

## PROFILE

Innovative engineering leader with 15 years of experience creating and launching products that delight customers and improve people's lives. Key qualifications include:

- Leader of high output R&D teams that quickly launch and validate life changing devices and products.
- Experience distilling user needs into design requirements and pairing with new technologies to create cutting edge medical products and processes.
- Project manager on multiple medical devices that include peripheral vascular, drug delivery, robotic electrosurgical instruments, cardiovascular implants, and advanced manufacturing processes.
- Extensive CAD experience in Solidworks and Creo (Pro/E) to take designs from a napkin sketch to a manufacturable 3D model with GD&T drawings.
- Implementation of design for manufacturing principals into products and procedures that reduced iterations and brought medical devices to market in 8 months.
- Creation of high functioning business systems for R&D, quality, IP and manufacturing areas.

## EXPERIENCE

**Partner** K1C Consulting-Denver, CO Oct. 2019-Present

Working alongside our clients as a design partner in the medical device, semiconductor and IoT industries to quickly launch products that integrate new technologies to improve and save lives.

- Design of MRI frame for guided laser neurosurgery
- Brainstorming and user needs for cranial drain device for treating subdural and intraparenchymal Hematomas.
- Creation of new proposals, time tracking systems, accounting and marketing initiatives.

**R&D Manager** TriSalus Life Sciences (Surefire Medical)-Westminster, CO Sept. 2017-Oct. 2019

Responsible for building and leading an exceptional R&D team focused on improving outcomes in patients with liver and pancreatic cancer with state of the art drug delivery devices.

- Led R&D team in launching four different peripheral vascular devices with FDA 510K clearance and CE marking in less than 2 years.
- Collaborated directly with physicians, researchers, marketing and sales in development of new drug delivery devices that utilize the body's vascular system to overcome issues treating solid tumors.
- Selected and partnered with numerous vendors to supplement development and manufacturing capabilities.
- Member of leadership team responsible for direction of company, new product lines, financing and communication of R&D progress to board members and potential investors.

**Senior R&D Engineer** TriSalus Life Sciences (Surefire Medical)-Westminster, CO April 2017-Sept. 2017

Lead development of new microcatheter drug delivery systems and accessories that improved user experience and reduced manufacturing costs.

- Designed microcatheter (0.029" OD) with expandable nitinol valve that overcame weaknesses of poor flexibility and improved usability by incorporating input from voice of customer studies.
- Created design control and system engineering documents based on research and customer inputs.
- Established new systems for CAD design, design control, statistical methods and incorporated lean/six sigma tools such as Kaizen, DMAIC and KT Analysis.

- Co-founder** Lumed Science-Denver, CO Nov 2014-April 2019  
Responsible for all aspects of a medical device startup, including engineering, marketing, manufacturing and sales to build a solid company foundation.
- Collaborated with dentists to address their needs and bring to market an FDA approved, patent pending dental lighting device in eight months.
  - Designed and validated the world's first completely autoclavable intraoral light utilizing new battery and LED technology.
  - Pitched to local and New York based investors to raise capital investment of \$300K.
  - Created quality management and business systems to meet FDA and ISO requirements.
  - Established and maintained relationships with industry KOLs and large dental device distributors.
- Founding Partner** K1C Consulting-Denver, CO February 2016-April 2017  
Consulted for medical device and semiconductor clients facing complex design and manufacturing challenges.
- Developed three new manufacturing processes for polymer vascular coils that took the design from the engineering bench to a validated manufacturing process at endovascular startup.
  - Researched and designed a new method of handling microscopic semiconductor vertical probes that eliminated production waste and reduced process steps by 30% at MEMs manufacturer.
  - Responsible for new proposals, time tracking systems, accounting and marketing.
- Sr. Mechanical Engineer-R&D** ConMed-Centennial, CO Oct 2011-Nov 2014  
Designed and launched new electrosurgical devices used in laparoscopic and robotic surgery.
- Designed, validated, and supported 510(k) for first robotic argon beam coagulation system with two patents issued.
  - Designed new adhesive bonding method to eliminate field failures on vessel sealing product line.
  - Redesigned mechanism components using design for manufacturing principles to reduce production scrap and eliminate 100% inspection of parts.
  - Project manager of five design projects with up to a \$400K budget and five direct team members.
- Manufacturing Engineer II** ConMed-Centennial, CO Dec 2009-Oct 2011  
Created and designed equipment and processes for new electrosurgery products.
- Designed laser surface preparation processes and equipment for high volume assembly.
  - Project manager and designer of a \$360K manufacturing line for semi-automated assembly.
  - Led implementation and validation of nine different semi-automated processes.
  - Lean Six Sigma leader and participant in reduction of production scrap from 30% to 5%.
  - Author of numerous protocols and SOPs including design for manufacturability and statistical methods procedures.
- Sr. Manufacturing Engineer** Accellent- Arvada, CO May 2008-Dec 2009  
Responsible for development of new cardiovascular products for high volume manufacturing.
- Led development of 30+ medical device manufacturing projects.
  - Project manager and designer of equipment and processes for Class III IVC filter.
  - Implemented new processes in stent manufacturing, laser cutting and welding of an IVC filter, precision metal stamping and resistance welding of guidewire assembly.
  - Created device master records, validation plans and protocols, product risk assessments, work instructions and manufacturing documentation.
- Mechanical Quote Engineer** Flextronics-Broomfield, CO June 2007 - May 2008  
Analyzed new customer RFQs and determined vertically integrated solutions for a variety of industries.
- Created and trained U.S. based team on automated system for quoting of complex electronic systems.
  - Worked with internal and external suppliers to determine costs of machined components.
  - Developed relationships with custom component manufacturers in the U.S. and abroad.

**Project Engineer** Point Technologies-Boulder, CO & Costa Rica July 2004 - April 2007

Responsible for design, and development of new medical and semiconductor products and manufacturing processes

- Project manager responsible for \$3 million relocation of manufacturing facility to Costa Rica which was under budget and on time.
- Created and presented new product designs and processes to customers and company executives.
- Designed and implemented automated plating and electrochemical processing lines.

**EDUCATION** **University of Colorado, Boulder, CO** Bachelors of Science in Mechanical Engineering, 2004  
President of Society of Venture Engineers, 2003-2004  
Engineering Outreach Undergraduate Fellow, 2003-2004

**TRAINING & CERTIFICATION**  
Design for Lean Sigma-2013  
OR Protocol: Codes of Conduct and Safety- 2012  
ANSYS Workbench Mechanical-2012  
Geometric Dimensioning and Tolerancing- ASME Y14.5M-1994- 2004 & 2010  
GMP Process Validation and Principals -2010  
Lean Six Sigma - 2009  
Training Skills for Managers- 2008

**HONORS**  
National Science Foundation I-Corps Mentor for pre-SBIR technologies  
Panelist at CU bioengineering retreat  
Guest speaker at CU product introduction class on new product development

**ACTIVITIES**  
Adventure racing and long distance relays  
Mountain biking, skiing, and hiking  
Home brewer