

Stephen R. Thomas, PhD – Thoughtful Leader

Peter Sandwall¹, Michael Lamba², Joshua Hessler², Nathan Schneider², Christopher Njeh², & Kevin Little²

¹OhioHealth, ²Ohio River Valley Chapter, American Association of Physicists in Medicine



Abstract

Dr. Stephen Russell Thomas, is a respected leader in diagnostic and nuclear medicine physics. He is an eminent scientist, teacher, and committed volunteer. Dr. Thomas is known for his thoughtful approach to decision making and pioneering work in nuclear medicine and diagnostic medical physics. Some of his achievements include working with early computed tomography (CT) scanners, development of coplanar quantitative imaging, and construction of the first magnetic resonance (MR) scanner in Cincinnati.

Dr. Thomas has received the highest awards in our profession, including the William D. Coolidge Award (Gold Medal) from the American Association of Physicists in Medicine (AAPM), the Gold Medal from the Radiological Society of North America (RSNA), and the Society of Nuclear Medicine and Molecular Imaging (SNMMI): Loevinger-Berman Award for excellence in internal dosimetry.

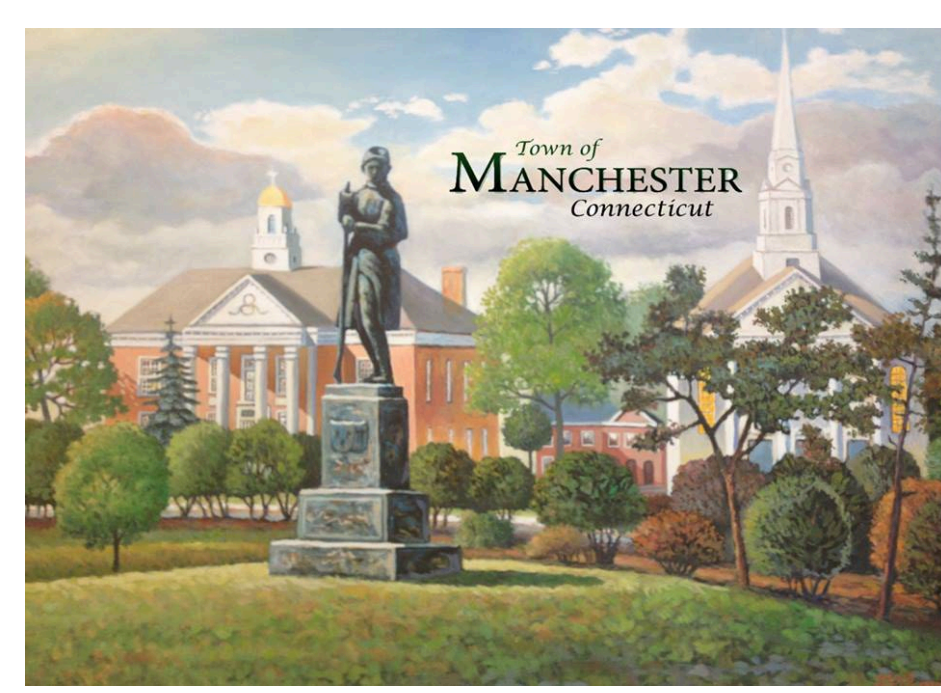
Dr. Thomas is fondly recalled as an excellent instructor to radiology residents and a helpful advisor to physics and engineering graduate students. Known for his ability to bring diverse stakeholders together, Dr. Thomas' professional society leadership roles include President of the Ohio River Valley Chapter of the AAPM (1986), AAPM (1997), and as Associate Executive Director (Medical Physics) for the American Board of Radiology (ABR) (2006-2011). Thoughtful and dedicated, Dr. Thomas exemplifies the foundations of character, "a good heart, kind feelings, and a keen mind."

Origin & Family



Stephen Russell Thomas was born August 30th, 1941, in a small town near the north shore of Boston, Massachusetts; Manchester-by-the-Sea. Tragically, Steve's father passed away before his first birthday. Steve and his mother then went to live with his aunt, uncle, and cousins in Bloomfield, Connecticut. He was caught holding his first camera at two years old (left).

