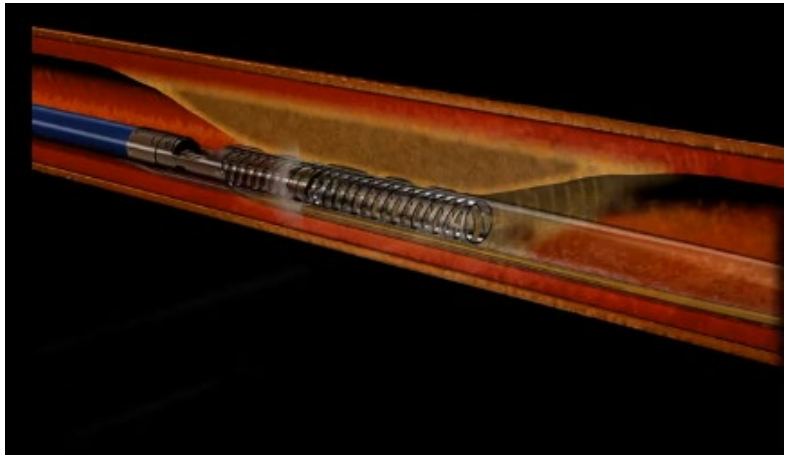
- More than ***15.8 million*** Americans have known Coronary Artery Disease (CAD).
- **50%** of all men and **33%** of all women over age 40, representing over ***80 million people***, can expect to suffer from CAD.
- ***Increasing*** incidence of complex cardiac catheterization cases involving heavily calcified atherosclerotic plaque necessitating ***atherectomy***.
    - This drives the use of atherectomy tools to ***debulk the calcified plaque***
    - **Case Example:** Dr. Price using atherectomy for calcified lesions

      Link: https://www.bostonscientific.com/en-EU/medical-specialties/interventional-cardiology/procedures-and-treatments/complex-pci/plaque-modification/rotablator-in-calcified-lesions.html
        - "***This plaque is going nowhere with balloons (i.e. angioplasty). My next step is atherectomy.***"
- Peripheral Artery Disease (PAD) affects over **8.5 million Americans**
    - An increasing number of these patients require endovascular procedures to improve their condition.

Prior-Art Solution



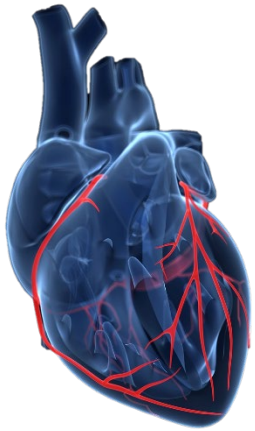
Current ***tethered catheter*** solutions limit access to hard-to-reach arteries



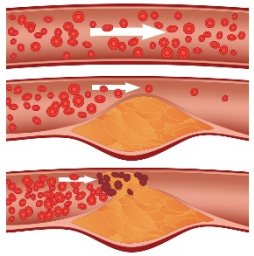
- Positives
  - Established method

- Technical Challenges:
  - Limited to **130cm** tether
  - Maximum diameter is **.9mm**
  - Same entrance and exit point

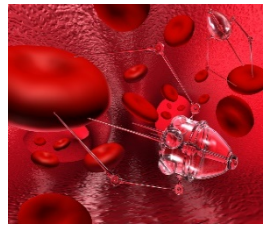
Vascular Devices' Solution

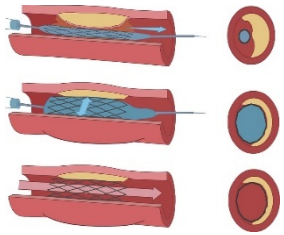


A *quantum leap* in interventional methods

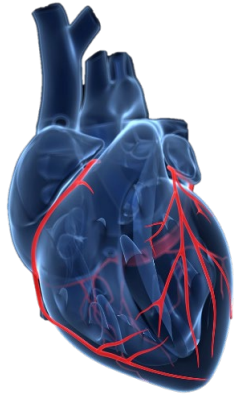


- ***Transcends*** the current methods of clearing (i.e. atherosclerotic plaque) human coronary and peripheral vascular artery blockages.
- Accomplished through an affordable, single-operator, technician controlled instrument.

