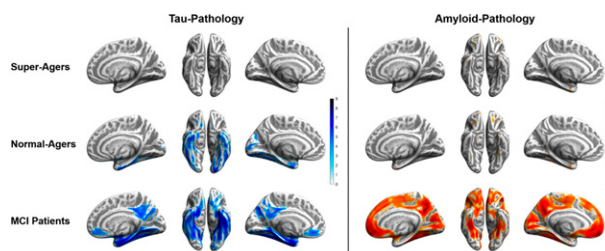


2020 SNMMI Image of the Year

On July 14, as part of the SNMMI Annual Meeting, a figure from a study exploring the relationship between high cognitive function in advanced age and resistance to tau and amyloid pathologies was named as the 2020 SNMMI Image of the Year. The study, “Resistance to tau and amyloid pathology facilitates superaging” was presented by Hoenig et al. from University Hospital Cologne, the Research Center Jülich, and the German Center for Neurodegenerative Diseases (Bonn/Cologne; all in Germany). “The phenomenon of selected individuals cognitively performing above the norm even at high age (so-called superagers) suggests that these individuals must obtain extraordinary resistance mechanisms against brain aging processes and/or neurodegeneration,” wrote the authors. “However, not much is known about age-associated molecular hallmarks of neurodegeneration in superagers, particularly concerning proteopathies, such as the accumulation of amyloid- β and tau.”

Using ^{18}F -AV-1451 and ^{18}F -AV-45 PET imaging acquired as part of the Alzheimer’s Disease Neuroimaging Initiative, the researchers compared intracerebral amyloid and tau burdens in 3 age- and education-matched groups of superagers, normal agers, and patients with mild cognitive impairment (MCI), all ≥ 80 years old. An additional control group of younger (median age, 63.2 years old) cognitively normal and amyloid-negative controls was included. Tau and amyloid burdens were compared among the 4 groups. No significant differences were seen in in vivo tau and amyloid burden between the superagers and the younger controls. The normal agers showed a higher tau burden in the inferior



Tau and amyloid distribution patterns in different cognitive aging trajectories. Rows, top to bottom: superagers, normal agers, and individuals with mild cognitive impairment (MCI). Left, tau pathology (in blue). Right, amyloid pathology (in orange).

temporal and precuneal areas than the controls, but with no significant differences in amyloid burden. Individuals with MCI had both higher amyloid and tau pathology burdens. Differences in amyloid burden differentiated normal agers from those with MCI, and lower tau burden and lower polygenic risk differentiated superagers from those with MCI.

“The phenomenon of superaging appears to be associated with the resistance to tau and amyloid pathology, which likely permits maintenance of cognitive performance despite advanced age,” the authors concluded “In turn, differences between normal aging and MCI appear to be driven by the level of amyloid burden. These results motivate further research to determine responsible resistance factors, which may also inspire the development of novel treatment concepts.”

JNM Impact Factor Rises to New High

The *Journal of Nuclear Medicine* in 2019 achieved its highest ever impact factor rating, ranking fourth among all 133 medical imaging journals worldwide, according to new data released on June 29 in the annual *Journal Citation Reports* by Clarivate Analytics (Philadelphia, PA). *JNM* is the flagship publication of SNMMI. The *JNM* impact factor increased by more than 7%, from 7.354 (2018) to 7.887 (2019). The journal’s immediacy index was 2.386, third highest in the medical imaging category. With a total of 26,844 citations, *JNM* had the highest total citations, 5-year impact factor, immediacy index, Eigenfactor score, and article influence score among nuclear medicine journals.

“Thanks to our creative and hard-working team of associate editors, committed editorial board, excellent reviewers, outstanding *JNM* staff, and high-quality contributions by

scientists from around the globe for this significant increase in *JNM*’s impact factor,” said Johannes Czernin, MD, *JNM* editor in chief and professor of molecular and medical pharmacology and chief of the Ahmanson Translational Theranostics Division at the David Geffen School of Medicine at the University of California, Los Angeles. “As a result of their tireless efforts, *JNM* ranks among the most prominent medical imaging journals published today.”

The impact factor—a quantitative measure of the frequency with which an article in a journal is cited—is used to gauge the overall influence of a journal within scientific, professional, and academic communities. The immediacy index is an indicator of the speed with which citations to a specific journal appear in peer-reviewed literature.

New Officers for SNMMI and SNMMI-TS

During the 2020 SNMMI Annual Meeting, from July 11 to 14, both the SNMMI and SNMMI Technologist Section (SNMMI-TS) welcomed new officers. Elected at earlier meetings by the members of the 2 organizations, the new officers will serve in these positions through June 2021.

SNMMI President

Alan Packard, PhD, became the 2020–2021 SNMMI president, succeeding Vasken Dilsizian, MD. Packard is an associate professor of radiology at the Harvard Medical School (Boston, MA) and the director of radiopharmaceutical research and a senior research associate in nuclear medicine at Boston Children's Hospital. "This is a very exciting time for the field of nuclear medicine, and, as president of SNMMI, I look forward to working with my fellow members to build upon recent breakthroughs in the field, especially in the area of theranostics, and to demonstrating the value of nuclear medicine to those outside our field," he said.



