

**2008**  
**Elda E. Anderson Award**

Presented to

**Phillip W. Patton**

at the 53rd Annual Meeting of the Health Physics Society, Pittsburg, Pennsylvania  
12-16 July 2008

Phillip W. Patton was born and raised in Augusta, Georgia. He received a Bachelor of Science degree in Physics from Augusta College in 1990 and a Masters of Science in Nuclear Physics from the University of Georgia in 1993. Phil then proceeded on to the University of Florida where he earned a second Masters degree, this time in Health Physics, Medical Physics Option in 1998, and a PhD in Medical Health Physics in 2000. Phil is a Certified Health Physicist (2006) and a Licensed Medical Physicist in the state of Arizona. He has been a professor of health physics at UNLV since 2000.

Phil conducts research in a wide variety of medical imaging and cancer treatment projects. He works closely with students in many of these efforts. His early work included studying and conducting research under the supervision of a previous Elda E. Anderson award winner, Wesley Bolch at the University of Florida. This research involved modeling and exploring improved methods of imaging and treating cancer in the skeleton. His efforts were responsible for improvements in the Monte Carlo modeling code for radiation transport and measured doses to bone and bone marrow to validate the modeling effort. He also benchmarked Nuclear Magnetic Resonance (NMR) imaging techniques against Optical Microscopy imaging techniques.

His selection to become a tenure-track professor at the University of Nevada, Las Vegas (UNLV), marked the beginning of an extensive renovation of the health physics department. Phil attracted medical imaging students from a wide variety of undergraduate programs eventually supervising eight graduate students. He developed a close working relationship with the Nevada Imaging Centers Spring Valley and founded the Magnetic Resonance Imaging Research Center at UNLV for which he is the current director. Although only active since 2006, the Center has already been responsible for a number of major advances including the development of new MRI and fMRI imaging protocols, the investigation of olfactory stimulus measurements using fMRI for the early detection of Parkinson's and Alzheimer's disease, examined the usefulness of Diffusion Tensor Imaging as a tool for the diagnosis of Multiple Sclerosis, and development of MRI imaging techniques to improve low dose rate prostate brachytherapy.

Phil has done extensive work to model and develop experimental measurements for doses received during high energy X-ray interrogation of cargo containers for Homeland Security applications. He has devised a unique combination of radiation measurements in air with human-simulating phantoms embedded with TLDs. This information is considered invaluable to the public acceptance of these important security interrogation techniques. In addition, Phil is working with students to develop novel low energy neutron interrogation techniques that promise to revolutionize the efforts to quickly

determine conclusively whether or not Special Nuclear Material is contained in a specific container. This effort is conducted in collaboration with Varian Security and Inspection, Inc. and promises to develop into new equipment and techniques available for public use in these efforts.

Phil's work has been extensively published in such professional journals as *Health Physics*, *Radiation Protection Dosimetry*, *Physics of Medical Biology*, *the Journal of Nuclear Medicine*, and *Medical Physics*. These publications represent a great deal of breadth in research with focuses in modeling, nuclear medicine, imaging technology, imaging analysis, experimental cancer treatments, experimental diagnosis techniques for a wide variety of medical conditions including Parkinson's disease, Alzheimer's disease, multiple sclerosis, and bone and prostate cancer. He is constantly reaching out to the community to develop stronger collaborations with Government and industry research interests. His current associations include organizations as diverse as the Nevada Cancer Institute, Nevada Imaging Centers, National Institutes of Health, Varian Security and Inspection, National Security Technologies, LLC, the Department of Energy National Nuclear Security Administration, and the Department of Homeland Security. Phil has proven to be an expert at integrating student research work and attaining world-class results. He has also placed students in very valued positions after they have attained their degrees.

Phil's community involvement extends to both local and national organizations. He served as the President of the Lake Mead Chapter of the Health Physics Society and has served as the advisor to the student sections of both the Lake Mead Chapter and the Nevada Section of the American Nuclear Society. He is a reviewer for the national Health Physics Society and is the Chair for the National Health Physics Society academic education committee. Phil is a career soldier in the US Army Reserve and has served in both enlisted and officer positions. He was mobilized for 13 months following September 11<sup>th</sup> and is now a Captain serving as the medical physics officer for the unit.

Phil Patton has become a recognized tenure-track professor among his peers at UNLV. He has been complimented on his ability to integrate meaningful research for students and maintain a strict delivery schedule for his industry customers. His insightfulness and understanding of graduate student needs has drawn a growing number of candidates to the UNLV health physics program. His graduates are recruited before they leave and have often worked extensively with the employer of their choice before graduation. Phil has been instrumental in the development of a PhD program at UNLV in the area of Health Physics and Nuclear Engineering. This is an ambitious undertaking spanning the combination of two very different disciplines to attract researchers that can integrate into both the national security applications and the "nuclear renaissance" for power plant expansion seen to be expanding in the near future. Phil has simply become a favorite of students and professors because of his dedication to expanding research opportunities for the university and his innate ability to attract and develop world-class graduate students.

Phil is married to Brandy and they have two children, four years and seven months old. They live in Las Vegas, Nevada.