Steve was raised by his mother, Sarah, who had a career as a secretary for an insurance company. He recalls his mother as a tough woman with high standards. Steve remembers having a knack for science from an early age and an encouraging 6th grade science teacher, Mr. Doyle. Steve enjoyed and connected with the material easily. At the beginning of junior high school, Steve and his mother moved across the river to Manchester, Connecticut.



Steve developed an appreciation for physics in high school, where his leadership started early. Steve is seen his sophomore year (1957), serving as Vice-President of Junior Hi-Y, a club devoted to developing good character (right). During his senior year of high school, he was a member of Senior Hi-Y, the varsity soccer team (below; sitting far right first row), and a cappella choir. Additionally, he had leadership roles serving on the student council, Treasurer for the National Honor Society, Vice-President of Sock and Buskin (drama club), and as Co-Captain of the Tennis team where he played "outstanding" doubles matches.



Above, 1959, Steve's high school senior photo and, 1965, with his mother, Sarah, in Accra, Ghana during a visit while he was serving in the Peace Corps

Steve married the love of his life, Ingrid Erika (née Störbeck from West Germany) during his graduate studies. They met at a student party, while Ingrid was working for a professor in the department of life sciences. Ingrid financed their first adventure vehicle, a 1968 Chevy van, which they removed the seats from and used as camper during their honeymoon in Canada. They also used the van for further escapades in Mexico, exploring Aztec and Mayan ruins. If not for his affinity for physics, Steve may have become an archeologist.



Above, Left, 1970, Ingrid and Steve in wedding photo with their adventure van, Center, 1985, Kirstin in front of Cincinnati's first MR unit, Right, 2013, family photo taken at the rehearsal dinner prior to Kirstin and Matt's wedding

In August 1976, Steve and Ingrid welcomed a daughter, Kirstin Erika, into the world. Kirstin graduated from Walnut Hills High School in Cincinnati, Ohio and her father's alma mater, Williams College. While not as interested in physics as her father, Kirstin enjoyed mathematics and graduated with a double major in German and Economics. She later moved out west where she married Matthew Howard Smith and gifted her parents with two grandsons, Jack Thomas Smith and Dexter Timothy Smith.

Education

B.A. Physics (1963), Williams College Williamstown, MA

Steve attended Williams College, a small liberal arts school in Massachusetts. Building on the interest developed in high school, his initial goal was to study physics. He continued to do well, and the goal was achieved. Steve enjoyed playing soccer throughout high school and college. An avid reader, Steve read the classics and minor English literature. He continues to participate in book clubs and is a long-time patron of the historic Mercantile Library in Cincinnati, Ohio.

His Senior year (portrait to the right), the Ephs soccer team went undefeated to win the Sampson Cup for the second straight year. The first team in the cup's 28-year history (at that time) to win back-to-back championships. To the upper right are the Ephs his senior year, he is seen sitting in the front row left of his classmate, Ben Kofi, a native of Accra, Ghana.

M.S. Physics (1968), Purdue University West Lafayette, IN

With some awareness of and interest in solid state physics, Steve directed his attention toward Purdue University, known for this area of study. He entered graduate school immediately after completion of his undergraduate degree. However, after a year of studies, Steve joined the Peace Corps in 1964. He began a two-year assignment as a member of the fifth contingent to Ghana, West Africa where the first group had gone in 1961. Steve was stationed at The West African Secondary School in the capital city of Accra, where he taught physics and mathematics.

The Peace Corps was a very enlightening and formative experience for Steve, with exposure to several cultures, not just African. Living with East Germans and Russians, one of the common bonds was rock n' roll music. Steve was in Ghana during Kwame Nkrumah's removal as president through a bloodless coup. After which, Ghana aligned itself closer with the Western Bloc. In Africa, Steve learned to enjoy warm coke and the art of teaching. He was sometimes distressed by what students were not grasping but saw the same at Purdue after his return.

Ph.D. Solid-State Physics (1973), Purdue University West Lafayette, IN

For his doctoral studies, Steve chose a torturous route. Selecting Dr. Hsu-Yun Fan as his advisor, fully aware of his reputation as a stern task master known for chewing up graduate students before eventually setting them free. For five years Steve worked with semiconductors at low temperatures, characterizing impurities by the study of far infrared emissions with a Michelson interferometer. Steve's work included designing and assembling the equipment, preparing the semiconductor samples, and assembling the data acquisition hardware and analysis software. It was a true scientific odyssey.