Alan Packard, PhD

His overall goal for the coming year is to enhance the value of SNMMI membership. He will accomplish this by working to enhance the society's core member benefits—the SNMMI Annual Meeting, continuing education, and *The Journal of Nuclear Medicine*—and by strengthening the society and nuclear medicine more broadly through the SNMMI Value Initiative, SNMMI's strategic vision for working with industry and other partners to demonstrate the crucial role of nuclear medicine and molecular imaging to the medical community, regulators, patients, and the public.

Packard has a bachelor's degree in chemistry from the University of New Hampshire (Durham) and a PhD in inorganic chemistry from Colorado State University (Fort Collins). His laboratory at Boston Children's Hospital is engaged in development of radiolabeled proteins for multiple applications, including cancer imaging and therapy, and ^{18}F -labeled small molecules for myocardial perfusion imaging. The focus of the cancer program is on developing ^{64}Cu - and ^{89}Zr -labeled antibodies to noninvasively evaluate disease status, as well as on developing antibodies labeled with therapeutic radionuclides, such as ^{177}Lu and ^{67}Cu .

Packard has authored more than 70 peer-reviewed articles and book chapters on topics ranging from pediatric nuclear medicine and new procedures in nuclear medicine to the application of nanoparticles in medical imaging. He is a regular lecturer and invited speaker at conferences across the United States and around the world. He is a reviewer for a range of major journals and is on the advisory board for *Molecular and Cellular Therapies*.

A longtime SNMMI member, Packard has served on the society's Board of Directors. He is currently chair of the Education Committee and has chaired and served on many committees and task forces in past years. He is a member of the society's Radiopharmaceutical Science Council and Center for Molecular Imaging, Innovation, and Translation. He is also an active member of the American Chemical Society and the Society of Radiopharmaceutical Sciences.

"SNMMI's strength comes from its breadth of membership, with physicians, scientists, and technologists working together to advance nuclear medicine and molecular imaging in order to provide patients with the best possible care," Packard said, noting that the society will build on these strengths in the coming year.

SNMMI President-Elect

Richard L. Wahl, MD, assumed the office of 2020–2021 SNMMI president-elect. He is the Elizabeth E. Mallinckrodt Professor and head of radiology at Washington University School of Medicine in St. Louis (MO), director of the university's Mallinckrodt Institute of Radiology, and a professor of radiation oncology. "Nuclear medicine is undergoing a renaissance as a precision medicine specialty, with new radiopharmaceuticals, theranostics, and instrumentation to elucidate biology and benefit patients," Wahl said. In his years in office, he plans to focus on access to and advocacy for nuclear medicine, on enhancing the diversity and number of professionals working in nuclear medicine, and on discovery and innovation.



Richard L. Wahl, MD

After graduating from Washington University School of Medicine and completing his residency there, Wahl interned at the University of California at San Diego School of Medicine. He returned to Washington University in 1979 for training in diagnostic radiology and nuclear medicine. He accepted his first faculty appointment at the University of Michigan (Ann Arbor) in 1983 and moved to Johns Hopkins University (Baltimore, MD) in 2000, where he was the Henry N. Wagner Jr., MD, professor and director of the Division of Nuclear Medicine; vice chair for technology and new business development in the Russell H. Morgan Department of Radiology and Radiological Sciences; and professor of oncology. He accepted his current appointment at Washington University in 2014.

Wahl has been an active SNMMI member and currently serves as chair of the Research and Discovery domain for the society's Value Initiative. He has served on the editorial board of *The Journal of Nuclear Medicine* for many years. Wahl is an elected member of the American Society for

Clinical Investigation, the American Association of Physicians, and the National Academy of Medicine and has received honors from multiple organizations. He holds 18 patents and has published more than 460 peer-reviewed scientific articles. He is the primary author of several textbooks, including *Principles and Practice of PET and PET/CT*. He maintains a strong interest in quantitative imaging and is on the coordinating committee of the Quantitative Imaging Biomarkers Alliance efforts of the Radiological Society of North America (RSNA) and has been a lead investigator in the Quantitative Imaging Network of the National Institutes of Health.

His awards include a U.S. Department of Energy Achievement Award; the de Hevesy, Tetalman, Berson, and Yalow awards and 2 Alavi-Mandel awards from SNMMI; and the Academy of Molecular Imaging's Distinguished Scientist Award. He has given many named lectures throughout the world, including the Eugene P. Pendergrass New Horizons Lecture at the RSNA annual meeting and the Marie Curie Lecture at the European Association of Nuclear Medicine annual meeting.

