#### Joseph M. Evans, Ph.D.

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After receiving his Ph.D. from Carnegie Mellon University, Dr. Evans joined the staff of the Westinghouse Research Laboratories as senior research engineer. He served as principal investigator of NIH Contract PH 43-67-1139, with the objective of producing a clinical intra-aortic balloon heart assist. He successfully produced forty assist devices and guided the program through the clinical evaluation stage.

In 1969, Dr. Evans was selected to head the Biosciences and Medical Systems Department of the Westinghouse Research Laboratories. This department had responsibility for the development of medical devices in the support of the Medical Systems Division and X-ray Division as well as more general problems of corporate interest in the biological sciences. Under his direction, this multidiscipline group produced a number of major developments in the field of patient monitoring and analytical instrumentation. Among these developments were advanced concepts in arrhythmia monitoring, a continuous invivo blood gas monitor, a computerized intensive care system, an advanced video display system, and an ultrasonic imaging system.

In 1971, Dr. Evans headed a group at the research laboratory in support of the planning and consulting activities of the Health Systems Division. This activity led to the development of a systems analysis approach to health care delivery and resulted in the definition of methods for optimizing clinical laboratory testing processes, a method for accurately estimating the type and frequency of ambulatory patient visits to a clinic based on population served, and a method for the rational design of multiphasic testing facilities.

Dr. Evans' interests in the innovation process prompted him to organize a group at the research laboratories in 1972 to study the process of new product development. This activity grew to include the development of methods for evaluating research productivity and management policy. These methods were applied to corporate problems such as the selection and training of division managers, research communications and marketing, research organization and salary administration.

In 1975, Dr. Evans left Westinghouse to establish Evaluation Technology. The objective of this organization was to assist organizations in the improvement of management policy and practice through the use of quantitative techniques. Evaluation Technology conducted studies and provided consulting services for a variety of industrial and governmental clients. These included Westinghouse, General Electric, Pittsburgh Corning, Gulf, the City of Philadelphia and the National Science Foundation. Activities included the development of marketing programs for K. W. Battery (a Westinghouse subsidiary) and the Westinghouse Industrial Materials Division; the design and evaluation of a transit security system for the City of Philadelphia; assessment of a

sales incentive plan for Pittsburgh Corning; development of evaluation procedures for general management training for Westinghouse Corporate Headquarters.

In 1979, Dr. Evans founded Silicon Technology, Inc. to market the sealing technology that he had developed in the prior two years. Dr. Evans served as Chief Executive and Chairman of Silicon Technology, Inc. Silicon Technology provided environmental control equipment and materials directly to the steel industry and through United Refractories (a licensee) in the United States and through Silicon Technology in Canada, Silicon Technology Ltd. in Great Britain, and Stog GMBH in Western Europe.

In 1986, Dr. Evans founded Kinetic Technology, Inc. to develop and market an improved chiropractic adjustor.

In 1989, Dr. Evans founded Sense Technology, Inc. to market improved conveyor monitoring systems to the mining and power generation industries. That company evolved into the development and manufacture of a computerized imaging instrument for chiropractors, osteopaths and physiatrists. Dr. Evans currently serves as chief executive and chairman of Sense Technology, Inc.

Dr. Evans was elected to the Franklin Regional School Board of Directors in 1987. He is currently an ad hoc steering committee member of the Western Pennsylvania Regulatory Affairs Network, established in 1998 to enable local companies to accelerate the introduction or enhancement of sound, responsive regulatory approval and compliance practices into their product development and manufacturing processes.

## **Education:**

B.Sc., Civil Engineering, The Citadel, 1960
Elected Member, Engineering Honorary Society, Tau Beta Pi
M.S., Civil Engineering, Carnegie Institute of Technology
Ph.D., Civil Engineering-Biotechnology, Carnegie Mellon University, 1967

#### **Military Experience:**

1964-65 - 5th Engineer Battalion, Ft. Leonard Wood, Missouri 1965-66 - 87th Engineer Battalion, Cam Rahn Bay, Vietnam

Awards and Decorations--Vietnamese Service Medal, Vietnamese Campaign Medal, National Defense Medal, Army Commendation Medal, Promoted to the rank of Captain in Vietnam.

