

# endiatx

Micro-robotics in the human body

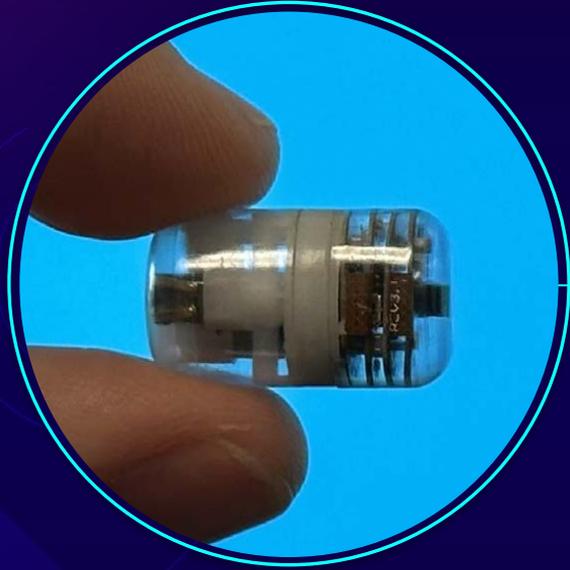
This isn't med device.



This is the future of telemedicine.

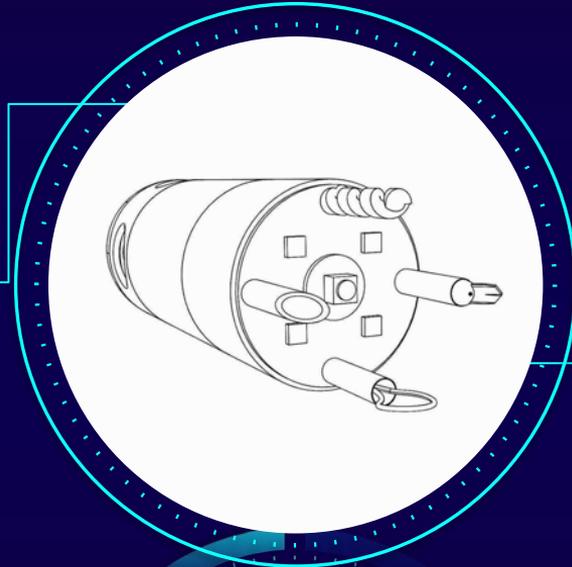


# Micro-robotic telemedicine is the future, and the future is now.



## PILLBOT™

- ▶ MVP
- ▶ Upper endoscopy over a zoom call



## PILL SURGEON™

- ▶ Remove small polyps
- ▶ Tissue biopsy
- ▶ Cauterize bleeds
- ▶ And more



## MICRO SURGEON

- ▶ Pill Surgeon the size of a rice grain
- ▶ What do YOU think comes next?

# **Why** is it so hard to have a quick look inside the human body?

- Let's start with the Upper Endoscopy or "EGD"
- Patients present with pain
- Months of gatekeeping
  - Transfers from doctor to doctor
  - Multiple visits to the hospital
  - Food restrictions
  - Various medications (can make it worse!)
- Endless co-pays, hassles, travel, missed work
- ***All of that to get 5 minutes with an endoscope in your belly!***  
***There must be a better way.***



# *How* do we begin this adventure?

## Telemedicine with robot pills!



- PillBot™ is like a “moving eyeball in your stomach”
- Your doctor controls it over a video call while you watch
- Inexpensive, safe, easy to use
- Drink some water, swallow the pill in your living room
- A mass-market screening tool for the upper endoscopy market

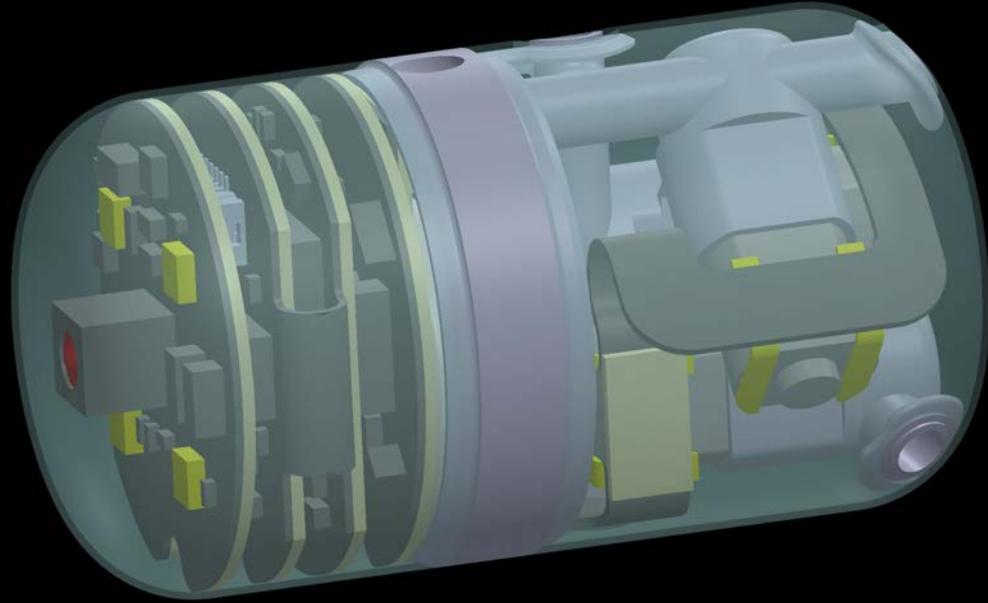
# Opportunity: Market disruption and category creation