Work

Kentucky Wesleyan College, (1973-74) Owensboro, KY

Assistant Professor – Department of Mathematics and Physics



After graduation from Purdue, Dr. Thomas taught for a year at a small college, Kentucky Wesleyan in Owensboro, KY. There he joined a fellow Boilermaker in a two-person physics department. Dr. Thomas was considering another academic position in Connecticut; however, instead he turned his attention to Medical Physics.

University of Cincinnati Cincinnati, OH

Post-Doctoral Fellow, Radioisotope Laboratory (1974-1975)
Assistant Professor of Radiology (1975-1979)
Associate Professor of Radiology (1979-1987)
Professor of Radiology (1987-2000)
Associate Director, Division of Medical Physics (1989-1991)
Director, Division of Medical Physics (1991-1998)
Professor Emeritus (2000)

Dr. Thomas first met his medical physics mentor, Dr. Jim Kereiakes in the basement near the Division of Nuclear Medicine, then lead by Dr. Eugene Saenger. There were several funding sources in Cincinnati and Dr. Thomas accepted a post-doctoral fellowship as an opportunity to enter the field. He received a faculty appointment the following year.

Starting in the Radioisotope Laboratory, Dr. Thomas worked on quantitative techniques to calculate radioactivity *in vivo*; this data was then used to determine radiation dose. In collaboration with Dr.'s Harry Maxon and Kereiakes, this work on quantitative imaging and pediatric dosimetry led to a series of landmark publications on thyroid dosimetry and long-term engagement with the Committee on Medical Internal Radiation Dose (MIRD).

During his fruitful career at the University of Cincinnati, Dr. Thomas credits the mentorship and personal friendships of several close colleagues, including but not limited to: James G. Kereiakes, Ph.D., Eugene Saenger, MD, Jerome F. Wiot, MD, Harry R. Maxon, MD, Robert R. Lukin, MD, Edward B. Silberstein, MD and Mary C. Mahoney, MD. From his experience, Dr. Thomas shares the importance of not isolating oneself; 'rub elbows and build bridges with physicians.'

Director, University Radiology Associates (1999-2008)

Following retirement from the University in 1998, he continued to teach radiology residents as director of medical physics for the private physician group, University Radiology Associates.

American Board Of Radiology, (2006-2011) Tuscon, AZ

Associate Executive Director (Medical Physics)



Above, from left to right, Dr.'s Wiot, Thomas, Kereiakes, and Saenger

Later working for the ABR, Dr. Thomas helped build the current certification pathway for clinical medical physicists, including residencies and maintenance of certification.

Achievements/Service

Dr. Thomas attended his first RSNA meeting in 1976 and first AAPM meeting in 1977. The AAPM was held in Cincinnati that year and he shared a talk on radioisotope quantification techniques. Every year thereafter, Dr. Thomas attended the AAPM and RSNA meetings (as did his wife, Ingrid, ever-present at his side). This engagement led to a lifetime of service on many committees with several professional societies and organizations.

During Dr. Thomas' many years at the University of Cincinnati, he engaged in work with physicists, scientists, biomedical engineering, and physics graduate students. His nuclear medicine studies led to membership appointment on the National Council Radiation Protection & Measurements (NCRP) Scientific Committee 57 (Task Group 7) which published a timely report on radiation-induced carcinogenesis of the thyroid, one year prior to the Chernobyl disaster (1985). Dr. Thomas also published early studies on the first CT system (EMI Scanner Mark 1). Repeatedly on the forefront of radiological science and medical imaging, Dr. Thomas started building an MR scanner in the early 1980's.

Initiated with a donation from Proctor & Gamble of a 'large bore' (2") 1.44T nuclear magnetic resonance (NMR) magnet, Dr. Thomas assembled a team in collaboration with Dr. Jerome Ackerman from the department of chemistry. Proposing the purchase of a clinical MR imaging (MRI) unit but, as an alternative, offering to assemble their own, the team was tasked with the second option. That led to construction of an MRI unit at the University of Cincinnati by in-house scientists including RC Samartrunga (coils), Larry Busse (programming), and Ron Pratt (pulse sequences), among others. Their unit was the first in the city to image patients (human and primate) and provided collaboration opportunities with Dr. Leland Clark, studying perfluorocarbon contrast agents.