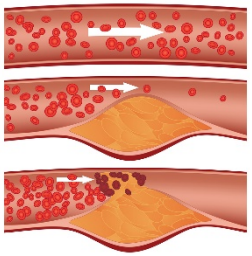


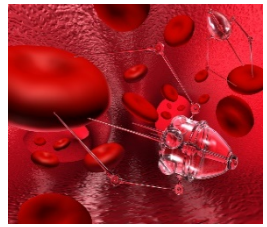


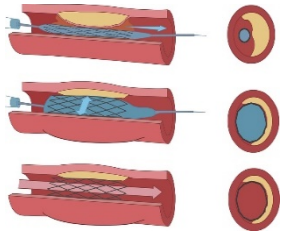
Vascular Devices' Solution



- Complete mapping of the human cardiovascular system utilizing MRI, allowing for ***precise*** locating and targeting of occlusion(s).
- Computer assisted surgical methods of clearing blocked arteries via programmed path algorithms.
- Computes the circulatory system path algorithm
- Allows navigation to, around, and from the source of the blockage(s).
- Programs an algorithm for removing the blockage(s) into the master computer
  - Biocompatible Modules (BCMs) are directed to the occlusion and then exert laser energy (fluence) to vaporize the atherosclerotic plaque.
- Direct the motion of a Biocompatible Module apparatus (BCM), which is constructed of semiconductor material.







Global Market Size

The global interventional cardiovascular device market is worth $11.7 billion with a CAGR of 8%.

Global Interventional Cardiovascular Device Market

	2019		
(in millions of US$)	**Coronary Interventions**	**Peripheral Vascular Interventions**	**Totals**
Boston Scientific	2,816	1,392	4,208
Medtronic	3,730	1,926	5,656
Abbott Laboratories	574	1,047	1,621
Other (Remaining 20% of market)	120	120	240
Totals	**7,240**	**4,485**	**11,725**

Sources: Boston Scientific 2019 Annual Report, Medtronic 2019 Annual Report, Abbott Laboratories 2019 Annual Report, iData Research, Grand View Research

Competition

Boston Scientific
Medtronic
Abbott Laboratories

Philips Healthcare
Terumo Medical
Cardinal Health

All of the competitors offerings in this space are strictly limited to ***tethered solutions***

The above companies are risk averse to adopting more advanced interventional technologies and re-thinking endovascular solutions.

A common clinician observation:

"Nothing has really changed in cardiology in 30 years."

