

# GPX<sup>TM</sup> EMBOLIC

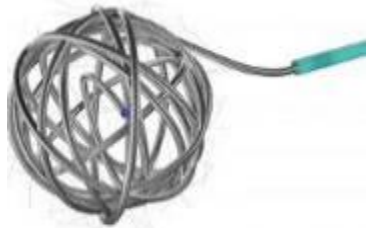


**FLUIDX**  
MEDICAL TECHNOLOGY

# Significant Market Opportunity

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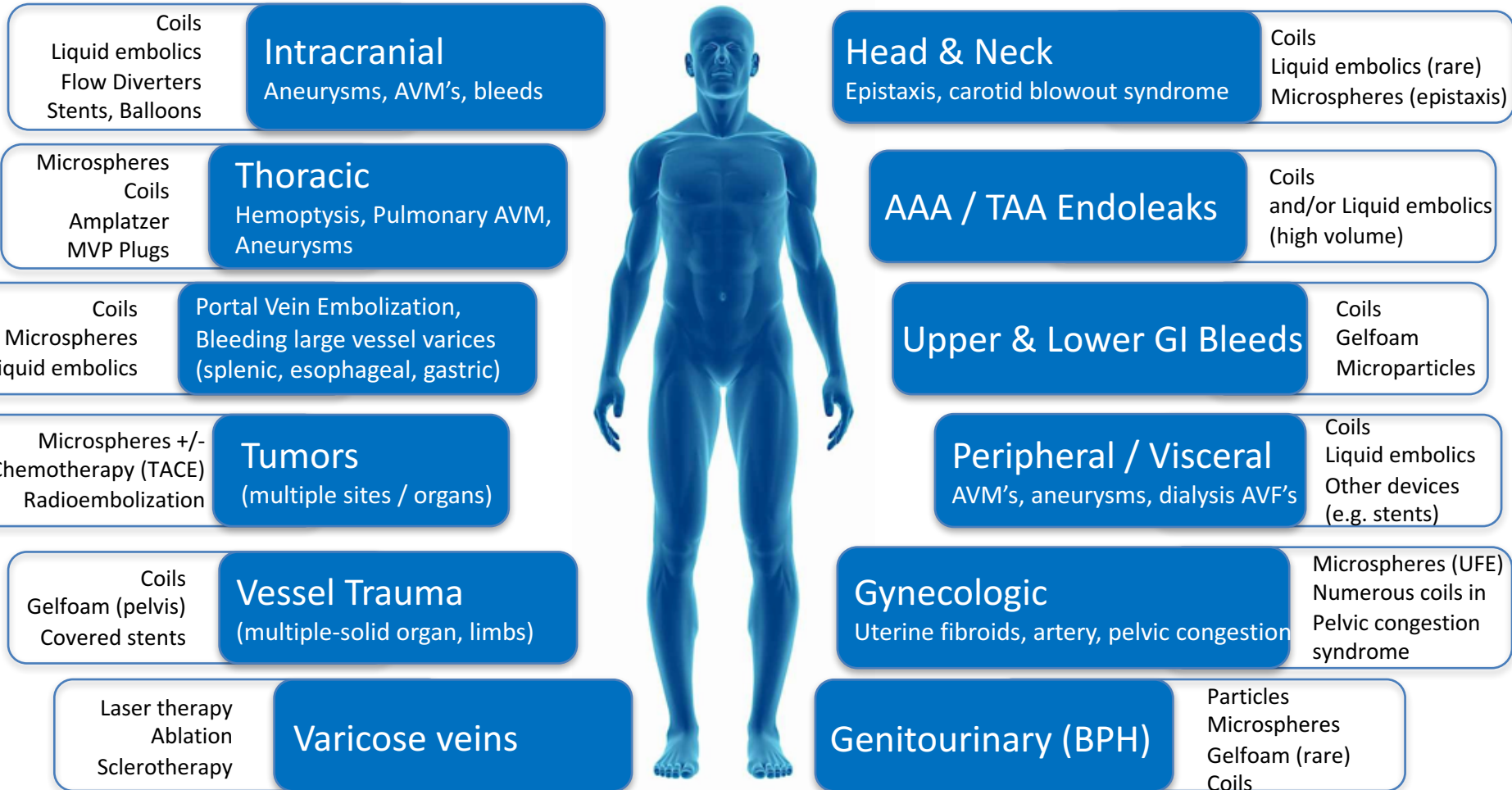
- Market size for embolic devices: \$1.5Bn worldwide; 8-10% growth
- Millions of coils, microspheres/beads, particles, plugs, and liquid embolics are used each year
- Peripheral, interventional oncology and neurovascular embolization applications
- Wide array of uses including embolize tumors, seal aneurysms, close leaks in aneurysm grafts, seal arterial venous malformations (AVMs), stop bleeding, and other like uses



Source: iData 2016 Worldwide Transcatheter Embolization Device Market. 2016

# Embolics – Diverse Applications

- Embolics are used throughout the body for a variety of applications



# Limitations of Current Embolics

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- Embolic products available today can be difficult to use and unpredictable



**Particles & Beads** are widely used but are associated with delivery errors including unintended proximal reflux, off-target embolization, and catheter clogging/clumping.