SNMMI Vice President-Elect

Munir Ghesani, MD, associate professor of radiology at Mount Sinai Hospital and chief of nuclear medicine and molecular imaging at Mount Sinai Health Enterprise (New York, NY), was named as SNMMI vice president-elect. He reported that his goals in this position include working to streamline approval of nuclear medicine and molecular imaging agents and technologies; advancing and promoting education, quality, value, and safety; and fostering the availability and clinical utilization of nuclear medicine. Among these goals he has targeted creation of a clear Food and Drug Administration (FDA) approval process, development of quality measures for reporting and appropriate use criteria, and establishment of a sustainable domestic isotope supply supplemented by uninterrupted international imports. Ghesani noted that collaborations are key for achieving these goals. "Throughout my various roles at SNMMI, I have seen the value of effective collaborations," he said. "By working together with physicians, technologists, scientists, government agencies, and other national and international societies, we have made great progress in advancing the field of nuclear medicine and molecular imaging."



Munir Ghesani, MD

Ghesani earned his medical degree from Gujarat University, NHL Medical College (Ahmedabad, India) in 1984. He completed a diagnostic radiology residency in 1988 at the KM School of Postgraduate Medicine and Research, followed by a diagnostic ultrasound fellowship in 1989 at LG

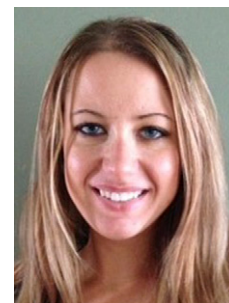
Hospital and KM School of Postgraduate Medicine and Research, also in Ahmedabad. In 1993, he completed an internal medicine residency at Jersey City Medical Center (NJ) and, in 1996, a nuclear medicine residency and fellowship at St. Luke's-Roosevelt Hospital Center (New York, NY), where he also went on to radiology residency. He has held academic appointments in New York City at the New York University School of Medicine, the Icahn School of Medicine at Mount Sinai, and Columbia University.

Within SNMMI, Ghesani has been an active member of the society's governance, with a strong focus on advocacy. He has served as chair of the SNMMI Government Relations Committee and the SNMMI/FDA Task Force, as well as Advocacy Domain chair for the SNMMI Value Initiative. He was a cochair of the SNMMI Membership Task Force and a member of the SNMMI Board of Directors. He has also held multiple leadership positions in the Greater New York Chapter of SNMMI, most recently as president.

In the larger nuclear medicine community, Ghesani has served as chair and director of the American Board of Nuclear Medicine and as president of the American College of Nuclear Medicine (ACNM). Earlier this year, he won the ACNM Personal Best Mentor of the Year award. He has published 88 peer-reviewed journal articles and a text, *Nuclear Medicine: A Case-Based Approach*.

SNMMI-TS President

Tina M. Buehner, MS, CNMT, NMTCB(CT)(RS), RT(N)(CT), was named 2020-2021 president of the SNMMI-TS. Buehner is a health physicist specialist at Rush University Medical Center (Chicago, IL). "As SNMMI-TS president, my goal is to promote clinical excellence by working closely with leadership to continue to develop, translate, and communicate standards for quality in clinical practice, as well as ensuring that technologists have pathways to obtain the skill set necessary to perform the tasks required of them," she said. "There is always room to enhance communications, educational offerings, advocacy, and research support. In the rapidly evolving field of nuclear medicine, I also firmly believe in sharing knowledge and working together with related societies and the international community to bring patients state-of-the-art imaging and precision therapies."



Tina M. Buehner, MS, CNMT, NMTCB(CT)(RS), RT(N)(CT)

Buehner has almost 20 years of experience as a nuclear medicine technologist. She completed her AAS in nuclear medicine technology at Triton College (River Grove, IL), followed by a bachelor's degree in health arts and a master's degree in health services administration at the University of St. Francis (Joliet, IL). She is currently in the health

(Continued on page 20N)

Conti Receives Benedict Cassen Prize for Cancer Imaging Research

Peter S. Conti, MD, PhD, known for his pioneering work in the diagnosis and management of cancer, was awarded the Benedict Cassen Prize on July 13 during the 2020 SNMMI Annual Meeting. The honor is awarded every 2 years by the Education and Research Foundation (ERF) for Nuclear Medicine and Molecular Imaging in recognition of outstanding achievement and work leading to a major advance in nuclear medicine science. Conti is a tenured professor at the University of Southern California (USC) in Los Angeles, with academic appointments in the departments of radiology, biomedical engineering, and pharmaceutical sciences, and has been the director of the USC PET Imaging Science Center since its inception in 1991.

“The Cassen Prize Committee selected Peter Conti as the 2020 recipient in recognition of his pioneering work in the development of novel radiopharmaceuticals and clinical PET applications for cancer imaging, as well as his volunteerism and service to the molecular imaging community,” said ERF President Frances K. Keech, DHSc, RT(N).

During a special virtual plenary session at the SNMMI Annual Meeting, Conti presented the Cassen Lecture on “Imaging in 2020 and beyond: Expect the unexpected.” He offered insights into the potential role of molecular imaging of viral infection relevant to the current COVID-19 crisis, along with an overview spanning his more than 40 years in the cancer imaging field, from the early development of radiolabeled analogs of nucleosides and amino acids to more recent work using bifunctional chelation technologies, drug conjugates, and companion diagnostics, as well as multimodality imaging agents.