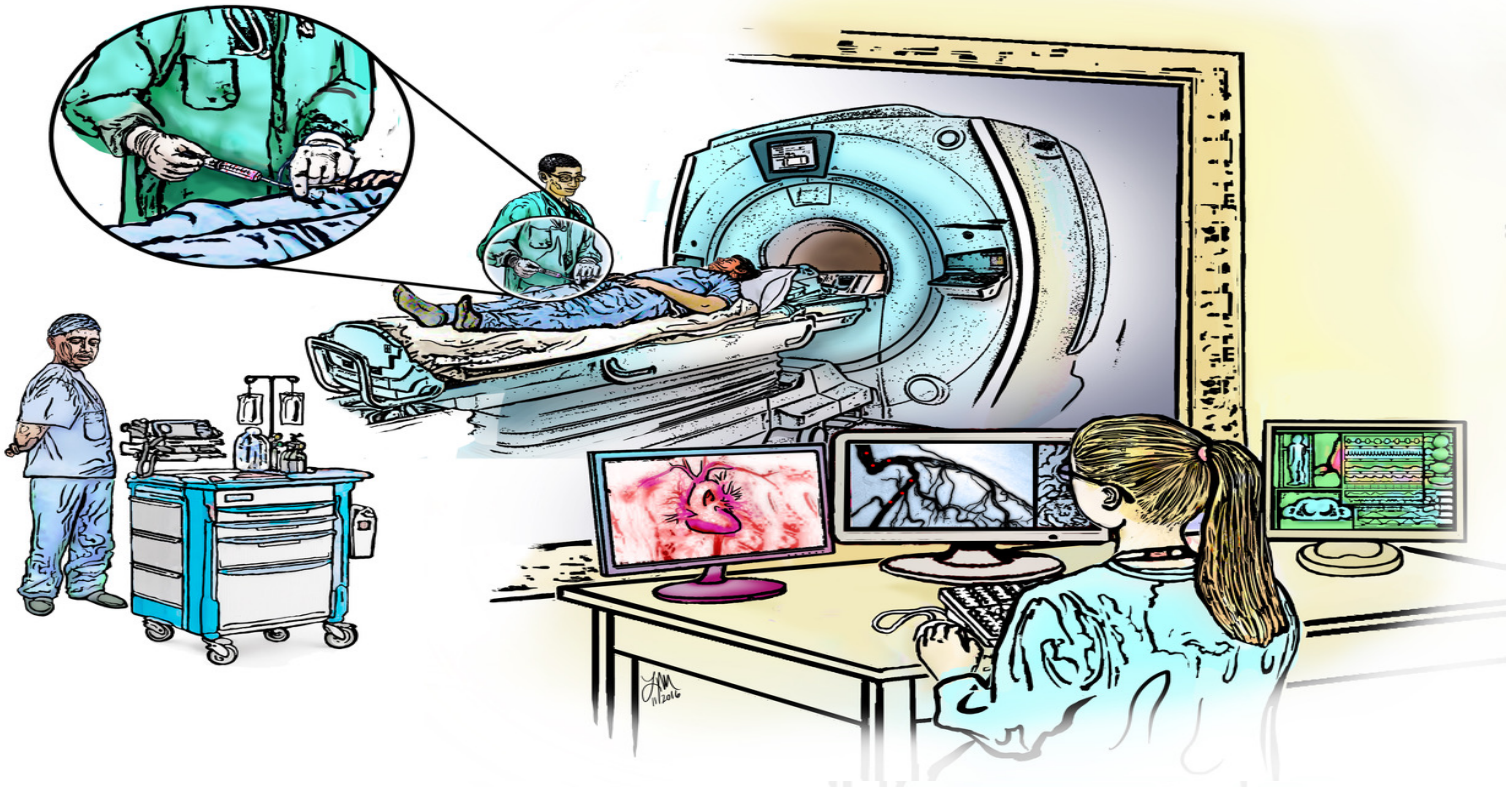
Vascular Devices via the **Implanted Vessel Clearing Module & System** will deliver a more ***patient friendly*** and ***effective approach*** offering:

- Reduced patient trauma
- Ability to access the smallest arteries which current technologies are unable to reach

- Vascular Devices will push the boundaries of endovascular access and hence enable clinical solutions that were once ***unthinkable*** and ***impossible*** with prior-art technologies.

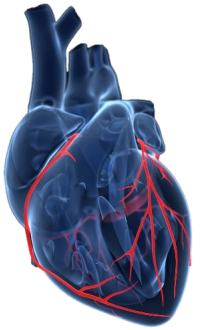
- Our proprietary hardware and software platform once realized will put us miles ahead of the competition as they will be weighed down by vested interests late product lifecycle systems.

The Product: Implanted Vessel Clearing Modules & System

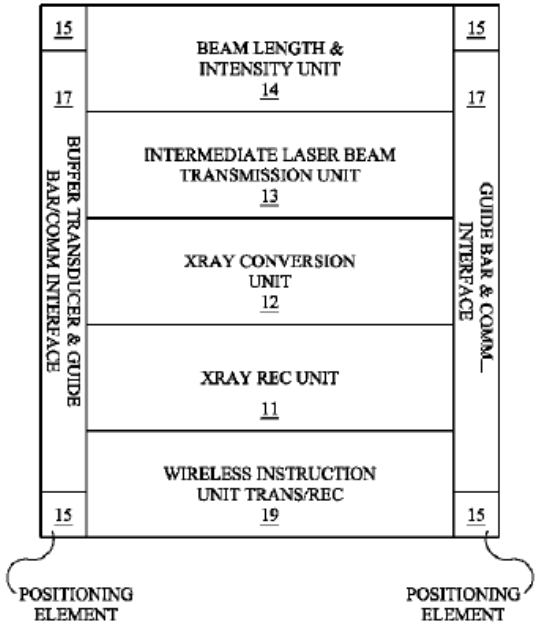


Medical illustration rendered by Laura Maaske, Medimagery, https://medimagery.com/

Development Roadmap



- Phase I: Prototype System
  - PCB Board rendition
  - Burns down risk for MCM implementation
- Phase II: System for FDA approval
  - Multi-chip module
  - <.9 mm diameter



Key Statements

"In summary if you can develop a device that is tough enough to penetrate through the heavily calcified obstructed vessels, small enough with potential to reach distal and small vessels, and that carries low risk of perforation, it would be the holy grail for endovascular disease treatment."