- **Devices:** \$67B global endoscopy devices [\(link\)](#)
- **Patients:** 8 million upper endoscopies (US alone) [\(link\)](#)
- **GI Tract & beyond:** 223 million endoscopy procedures per year [\(link\)](#)
- **New Category:** Micro-robotics in the human body



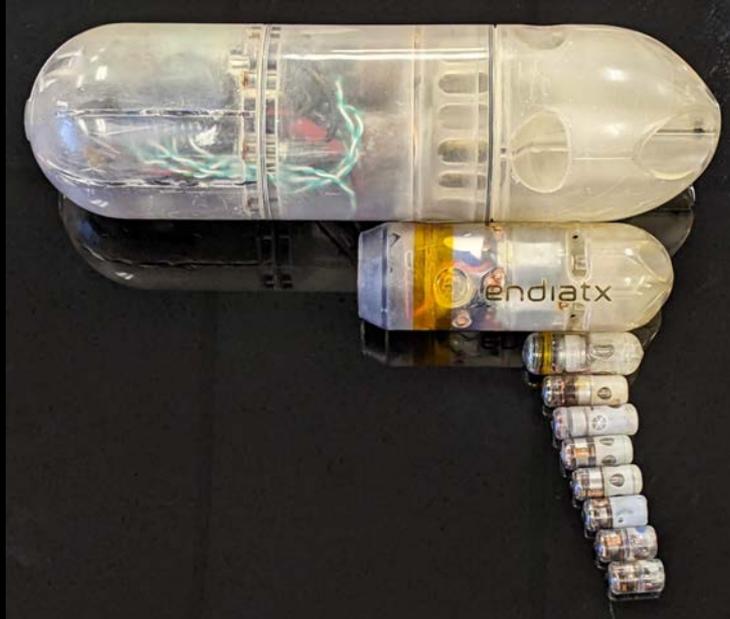
# PillBot™ Core Technology

- iOS-enabled for ultra modern doctor-patient workflow
- Hardware costs \$25 - \$50 in volume
- Patented multi-pumpjet propulsion system
- Onboard lights and camera
- Live video feed
- Secure radio dongle connects to your iPhone
- Doctor controls with touchscreen app on their phone
- No capital equipment required. No hospital visit!
- Perfect for telemedicine