Dr. Thomas' work with MR led him to chair of the AAPM Task Group No. 1 on quality assurance for MRI and co-chair the 1985 summer school, "NMR in Medicine." Known for taking impeccable minutes, Dr. Thomas rose in the ranks of leadership and came to serve multiple organizations including RSNA, AAPM, Society of Magnetic Resonance Imaging (SMRI), American College of Radiology (ACR), and the ABR.

With a thoughtful leadership style that always sought to include disparate opinions and provide all stakeholders with a place at the table, Dr. Thomas is recalled for his ability to drive projects to completion and bridge relationships between professional societies.



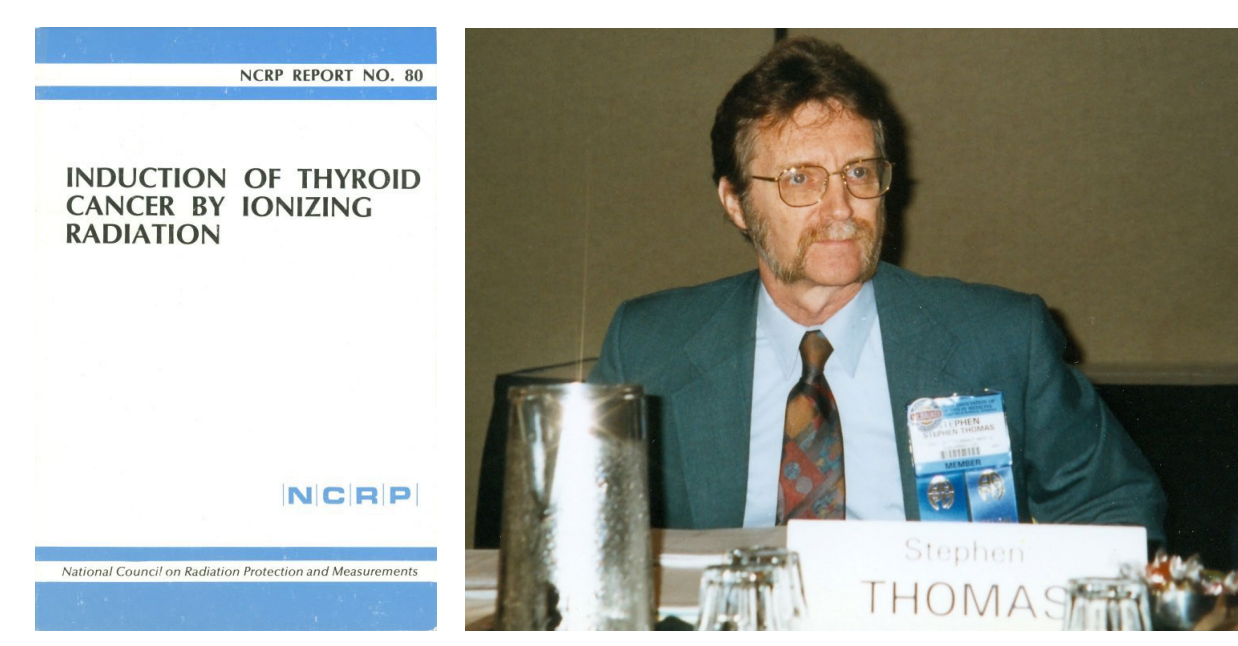
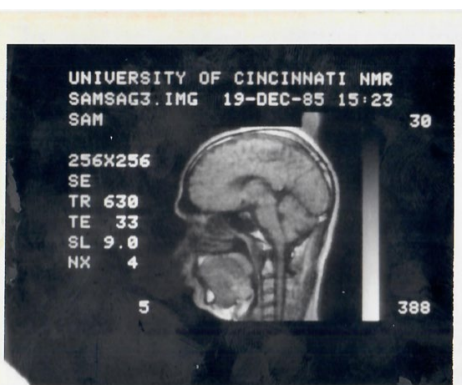
Left, 1994, Dr. Thomas, Jim Galvin, Pat Windham, and Guy Simmons