Julian J. Javier, MD, FACC, FSCAI, FCCP
Interventional Cardiologist
Naples Cardiac & Endovascular, Naples, FL
https://www.heartvein.com/dr-julian-javier-endovascular-specialist/
Asst Professor of Medicine Univ of Miami School of Medicine

"We have already come far with the interventional reconstruction of peripheral and also coronary arteries. However, severe calcifications are still challenging and precision in difficult anatomies may further be improved. Debulking of large stenotic lesions by atherectomy devices has shown to ameliorate results and after significant improvements, laser catheters are a promising option, especially, if precisely steerable through tortuous lesions by some kind of image guided "robotic" or rather telemanipulation systems, as the physician is still steering the procedure. These technologies would by the way also reduce the radiation exposure of the physicians, which makes such systems not only attractive for the patient but also for the medical team."

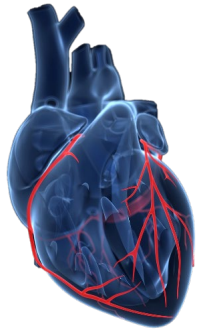
Prof. Rainer Moosdorf, MD, PhD, FAHA
Consultant and member of the Healthcare Shapers
Retired as a Full Professor for Cardiovascular Surgery (2017)
https://www.healthcareshapers.com/en/portfolio/moosdorf-rainer/

Key Statements

"In the future, we will look back at tethered devices as barbaric". "The idea of shoving a tube through the entire vascular system to reach a patient who is at high risk of heart failure needs to be left in the past".

Adam Sonnenberg
Lead Researcher, Vascular Devices, LLC
Medical Student at the University of Illinois College of Medicine
PhD, Bioengineering

Funding Requirements

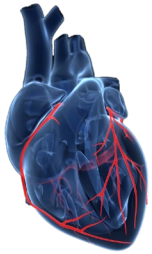


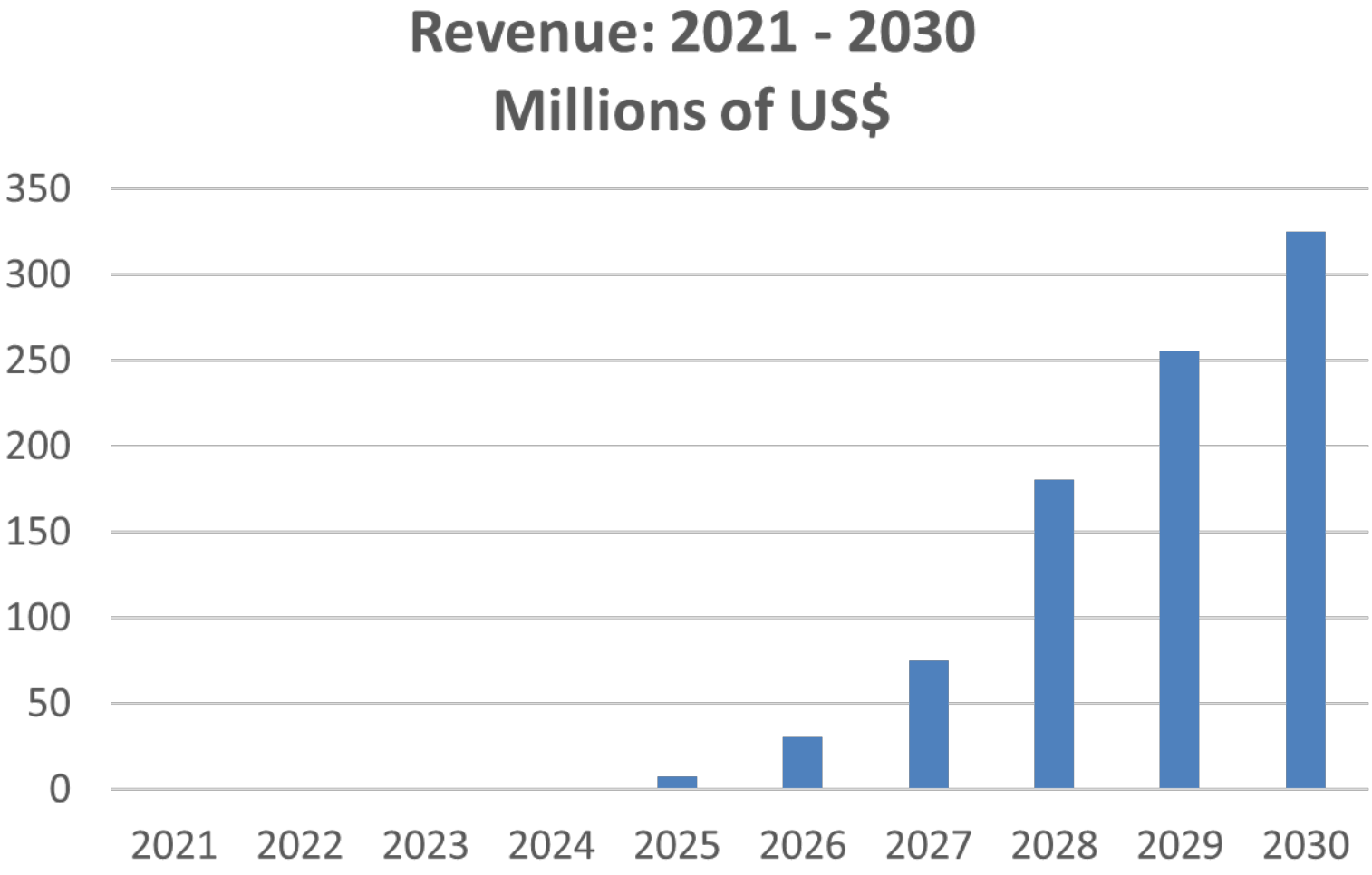
Phase I: *$20 million* – Prototype construction consultant, MRI/NMR retrofit consultant. During this phase, the focus will be on building the out-sourced prototype and transforming NMR capability to existing MRI equipment. ***20% Equity Stake.***