“It is an honor to be recognized by the Cassen Committee of the ERF and SNMMI,” Conti said. “It is a privilege to be considered a member of this elite group of scientists

who have contributed so much to the field. I want to thank all my U.S. and international collaborators, colleagues, mentors, students, friends, and family whose support and inspiration made this possible.”

Conti received his undergraduate degree from Johns Hopkins University (Baltimore, MD) and his medical degree from Cornell University Medical College (New York, NY). His doctorate in biophysics was completed at Memorial Sloan-Kettering Cancer Center (New York, NY). He is board certified in both nuclear medicine and diagnostic radiology and is a fellow of both the American College of Radiology and the American College of Nuclear Medicine.

With more than 300 peer-reviewed articles published in the field of molecular imaging, Conti has focused on the development of novel PET and hybrid imaging agents for diagnostic and theranostic applications in cancer and other diseases. He was the 2016 recipient of the SNMMI Paul C. Aebersold Award for achievements in the basic science of nuclear medicine and the SNMMI 2018 Peter Valk Award for his pioneering work in clinical PET.

The Cassen Prize honors Benedict Cassen (1902–1972), whose invention of the rectilinear radioisotope scanner—the first instrument capable of making an image of radiotracer distribution in the organs of living patients—was seminal to the development of clinical nuclear medicine. Conti is the 15th individual since 1994 to receive the prestigious \$25,000 award from the ERF.



**Peter S. Conti, MD,
PhD**

Anderson Recognized with SNMMI 2020 Aegersold Award

Carolyn J. Anderson, PhD, was named on July 12 as the 2020 recipient of the prestigious Paul C. Aegersold Award from SNMMI during its Annual Meeting. She is the Simon-Ellebracht Professor of Medicinal Chemistry and Professor of Radiology at the University of Missouri (Columbia), where she recently moved with a leadership role in molecular imaging and theranostics research.

“Dr. Anderson has been a trailblazer in the translation of novel PET agents for the imaging and targeted radiopharmaceutical therapy of cancer and other diseases in humans,” said Bennett S. Greenspan, MD, chair of the SNMMI Committee on Awards. “She pioneered the development of radiometal-labeled receptor-targeted PET imaging agents, leading to the first human study of ^{64}Cu -labeled octreotide in patients with neuroendocrine tumors. Her contributions to basic science in the field of nuclear medicine and molecular imaging are well deserving of the SNMMI Aegersold Award.”

After an undergraduate degree in chemistry from the University of Wisconsin Superior, Anderson earned her doctorate degree in inorganic chemistry from Florida State University (Tallahassee). She spent more than 20 years developing PET tracers at Washington University in St. Louis (MO) and most recently was a professor in the departments of medicine, radiology, bioengineering, chemistry, and pharmacology and chemical biology at the University of Pittsburgh (PA). There she was also director of the Molecular Imaging Laboratory and codirector of the In Vivo Imaging Facility at the UPMC Hillman Cancer Center.

Anderson’s research interests center on the development and evaluation of novel radiometal-based radiopharmaceuticals for diagnostic imaging and targeted radiotherapy of cancer and other diseases. Her recent research has focused on development of imaging agents for upregulated receptors on immune cells involved in inflammation related to lung diseases, including tuberculosis, primary tumor growth, cancer metastasis, and sickle cell disease. Her research also capitalizes on the effects of targeted radiopharmaceutical therapy on both tumor cells and immune cells in the tumor microenvironment. “What is most exciting and interesting about research in radiopharmaceutical development is multipurposing tracers for diseases that range from cancer to pulmonary ailments to vascular diseases,” she said. “I’ve had

the honor and pleasure of working with a highly diverse group of clinicians and scientists by being part of the nuclear medicine research community.”

Anderson has received numerous honors throughout her career, including the Michael J. Welch Award from SNMMI in 2012 and the Distinguished Investigator Award from the Academy of Radiology Research in 2014. In 2019, she was inducted as a fellow of SNMMI, as well as of the World Molecular Imaging Society. She has mentored many students and researchers throughout her career and has developed multiple training programs in radiochemistry and molecular imaging. She has coauthored more than 185 publications, most in the area of developing radiopharmaceuticals for oncologic imaging and therapy.

She is a past president of the SNMMI Center for Molecular Imaging Innovation and Translation and has served on many committees and councils throughout the organization, including the SNMMI Board of Directors and the PET Center of Excellence. She is also a member of the American Chemical Society, American Association of Cancer Research, Society of Radiopharmaceutical Sciences, Academy of Molecular Imaging, and World Molecular Imaging Society.

