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Bob Lash, M.D., B.S.E.E./C.S.

Objective

As both a Medical Doctor and Engineer by training, with 12 years of medical device industry experience leading product development from concept through to production, I enjoy pioneering new medical devices in fast-moving start-up environments. I love to innovate, leveraging existing technology when it makes business sense to do so. I also enjoy using my industry experience to help shape product vision and strategic business direction.

Experience

ViOptix, Inc.   Fremont, CA   2002 – Present

VP of Engineering

- Responsibilities include leading the product development process, from concept stage through to production, for a non-invasive laser-based tissue oximeter.

- Directing all engineering. Overseeing project planning as well as management of in-house and out-of-house teams providing analog, digital, mechanical, optical, industrial design, electrical safety, manufacturing engineering (including IEC60601 and UL2601 conformance), GUI design, C++ based software engineering, and software quality assurance.

- Grew the in-house engineering staff to nine by identifying and hiring engineers with medical device industry experience who were also a good fit with the culture of the existing team. Provided mentoring, resources, design assistance, and help with problem solving.

- Track record of hitting milestones on time and within budget.

- Transformed "science project" stage technology into BETA commercial product prototype within 3 months of joining company.

- Contributed to the design of both bench and clinical validation studies to support the FDA 510[k] process, and participated in discussions with the FDA.

- Securing provisional patent filings on an on-going basis.

- Selected, qualified and now managing major contract manufacturer conforming to FDA QSR / cGMP quality requirements.

- Experienced working with investors and participating in road show presentations.

- Product consists of a touchscreen driven embedded-control based console which is fiberoptically coupled to patient sensors, using ODIS (Optical Diffusion Imaging and Spectroscopy) technology. Sensors consist of a reusable and a disposable component. Applications include plastic surgery, peripheral vascular disease, breast cancer, and neonatology.

Driving Media, Inc.　　　Los Gatos, CA　　　　　　　2000 – 2001
VP of Engineering

- Responsibilities include all technology development for a massively scalable online service for consumers.
- Directed all engineering. Oversaw technical project planning as well as hiring and management of Software Engineering staff and IT services.
- Led creation of high performance web page Application Server, Content Management System, XML data integration, Flash client integration, Registration and Login, Message Board integration, and Stats tracking.
- Constructed scalable co-located server farm based on clustered Linux machines and RAID-5 infrastructure using no-single-point-of-failure architecture.

Zorch, Inc.　　　　　　Menlo Park, CA　　　　　　　1998 - 2000
Chief Technical Officer, Co-founder

- Responsibilities included all technology development for a massively scalable online service.
- Directed all engineering. Oversaw technical project planning as well as hiring and management of Software Engineering staff and IT services.
- Developed proprietary Shockwave client and client/server layer. Client runs in Web browser and connects to efficient C-based world server backend. Client also communicates to Perl-based Web services via Javascript and VBScript event trapping.

Infoseek / Disney's GO Network　　　Sunnyvale, CA　　　　　1998
Engineering Manager

- Continued to oversee WebChat Communications engineering staff and technical operations during its acquisition by Infoseek Corporation. Assisted with transfer of technology and its integration into Disney's GO Network. Subsequently left to join other WebChat founders in a new venture, Zorch, Inc, as its CTO.

WebChat Communications　　　Menlo Park, CA　　　　　1993 – 1998
Chief Technical Officer, Co-founder

- Responsibilities included technology development for the WebChat Broadcasting System, a 3 million member web-based community.
- Directed all engineering. Oversaw technical project planning as well as management of Software Engineering Staff (server applications) and IT services (UNIX administration and 24 X 7 operations).
- Designed massively scalable web site for this service.
- Site acquired by Infoseek in April, 1998. Integrated into Disney's GO Network.
- Constructed and managed Web server farm handling 20 million hits/day, 6 million ad impressions/day, and 30 MBPS peak bandwidth, using 20 DEC Alpha UNIX servers, SUN Enterprise server, and RAID-5 infrastructure.
- Assisted in crafting high-level business strategy and vision as a member of the Board of Directors.

M.D. Personal Products, Inc.   Hayward, CA   1989 – 1993

Vice-Chairman, Chief of Research & Development, Co-founder

- Raised venture backing from Hambrecht & Quist for development of a gynecological medical device: the "Women's Choice" female condom.

- Recruited former VP of Marketing at Kimberly-Clark to serve as CEO.

- Responsible for technology development including prototyping, timeline and budgetary planning, allocation of staff and resources, R&D, device development, laboratory testing, design and conduct of clinical trials, management of FDA regulatory affairs (including 510[k] and PMA filings), development of GMP program, patents, and engineering support.

M.D. Engineering, Inc.   Hayward, CA   1984 – 1989

President & CEO, Co-founder

- Responsibilities included development of new embedded-control based medical devices and technology in the area of surgical instrumentation for cosmetic and endoscopic general surgery. Led the analog, digital, software, and mechanical engineering teams. Directed all R&D. Oversaw clinical trials, manufacturing, marketing, sales, FDA regulatory affairs (including 510[k] and PMA filings), GMP/QS, patents, and administrative functions.

