

ERIC M. SIMON

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Career Highlights

- Twelve years President / Freelance Design Engineer—Dexterity Design / Dexterity, Inc.; product design and engineering, functional prototyping, testing, pre-production services
- Co-Manager—Miniature Implantable Drug Delivery Systems Project (funded by subsidiary of Merck Sharp & Dohme): average annual budget of \$350,000; three patents issued; responsible for technical development, personnel management, budgeting, scheduling, reporting
- National Institute of Health SBIR Grant Principle Investigator—Fibrous Substrates for Cell Culture: budget of \$70,000; responsible for device design and implementation, management & outsourcing, budgeting, scheduling, reporting
- Fourteen patents issued or pending; numerous products designed and in production
- Successfully invented, patented, marketed, and licensed a product

Technical Experience

DESIGN ENGINEER / CONSULTANT

Dexterity Design, Salt Lake City, Utah

1991 to Present

- Product design, engineering, prototyping, testing, and failure analysis
- Project management, market and patent research, expert witness
- Focus on biomedical, consumer, and recreational product sectors
- SolidWorks □ 3-D Solids CAD user since 1996
- Selected Projects: Design and prototype laser therapy system; Design and prototype modular climbing wall system; Design and prototype blood pressure transducer; Design of modular crowd-control barrier system; Design and prototype micro-dermabrasion system; Design and prototype tool-less irrigation couplings; Design and prototype aesthetic massage system; Design of free-form eyeglass retainer nut; Design and implement pressure-formed dental laser enclosure; Design water-filled highway barrier system; Design, prototype, and license disposable dispensing prophylaxis angle; Design and prototype fluorescence immunoassay system—hardware and disposables; Plastic materials selection for modular cellular telephone; Materials selection, production analysis, and failure analysis of sunglasses and ski goggles

ENTREPRENEUR – INVENTOR

Mitochon, LLC, Salt Lake City, Utah

1998 to Present

- Design and pre-production of the Qwikey □ detachable clasping fastener
- Preparation and prosecution of US utility patent
- Preparation and negotiation of license to manufacture & distribute with Micro Plastics Inc.
- Ongoing product development

PROJECT ENGINEER / BIOMATERIALS SPECIALIST

Center for Engineering Design, Salt Lake City, Utah

1985 to 1991

- Development of implantable logic controlled drug-delivery devices
- Design, development, and testing of fibrous membrane cell culture labware
- Technical writing and proposal preparation--\$25,000 to \$1.5 million funded
- Fabrication of electret materials for micro-mechanical sensors and actuators
- Redesign of abdominal implant devices
- Material and design consultation—robotics, biomedical, sensors

Experience <i>(continued)</i>	BIOMATERIALS / MANUFACTURING ENGINEER		
	Symbion Inc., Salt Lake City, Utah		1985
	<ul style="list-style-type: none"> • Contract engineer—development and manufacture of Jarvik-7 artificial heart • Analysis of materials and techniques used in artificial heart manufacture • Selected Projects: Surface and bulk analysis of urethane material (Biomer®) in explanted artificial hearts; Photographic documentation of explanted hearts; Scientific review of state-of-the-art in surface passivation of blood-contact materials; Quality control analysis of elastomeric valve seals used in pneumatic heart drives; Manufacturing review of heart production methodology 		
	ZAMBONI DRIVER		
	Sun Valley Ice Center, Sun Valley, Idaho		1985
	<ul style="list-style-type: none"> • Maintenance of ice sheet, maintenance of ammonia-based refrigeration system 		
	GRADUATE STUDENT		
	University of Utah, Salt Lake City, Utah		1983 to 1985
	<ul style="list-style-type: none"> • Thesis: Design, production and testing of electrostatically spun fibrous polymeric membranes for use in small diameter cardiovascular implants • Surgical implantation of artificial vascular devices • Supervisor of undergraduates in laboratory 		
	MANUFACTURING ENGINEER		
	American Medical Optics, Irvine, California		1983
	<ul style="list-style-type: none"> • Development of surfactinated polish and finishing methodology for use in intraocular lens (IOL) and contact lens production • Design of IOL haptic elements • Implementation of static control system, quality control, worker education 		
	RESEARCH TECHNICIAN		
	BME Center for Polymer Implants, Salt Lake City, Utah		1981 to 1983
	<ul style="list-style-type: none"> • Urethane synthesis • Fabrication and testing of polyurethane vascular grafts 		
	PRODUCTION & DESIGN TECHNICIAN		
	Eclipse, Inc., Ann Arbor, Michigan		1980
	<ul style="list-style-type: none"> • Design, fabrication, and testing of bicycle equipment and recreational goods 		
Education	Master of Engineering, Bioengineering, University of Utah		graduated 1985
	Bachelor of Science, Materials Science & Engineering, University of Utah		graduated 1983
	Interdisciplinary Engineering/Premedicine, University of Michigan		1978 to 1980
Professional Skills	Project Management	Product Design	Surface Characterization
	Proposal Preparation	Rapid Prototyping	Materials Selection
	Budgeting & Scheduling	3D Solids CAD/CAE	Failure Analysis
	Patent Review	Design Review	Surface Modification
	Manufacturing Analysis	Market Review	Molding & Fabrication