## **Experience:**

1967-68	Instructor, Carnegie Mellon University Bioengineer, VA Hospital, Pittsburgh, PA
1968-69	Senior Engineer, Westinghouse Research Laboratories

1969-72	Manager, Biosciences and Medical Systems, Westinghouse Research Laboratories
1972-75	Manager, Sociologic Systems, Westinghouse Research Laboratories
1975-79	President, Evaluation Technology
1976-77	Instructor (Probability and Statistics) Duquesne University, Pittsburgh PA
1979-82	President, Silicon Technology Inc.
1982-2001	Chairman of the Board and Chief Executive Officer, Silicon Technology Inc.
1987-2003	President, Kinetic Technology Inc.
1989-2003	President, Sense Technology Inc.
2004	CEO and Chairman, Sense Technology Inc.

## **Patents:**

U.S. Patent 4,307,722 Dilators for Arterial Dilation Issued December 29, 1981

U.S. Patent 4,425,191 Method and Apparatus for Sealing a Heated Chamber Issued January 10, 1984

U.S. Patent 4,844,105 Automated Cleaning and Sealing System Issued July 4, 1989

U.S. Patent 4,841,955 Chiropractic Device Issued June 27, 1989

U.S. Patent 4,989,127 Control System for Precision Spinal Adjustment Issued January 8, 1991

U.S. Patent 5,435,813 Wet Bulk Density Control of Fine Aggregates Issued July 25, 1995 U.S. Patent 5,662,122 Method and Apparatus for Objectively Assessing and Correcting the Relative Compliance of Vertebral Segments Issued September 2, 1997

# **Recent Publications/Presentations:**

- Differential Compliance Measured by the Function Recording and Analysis System in the Assessment of Vertebral Subluxation, Journal of Vertebral Subluxation Research, 2(1), January 1998: 15-21
- The Clinical Application of Differential Compliance Methodology to Joint Fixation Identification and Resolution Using the PulStarFRAS, Journal of Vertebral Subluxation Research, 2(3), November 1998: 131-136
- Similarities and Differences Between X-ray Analysis and Computerized Fixation Imaging of the Cervical Spine presented at the Seventh Annual National Subluxation Conference Sponsored by Sherman College of Straight Chiropractic Spartanburg SC, October 1999
- The Minimum Energy Hypothesis: A Unified Model of Fixation Resolution, with Leach and Collins, Journal of Manipulative and Physiologic Therapeutics, 2001 (25)2, p105-110
- Estimating the Efficiency and Effectiveness of Techniques of Musculoskeletal Therapy, Accepted for publication in The Journal of Manipulative and Physiologic Therapeutics, 2003
- Introduction to the use of Survival Analysis for the Evaluation of Musculoskeletal Therapy, Accepted for publication in The Journal of Manipulative and Physiologic Therapeutics, 2003
- Pilot Study of the Effectiveness of Multiple Impulse Therapy for Musculoskeletal Complaints, with Collins and Grundy, accepted for publication in The Journal of Manipulative and Physiologic Therapeutics, 2003, presented at the 7<sup>th</sup> Biennial Congress of the World Federation of Chiropractic, Orlando FL, May, 2003
- The Efficiency of Multiple Impulse Therapy for Musculoskeletal Complaints, with Collins and Grundy, in review by The Journal of Manipulative and Physiologic Therapeutics, 2003, accepted as poster presentation at the ACC-RAC Conference in Las Vegas CA, Mar, 2004
- The Effect of Frequency of Treatment on Patient Response to Multiple Impulse Therapy for Musculoskeletal Complaints, with Collins, Leach and Grundy, manuscript undergoing review prior to submission to journal.