The Aegersold Award is named for Paul C. Aegersold (1910–1967), a pioneer in the biologic and medical application of radioactive materials and the first director of the Atomic Energy Commission’s Division of Isotope Development. It recognizes outstanding achievement in basic science applied to nuclear medicine and was first presented in 1973. The SNMMI Committee on Awards selects the recipient. Anderson is the 47th Aegersold Award honoree and the third woman to receive the recognition. “Words cannot describe how honored I am to receive the Aegersold Award and join the prestigious group of previous awardees,” she said. “This award is shared with my past and present collaborators and trainees, and our accomplishments are greatly enhanced by the support of the SNMMI community.”



Carolyn J. Anderson, PhD

Stephen L. Bacharach, PhD, Honored with SNMMI de Hevesy Award

Stephen L. Bacharach, PhD, a physicist known for his research in cardiac and PET oncology imaging, was named on July 12 at the 2020 SNMMI Annual Meeting as the recipient of the Georg Charles de Hevesy Nuclear Pioneer Award. Bacharach was recognized for his inception of and contributions in the areas of gated cardiac blood pool imaging, informatics, and data processing and analysis. He and his colleagues were the first to apply the technique of cardiac function evaluation at rest and stress, a test that was the mainstay of nuclear medicine for many years.

“Dr. Bacharach is considered to be one of the premier physicists in the area of nuclear medicine and cardiology and is nationally and internationally known for his research on gated cardiac blood pool imaging,” said 2019–2020 SNMMI president Vasken Dilsizian, MD. “Dr. Bacharach is a brilliant teacher, a thoughtful investigator, and a prolific writer. He makes the most difficult concepts in physics, nuclear medicine, and statistics easy to understand. An intellectual with marvelous human values, he is most deserving of the Georg Charles de Hevesy Nuclear Pioneer Award.”

Bacharach received his undergraduate and master’s degrees in engineering physics from Cornell University (Ithaca, NY), where he went on to earn his doctorate in applied physics. For nearly 40 years, he worked at the National Institutes of Health (NIH; Bethesda, MD). He was appointed as a senior tenured research scientist at NIH and was head of the Imaging Science Group until his retirement in 2005. He then moved to San Francisco, CA, where he was appointed visiting professor of radiology at the University of California, San Francisco (UCSF). He retired from UCSF in 2017.

During his career, Bacharach was invited to serve in many short-term appointments around the world, including as a consultant with the World Health Organization at the Bhabha Atomic Research Centre (Mumbai, India), chief medical worker at the University of Utrecht (The Netherlands), and visiting professor in the joint MD/PhD Program at the Massachusetts Institute of Technology and Harvard

University (Boston, MA). He also held the Chair of Excellence at the University Carlos III in Madrid, Spain.

Bacharach served on the editorial board of *The Journal of Nuclear Medicine* for more than 20 years and on the editorial boards of the *Journal of Nuclear Cardiology* and the *Journal of the American College of Cardiology*. He has published more than 200 papers in cardiology, PET, oncology, and image processing. He has served on multiple SNMMI committees and councils and received the SNMMI Hermann Blumgart Award in 2005.

“As a physicist, I am especially honored and humbled to receive the de Hevesy Nuclear Pioneer Award,” said Bacharach. “Although de Hevesy was primarily thought of as a chemist, his degree was in physics, and he worked with some of the greatest names in physics of all time, including Ernest Rutherford and Neils Bohr. I sincerely thank everyone at the SNMMI and all my collaborators for helping me get to this pinnacle at the end of my career.”

Each year, SNMMI presents the Georg Charles de Hevesy Nuclear Medicine Pioneer Award to an individual for outstanding contributions to the field of nuclear medicine. De Hevesy received the 1943 Nobel Prize in chemistry for his work in determining the absorption, distribution, metabolism, and elimination of radioactive compounds in the human body. His work led to the foundation of nuclear medicine as a tool for diagnosis and therapy. SNMMI has given the de Hevesy Award every year since 1960 to honor groundbreaking work in the field of nuclear medicine. The list of previous recipients of this award includes numerous Nobel laureates—including Ernest Lawrence, who built the world’s first cyclotron for the production of radionuclides, and Glenn Seaborg, who discovered more than half a dozen new elements.



Stephen L. Bacharach, PhD

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

*Perelman School of Medicine at the University of Pennsylvania
Philadelphia, PA*

(Continued from page 15N)

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)**

SNMMI Virtual Meeting a Real-Life Success

Virginia Pappas, CAE, SNMMI CEO

Earlier this year, SNMMI was faced with the difficult decision of how to move forward with its 2020 Annual Meeting during the COVID-19 pandemic. Knowing that an in-person meeting would be impossible, SNMMI took the opportunity to reimagine the Annual Meeting and create a truly innovative virtual experience for the nuclear medicine and molecular imaging community. Utilizing an interactive, virtual platform, the society presented a robust and groundbreaking Annual Meeting that was a resounding success.

Held July 11–14, the 2020 virtual meeting drew 9,000 registrants from all over the world. All SNMMI members received free registration for the virtual Annual Meeting; nonmembers who joined the society were offered the same benefit. In addition, the International Atomic Energy Agency, a sponsor of the virtual meeting, offered complimentary registration to its member states, with more than 1,000 associated individuals attending the meeting.

