W. Michael Farmer, Ph.D.

W. Michael Farmer was born in Nashville, Tennessee. He attended the University of Tennessee where he earned a B.S. Degree in Engineering Physics, a Master's Degree in Physics, and a Ph.D. in Physics after attending The University of Tennessee Space Institute. His dissertation on the use of laser interferometry to measure aerosol particle size, speed, and number density is considered a seminal paper in the development of optical methods for measuring aerosols. While completing his graduate work under J.D. Trolinger, he worked as a graduate research assistant and engineer at Arnold Air Force Station, Tennessee, on a number of programs involving particle field holography and laser velocimetry. In that capacity, he obtained three patents that were assigned to the Air Force and produced a number of refereed technical papers that appeared in *Applied Optics*, the *Journal of the Society of Photo-optical Instrumentation Engineers*, and the *Journal of the Optical Society of America*.

After working as a senior scientist at SAI (now SAIC) and Spectron Development Labs where the first airborne holography camera and particle sizing interferometer were developed and flown for the measurement of high altitude ice crystals, Dr. Farmer joined the faculty of the University of Tennessee Space Institute first as a research associate, and then as an associate and full professor of physics where he conducted research in the measurement of atmospheric aerosols and military countermeasures to electro-optical weapons sensors, conducted short courses, and taught graduate level optics and classical electromagnetic theory. While at the Space Institute, he served as an advisor to NATO for the U.S. Army and designed tests and evaluated test results for the PG-16 Trials.

Dr. Farmer continued his research on atmospheric aerosols after joining Science and Technology Corporation in Las Cruces, New Mexico, where he directed the operation of the Army's Atmospheric Optics and Data Library to support the evaluation of atmospheric countermeasures, high energy laser propagation, and the development of the Electro-Optical Sensors and Atmospheric Effects Library of data and analytical models. While at the Science and Technology Corporation, Dr. Farmer designed and directed six large smoke and obscurant field tests for the Army and served as the technical editor and wrote most of the NATO AC/225 Panel VI, Sub-panel 6 four-volume NATO Handbook for the Assessment of Military Smokes and Smoke Screens, and designed and developed the fiber array nephelometer.

As the Manager for the Bionetics' Atmospheric Information Measurement Services Office, Dr. Farmer developed the Tactical Smoke Model for survivability studies, TACSMK, an operational requirements and survivability model for military operations in smokes and obscurants. While at Bionetics, he also conducted research for the Centers for Disease Control on aerosols produced during surgical procedures.

Dr. Farmer served on the Army Science Board and conducted evaluations of unmanned aerial vehicles, tanks, and re-engineering the Army. As a private consultant, he has supported government agencies, universities, and commercial companies in the development of analytical models, data analysis, and the design and development of advanced aerosol instrumentation.

In 2001, he produced a two-volume guide for understanding atmospheric effects on remote sensor operation in the atmosphere and has lectured at numerous Society of Photo-optical Instrumentation Engineers' short courses on this subject.

Dr. Farmer now serves as the Independent Development Evaluator for the Army Distributed Learning System in Newport News, Virginia. He lives and writes in Smithfield, Virginia, and is a member of the Optical Society of America, the Society of Photo-optical Instrumentation Engineers, the National Rifle Association, and the Single Action Shooters Society.

During his career he has produced thirty-four modeling publications and presentations, ninety-one test and evaluation publications and evaluations, fifteen NATO-related publications and presentations, ninety-two instrumentation publications and presentations, and developed eight major instrumentation systems.