

Gerd Muehlehner, PhD 1939–2020

It is with much sadness that we note the passing of Gerd Muehlehner, PhD, a pioneer in nuclear medicine and PET. Born in Germany and educated as an undergraduate at Georgetown University (Washington, DC), he earned a PhD in nuclear physics at the University of Michigan (Ann Arbor). He started his early career at Searle Radiographics (later Siemens Gammasonics), quickly becoming a leader in nuclear imaging technology. During this time, he led a number of important advances in imaging technology that included novel nuclear camera collimators (*J Nucl Med.* 1969;10:197–201), one of the first digital nuclear image correction methods (*J Nucl Med.* 1980; 21:771–776), and a prototype gamma camera with extended count rate capability for use in positron-emitter imaging (*J Nucl Med.* 1975;16:653–657).

In 1979, Gerd moved to the University of Pennsylvania School of Medicine (Philadelphia) to join the Division of Nuclear Medicine in the Department of Radiology, recruited by Abass Alavi, MD, and Stanley Baum, MD, at that time the division chief and department chair, respectively. Always a visionary, Gerd chose to move to academics at Penn to pursue PET, which he saw as the future of radioisotope imaging at a time when industry was not fully ready to embrace that path. He built one of the top academic nuclear medicine physics and instrumentation programs in the world and became a professor of radiology in 1988. At Penn, Gerd and his colleagues helped create the modern generation of PET imaging devices. Seminal advances during his time at Penn included large-area NaI detectors with digital encoding for PET with techniques to increase the count rate capability by nearly 10-fold over prior Anger-logic detectors. These innovations formed the basis for a prototype at Penn (the PennPET scanner) and commercial coincidence camera devices that broadened clinical access to PET in the early 1990s. The PennPET (*J Nucl Med.* 1990;31:617–627) was the first fully 3D PET tomograph used clinically, for which Gerd and his team also developed scatter correction methods and practical image reconstruction algorithms to handle 3D data for septal-less scanners such as the PennPET.

In 1990, Gerd left Penn and became president of UGM Medical Systems, Inc., a company he founded with his wife, Ursula, transferring leadership of the Penn nuclear medicine physics laboratory to his long-time collaborator,



Gerd and Ursula Muehlehner, 2019

Joel Karp, PhD, the current Physics & Instrumentation lab leader. At UGM, Gerd continued his leadership in the field of PET instrumentation, collaborating with Dr. Karp's Penn team to introduce important advances in the technology for gadolinium oxyorthosilicate- and lutetium yttrium orthosilicate-based detectors for animal and whole-body scanners, implementation of singles-based attenuation correction, and implementation of modern time-of-flight methodology that is now an essential part of all commercial

PET scanners (*J Nucl Med.* 2008;49:462–470). PET imaging systems created by his team at UGM led to widely used commercial systems that eventually became the Philips line of PET and later PET/CT scanners. Throughout his career Gerd's work remained true to his vision that instruments should be practical, cost-effective, and, above all, meet clinical needs.

After his retirement from Philips in 2004, Gerd remained active as a partner to the Penn academic lab as an adjunct professor of radiology. Working with Dr. Karp and the Penn lab, he made contributions to the current whole-body PennPET Explorer (*J Nucl Med.* 2020;61:136–151), one of only 2 currently operating long-axial field-of-view whole-body PET systems in the United States. He thoroughly enjoyed taking breaks from retirement to become reengaged with PET instrumentation research at Penn and continued to take great pride in the achievements of the academic group he had created.

Gerd was highly respected in the broad community of nuclear medicine and was recognized with the highest awards in his field of study, including the SNMMI Aebersold Award, the SNMMI Georg de Hevesy Pioneer Award, and the IEEE Medical Imaging Senior Scientist Award (renamed the Edward J. Hoffman Award), and was named an IEEE fellow for his contributions to nuclear medicine, PET instrumentation, and image reconstruction techniques. During his retirement, he contributed significantly to his local community in Wisconsin, including work in local government and, with Ursula, support of environmental issues. Gerd and his family created an endowed fellowship at Penn to support PET instrumentation research, which later became the Gerd Muehlehner Professorship, currently held by David Mankoff, MD, PhD, Gerd's first (and only) graduate student.