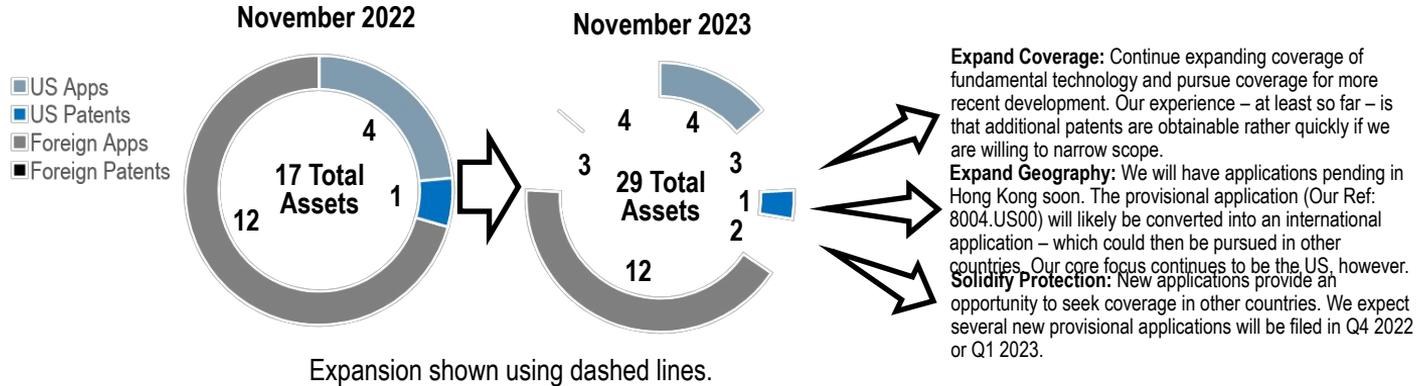
# Endiatx (“ehn-dee-ah-tix”) history

- “We like making robot pills.”
- Endiatx, Inc. incorporated March 8th 2019
- \$3M closed to date
- Multiple patents, US and international
- 24 robots operated inside bodies of founding team
- Vivek Kumbhari MBChB, PhD
  - Heads GI at Mayo Clinic
- Bu’Hussain Hayee PhD FRCP AGAF
  - Chief of GI at King’s College London
- MVP in progress
- Endiatx HQ: 8700 square feet in Hayward, CA

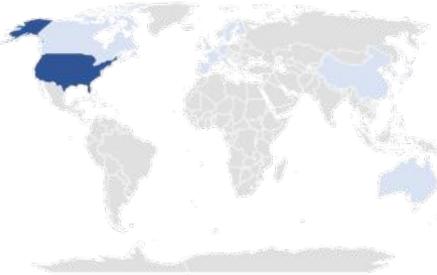


# Endiatx | Patent Portfolio Summary

## Overview of Active Portfolio and Planned Expansion



## Overview of Geographical Scope



Primary focus is on securing protection in the US, but protection is being sought in Australia, Canada, China, Europe, Japan, and South Korea. As noted above, protection will be sought in Hong Kong soon. Further coverage may be sought in these countries, or coverage may be sought in other countries, as appropriate.

## Summary of Active Portfolio (2019 – 2022)

### Our Ref: 8001

- This “family” focuses on ingestible devices with propulsion capabilities. At a high level, the claims cover ingestible devices with “a pair of propulsors ... to control movement ... about three mutually perpendicular axes.” See [US Publication No. 2020/0405131](#).
- An office action was issued in Q3 2022, and we are currently discussing how to respond to the same with Torrey and Alex.

### Our Ref: 8002

- This “family” focuses on propulsion more specifically. The claims cover an ingestible device with “four rotors arranged in a cross-type configuration.” See [US Patent No. 11,045,080](#).

### Our Ref: 8003

- This “family” focuses on ingestible devices with manipulation capabilities. At a high level, the claims cover ingestible devices with “an intervention tool ... to manipulate a structure in the living body.” See [US Publication No. 2020/0405132](#).
- A restriction requirement was issued in Q4 2023, and we are currently discussing how to respond to the same with Torrey and Alex.

### Our Ref: 8004

- This “family” focuses on ingestible devices with direct z-axis translational mobility. At a high level, the claims cover ingestible devices with motors whose thrust axes are orthogonal to each other. **This is a provisional application, and therefore not publicly available.**

# Strategic partnership with Mayo Clinic

- **Vivek Kumbhari MD PhD heads GI at Mayo Clinic**
  - **Investor**
  - **Endiatx board of directors**
- **Know-how agreement in place**
- **Mayo Clinic estimates a \$14B annual market for PillBot™**





## **Torrey Smith**

**Co-Founder & CEO, acting CTO**

Aerospace Engineering, Cal Poly, SLO

17-year med device designer

Early employee: Ensure Medical to Cordis: \$110M,

AtheroMed to Volcano: \$150M, Volcano to Philips:

\$1.2B

Design & art featured intl & Smithsonian



## **Vivek Kumbhari MD/PhD**

**Professor of Medicine**

**Chair, Division of Gastroenterology and  
Hepatology, Mayo Clinic**

Formerly Associate Professor Of Medicine,  
Johns Hopkins University School of Medicine



## **Alex Luebke**

**Co-Founder & Chairman**

Doctorate Aerospace Engineering, Stanford

20+ years in Military & Aerospace;