The virtual Annual Meeting offered a wide variety of continuing education sessions, on-demand access to hundreds of scientific abstract oral presentations and posters, a cutting-edge exhibit hall, and networking events—all in a flexible format designed to accommodate the needs of attendees' schedules. The easy-to-use and vibrant virtual platform mimicked the dynamics of a physical meeting, making it easy for attendees to navigate and take full advantage of all features of the meeting.

Entering the virtual “Live Sessions” auditorium, attendees accessed an exceptional education program spanning everything from boot camps to hot topics in nuclear medicine and molecular imaging, such as nuclear medicine in the time of COVID-19, current perspectives on total-body PET, and new isotope development. Six young investigator sessions, 2 basic science summary sessions, and 14 continuing education sessions were offered over the course of the meeting, allowing participants to earn up to 25 continuing education credits. These interactive sessions included live chat functionality for questions and answers, which was used extensively by attendees.

Plenary sessions featuring keynote speakers, significant awards, and accomplishments were also offered in the Live Session lecture hall. Jagat Narula, MD, PhD, MACC, the Henry N. Wagner, Jr., MD, lecturer, delivered an outstanding presentation on molecular imaging in cardiovascular medicine. Peter S. Conti, MD, PhD, presented the Cassen Lecture on “Molecular imaging in 2020 and beyond: Expect the unexpected,” discussing insights into the potential



role of molecular imaging of viral infection as well as developments in the cancer imaging field. The SNMMI-TS plenary session, presented by Lisa Bodei, MD, PhD, focused on radionuclide therapy during COVID-19, and the always interesting Highlights Symposium was presented at the conclusion of the meeting by Heather Jacene, MD, Julie Price, PhD, Andrew Scott, MD, and Mehran Sadeghi, MD.

The virtual Science Pavilion allowed participants to discover and explore scientific abstracts on the latest research in nuclear medicine and molecular imaging. The pavilion featured more than 275 research presentations, including recorded oral presentations from the authors, as well as posters and educational exhibits. Attendees were able to get further information while visiting posters by either chatting or e-mailing questions to authors.

Moving to the virtual Exhibit Hall, attendees had the opportunity to visit the customized virtual booths of more than 80 top industry suppliers and organizations in the nuclear medicine and molecular imaging field. Each exhibit offered the chance to learn more about products and services through videos and downloadable presentations. Attendees participated in one-on-one meetings with exhibit personnel via online chats while visiting the booths.

In the Networking Lounge, Annual Meeting attendees had online interactions that allowed them to connect with professionals from around the world both in one-on-one conversations and in group settings. Virtual networking events, including the Molecular Hub Meet-Ups, Presidents' Town Hall and Reception, Drink and Think sessions, and the Knowledge Bowl, brought attendees together over the course of the meeting. Participants also enjoyed the premiere of the Amazon film *Radioactive*, released early only for SNMMI attendees, at a viewing party organized by the Women in Nuclear Medicine Committee.

I'm pleased to note that all content from the Annual Meeting will remain available online to registrants for 1 year, and

additional content will be rolled out in webinars over the next few months. This includes an exciting Technologist Summer Program, as well as content from SNMMI's councils and centers.

The 2020 Annual Meeting provided a wealth of current and valuable information and offered attendees a meaning-

ful, interactive virtual experience. With the tremendous success of this virtual meeting and the accessibility of the content, SNMMI will be considering holding meetings virtually in future months to offer its members and the nuclear medicine community the best possible education while ensuring their safety.

NEWS BRIEFS

FDA Approves Tau Pathology Imaging Drug

On May 28 the U.S. Food and Drug Administration (FDA) approved Tauvid (flortaucipir F18) for intravenous injection, for PET imaging in adult patients with cognitive impairment for evaluation for Alzheimer disease (AD). The FDA granted approval of Tauvid to Avid Radiopharmaceuticals, Inc. (Philadelphia, PA), a subsidiary of Eli Lilly and Company. The approval came through the Priority Review process, under which the FDA goal is to take action on an application within 6 months if the agency determines that the drug, if approved, would significantly improve the safety or effectiveness of treating, diagnosing, or preventing a serious condition.

"AD is a devastating condition that affects millions of Americans. This approval will provide health care professionals with a new type of brain scan to use in patients being evaluated for AD," said Charles Ganley, MD, director of the Office of Specialty Medicine in the FDA Center for Drug Evaluation and Research. "While there are FDA approved imaging drugs for amyloid pathology, this is the first drug approved for imaging tau pathology, one of the 2 neuropathological hallmarks of AD, and represents a major advance for patients with cognitive impairment being evaluated for the condition."