**Coils** are widely used but can migrate from the intended site, and result in inconsistent embolization requiring multiple coils, and high cost.



**Liquid embolics** have some advantages in distal and small vessel embolization, but are highly priced, difficult to control, require special preparation and delivery technique, and have been associated with numerous patient injuries and FDA warnings.

# Unmet Needs

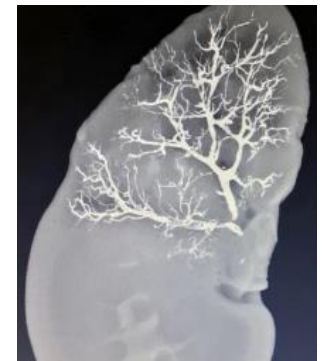
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- Embolic devices today are often difficult to use and unpredictable
- Unmet needs include:
  - Greater control and precision during embolic delivery
  - Ease of use – minimize prep and changes in clinical procedure
  - Versatility
    - Ability to penetrate distal targeted vasculature & “cast”
    - Ability to form a more proximal “plug” and create an immediate occlusion in larger vessels
  - Complete & immediate occlusion
  - No clogging in catheter
  - Minimize risk of non-target embolization
  - Minimize risk of occlusion proximal to desired location
  - Visualization of embolic during and after delivery
  - No fragmentation
  - No reflux

# GPX™ Embolic Device

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- Easy to use, controllable, versatile embolic device for highly targeted vessel occlusion
- No complex delivery technique or DMSO necessary
- Minimal prep required prior to administration
- Versatility – casts well for distal penetration in small vessels and use with a coil for proximal “plug-like” occlusions
- Overcomes problems inherent in other embolic solution:
  - Radiopaque
  - Reduced risk of non-target embolization
  - No clogging in catheter
  - No issues with reflux on delivery
- Compatible with common embolic delivery catheters & flush techniques



# GPX™ Delivery

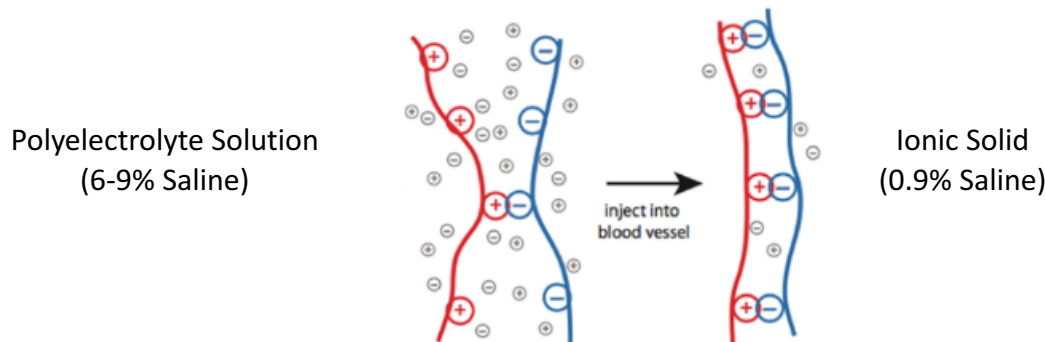
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# Technology Overview

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- GPX™: polymer-based technology consisting of a polycation, polyanion, and tantalum (radiopacity) premixed in a syringe
- The oppositely charged polymers remain dissolved in water at high salt concentrations, resulting in a flowable liquid
- The interaction strength between the oppositely charged polymers increases as GPX is injected into the blood stream and salt dissipates, forming a gel-like solid
- GPX will be offered in multiple viscosity solutions designed for a variety of applications
  - Low viscosity for deep embolization and use with small ID microcatheters
  - High viscosity for occluding larger vessels and proximal occlusion with larger microcatheters

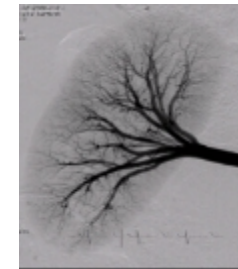


**General Principle:**  
**GPX solidifies upon injection into  
the blood vessel in response to  
decreased NaCl concentration**