Right, 2000, Angela Keyser, Ingrid and Dr. Thomas



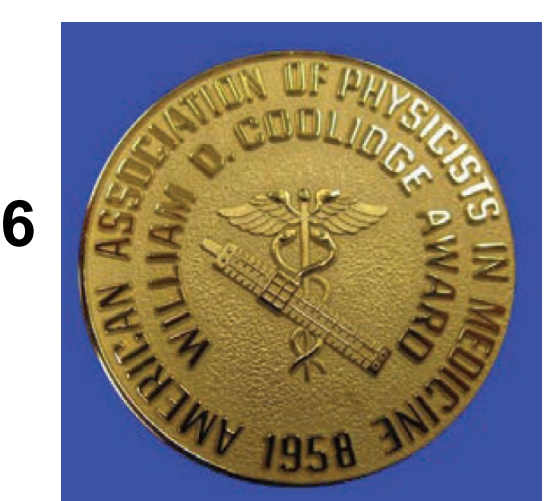
Left, 1985, MR research group: (from left) RC Samartrunga (Sam), Larry Busse, Ron Pratt, and Dr. Thomas. Above an early MR image from their unit.



Summary of Academic Activities	
Doctoral Degree Students	5
Masters Degree Students	28
Research Grants	28
Book Editorship/Collaboration	6
Book Chapters	20
Publications	110

Honors

President, Ohio River Valley Chapter, AAPM, 1986
Award of Merit – Journal of Nuclear Medicine (co-author), 1991
Secretary, SMRI, 1991-93
Third Vice President, RSNA, 1994
Fellow, AAPM, 1994
Fellow, SMRI, 1994
President, AAPM, 1997
Trustee, ABR: Medical Nuclear Physics, 2001-06
Lifetime Service Award, ABR, 2009
Loevinger-Berman Award, SNMMI, 2009
Fellow, ACR, 2010
Gold Medal, RSNA, 2012
William D. Coolidge Award (Gold Medal), AAPM, 2012



Above, Left, 2005, giving the Loevinger-Berman award to James Robertson. Right, 2009, receiving the same award from George Sgouros.



Left, 2012, Ingrid and Dr. Thomas at the RSNA award ceremony following his award of the Gold Medal. Above, the AAPM gold medal which was awarded the same year. Right, 1997, Ingrid and Dr. Thomas at the RSNA taking pleasure in a favorite pastime, enjoying wine and hosting their friends.



Dr. Thomas embarked on a life of character and accomplishment at an early age. Following his first travels with the Peace Corps in Africa, later adventures with his beloved wife Ingrid, and numerous international speaking engagements, Dr. Thomas' scientific achievements and professional service have earned him respect and admiration from around the world.

"There is no chance, no destiny, no fate, that can hinder or control the firm resolve of a determined soul."

Bibliography

Manchester High School, Somanhis, Volume XI, Manchester, Connecticut, 1957.
 Manchester High School, Somanhis, Volume XLIV, Manchester, Connecticut, 1959.
 Williams College, Gulelmesian, Williamstown, Massachusetts, 1963.
 Laughlin, J.S. and Goodwin, N.N. "History of the American Association of Physicists in Medicine 1958-1998," Med. Phys. 25, 1235-1383 1998
 Thomas, Stephen AAPM "History Interview with Stephen Thomas," Robert Gorson, July 26th, 1999
 Thomas, Stephen R. "Robertson Receives Loevinger-Berman Award." The Journal of Nuclear Medicine 46:9 (2005): 26N.
 Sgouros, George. "Thomas Receives Loevinger-Berman Award." Journal of Nuclear Medicine 50:9 (2009): 35N-35N.
 Thomas, Stephen R. "Gorilla in the RF Cage and Other Recollections" True Tales of Medical Physics, Jacob Van Dyk, Springer, 2022. (uncorrected proof)
 Kassing, W., Schneider, A., Lamba, M., Samartrunga, RC, Morin, R., Thomas, S., Keyser, A., Mahoney, M., Ibbott, G. and Pratt, R. Telephone conversations and email exchanges, Peter Sandwall. March-April 2022