Google X, C level roles

BOD on multiple startups



## **Kevin Johnson**

**Electrical Engineering**

MS EE Stanford

Co-Founder, Blue Ocean Gear

HoloLens @ Microsoft



## **James Erd**

**Co-Founder & Sr. Principal R&D Engineer**

Automata and biomechanical motion

Expert Machinist & Maker

Master on 60,000lbs of machine tools

Founder, ERD Machining



## **Nancy Lincé**

**Reg/Clin/Quality Consultant**

20 years of exp for RCQ for medical products

160 submissions & extensive FDA negotiations

# Endiatx Scientific Advisory Board



**Vivek Kumbhari,  
MBChB, PhD**

Professor of Medicine

Chair, Division of  
Gastroenterology and  
Hepatology

Mayo Clinic, Florida

**United States**



**Bu' Hayee, BSc,  
MBBS, MRCP, PhD**

Professor of Medicine

Chief of Service and  
Clinical Director,  
London Endoscopy  
Academy

King's College Hospital  
NHS Foundation Trust

**United Kingdom**



**Michael L Kochman, MD**

Professor of Medicine  
and Surgery

Center for Endoscopic  
Innovation, Research,  
and Training  
Gastroenterology Division

University of  
Pennsylvania Health  
System

**United States**



**Nageshwar D Reddy,  
MD, FRCP, FASGE,  
FACP**

Professor of Medicine

Chairman & Chief of  
Gastroenterology

Asian Institute of  
Gastroenterology,  
Hyderabad

**India**



**Michael B Wallace MD,  
MPH**

Professor of Medicine

Division of  
Gastroenterology and  
Hepatology Mayo Clinic,  
Jacksonville, Florida

