

Roger T. Howe

William E. Ayer Professor of Engineering, Emeritus
Dept. of Electrical Engineering
Stanford University, Stanford, California 94305-4075 USA
rthowe@stanford.edu
<http://www.stanford.edu/~rthowe>

ACADEMIC POSITIONS

(2005 – 2025) *Stanford University*

William E. Ayer Professor of Engineering, Emeritus – Recalled (2023 – 2025)
William E. Ayer Professor of Engineering (2009 – 2023), Professor (2005 – 2009)
Faculty Director, Stanford Nanofabrication Facility (2009 – 2017; Acting 2020 – 2021)
Department of Electrical Engineering

(2018) *Thayer School of Engineering at Dartmouth*, Visiting Professor

(1987 – 2005) *University of California, Berkeley*

Robert S. Pepper Distinguished Professor (2004 – 2005)
Chair, Electrical Engineering Division and Associate Chair, EECS Dept. (2002 – 2005)
Professor (1993 –), Associate Professor (1989 – 1993), Assistant Professor (1987 – 1989)
Department of Electrical Engineering and Computer Sciences
Professor (1997 –), Department of Mechanical Engineering
Director (1993 –), Associate Director (1987 – 1993), Berkeley Sensor & Actuator Center

(1985 – 1987): *Massachusetts Institute of Technology*

Assistant Professor, Dept. of Electrical Engineering and Computer Science

(1984 – 1985): *Carnegie Mellon University*

Assistant Professor, Dept. of Electrical and Computer Engineering

START-UP COMPANIES

Co-Founder (2015) and Scientific Advisor, ProbiusDx, Inc. (2015 –)

Co-Founder (2010) of Acera, Inc.

Co-Founder (2004) and Chief Scientist (2004 – 2010): Silicon Clocks, Inc.

Acquired by Silicon Laboratories, Austin, Texas, April 2010

RESEARCH INTERESTS

Design and fabrication of micro/nano sensors, actuators, and signal processing devices and systems; heterogeneous integration processes; thermionic energy conversion devices.

EDUCATION

University of California, Berkeley: Ph.D., December 1984, M.S., December 1981.

Engineering Science, Dept. of Electrical Engineering and Computer Sciences.

Harvey Mudd College, Claremont, California, B.S., May 1979. Major: physics, applied option.

HONORS

IEEE Fellow: 1996. Life Fellow: 2022

Citation: “for seminal contributions to microfabrication technologies, devices, and micro-electromechanical systems.”

IEEE Electron Devices Society Education Award, 2015

Citation: “For contributions to mentoring and education in the fields of micro-electromechanical systems and nanotechnology.”

IEEE Electron Devices Society Robert Bosch Micro and Nano Electromechanical Systems Award (with Y.-C. Tai): 2015

Citation: “For sustained contributions to MEMS/NEMS over many years especially those enabling MEMS-based inertial-sensor applications.”

U.S. National Academy of Engineering: 2005

Citation: “For contributions to the development of microelectromechanical systems in processes, devices and systems.”

IEEE Cleo Brunetti Award (with R. S. Muller): 1998

Citation: “For leadership and pioneering contributions to the field of microelectromechanical systems.”

Analog Devices Career Development Professorship, 1988 – 1991

NSF Presidential Young Investigator Award, 1986

IBM Faculty Development Award, 1984 – 1986

David J. Sakrison Memorial Prize and Demetri Angelakos Memorial Achievement Award, Dept. of Electrical Engineering and Computer Sciences, Univ. of California, Berkeley, 1984

ADMINISTRATIVE SERVICE

Member, Faculty Senate, 2021 – 2022

Member, Executive Committee, Dept. of Electrical Engineering, 2016 – 2017, 2019 – 2021

Co-Chair (2015 – 2017) and Member (2009 – 2017),

Campus Nanoscale Sciences and Engineering Shared Facility Program Committee

Chair, Allen Shared Labs Committee, School of Engineering, 2014 – 2015

Member, Strategic Planning Committee: Dept. of Electrical Engineering, 2005-2006

Chair, Master’s Degree Program Reform Committee, Dept. of Electrical Engineering, 2006-2007

Associate Chair, Dept. of EECS, 2002 – 2005

Head of Undergraduate Affairs: Dept. of EECS, 1992 – 1993.

