**Benjamin M. Trapp**



## Business Interest & Expertise:

* Innovation Theory, Portfolio and Project Management
* Product / Technology Development
* Intellectual Property
* Business Model creation and validation

**Technical Expertise:**

* Interventional Products / Procedures
* Cardiovascular Disease
* Catheter / Balloon / Device Design
* Material Selection, Processing & Testing
* Fiber and Nonwoven Formation
* 3-d Part Design / Rapid Prototyping
* Thin Film Composites
* Heat / Moisture transfer
* Human Comfort
* Failure analysis

**Professional Experience:**

**W.L. GORE & Associates,** (Flagstaff & Phoenix, AZ) Dec 2015 – June 2021

# Front End Innovation Leader - Medical Division

* Developed the methodology for the identification, review and pursuit of new business opportunities.
* Managed the Innovation Portfolio and Funds (~$20M) for all early exploration activities.
* Developed the Product Innovation Strategy (and Digital Health Strategy). Coorindated a select team to update annually.
* Served as the Medical Division’s representative on Gore’s Enterprise Innovation Center of Excellence team.
* Represented Gore’s innovation processes in multiple external forums.
* Introduced ‘Lean’ innovation principles and business model / customer validation into our standard practices.
* Worked with all support functions to create appropriate tools and expectations (IP, Finance, Manufacturing, etc).
* Hands on project lead and mentor to many individual product opportunities being pursued.

**W.L. GORE & Associates,** (Flagstaff, AZ) Mar 2013 – Dec 2015

# Divisional Technology Leader - Medical Division

* Key Member of the Technical Leadership Team for the Medical Division (+$1B revenue).
* Led a group of Technology Team Leaders, from a variety of disciplines, responsible for the development of the technologies critical to Gore’s endovascular portfolio.
* Drove the forecasting review and strategic planning process for the teams.
* Drove the Contribution / Compensation process for Technology associates.
* Provided review and approval for the investments plans to develop new technology.
* Organized the Divisional Technology yearly gatherings.
* Redefined the process and organization by which the Medical Products division pursues the development of new technology.

**W.L. GORE & Associates,** (Flagstaff, AZ) Aug 2007 – Mar 2013

# Catheter Technology Leader - Medical Division

* Established and led a group of associates focused on catheter and balloon technology.
* Created and maintained the goals, organizational structure, and work load for the divisional group.
* Supported the early stage catheter design work to address the needs of GORE’s four cardiovascular business units.
* Ensured investment in the appropriate capital equipment needed to maintain and grow the divisional catheter R&D lab’s capability.
* Led the development of key technologies thought to be broadly applicable to GORE’s unique catheter portfolio.
* Fostered and grew the Intellectual Property portfolio related to Gore’s catheters and balloon technology.

**W.L. GORE & Associates,** (Flagstaff, AZ) Jan 2003 – Aug 2007

# Product Development / Research Engineer - Medical Division

* Assessed the intellectual property and product portfolio of potential acquisitions. Reduced concepts to practice and revised patents to reshape the scope post acquisition.
* Managed intellectual property for all projects and relationships.
* Researched area of neuro intervention (new to company) and concepted new products to address market needs. Drove selected products through feasibility assessments and consulted as products transitioned towards clinical application.
* Designed new endovascular catheter systems and supporting medical devices for a variety of applications.
* Managed both internal and external resources to drive projects through completion.
* Set up product feasibility metrics, material needs and tests to fulfill the design criteria from market feedback.
* Developed molded, extruded, rapid prototyped and machined parts and assemblies to meet outlined metrics and market needs from concept through small scale production.
* Created extensive network of company competencies and connections and maintained a back and forth transfer of knowledge.
* Worked within the bounds of medical industry quality/design control and regulations.

**W.L. GORE & Associates,** (Elkton, MD) June 1997 – Jan 2003

# Product Development / Research Engineer - Fabrics Division

* Help to form and participated in a New Business Development Team to broaden the scope of the current business (GORETEX® outerwear) strategies and markets.
* Developed a new product line (AIRVANTAGE™ adjustable insulation) addressing the needs learned from extensive Human Comfort Research. Revenues in the multi-millions within a few years. Championed the technical development and IP planning of the product. Participated in the formation of the business and sales strategy, and worked on a small team to implement the global business plan.
* Designed and prototyped many supporting concepts throughout the technology phases of projects. Utilized both in-house and external prototyping capabilities (eg. Stereolithography, castings, machining, etc) to bring concepts to fruition. Set up molding standards and tolerances for manufacture.
* Inventor and project manager of a new nonwoven based manufacturing / product platform aimed at revolutionizing the current product and supply chain. Wrote and filed two US patents protecting invention.
* Experimented at outside factories and labs in Europe, Asia, and the US to assess their ability to manufacture our new products to set standards. Designed and implemented manufacturing and test protocols
* Conducted lab testing and field trials to determine fitness for use of new products and analyzed the returned specimens to guide further development work.
* Organized sessions across Europe and US to educate trade on learnings and to solicit market and product feedback.