Sheikh Shakhbout  
Medical City (SSMC),  
Abu Dhabi

**UAE**



**Petros Constantino  
Benias, MD**

Associate Professor

Donald and Barbara  
Zucker School of  
Medicine

Hofstra/Northwell

**United States**



**Alessandro Repici,  
MD**

Professor of Medicine

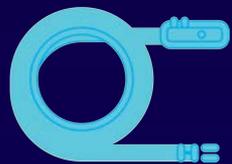
Director of Digestive  
Endoscopy

Humanitas Research  
Hospital

**Italy**

# We see a gap in the GI diagnostic space:

**Doctor  
Experience**



Endoscopes



NaviCam



PillBot™



Passive Capsules

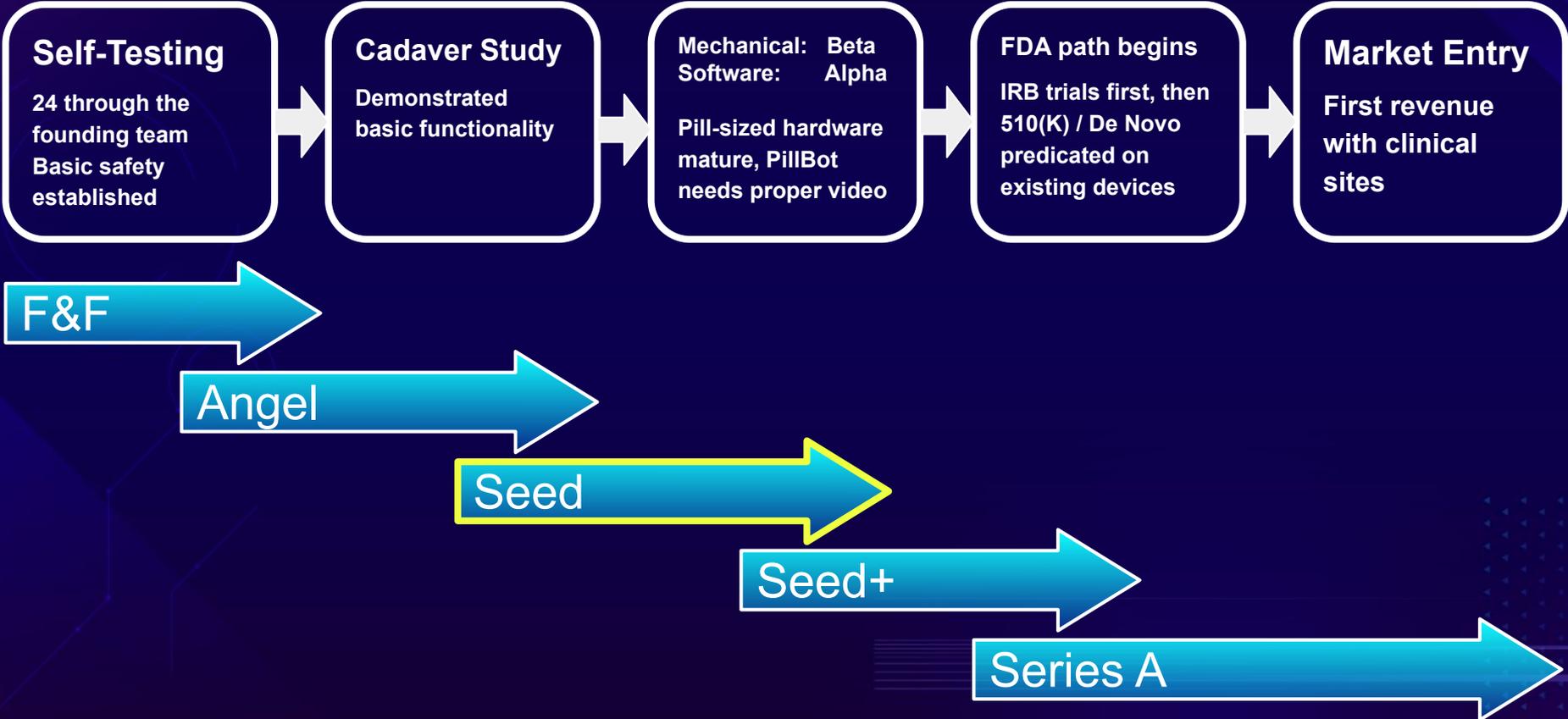
**Patient Experience**

# Business Model: **solid unit economics**

- COGS: \$25 - \$50 in volume
- Insurance CPT code already available to us:
  - \$500 (passive PillCam) yields **90% - 95% gross margin**
  - ~\$800 (magnetic NaviCam) is higher still
- Secure radio dongle connects to any electronic device
  - Begin with iPhone / iPad
- Secure, HIPAA-compliant cloud based control w/ data analytics (AI/ML, Cyber Security)
- ***Bottom line: Every time a doctor uses PillBot™ we make lots of money while saving patients and insurance providers many months and thousands of dollars. Doctors get to be doctors instead of gatekeepers.***



# Market entry is targeted at 2026





## Ask:

- We are seeking partners to help us make PillBot™ a clinical reality
- Use of funds:
  - PillBot™ requires a dedicated software engineering team
  - Endiatx needs Regulatory, Clinical, and Quality departments
  - These take us to first clinical trials & FDA
- Series A will take us through FDA to Market

# THANK YOU!

torrey@endiatx.com

+1 805-234-6575

endiatx



<https://www.linkedin.com/in/torreypsmith>



@endiatx



Hayward, CA

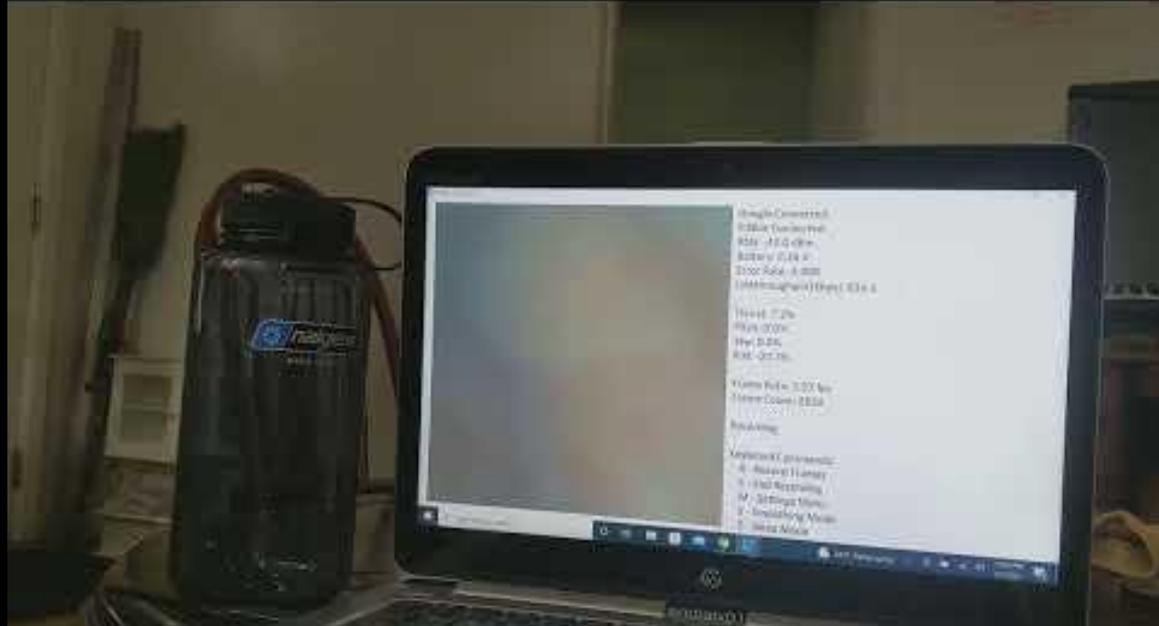
# The inspiration



# Basic mechanics of 3D flight



Video quality is under development



# Cadaver Study