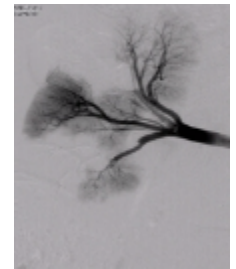


# In-Vivo Experience Summary

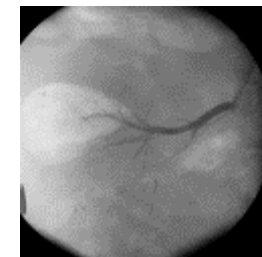
- Extensive in-vivo studies demonstrate effectiveness and versatility of GPX™:
  - Selective embolization of kidney and liver branches<sup>1,2,5,6,7</sup>
  - Single coil + GPX demonstrates rapid vessel occlusion<sup>2,6,7</sup>
  - Dual catheter embolization procedures (“Buddy Cath” technique)<sup>2</sup>
  - Simulated aneurysm (coil + balloon + GPX)<sup>2</sup>
  - Deep embolic penetration into rete mirabile (simulate AVM)<sup>3,4</sup>
  - Wide-neck aneurysms<sup>4</sup>
  - Complete occlusion of larger vessels<sup>5</sup>
  - Easy preparation and delivery compared to other embolics<sup>6,7</sup>
  - Tissue response over time similar to other liquid embolics<sup>6</sup>
  - Complete vascular occlusion out to 90 days<sup>6,7</sup>
  - Portal vein embolization<sup>8</sup>



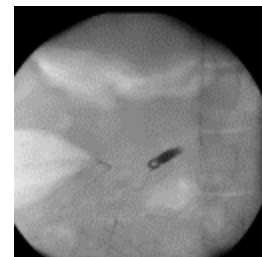
Before GPX



After GPX



Coil, before  
GPX



Coil + GPX



Aneurysm

<sup>1</sup>Camrud, A., Jorgenson, M. American Preclinical Services (APS), Minneapolis, MN. August 2018

<sup>2</sup>Reith, W., Muehl-Benninghaus, R. Universitätsklinikum des Saarlandes. Germany. August 2018

<sup>3</sup>Jorgenson, M. American Preclinical Services (APS), Minneapolis, MN. August 2018

<sup>4</sup>Reith, W., Muehl-Benninghaus, R. Universitätsklinikum des Saarlandes. Germany. October 2018

<sup>5</sup>BioSurg, Inc. Preclinical CRO Services. Sacramento, CA. November 2018.

<sup>6</sup>O’Hara, Ryan. Utah State University. April 2019 and July 2019.

<sup>7</sup>Johnson, Matthew and O’Hara, Ryan. Pre-Clinical Research Services. Fort Collins, CO. August 2019.

<sup>8</sup>O’Hara, Ryan. Utah State University. September 2019.

# Strong IP Portfolio

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- Robust intellectual property portfolio
- 10 issued patents
  - Polyelectrolyte composition
  - Method for vessel occlusion using polyelectrolytes
- Global, exclusive rights to University of Utah related IP
- 10+ patent applications
- Coverage in U.S., Europe, Australia, Japan, Canada

# Management Team & Advisors

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- Seasoned leadership team includes well-known interventional physicians, proven entrepreneurs within the interventional space, and other successful industry leaders
- **Libble Ginster**
  - President & CEO
  - C.R. Bard, Becton Dickinson, Merck, Ernst & Young, Lehman Brothers
  - 20+ years of marketing, strategy, M&A, product development
- **Danny Smith**
  - Director, R&D
  - C.R. Bard, R&D leader at several early stage companies
  - 15+ years of R&D in med device
- **Josh Jones, PhD**
  - Lead Biomedical Engineer
  - Research focus on polymers
- **Michael Dake, MD**
  - Board Member
  - Senior VP, University of Arizona Health Sciences (Professor, Depts of Medical Imaging, Surgery, Medicine)
  - Previously Professor of Cardiothoracic Surgery and Director of the Catheterization and Angiography Laboratories at Stanford Medical Center
- **Shawn Fojtik**
  - Co-Founder, Board Member
  - Successful entrepreneur; product development & commercial experience across cardiovascular, electrophysiology, interventional oncology markets
  - 75+ combined issued and pending patents
- **James McGuckin, MD**
  - Co-Founder, Board Member
  - Medical Director of the Philadelphia Vascular Institute, Founder and CEO of Vascular Access Centers, Co-Founder and Director of Research at Rex Medical, Chair of the Board of Endoshape and Board Member of Roxwood Medical
  - Awarded the 2017 Frederick S. Keller, MD, Philanthropy Award (SIR)
- **Lawrence Kronick**
  - Co-Founder, Board Member
  - 35+ years of operational experience in cardiovascular, interventional radiology, electrophysiology, and imaging