Chair, Undergraduate Curriculum Reform Committee: Dept. of EECS, 1992 – 1993.

Member, Strategic Planning Committee: Dept. of EECS, 1993 – 1995

College of Engineering, 1994 – 1995

PROFESSIONAL SERVICE

Director, NSF National Nanotechnology Infrastructure Network (NNIN), 2011 – 2015

U.S. Air Force Scientific Advisory Board, 2004 – 2008

Trustee; Overseer; Emeritus Trustee: Transducer Research Foundation, Inc. Cleveland, Ohio, 1995-2007; 2007 – 2015; 2015 –

Chair: MEMS Technical Committee, IEEE Electron Devices Society, 1998 - 2001

Technical Program Chair: 12th International Conference on Solid-State Sensors, Actuators, and Microsystems, Boston, Mass., June 8-12, 2003

General Chair: Solid-State Sensor and Actuator Workshop, Hilton Head Island, South Carolina, June 1996.

Technical Program Chair: Solid-State Sensor and Actuator Workshop, Hilton Head Island, South Carolina, June 1994.

General Co-Chair: 3rd IEEE Micro Electro Mechanical Systems Workshop, Napa Valley, California, February 1990.

Technical Program Co-Chair: IEEE Micro Electro Mechanical Systems Workshop, Salt Lake City, Utah, February 1989.

Member of Editorial Boards:

IEEE/ASME Journal of Microelectromechanical Systems, 1998 – 2002, 2006 –

Microsystem Technology, 1994 –

Sensors and Actuators A, 1988 –

Co-Editor: Microsystems and Nanosystems Series (Springer)

ADVISORY BOARD AND CONSULTING RELATIONSHIPS

ACLARA BioSciences, Mountain View, Calif., 1996 – 2001

Aligned Carbon, Inc., Santa Clara, Calif., 2020 –

Analog Devices, Cambridge, Mass., 1989 – 2008

Ardesta LLC, Ann Arbor, Michigan 2001 – 2004

DaimlerChrysler, Circle Member Group, Stuttgart, Germany, 1997 – 2001

Discera, Inc., San Jose, Calif., 2001 – 2004

Federal Products Corp., Providence, R.I., 1987 – 1988

General Motors Research, Warren, Mich., 1986 – 1990

Gerson Lehrman Group, Council of Communications and Technology Advisors, 2000 – 2004

HRL, Malibu, Calif., Technical Advisory Group: 2014, 2016, 2018, 2020, 2022, 2024

LG Electronics, Seoul, Korea, 2015 – 2018

Medcam, Bellevue, Wash., 1998 – 1999

MEMSIC, Andover, Mass., 1999 – 2004

MicroReactor Systems, Mt. View, Calif., 2003 – 2005

Motion Sense, Fremont, Calif., 2000 – 2002

Obsidian Sensors, San Diego, Calif., 2018 –
Phinomix, San Carlos, Calif., 2020 –
ProbiusDx, Inc., Fremont, Calif., 2015 – (co-founder)
Sandia National Laboratories, Albuquerque, N.M., 1996 – 2008
Silicon Clocks, Inc., Fremont, Calif., 2004 – 2010 (co-founder)
Silicon Laboratories, Sunnyvale, Calif., 2010 – 2014
Silicon Light Machines, Sunnyvale, Calif., 1995 – 1998
Silicon Microgravity, Ltd., Cambridge, England, 2015 –
SiWave (later Siimpel, acquired by Tessara in 2010), Arcadia, Calif., 2000 – 2003
SRI International, Menlo Park, Calif., 2009 – 2010
Sundstrand Data Control, Redmond, Wash., 1989 – 1990
Tendo Technologies, Princeton, N.J., 2023 –