

SCOTT W. ROBERTSON

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PROFESSIONAL EXPERIENCE

FATHOM ENGINEERING; Berkeley, CA

2013 – present

Co-Founder

Provides engineering consulting services supporting medical device design during new product development, benchtop testing, failure analysis, and litigation support. Offers material selection, design optimization for safety, efficacy, differentiability, cost, and manufacturability, project management, verification and validation activities, supplier qualification, and manufacturing scale-up.

NITINOL DEVICES & COMPONENTS (NDC); Fremont, CA

2007 - 2014

Primary Business Unit

Engineering Fellow (May 2013 – Jan 2014)

Advancing the technological innovation critical to the long-term success and market differentiation of the entire NDC business, including new material formulation, development of improved manufacturing processes and techniques, and facilitation of customer success by adoption of novel Nitinol solutions.

Materials Business Unit

General Manager (April 2011 – May 2013)

Built \$30M annual top-line revenues with year-over-year profit growth by the development of market-differentiating products, continual innovation, and process optimization for cost reduction. Managed employees, suppliers, customers, resources, timeline, and budget of high quality Nitinol products including wire, sheet and tube. Provided Nitinol technical expertise for the development of new product lines and to support customer challenges. Facilitated interdisciplinary team focused on efficiency, communication, growth, and employee retention. Launched direct-from-inventory e-commerce site shop.nitinol.com.

Veniti Medical, Venture Roll-up of NDC

V.P. of R&D (Feb 2011 – May 2011)

Served as the interim V.P. of R&D following the acquisition of Teneo by Veniti to ensure a seamless technology transfer. Trained engineering staff, combined design history and quality systems, and supported regulatory and marketing objectives.

Teneo Medical Development, Incubated Venture of NDC

General Manager (Jan 2009 – Feb 2011)

Managed the development of a novel IVC filter in pursuit of FDA 510(K) approval. Responsible for the design of the device and delivery system, KOA interface, device manufacturing, clinical trial design, FDA regulatory affairs, business planning and fund-raising, and quality system management. Negotiated successful exit strategy resulting in acquisition of Teneo by Veniti Medical, a larger venture spin-off from NDC.

Devices & Components Division

Principal Engineer (Mar 2008 – Jan 2009)

Promoted and moved from R&D into a manufacturing production role following NDC's divestiture from Cordis. Provided expert services to customers via manufacturing prototyping, development, and failure analysis needs relating to Nitinol biomedical products. Provided engineering support to customers who required manufacturing scale-up from initial prototype design through regulatory body approval and commercialization. Managed suppliers and an internal cross-functional mechanical testing and R&D services team.

Accelerated Medical Ventures Division (NDC subsidiary, Cordis Corp, a J&J Company)

Staff Engineer (Feb 2007 – Mar 2008)

Performed R&D support to characterize cardiovascular disease states – specifically carotid and superficial arterial disease, and atrial septum defects – and quantified those biomechanical dynamic motions into appropriate engineering design criteria to enable the design of robust and durable biomedical devices. Designed and prototyped peripheral stents and fabricated in *vitro* models for the simulated testing of those devices. Served as liaison between engineering team and local interventional radiologists and cardiologists.

SRI INTERNATIONAL; Menlo Park, CA

2004 – 2006

Researcher

Founding member of the RESISStent program (Reliability Enhancement and Service Improvement for Stents), which co-organized a worldwide group of interdisciplinary biomedical device professionals all with the common goal of investigating the shortcomings of current stent designs. Prepared presentations and reports to disseminate the team's findings to the general public, FDA, physicians, and engineers such that future advancements in the field could lead to lower occurrences of device failure.

EXPONENT FAILURE ANALYSIS ASSOCIATES; Houston, TX and Menlo Park, CA

2001 – 2004

Engineer, Mechanics and Materials Unit

Specialized in analysis of mechanical and materials applications including accident investigations/recreations and failure analyses for a variety of industries including aerospace, architecture, automotive, aviation, biotechnology, construction, defense, electronics, energy, nuclear power, oil/gas, optoelectronics, polymer, semiconductor and telecommunications.

Project Engineer

Designed and developed custom mechanical testing fixtures; identified organic contaminants by Fourier Transform Infrared Spectroscopy (FTIR) that caused failures in products such as bioengineered implants, PCB components, thermo-electric coolers, and jet engines; and performed photodocumentation: macroscopic, stereomicroscopic and metallographic techniques to accentuate failure mechanisms such as fatigue striations, stress-corrosion-cracking and intergranular attack.

EDUCATION**University of California, Berkeley**

Ph.D., Materials Science & Engineering, Dec 2006

Masters of Science, Materials Science & Engineering, May 2005

Haas School of Business, University of California, Berkeley

Management of Technology Certification, Jan 2006

University of Texas, Austin

Bachelors of Science, Mechanical Engineering, May 1998

PROFESSIONAL MEMBERSHIP

ASM International's Shape Memory and Superelastic Technologies (SMST) Society, 2002-present. Elected to the SMST Board in 2012, and serving as the Co-Chair of the 2014 SMST Conference in Asilomar, Ca.

