



# VALLEY OF THE GIANTS

*"When I want to understand  
what is happening today  
or  
try to decide what will  
happen tomorrow,  
I LOOK BACK."*

OLIVER WENDELL HOLMES

**JAMES H. VEGHTE, PH.D.**  
**PRESIDENT**  
**Biotherm, Inc.**

This distinguished scientist is a recognized authority in thermal physiology. He holds several degrees: BS Zoology, MS Zoology, and Ph.D. Environmental Physiology. He is a member of the American Physiological Society, Aerospace Medical Association, American Society of Testing and Materials, National Fire Protection Association, Southern Area Fire Equipment Research (SAFER), Phi Sigma Society, Sigma Xi, World Future Society, and Engineers Club. He has authored over fifty professional

publications on thermal physiology. He currently is the founder and president of Biotherm Incorporated which specializes in thermal analyses of fire fighters' and race car drivers' protective clothing. He also serves as Associate Clinical professor, Department Community Medicine (Aerospace Medicine), Wright State University.

Lt. Colonel Veghte retired from the U.S. Air Force with twenty-five years of distinguished military service. He holds the Legion of Merit, Air Force Commendation medal, and is a member of the prestigious Primus Club, U.S. Air Force Systems Command.

Dr. Veghte is a pioneering scientist with extensive work in the field of infrared radiography to determine heat loss from clothing and the heat loss from exercising athletes in which real time infrared movies demonstrated peripheral blood shifts that occur during exercise. This work established the comprehensive design requirements for USAF proximity fire fighters clothing. He not only organized and directed this research activity, he has also participated as a human test volunteer in over 1000 exposures to temperature extremes (+1200C to -100C). The results of these experiments are now being used by fire departments throughout the United States for the design of fire fighting protective clothing.

He conceived and successfully performed pioneering and original research designed to determine, on a first-time basis, the limits of human tolerance to extreme intensity heat pulses. New

and valid research information was obtained concerning human physiologic response to these hazardous and extreme aerospace thermal environments. The temperatures investigated ranged from 70°F to 450°F (mean air temperature). Jim not only served as program director, but he also functioned as a volunteer subject in these historic human exposures. He personally experienced a peak exposure of 406°F for three minutes. A new predictive relationship expressing safe human tolerance time in these extremely high air temperatures was formulated. This work achieved a historic first in aerospace research and was internationally recognized by the medical research community.

Dr. Veghte is a dedicated scientist and manager who functions best in the true team environment on the frontier of technology. His experience permits the integration of sophisticated management techniques for overall control and direction of a multidisciplinary program. He leads by example and is recognized as a person with significant integrity, ingenuity and energy. He is totally dedicated to constantly achieving the highest professional standards in any endeavor. He has served as a consultant to many universities, North Atlantic Treaty Organization (NATO), NASA, other government agencies and civilian firms in applied thermal problem areas. He is a recognized leader who stands with the other great scientists in this community.

