

**Andrew A. Berlin, Ph.D.**  
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**(856) 904-1552**

### **Skills Summary**

Senior Technologist (inventor and entrepreneur) with a strong record of building organizations that create novel solutions to real-world problems. Expert in using information technologies to interact with the physical world. Broad experience in information technologies, as well as analysis of complex data sets, signal processing, early disease detection, biosciences, Micro Electro Mechanical Systems (MEMS), sensor networks, computer architecture, and machine vision. Dr. Berlin is a prolific inventor with 70+ U.S. patents and dozens of international patents.

### **Education**

#### **Massachusetts Institute of Technology (MIT)**

Ph.D., S.M., and S.B. degrees in Electrical Engineering and Computer Science

### **Honors and Awards**

*MIT Guillemin Prize* (undergraduate thesis award) for creating one of the first real-time image processing VLSI chips.

*Xerox Corporation EAGLE award* (awarded to the top 10 inventors in the company)

*Xerox Corporation Excellence in Research Management* award (for cross-organization coordination and vision-setting activities)

*Xerox Corporation Team Excellence in Science and Technology* award for creating the world's smartest 'air hockey' table to move paper at high speeds.

Dr. Berlin's research at Xerox on active structural enhancement has been featured on the front page of *The New York Times*, as a nationwide news story on *ABC World News Tonight*, and in dozens of major media publications worldwide.

### **Employment**

#### **New Venture (July, 2014 - present)**

Currently incubating a new business to commercialize a new invention that removes reflections and glare from video images and enables detection and amplification of features that would not otherwise be visible.

#### **Owner, Applied Voices LLC (2008 - Present)**

Invented and commercialized novel software algorithms that enhance the ability of microphones to capture the human voice at a distance (i.e. the back row of a lecture hall). Also developed a variety of 'apps' for mobile phones including the first breath-activated 'flute' for a mobile phone.

#### **Owner, Berlin Science and Technologies (2006-2008)**

In collaboration with Stanford University Medical School, developed a prototype biopsy probe for acquiring cell samples from fallopian tubes for cancer diagnosis. Invented a new type of magnetically-driven locomotion to enable an untethered probe to traverse a fluid channel without inducing significant displacement/pumping of the fluid.

#### **Sr. Principal Engineer, Intel Corporation Technology and Manufacturing Group (2000 - 2006) and General Manager, Biomedical and Life Sciences**

Founded, built, and led Intel's biomedical diagnostics (biochip) research activities and grew these into a 41-person business unit. Achieved the first detection of the unlabeled DNA nucleotide dGMP ('G' of the 'A,C,T,G' DNA sequence components) at the single molecule level, as well as numerous advances in biochip fabrication methods. Created working prototypes and delivered to customers. Major users of our technology included the Fred Hutchinson Cancer Research Center, Stanford University, and Cedars-Sinai Medical Center.

### **Sr. Researcher and Principal Investigator, Xerox Palo Alto Research Center (1993 - 2000)**

Co-founded and coordinated the center's 'MEMS' and 'Smart Matter' activities, which grew to encompass 50+ people across multiple laboratories. Led research on active enhancement of structures and devices. Principal Investigator on multi-million dollar Defense Department (DARPA) research contracts.

### **Engineer (1985) and Consultant (1989-91), Hewlett-Packard Company**

Co-developed architecture and wrote the parallelizing compiler for the MIT-HP Supercomputing Instrument Toolkit, a set of supercomputer-class building blocks for embedding computing in measurement instruments. In a very famous result, this Supercomputer was used by a group of astrophysicists to determine that our solar system is chaotically unstable on the time scale of 900-million years.

Co-developed HP's first parameterized VLSI design library and associated CAD tools.

### **Advisory Panels, Boards, and Public Service**

**Member, Board of Education**, Haddonfield, New Jersey (2011 - Present). Currently serving as board Vice President.

Chair, Technical Advisory Board and member, Scientific Advisory Board, **Canary Foundation**, a charity devoted to developing diagnostic tests for early cancer detection (2005-2007).

Member, U.S. National Academy of Sciences Board To Oversee the **National Institute of Standards and Technology** (2004-5).

Founding member, Board of Directors, **MEMS Industry Association**. (2001-2003)

United States Department of Defense (DARPA) Information Science and Technology Study group. Co-chaired (with anthropologist Brigitte Jordan) DARPA ISAT Study on "**Lifescapes of the Future**" (1999) which pioneered new usage paradigms for Information Technology, including numerous home health and medical applications of mobile computing. Chair, DARPA ISAT Study on "**Distributed Information Systems for MEMS**" (1995). This study played a significant role in forming the vision for and aligning funding of the distributed sensor networking and Internet of Things DARPA activities. Member, DARPA ISAT steering committee (1999-2001).

**National Institutes of Health**, Director's technology road-mapping activity for the Early Disease Detection and Cancer Nanotechnology Initiatives (2004).

Delegation member and co-author of the **National Science Foundation's Technology Assessment of Microsystems Research in Japan** (2003).

Numerous technical program committees and startup board roles.

### **Teaching Activities**

Teaching activities in university settings include: Advanced VLSI design, Computer Architecture, and Introductory Computer Science. Teaching in industry includes: Risk Assessment, Project Management, Platform Architecture, and Introductory Computer Science.

### **Hobbies**

Design and implementation of medium-frequency stock and stock option trading systems.  
Play the piano.

**Patents**

Dr. Berlin holds 70+ United States patents and dozens of foreign patents. Please see:

<http://berlinplace.com/us-patents.html>

**Publications**

Dr. Berlin is the author of many technical publications in fields ranging from computer architecture and compiler design to microfluidics and biomolecule detection. For a complete list, please see:

<http://berlinplace.com/publications.html>