- Led the development of a microprocessor-based laparoscopic insufflator, endoscopic xenon fiber-optic light source (with video controlled auto-iris), microprocessor-based intraoperative blood loss monitor, surgical aspiration system, sterile disposables, oral implant, autologous tissue transfer system, core temperature biotelemetry probe, and a pulse oximeter.

- The venture was acquired by Medical Device Resource Corporation, which still produces many of the company's cosmetic surgical products today.

Academic / Medical Device Engineering Projects		
1989 - 1997	Intraoral Controller for Quadriplegics, N.I.H. Grant
1982	Ocular Communicator for Quadriplegics, U.C. San Diego
1981	Core Temperature Telemetry Recorder, U.C. San Diego
1978 - 1981	Caloric Expenditure Computer Monitor
1978	Surgical Nerve Stimulator, Stanford
1979	Automated Hearing Tester, U.C. Berkeley

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1977-1979	Visual Evoked Potential System, U.C. Berkeley
1977	Engineering Intern, IBM
1974	Engineering Intern, Stanford Linear Accelerator Center
1973-1977	Microprogrammed Computer, Homebrew Computer Club

As an original member of The Homebrew Computer Club, I designed and constructed a "homebrew" computer with a 30 bit wide micro-control store and user-definable RISC type instruction set. I built it entirely out of MSI/SSI TTL. I also wrote software tools for the project including my own compiler and assembler.

Hardware Design Specialty Areas	Embedded Control, Transducers, Data Acquisition Systems, Signal Processing, Analog and Digital Design, Optoelectronics, Fault-tolerant Systems, UL 2601 compliance, Electro-mechanical and Mechanical Medical Devices.
Operating Systems	Linux (since 1994), Digital UNIX, SUN Solaris, FreeBSD, Windows 95/98/ME/NT/2000/XP/XP Embedded. Platforms: Intel, DEC Alpha, and SUN SPARC.
Programming Languages	Perl / XML, C, Javascript, VBScript, HTML / CGI, Shockwave / Lingo, Visual Basic, and Fortran. Assembly languages: x86, Z80, 6502, 1802, IM6100, PDP-8, PDP-11.
Databases	UNIX DBM, mySQL, XML data feeds, LDAP / Netscape Directory Server.
Applications	Macromedia Director, Flash, and Fireworks. Microsoft Project, Excel, Powerpoint, and Word.
Education	University of California Berkeley, CA 1975 - 1979

- **B.S. Degree in Electrical Engineering and Computer Science**
- Graduated Summa Cum Laude, with emphasis in Bioengineering

University of California   San Diego, CA   1979 - 1983

- **M.D. Degree**

St. Mary's Hospital   San Francisco, CA   1983 - 1984
- **Physician** – **Transitional Internship in Surgery and Medicine**

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Honors	Phi Beta Kappa
	Tau Beta Pi
	Eta Kappa Nu

U.S. Patents

U.S. Patent No. 4,770,187	"Surgical aspirator and monitor"
U.S. Patent No. 4,662,873	"Intravenous tube stress relief bracelet"
U.S. Patent No. 4,683,884	"Smokeless low-noise electrocautery"
U.S. Design Patent No. 298,650	"Surgical aspirator and pump"

Papers and Publications

Lash, R., Neroth, C., and Marg, E., *A Microprocessor Based System for Visual Evoked Potential Measurement*, in Proceedings of the Twelfth Hawaii International Conference on System Sciences, vol. 1, pp. 210-213, 1979

Lash, R., *A Computer Algorithm to Control Walking Function in Paraplegics Using Hypothetical Muscle Stimulator System*, doctorate thesis, University of California Biomedical Library, San Diego, 1983

Maloney, S., Zlotolow, I., Lash, R., and Sproles, C., *Feasibility Testing of an Intraoral Controller Prototype*, Proceedings of the 21st Annual Neural Prosthesis Workshop, NIH Oct., 1990

Maloney, S., Zlotolow, I., Lash, R., and Kovacs, G., *Control Characteristics of an Intraoral Controller Prototype*, Proceedings of the 22nd Annual Neural Prosthesis Workshop, NIH, Oct., 1991

Maloney, S., Zlotolow, I., and Lash, R., *Optimization of Proprioceptive, Visual, and Auditory Feedback for an Intraoral Controller*, Proceedings of the 23rd Annual Neural Prosthetics Workshop, NIH, Oct. 1992

Maloney, S., Zlotolow, I., and Lash, R., *Intraoral Controller Emulation of a Computer Mouse*, Proceedings of the 27th Annual Neural Prosthetics Workshop, NIH, Oct. 1996

Interests

Amateur radio astronomy, enjoying hobby projects with my son, scuba diving, travel, and guitar. I also make an excellent Caesar salad.