Phase II: *$40 million* – This is the critical technical function phase. The focus is on developing requirements for communication between the master machine, implant modules and controlling the modules with NMR technology. Also retain FDA compliance officer, and a general administration manager (i.e. to direct outsourcing activities: HR, accounting, legal, IT, and facilities management. The production manager and quality control manager as liaison to outsourced factory contractors. Will also require supply-chain manager

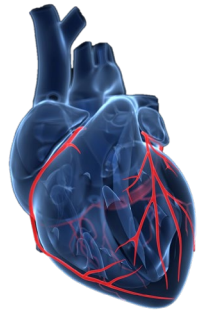
Phase III: *$40 million* – Commercialize master machine & modules

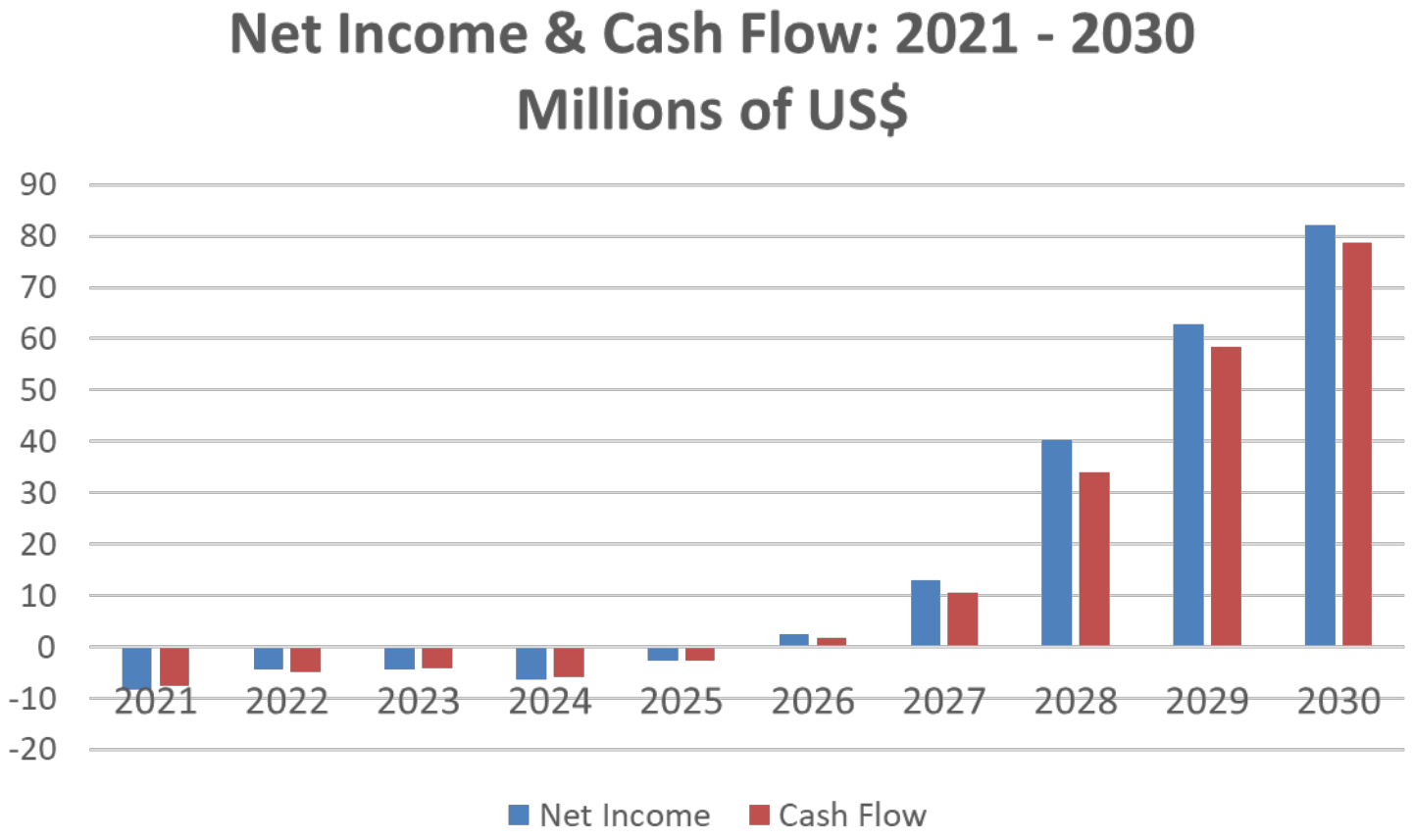
Financials



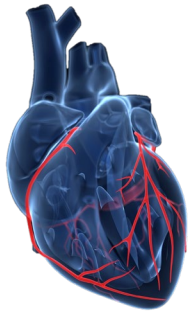


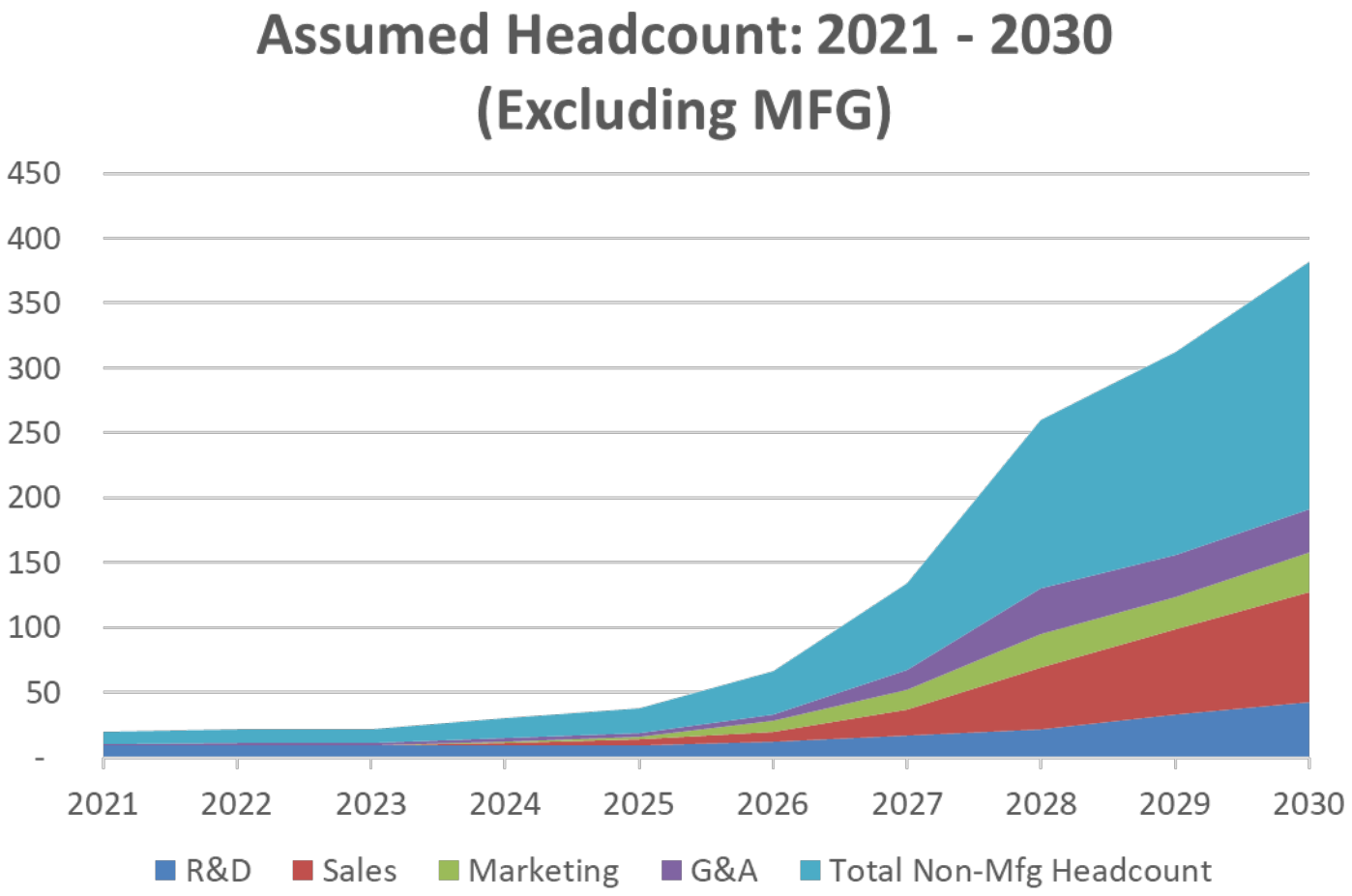
Financials





Staffing Requirements





Key Media Links

1. Patent Abstract: Vessel clearing apparatus, devices and methods,
   U.S. Patent Number:**US8663209B2**