**Montell Polyolefins,** (Elkton, MD) Mar 1996 - Sept 1996

# Engineering Assistant

# Designed and conducted experiments to characterize the effect of several modifiers, rubbers, and fillers in Montell’s injection molding polymers.

# Experimented with varying processing conditions to obtain desired physical and aesthetic properties.

# Operated a variety of polymer processing and testing equipment.

**W.L. GORE & Associates, (**Elkton, MD) Sept 1994 - Mar 1995

# Engineering Associate

# Characterized the dimensional stability of W.L. GORE’s standard circuit board laminates and their components using designed experiments.

# Aided in the material selection for different aspects of the final circuit board laminate.

# Statistically determined sources of error affecting the accuracy and precision of the dimensional stability measuring process and implemented changes.

**Bethlehem Steel,** (Bethlehem, PA) Aug 1993 - Mar 1994

# Engineering Assistant

* Tracked ingot stool wear and recommended ways to reduce it.
* Monitored refractory thickness of two Basic Oxygen Furnaces using laser measurement equipment.
* Worked to reduce the occurrence of ingot top explosions in the pouring stages.
* Gathered data to demonstrate the effect of high percent scrap heats.
* Managed the company wide Statistical Process Control Program.

**Education:**

**Drexel University,** (Philadelphia, PA) Aug 1992 – Jun 1997

Bachelor of Science in Materials Engineering

Graduate classes in Biomaterials & Fibers

Dissertation: Resorbable Bone Implants

**USPTO Granted Patents:**

* 11007351 CONTROLLED POROSITY DEVICES FOR TISSUE TREATMENTS
* 10076642 CONFORMABLE MEDICAL BALLOON DEVICES AND METHODS
* 10617853 CONFORMABLE MEDICAL BALLOON DEVICES AND METHODS
* 9669194 CONFORMABLE MEDICAL BALLOON DEVICES AND METHODS
* 9757261 PIVOTING RING SEAL
* 9028444 PIVOTING RING SEAL
* 10279084 MEDICAL BALLOON DEVICES AND METHODS
* 10173038 RETRACTABLE SHEATH DEVICES, SYSTEMS, AND METHODS
* 9415193 ELUTING MEDICAL DEVICES
* 10016579 CONTROLLABLE INFLATION PROFILE BALLOON COVER APPARATUS
* 9808605 CONTROLLED POROSITY DEVICES FOR TISSUE TREATMENTS
* 9730726 BALLOON ASSEMBLIES HAVING CONTROLLABLY VARIABLE TOPOGRAPHIES
* 10881426 BALLOON ASSEMBLIES HAVING CONTROLLABLY VARIABLE TOPOGRAPHIES
* 9622770 CEREBRAL VASCULATURE DEVICE
* 9084857 SINGLE ACCESS FLOW-REVERSAL CATHETER DEVICES AND METHODS
* 10799244 SINGLE ACCESS FLOW-REVERSAL CATHETER DEVICES AND METHODS
* 9668743 SINGLE ACCESS FLOW-REVERSAL CATHETER DEVICES AND METHODS
* 9889273 METHODS AND APPARATUS FOR AN ADJUSTABLE STIFFNESS CATHETER
* 9884170 CATHETER ASSEMBLY
* 7625337 CATHETER ASSEMBLY
* 9433745 PUNCTURING TOOL FOR PUNCTURING CATHETER SHAFTS
* 9180274 IMPROVED INDWELLING LUMINAL DEVICES
* 10625049 IMPROVED INDWELLING LUMINAL DEVICES
* 7736571 POLYMER SHRINK TUBES AND NOVEL USES THEREFORE
* 9320831 POLYMER SHRINK TUBES AND NOVEL USES THEREFORE
* 8252219 POLYMER SHRINK TUBES AND NOVEL USES THEREFOR

**USPTO Published Applications:**

* 20200196943 Medical treatment system using measurement data from multiple sensors
* WO2021040734A1 (PCT) Compliant sensing tether for implantable biosensor systems
* 20200196876 Implantable Cardiac Sensors
* 20200196944 Implantable Cardiac Sensors
* 20200367792 Implantable access chamber and associated method of use
* 20190183648 Artificial Chordae Tendineae repair devices
* 20140277065 Balloon Seal Stress Reduction
* 20050062284 Pressure relief valve in connector assembly of inflatable articles
* 20050046182 Connector assembly for flexible inflatable articles
* 20010033925 Fibrous Polymeric Material