PEER-REVIEWED PUBLICATIONS

- Kuo WT, Deso SE, Robertson SW. Venatech LGM Filter Retrieval 16 Years After Implantation: Piecemeal Removal By Intentional Mechanical Fracture. *J Vasc Interv Radiol* 2013; 24(11); 1731-1737.
- Kuo WT, Robertson SW, Odegaard JI, Hofmann LW. *Complex Retrieval of Fractured, Embedded, and Penetrating IVC Filters: a Prospective Study with Histologic and Electron Microscopic Analysis*. *J Vasc Interv Radiol* 2013, 24; 622-630.
- Robertson SW, Pelton AR, Ritchie RO. *Mechanical fatigue and fracture of Nitinol*. *Int Mater Rev* 2012, 57 (1); 1-36.
- Barney MM, Xu D, Robertson SW, Schroeder V, Ritchie RO, Pelton AR, Mehta A. Impact of Thermomechanical Texture on the Superelastic Response of Nitinol Implants. *J Mech Behav Biomed Mater* 2011. 4; 1431-1439.
- Hull JE, Robertson SW. *Bard Recovery Filter: Evaluation and Management of Vena Cava Limb Perforation, Fracture and Migration*. *J Vasc Interv Radiol* 2009. 20:52-60.
- Robertson SW, Cheng CP, Razavi MK. *Biomechanical Response of Stented Carotid Arteries to Swallowing and Neck Motion*. *J Endovasc Ther* 2008, 15:663-671.
- Robertson SW, Jessup DB, Boero IJ, Cheng CP. *Right Renal Artery In Vivo Stent Fracture*. *J Vasc Interv Radiol* 2008, 19(3); 439-442.
- Gall K, Tyber J, Wilkesanders G, Robertson SW, Ritchie RO, Maier HJ. *Effect of Microstructure on the Fatigue of Hot Rolled and Cold Drawn NiTi Shape Memory Alloys*. *Mat Sci Eng A* 2008, 486:389-403.
- Pelton AR, Schroeder V, Mitchell MR, Gong XY, Barney M, Robertson S. *Fatigue and Durability of Nitinol Stents*. *J Mech Behav Biomed Mater* 2008, 1; 153-164.
- Robertson SW, Ritchie RO. *A Fracture-Mechanics Based Approach to Fracture Control in Biomedical Devices Manufactured from Nitinol Tube*. *J. Biomed. Mater. Res. B* 2008, 84B(1); 26-33.
- Robertson SW, Mehta A, Pelton AR, Ritchie RO. *Evolution of crack-tip transformation zones in superelastic Nitinol subjected to in situ fatigue: A fracture mechanics and synchrotron X-ray microdiffraction analysis*. *Acta Mater* 2007, 55(18); 6198-6207.
- Robertson SW, Ritchie RO. *In vitro fatigue-crack growth and fracture toughness behaviour of thin-walled superelastic Nitinol tube for endovascular stents: A basis for defining the effect of crack-like defects*. *Biomaterials* 2007; V28(4): 700-709.
- Stankiewicz JM, Robertson SW, Ritchie RO. *Fatigue-crack growth properties of thin-walled superelastic austenitic Nitinol tube for endovascular stents*. *J. Biomed. Mater. Res. A* 2007; 81A (3): 685-691.
- Robertson SW, Gong XY, Ritchie RO. *Effect of Product Form and Heat Treatment on the Crystallographic Texture of Austenitic Nitinol*. *J Mater Sci* 2006; V41; 621-630.
- Robertson SW, Imbeni V, Wenk H-R, Ritchie RO. *Crystallographic texture for tube and plate of the superelastic/shape-Memory alloy Nitinol used for endovascular stents*. *J Biomed Mater Res A* 2005; V72A; Iss 2: 190-199.

INVITED LECTURES

- Advances in Fatigue Characterization of Nitinol. SMST Conference, Prague, Czech Republic, 2013.
- Introduction to Nitinol Fatigue. Shape Memory and Superelastic Technologies Conference, Prague, Czech Republic, 2013.
- Introduction to Nitinol Fatigue. Shape Memory and Superelastic Technologies Conference, Hong Kong, China, 2011.
- Introduction to Nitinol Fatigue. Shape Memory and Superelastic Technologies Conference, Pacific Grove, CA, USA 2010.
- Fatigue in Biomedical Devices. ME 117: Structural Aspects of Biomaterials, Univ of Calif. Berkeley; Feb 13, 2007.
- Stent Failures: Investigation, Research, and Fracture Mechanics. ME 117, Univ of Calif. Berkeley; April 4, 2006.