   https://www.google.com/patents/US8663209

2. Proof-of-Concept video https://www.youtube.com/watch?v=HkPlSvxZF18

3. Interview with Scientist and Inventor William H. Zurn : Global Innovation Magazine
   https://issuu.com/globalinnovationmagazine/docs/issue9_single?e=24924957/39307572
   -Please go to pgs. ***24-25*** for the article

4. "***A Fantastic Vessel-Clearing Innovation***", Inventor's Digest, February 2016 Issue:
   https://issuu.com/inventorsdigest/docs/inventorsdigestfebruary2016__1_
   -Please go to pg. ***18*** for the article

5. Explanatory Video: https://www.youtube.com/watch?v=Ia1aGejwr6c

FOUNDER: WILLIAM H. ZURN

Sunnyvale, California based inventor and scientist, **William H. Zurn** is the **Founder**, **Proprietor**, and **Chairman of the Board** of **Vascular Devices, LLC**, which is registered in the state of Delaware. His career and professional experience is rooted in the semiconductor industry, holding Product Management and Manufacturing Engineering positions at Actel, Credence, Altera, and AMD.

CAREER HIGHLIGHTS:

- Develops patents related to computerizing and automating processes for construction equipment, oil drilling equipment, Internet of Thing (i.e., IoT) and medical implant devices (including those with nanotechnology applications).
- Currently developing patents related to IoT (Internet of Things) for machine related patents (Motors, Generators, Hydraulic Systems), plus additional medical related patents, working with multiple co-inventors on these projects.
- Successfully filled the roles of Manufacturing Manager and Equipment Maintenance Manager, while employed by AMD, Monolithic Memories and Altera.

EDUCATION:

- M.S. Engineering Management, with a major emphasis in Computer Engineering from Santa Clara University, Santa Clara, California
- B.S. Business Administration, with a major emphasis in Accounting, from National University, San Jose, California.

