

Dennis E. Bahr, P.E.  
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### Education

Master of Science Electrical/Biomedical Engineering  
University of Wisconsin, 1972

Bachelor of Science Electrical Engineering  
University of Wisconsin, 1968

### Vocation

Bahr Management, Inc. 1995 - Present  
President & CEO

Bahr Management, Inc. was chartered as a technical/business consulting company and to manage a number of high technology companies involved in the startup phase of their business. Bahr Management trades business and technology support for an equity position. Mr. Bahr is involved in product marketing and engineering design. Areas of interest include biomedical instrumentation, software for real-time medical applications, and computer modeling of physical systems.

The Technology Business Group, Inc. 1992 - 1995  
Vice President

The Technology Business Group was chartered to develop business opportunities for itself and its clients. Its main thrust is the development of market driven products in the areas of biomedicine and aviation. Mr. Bahr was involved in corporate management as well as general engineering design.

FlexTech Systems, Inc. 1989 - 1993  
Vice President of Engineering

FlexTech Systems, Inc. was formed to develop and manufacture specialized data management software and display computers for the GLIDDEN Paint Company. Mr. Bahr developed and wrote the software to compress the paint data files to diskette.

Orbital Technologies, Inc. (ORBITEC) 1989 – 1992 & 1999 -2000  
Associate

ORBITEC was founded to contract with the government in aerospace research in such areas as propulsion, logistics, robotics, and materials processing. Mr. Bahr was involved in the design and implementation of a telerobotic hand and in a microgravity containerless furnace.

Criticare Systems, Inc. 1988 - 1991  
Vice President of Engineering

Criticare Systems is a manufacturer of high quality medical products for the operating room and postoperative care areas for hospital and alternate care use. I developed strategies for new products as well as general engineering management and also participated in product development. Working with Criticare's engineering team, he has developed a number of products for Criticare.

Bahr Technologies, Inc. 1983 - 1988  
Chairman of the Board, Chief Executive Officer, Partner

Bahr Technologies was an electronics R&D consulting firm (previously known as Applied Electronic Consultants). Directed corporate strategies, promoted new business development, and led new product efforts.

Applied Electronic Consultants, Inc. 1978 - 1983  
Vice President, Partner

Co-founder and one-third owner of this R&D company which developed patentable computer and biomedical products. Supervised a team of engineers in the design and development of numerous microprocessor-based products.

Nicolet Instrument Corporation, Inc. 1975 - 1978  
Cardiovascular Engineering Project Manager

Supervised the development of products that related to cardiovascular function testing and blood pressure monitoring.

Advanced Instrumentation, Inc. 1973 - 1975  
Engineering Manager

Developed a number of cardiovascular products including the arterial tonometer. Nicolet Instrument Corp purchased the Company.

## Teaching

University of Wisconsin-Madison 1980-1990  
Adjunct Assistant Professor

Taught in the Dept. of Electrical and Computer Engineering two undergraduate courses entitled "Digital Systems Fundamentals" and "Advanced Digital Logic Design."

University of Wisconsin Extension-Madison 1982-1983  
Program Consultant

Designed and taught a course entitled "Real-Time Microprocessor Systems" to engineers in private industry and government.

University of Wisconsin-Madison 1972  
Teaching Assistant

Taught a graduate lab in computer modeling and simulation.

## Expert Witness

Expert witness in the case of Kunges vs. Physio-Control for the defendant. This was a case where a blood pressure monitor was thought to have caused damage to an arm by not deflating properly. We showed that the monitor was not at fault.

Expert witness for Johnson World Wide in the case of Johnson World Wide vs. Zebco for the plaintiff. The case evolved around an auto steering trolling motor. Zebco was alleged to have copied the Johnson patented design. Johnson won the case.

Expert witness in the case of Dell, Gateway, and Toshiba America vs. Computer Docking Station Corporation for the defendant. On summary judgment, the United States District Court for the Western District of Wisconsin determined that the defendants did not infringe the plaintiff's United States Patent No. 5,187,645.

## Memberships

Professional Engineer, State of Wisconsin, #E-14256  
Institute of Electrical and Electronics Engineers, Senior Member  
(Chairman - Local Chapter, 1991-1992)  
(Chairman - Madison section of the IEEE Entrepreneurs Network, 2002 -2009)

American Institute of Aeronautics and Astronautics, Associate Fellow  
(Chairman - State Chapter, 1990-1991)

Sigma XI Scientific Research Society

## Patents

"Coherent Pattern Identification in non-stationary periodic data and blood pressure measurement using same" by Alan R. Kahn, Dennis E. Bahr, Kurt Allen. European Patent No. 0955873, September 2004.