Technical Scope	Drug Delivery Systems	Cardiovascular Devices	Ophthalmic Implants
	Cell Culture Hardware	Disposable Medical Products	Performance Apparel
	Percutaneous Access Devices	Dental Products	Micro Mechanisms/Sensors
	In Vitro Diagnostic Systems	Soft Goods	Electronic Device Enclosures
	Consumer Healthcare Products	Sport Optics	Catheter-Based Devices
	Biomaterials Selection/Analysis	Recreational Products	Barrier Systems

Awards & Affiliations	Intermountain Society of Inventors and Designers	Society of Plastics Engineers
	Intermountain Biomedical Association	Utah Soc for Biomaterials Research (President, 1985)
	College of Engineering Scholarship, U of Utah	Regent's Scholarship, U of Michigan
	Tau Beta Pi, Engineering Honor Society	Phi Kappa Phi, National Honor Society

Patents Reusable fluid pressure transducer monitoring apparatus (App. No. 20020198458)
Control barrier with rotatable legs (App. No. 20020014619)
Method and system for performing microabrasion (App. No. 20020169461)
Lens and Associatable Flow Cell (App. No. 20020094147)
Detachable Clasp Fastener (6,243,922; pro se execution)
Dermabrasion Handpiece (D451,196) and Dermabrasion System (D450,842)
Lens and Associatable Flow Cell (6,108,463 & 6,356,676)
Waveguide Lens (D426783)
Teeth Cleaning Implement with Integrated Fluid Dispenser (5,642,994)
Implantable Drug Delivery System with Piston Actuation (5,196,002)
Multiple Vesicle Implantable Drug Delivery System (5,167,625)
Disposable Toothbrush Cover (5,139,142; pro se execution)
Implantable Drug Delivery System with Piston Actuation (5,059,175)

Legal Experience	Plaintiff Expert Witness—Medical Malpractice	
	Failure of hip implant (unrelated to previous case, below)	1997
	<ul style="list-style-type: none"> • Review of extensive case documentation • Review of FDA regulations and device failure reports • Resolution: Based upon Plaintiff's history of falling and lack of applicable device failure reports, client was advised not to pursue case 	
	Plaintiff Expert Witness—Product Liability/ Personal Injury	
	Failure of night light and subsequent hand injury	1995
	<ul style="list-style-type: none"> • Review of failed and new product and analysis of failure (see technical report, below: Analysis and Performance Testing of the Base-To-Lens Snap Fit Assembly of a Night Light) • Resolution: Settled out of court in favor of plaintiff, strong financial gain 	
	Defense Expert Witness/Expert Search—Medical Malpractice	
	Failure of custom hip prosthesis	1994
	<ul style="list-style-type: none"> • Review of case documents, interview with defendant • Review of FDA regulations of custom and experimental medical devices • Located two experts with design knowledge of esoteric hip implant • Resolution: Settled out of court with small liability to the defense 	