The safety and effectiveness of Tauvid imaging were evaluated in 2 clinical studies. The first enrolled 156 patients who were terminally ill and agreed to undergo Tauvid PET imaging and participate in a post-mortem brain donation program. In 64 of the

patients who died within 9 months of PET imaging, evaluators' interpretations were compared with post-mortem findings from independent pathologists who evaluated the density and distribution of neurofibrillary tangles (NFTs). Results showed that the scans had a high probability of correctly evaluating patients with tau pathology and an average-to-high probability of correctly evaluating patients without tau pathology.

The second study included the same patients, with 18 additional participants with terminal illness and 159 patients with cognitive impairment being evaluated for AD, and focused on interobserver agreement in scan interpretation. Agreement was at 87% across all 241 patients in the study and 90% in a separate subgroup analysis that included the 82 terminally ill patients diagnosed after death and the 159 patients with cognitive impairment.

The most common adverse reactions in patients using Tauvid were headache, injection site pain, and increased blood pressure. Tauvid is not indicated for use in the evaluation of patients for chronic traumatic encephalopathy.

The availability of Tauvid will initially be limited and will expand in response to commercial demand and payor reimbursement. "The fight against AD requires precise and reliable assessments of the 2 key pathologies of the disease, because clinical assessments alone are limited in their ability to accurately diagnose patients," said Mark Mintun, MD, vice president of Lilly's pain and neurodegeneration research and development. "I am excited that Tauvid has now been approved to image tau

NFTs, which is the other key pathology, allowing a more comprehensive evaluation of patients. Lilly and Avid Radiopharmaceuticals are committed to bringing innovative AD diagnostics to the patients who need them most."

*U.S. Food and Drug Administration
Eli Lilly and Company*

Regulatory Relief for Imaging/Localization Study Training

On June 11, SNMMI, along with the American Society of Nuclear Cardiology, the American Society for Radiation Oncology, and the American College of Radiology requested regulatory relief from the Nuclear Regulatory Commission (NRC) for training for imaging and localization studies during the COVID-19 Public Health Emergency (PHE). The current regulation reads: "Work experience must involve: Eluting generator systems appropriate for preparation of radioactive drugs for imaging and localization studies, measuring and testing the eluate for radionuclidic purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs" (10 CFR Part 35.290 (c)(1)(ii)(G)).

The joint letter requested that NRC allow this requirement to be met using virtual technology (video/webinar) and add this as an already vetted area for regulatory relief when requested by licensees. This request is similar to the previous NRC Advisory Committee on the Medical Uses of Isotopes subcommittee recommendation for a 1-time modification because of the pandemic. That request stated, "In situations when hands-on training (hot lab) is not feasible, then video/webinar

observational training may be considered. Similarly, when work experience cannot be met in person, then virtual training may be considered.”

The NRC announced on May 20 the regulatory relief process (<https://www.nrc.gov/docs/ML2013/ML20134H934.pdf>) under its existing authority to consider granting relief from specific regulatory commitments when requested by a licensee under certain circumstances. Licensees were advised to reach out to the appropriate NRC point of contact as soon as possible upon identifying any potential compliance issues resulting from the COVID-19 PHE. In a June update, the NRC noted that “staff will work with the licensee to align around the information necessary to process the request and the needed timelines for relief. The NRC has assured and will continue to assure that licensed facilities operate safely during COVID-19.”

SNMMI

U.S. Nuclear Regulatory Commission

New Implementation Date for USP <825>

The United States Pharmacopeial Convention on June 1 updated the implementation date for General Chapter <825> Radiopharmaceuticals—Preparation, Compounding, Dispensing, and Repackaging to December 1, 2020. This General Chapter provides uniform minimum standards for the preparation, compounding, dispensing, and repackaging of sterile and nonsterile radiopharmaceuticals for humans and animals that occur as part of state-licensed activities. Originally scheduled for implementation on December 1, 2019, the start date has been delayed for appeals and comments. The text of the General Chapter <825> can be downloaded from <https://go.usp.org/l/323321/2020-03-09/3125jw>.

United States Pharmacopeial Convention

NRC Identifies 9 FY 2019 Abnormal Occurrence Events

The U.S. Nuclear Regulatory Commission (NRC) on June 23 published its annual report to Congress for fiscal

year 2019 regarding Abnormal Occurrences involving medical and industrial uses of radioactive material. Nine such occurrences were identified, 7 of which were medical events. U.S. law defines an Abnormal Occurrence as an unscheduled incident or event that the NRC determines to be significant from the standpoint of public health or safety. The NRC sets specific criteria, most recently updated in October 2017, for determining which events qualify, such as misadministration of radioactive material in diagnosis or treatment.

The majority of the medical events (4) involved higher-than-prescribed doses (including wrong site doses) in administration of ⁹⁰Y microspheres. A fifth case involved incorrect flushing of an ⁸²Rb generator, resulting in levels of ⁸²Sr and ⁸⁵Sr in the eluate, exceeding manufacturer-specified limits and affecting 8 patients. In the remaining 2 cases, patients received higher than prescribed doses in ¹⁰³Pd brachytherapy and in ¹³¹I treatment.