"Method and Apparatus for Processing a Physiological Signal", Dennis Bahr and James Reuss, U.S. Patent No. 6,647,280, November 11, 2003.

"Method and Apparatus for Processing a Physiological Signal", Dennis Bahr and James Reuss, U.S. Patent No. 6,339,715, January 15, 2002.

"Limited Use Medical Probe", By Gerhard Von der Ruhr, Michael Larsen, Dennis Bahr, U.S. Patent No. 6,308,089, October 27, 2001.

"Blood Pressure Monitoring With Improved Noise Rejection." By Alan R. Kahn, Dennis E. Bahr, Kurt Allen, U.S. Patent No. 5,873,836, February 23, 1999.

"Coherent Pattern Identification in non-stationary periodic data and blood pressure measurement using same" by Alan R. Kahn, Dennis E. Bahr, Kurt Allen. U.S. Patent No. 5,772,600, June 1998.

"Apparatus for Detecting Blood Pressure by Blood Pressure Sounds in the presence of Significant Noise" by Alan R. Kahn, Dennis E. Bahr, Kurt Allen. U.S. Patent 5,680,868, October 1997, International Application No. PCT/US97/09823, pending June 1997.

"System for the compacting and logical linking of data blocks in files to optimize available physical storage." by Stephen W. Flax, Dennis E. Bahr. U.S. Patent 5,551,020, August 27, 1996.

"Apparatus and Method for Receiving and Processing Loran Signals" by Dennis Bahr, Neil Fortney, Kendall Post, Michael Skroch and Erich Ziemann. U.S. Patent 4,814,771, March 1989. Canadian application pending September 1988. International Application No. PCT/US88/03135 pending September 1988.

"Automatic Blood Pressure Measuring Device and Method" by Dennis E. Bahr, Kenneth Clark, and Kendall Post. U.S. Patent 4,796,184, January 3, 1989.

"Receiver Preamplifier with Tuned Circuit Adapted for Loran Reception" by Dennis Bahr, Thomas Blandino, Mark Monson, and Kendall Post. U.S. Patent 4,875,019, September 1988.

"Pressure Monitoring and Leak Detection Method and Apparatus" by Dennis E. Bahr, Kenneth R. Clark, and Alan R. Kahn, MD., U.S. Patent 4,441,357. April 10, 1984.

"Blood Pressure Measuring Apparatus" by Dennis E. Bahr and Jeffrey Petzke. U.S. Patent 3,926,179. December 26, 1975.

## Publications

J. L. Reuss, PhD and D. E. Bahr, "Period Domain Analysis in Fetal Pulse Oximetry", IEEE/EMBS annual meeting, Houston, Texas, October 2002.

Daniel J Sebald, Dennis E. Bahr, and Alan R. Kahn, "Narrowband Auscultatory Blood Pressure Measurement", IEEE Transactions on Biomedical Engineering, Volume 49, Number 9, September 2002, pp1038-1044.

Paul Bach-y-Rita, Susie Wood, Ron Leder, Oscar Paredes, Dennis Bahr, Esther Wicab Bach-y-Rita, and Narda Murillo, Computer-Assisted Monitoring Rehabilitation (CAMR) for Institutional, Home, and Educational Late Stroke Programs, "Topics in Stroke Rehabilitation", Winter 2002, Volume 8 / Number 4, pp. 1-10.

Bahr, D. E., Rice, E. E., Dunn, S. A., Crabb, T. M., Teeter, R. R., Kohles, D.R., Richter, R.C., and Kellicut, A.J., "Microgravity Sonic Pump Furnace (MSPF-II) - A Phase II SBIR Project," NASA/MSFC Contract NAS8-38483, OTC-FR-G009-92-1, Orbital Technologies Corporation, Madison, Wisconsin, July 1992.

Dennis E. Bahr, Ronald R. Teeter, Thomas M. Crabb, Williams L. Phillips, and Eric E. Rice, "Orbitec Telerobotic Control Glove (OTCG) - Phase I SBIR Final Report," USAF Contract F41622-89-C-1020, OTC-FR-G005-90-1, Orbital Technologies Corporation, Madison, Wisconsin, March 9, 1990.