Legal (continued)	<p>Defense Expert Witness—Product Liability/ Personal Injury Entanglement of hand in rotor assembly of vacuum blower 1993</p> <ul style="list-style-type: none"> • Review of case documentation, site visit, photo-documentation • Review of current industry & government regulatory standards • Production and review of affidavit • Resolution: Co-authored interrogatory which led to successful summary judgment for client and release of liability <p>Defense Expert Witness—Medical Malpractice Failure of penile prosthesis 1992</p> <ul style="list-style-type: none"> • Review of state-of-the-art penile implant design, manufacturing, surgical technique, failure, liability • Resolution: Settled out of court with minimal liability to the defense
Technical Reports	<p>Tipping Analysis of Water-Filled Barrier, April 2001 Ophthalmic Electrode Materials Search, July 1999 Search Report: Tube and Pipe Fittings, May 1999 Manufacturing Feasibility for Production of Orlock™ Tubing, November 1998 Design Specification: Passive Cartridge v1.1, August 1998 Apollo™ Flashtube Chassis Design Verification, February 1998 Prophyze™ DDPA Pros & Cons, November 1997 Optimization of Waveguide Signal-To-Noise Ratio, February 1997 Implant Testing of Butyrate Sheet Subjects to Static Cling Vinyl Labels, April 1996 Incompatibility of Static Cling Vinyl Labels with Ski Goggle Lenses, December 1995 Surgical Microscope Shield—Concept Design & Materials, October 1995 Plastics Recommendations for Modular Cellular Telephone, June 1995 Discussion of Goggle Spacer-Foam Adhesion Failure, March 1995 L.L. Bean Lens Abrasion—Results of Optical and Physical Analysis, December 1994 Sunglass Frame Materials—Comparison of Properties, September 1994 Alternative Plastic Materials for High Performance Sunglass Frames, June 1994 Analysis and Performance Testing of the Base-To-lens Snap Fit Assembly of a Night Light, April 1995 (Product Liability/ Personal Injury Lawsuit) Materials Recommendations for Adjustable Ski Pole Clamp, March 1994 Sunglass Browpiece Redesign—Fortified Lens Groove, February 1994 Sunglass Lens Failure—Hardcoat Delamination, January 1994 Goggle Face-Foam Adhesion—Interim Report, December 1993 Coating Durability of Plastic Sunglass Lenses—QA Specification, November 1993 Rutherford Backscattering Analysis of Mirror Lens Coatings, October 1993 Injection Molding, Embrittlement, and ESC of Sunglass Frames, September 1993 Materials for Encapsulation of Transcutaneous Energy Transmission System, August 1993 Polycarbonate Thermal Lens Fogging, May 1993 Process Control for Thermoformed Lens Production, August 1992 Environmental Stress Crack Failure of Ventilator Cartridge Tubing Connector, May 1992 Redesign of Ventilator Cartridge and Heather Unity, April 1992 Miniature Implantable Drug Delivery System—Phase II Final Report, April 1990 Historical and Technical Review of Drug Delivery Systems, July 1988</p>

- Reports**
(continued)
- NIH SBIR Phase I Final Report: Fibrous Substrates for Cell Culture, May 1988
 - A Review of the FLEX Series Displacement Sensors, June 1987
 - Electret Materials: Comparison of Preparation By Corona Discharge and Electron Bombardment, May 1986
 - Electrostatic Spinning of Solution Polymers: Device Design and Product Surface Characterization, February 1985
 - A Device for the Electrostatic Spinning of Solution Polymers: Device Theory and Description, June 1983
- Proposals**
- Ophthalmic Electrode Materials, May 1999
 - Development and IP Review of a Micro-Dermabrasion System, May 1999
 - Intermediate Waveguide: Overview and Development Budget, September 1998
 - Design and Prototype of a Custom Photo Station for AMS, July 1998
 - Design and Prototype of an Aesthetic Massage System, March 1998
 - RFQ: Multibarrier 1B Finite Element Analysis, June 1997
 - Test Fixtures for Fluorescence Immuno-Diagnostic System, January 1996
 - Plastic Enclosure for the Genesis-2000 Dental Laser System, July 1995
 - Disposable Dental Articulator, May 1995
 - Electrical Connection System for pH Enteral Feeding Catheter, May 1995
 - Dental Implant Surgical Guide, April 1995
 - Double-Blade Biopsy Knife, February 1995
 - Thermoformed Enclosure for Vibrotactile Tester, January 1995
 - Plastic Enclosure for the AccuCure 3000 Dental Laser System, June 1994
 - Materials & Analysis of Overmolded Ski Pole Grip, March 1994
 - Determination of Lens Surface Temperature, February 1994
 - Medical Device Introducer—Materials & Fabrication, July 1993
 - Porcelain Dispensing System for Dental Fabrication, May 993
 - Heated Matched-Mold for Thermal Lens Production, January 1993
 - A Pet Collar Drug Delivery System, January 1991
 - MIDDS—University of Utah Biomedical Research Support Grant, October 1989
 - Thermal Energy Generation from Palladium Hydrolytic Cells, September 1989
 - MIDDS: A Miniature Implantable Drug Delivery System, July 1988
 - Fibrous Substrates for Cell Culture (NSF SBIR Grant), July 1986
 - Introduction to the Subcutaneous Peritoneal Access Device and Review of Potential research and Development Projects, May 1986
- Publications**
- “Be Careful with the ‘Custom’ Device Exclusion,” *SCOPE*, 2(1), February 1995, p. 6.
- Business Documents**
- Calapso™ Drinkware Products—Business Plan and Financial Analysis, December 1994
 - SportStax™ Production Financial Analysis, September 1993
 - VersaGlove™ Lightweight High-performance Glovers—Business Plan and Financial Analysis, July 1991
- After Hours**
- Inventing Whitewater Kayaking Skiing Mountain Biking Scriptwriting
- Personal**
- Married, with two maniacal children