We remember Gerd fondly for his scientific accomplishments, his vision, leadership, and mentorship—and as a person dedicated to the betterment of all who had the pleasure of knowing him professionally and socially. It is with great admiration for his contributions to nuclear medicine and PET and for the legacy he leaves in the form of advances in the field, that we remember Gerd

and cherish his memory together with the nuclear medicine community.

Joel Karp, PhD

David Mankoff, MD, PhD

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sciences PhD program at Rush University and is working through Loyola University Medical Center (Chicago) on a research project evaluating ^{18}F -fluciclovine in gynecologic cancers. She previously worked as manager of the nuclear medicine/nuclear cardiology at Loyola University Health System's Gottlieb Memorial Hospital (Melrose Park, IL) for 5 years and as a staff technologist and clinical educator at Northwestern Memorial Hospital (Chicago) for 14 years before taking her current position.

Currently a director-at-large on the SNMMI Board of Directors, Buehner has also served as a delegate in the SNMMI House of Delegates since 2011, on the SNMMI-TS National Council of Representatives since 2011, and on the SNMMI-TS Awards, Grants, and Scholarships Committee since 2010. She is active within the Central Chapter of SNMMI and served as chair of the Membership and Programs committees, on the technologist Educator's Task Force, and as technologist chapter president from 2014 to 2016. Outside of SNMMI, she has served on the Nuclear Medicine Technology Certification Board (NMTCB) since 2015 and was the SNMMI-TS representative to the Associated Sciences Committee for the RSNA in 2016 and 2017.

Buehner was named a fellow of SNMMI-TS in 2015. She was accepted to and completed the SNM/IBA Leadership Academy in 2010. She won the Northwestern Memorial Hospital's Employee Excellence Award in 2010 and the SNM Paul Cole Scholarship in 2001.

SNMMI-TS President-Elect

Dusty M. York, MAEd, CNMT, PET, ARRT(N)(CT), associate professor and clinical coordinator of the nuclear medicine program at Chattanooga State Community College (TN), was elected as the 2020–2021 SNMMI-TS president-elect. “As a nuclear medicine and molecular imaging educator, I am committed to promoting the field and am excited to represent the members of the SNMMI-TS as president-elect,” noted York. “I would like the SNMMI-TS to be

the first place technologists look for continuing education, patient resources, and advocacy support. In this ever-changing world, we will continue to make every effort to meet our members' needs.”

York studied nuclear medicine at the Medical College of Georgia (Augusta) and later earned a master's degree in education from Tusculum College (Greenville, TN). She began her career as a staff technologist at Memorial Hospital in Chattanooga and has been in her current position at Chattanooga State Community College since 2003.

An active member of the SNMMI-TS, York currently serves on the SNMMI Board of Directors, House of Delegates, and Committee on Women in Nuclear Medicine, as well as the Technologist Section Executive Board, Educators Committee, Grants and Awards Committee, and Professional Development and Education Fund. In the past she has served on and chaired multiple committees across the organization, including the Nuclear Medicine Week Task Force, the Continuing Education Committee, the International Outreach Task Force, and the local Organization Task Force, among others.

York was named the SNMMI-TS Outstanding Educator of the Year in 2017 and was a 2014 graduate of the SNMMI-TS Leadership Academy. Most recently, she was named among Augusta University's Alumni of the Year. She has been a site visitor for the Joint Review Committee on Educational Programs in Nuclear Medicine Technology since 2005 and has served on various review boards and exam committees. She has also contributed to several books and speaks both locally and nationally on nuclear medicine and molecular imaging.



**Dusty M. York,
MAEd, CNMT, PET,
ARRT(N)(CT)**