Bahr, D. E., Rice, E. E., Dunn, S. A., Crabb, T. M., Teeter, R. R., and Stabb, M. C., "Microgravity Sonic Pump Levitator Furnace - Phase I SBIR Final Report," NASA/MSFC Contract NAS8-38042, OTC-FR-G002-89-1, Orbital Technologies Corporation, Madison, Wisconsin, August 1989.

Dennis E. Bahr, Robert D. Schulz, "Acceleration Forces Aboard the NASA KC-135 Aircraft During Microgravity Maneuvers, AIAA Journal of Aircraft, July 1989, Vol. 26, No. 7, pp. 687-688.

Dennis Bahr, Paul Schick, Erich Ziemann, "Personal Navigation (A New Generation of LORAN Receiver Design)," WGA annual meeting, Portland, Oregon, October 24, 1988.

Bahr, D.E., Dunn, S.A. Pomplun, A.R., and Vanderwarn, B., "Development of the Sonic Pump Levitator," Final Report on Contract NAS8-33513, for NASA Marshall Space Flight Center, Huntsville, Alabama, 1985.

Dennis Bahr, Alan Kahn, M.D., and Allan Levin, M.D., "Epidural Intracranial Pressure Monitoring: A New System," Medical Instrumentation, Vol. 17, No. 4, July-August 1983, pp. 293-296.

Dennis Bahr, "Understanding Signature Analysis," Electronics Test, November 1983, pp. 28-33.

Dennis Bahr, Alan Kahn MD, Allan Levin, MD, "Epidural Intracranial Pressure Monitoring: New Methodology," The Firth International Symposium on Intracranial Pressure, May 30 - June 3, 1982, Tokyo, Japan.

Dennis Bahr, "Physiological Simulation," Application of Computers in Medicine: Vol.# 1, IEEE Journal, January 1982.

J.S. Gravenstein, et al., Essential Monitoring in Anesthesia, Grune and Stratton, Chapter 2, "Continuous Tonometry," by Dennis Bahr and Kenneth Clark, pp. 25-36, 1980.

Dennis Bahr, Alan Kahn M.D., H. Baharestani, K. Dhuper, "The VFA Method for Noninvasive Analysis of Left Ventricular Function," 32nd ACEMB Conference Proceedings, Vol. 21, 9.7, October 1979.

Dennis Bahr, Alan Kahn M.D., K. Dhuper, H. Baharestani, "A Microprocessor - Based Ventricular Function Analyzer," IEEE/EMBS First Annual Conference, pp. 145-149, 1979.

Dennis Bahr, Alan Kahn, MD, K. Dhuper, H. Baharestani, "A Microprocessor-Based Ventricular Function Analyzer," IEEE Transactions on Biomedical Engineering, BME-26(9):532, 1979.

Dennis, Bahr, "Discrete Model Simulation Program," Interface Age, August 1979, pp. 94-101.

Dennis Bahr, "Microcontroller/Microprocessor/Microcomputers in Medical Instruments," 31st ACEMB Conference paper, October 1978.

Dennis Bahr, K. Dhuper, J. Petzke, E. Ziemann, "A Microprocessor-Based Arterial Tonometer," First Annual Symposium on Computer Applications in Medical Care, October 1977.

Dennis Bahr, J. Petzke, "The Automatic Arterial Tonometer," 26th ACEMB, October 1975.

Dennis Bahr, V. Rideout, J. Beneken, B. DeWit, "Energy Spectra of Heart Sounds as Functions of Time and Frequency," San Diego Biomedical Symposium, February 1973.

Dennis Bahr, J. Kendrick, G. Matson, V. Rideout, "Pulse Probing of the Aorta by a Signal Averaging Scheme," BMES, Johns Hopkins University, January 1972.

Dennis Bahr, S. Heller, "The Meaning of Terminal Velocity," Parachutist, August 1970.

### Flight

Commercial Pilot, Instrument Rating - 1735 Hours, Aerobatics - 75 hours

NASA Physiological Training LBJ Space Center, 1982, 1991

NASA Zero Gravity Flights - KC135

Ellington AFB, Texas 1982-1984, 1992 - 15 flights, 630 parabolas

Sport Parachutist - 293 Jumps

USPA Class D License and Jumpmaster Ratings, Senior Parachute Rigger

### Personal

Widowed with two grown children

Hobbies - amateur radio (N9AD), reading, and computing

References on request