BACKGROUND:

- Family originates from Spirit Lake, Iowa
- Enlisted in the U.S. Navy at age 18, serving honorably for 4 years as a Radarman

The Team: Clinical Advisory

Julian Javier, MD, FACC:

- Board-certified Cardiologist who specializes in Interventional Cardiology and Endovascular Disease; in practice for more than 30 years
- Practices cardiology in Naples, Florida
- Affiliated with Physicians Regional Medical Center
- Director of Naples Cardiac and Endovascular Center and also Advance Research for Health Advantage
- Cardiovascular training completed at St. Louis University Hospital and University of Arkansas for Medical Science
- Medical degree from Universidad Autonoma de Santo Domingo

Prof. Rainer Moosdorf, MD, PhD, FAHA:

- Devoted to cardiovascular surgery for over 35 years
- Main clinical specialties are laser and arrhythmia surgery and advanced coronary interventions
- Retired as a Full Professor for Cardiovascular Surgery in 2017 and now works as a Senior Medical Consultant and member of the Healthcare Shapers
- Served as a Medical Director and Full Professor of Cardiovascular Surgery for 24 years at The University Medical Center (UKGM), Philips University in Marburg, Germany
- Holds degrees in Medicine and Dentistry from Philips University and Justus Liebig University in Giessen, respectively

The Team: Legal Advisory

Alan Cannon, JD:

- Highly experienced counsel in Patent Law
- Extensive career included tenure in law firms in California and Virginia
- Held position of Primary Patent Examiner in the United States Patent and Trademark Office in Arlington, Virginia
- M.S. in Bioengineering

Carlos Perez Gautrin, LLM:

- Tax adviser with over 20 years of legal experience
- Areas of business planning practice encompass mergers & acquisitions, corporate tax planning, and intellectual property planning
- Master of Laws (LLM) degree in International Taxation, New York University School of Law
- Law degree from Universidad de Sonora

The Team: Executive Leadership

Paul Knapp, Chief Financial Officer:

- Strong leadership experience having held various finance and cost accounting roles within the semiconductor, high technology, and laser industries
- Currently the Senior Director of Finance at Omnicell
- Key finance business partner to the Senior Vice President of Operations
- From 2005 to 2008, served in various finance management roles for Coherent Inc. (Lasers)
- MBA degree from Santa Clara University
- B.S. Accounting from Loyola Marymount University

Mahshid Karimi, Technical Program Manager :

- Track record of success and high performance at various positions related to the management of multiple types of medical devices
- Extensive experience related to the commercialization of medical devices
- Ph.D., Electrical Engineering and M.Sc, Electrochemical Engineering, University of British Columbia
- M.Sc, Condensed Matter Physics, Simon Fraser Univeristy
- B.S.c., Applied Physics, Shiraz University

The Team: Research & Development and Marketing

Adam Sonnenberg, Bioengineering - Made to Stock (MTS):

- Currently a medical student at the University of Illinois; concurrently conducting technical and clinical research on the Implanted Vessel Clearing Modules & System
- Previous Experience Includes a position as: an associate for enterprise technologies & venture strategy, funding, technological evaluation
- Ph.D. in Biomedical Engineering at Boston University

Clifford Thornton-Ramos, Product Marketing and Public Relations:

- Extensive hands-on clinical experience having performed over *3,000* Transthoracic Adult Echocardiograms and over 1,000 Transesophageal Echocardiograms, assisting the performing cardiologist
- Held national registry status with the American Registry of Diagnostic Medical Sonographers (ARDMS) for Adult Echocardiography (AE); in retired status since 2015 given move to a marketing role
- Independently developed, instructed, and led an Adult Echocardiography course (didactics and ultrasound lab) at Healthcare Training Institute (HTINJ), Union, NJ
- Professional experience as a Program Manager and Sr. Analyst in the telecom sector
- Published journalist, focusing on medical topics; articles well-received by physicians and executives
- Served Honorably in the U.S. Navy Reserve; received award for BlueJacket Sailor of the Quarter, 2004
- Cardiovascular Technology Certification (emphasis on Adult Echocardiography), Sanford-Brown Institute
- B.S. Business Administration, Marketing, New York University, Leonard N. Stern School of Business

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