The nonmedical events involved 1 worker exposure and the theft and subsequent recovery of a device containing a risk-significant radioactive source. No events at commercial nuclear power plants in FY 2019 met the criteria requiring an Abnormal Occurrence declaration. The Report to Congress on Abnormal Occurrences, Fiscal Year 2019, is available on the NRC website and includes details on each incident, as well as resolution and NRC actions. The full report is available at: <https://www.nrc.gov/docs/ML2016/ML20162A165.pdf#:~:text=defines%20an%20abnormal%20occurrence%20%28AO%29%20as%20an%20unscheduled,from%20the%20standpoint%20of%20public%20health%20or%20safety.>

U.S. Nuclear Regulatory Commission

IAEA SAFRON Program Extended to Radionuclide Therapy

The International Atomic Energy Agency (IAEA) recently announced the launch of its SAFRON for Radionuclide Therapy program, an incident learning system to help medical facilities improve safety for patients and

staff. The objective of this new platform is to “enhance the planning of radionuclide therapy used to treat, mitigate, or control cancer and other diseases by identifying potential safety issues from reported events.”

“The complexity of radionuclide therapy could lead to unintended exposure pathways for the patient, worker, or the public,” said Debbie Gilley, IAEA Radiation Protection Specialist, in a May press release associated with the announcement of the new program. “Sharing information is key to preventing future incidents in radionuclide therapy.”

SAFRON, which stands for Safety in Radiation Oncology, is an integrated voluntary reporting and learning system originally created in 2012 to collect and disseminate information on safety-related events in radiation therapy. The current extension to events associated with radionuclide therapy recognizes the increasing global use of such treatments. Information submitted to SAFRON is dependent on facilities registering and sharing incidents that occur in their institutions. The IAEA lists more than 50 registered medical facilities and hospitals in the system, currently with more than 1,300 incident reports covering various occurrences, including errors and near misses. Incident submission is anonymous.

Although local and regulatory incident reporting systems are available, the launch of SAFRON for radionuclide therapy allows for sharing of information and learning from good practices across the broader medical community. “The reports available in SAFRON are a valuable resource for identifying events, and published documents can assist the reviewers in understanding the complexity of incidents and identifying methodologies that might be used to prevent future errors,” Gilley said.

Registered contributors using SAFRON will be able to collect and analyze their reports to track, trend, and benchmark activities within their centers and with other SAFRON participants in radiotherapy and radionuclide

therapy. Registration for SAFRON radionuclide therapy incident learning is through IAEA NUCLEUS (<https://nucleus.iaea.org/Pages/Help/Registration.aspx>). Detailed instructions are available at: <https://www.iaea.org/sites/default/files/20/05/safron-nm-registration-instructions.pdf>.

International Atomic Energy Agency

FDA Pilot Program for Patient Reported Outcomes in Cancer Trials

The U.S. Food and Drug Administration (FDA) announced on June 23 the launch of Project Patient Voice, an initiative of the FDA Oncology Center of Excellence (OCE). Through a new website, Project Patient Voice will create a consistent source of publicly available information describing patient-reported symptoms from cancer trials for marketed treatments. Although patient-reported data have previously been analyzed by the FDA during the drug approval process, such data are rarely included in product labeling and, therefore, are largely inaccessible to the public.

“Project Patient Voice has been initiated by the OCE to give patients and health care professionals unique information on symptomatic side effects to better inform their treatment choices,” said FDA Principal Deputy Commissioner Amy Abernethy, MD, PhD. “The Project Patient Voice pilot is a significant step in advancing a patient-centered approach to oncology drug development. Where patient-reported symptom information is collected rigorously, this information should be readily available to patients.”

Patient-reported outcome (PRO) data are collected using questionnaires that patients complete during clinical trials. These are designed to capture

important information about disease- or treatment-related symptoms and include severity and frequency of such symptoms.

The Project Patient Voice website (<https://www.fda.gov/about-fda/oncology-center-excellence/project-patient-voice>) will include a list of cancer clinical trials with available patient-reported symptom data. Each trial will include a table of patient-reported symptoms that can be selected to display a series of bar and pie charts describing symptoms at baseline and over the first 6 mo of treatment. This information provides insights into side effects not currently available in standard FDA safety tables.

In the first phase of the pilot website, only 1 trial will be included while the FDA seeks public feedback on the way in which information is presented. Visualizations and data included on the website are voluntarily provided by the drug companies that conducted the clinical trials. AstraZeneca is the first company to provide patient-reported outcome data for an FDA-approved drug and has collaborated with the FDA to identify optimal methods for information display.

“There have long been calls to provide information to patients about how they may feel and function when receiving a cancer treatment. By initiating Project Patient Voice, we are moving towards standardized methods to display these outcomes, starting with patient-reported symptomatic adverse events,” said Paul Kluetz, MD, deputy director of the FDA’s OCE. “We encourage sponsors to collect this data systematically and look forward to welcoming additional sponsor collaboration as we work to help further serve the patient community.”

U.S. Food and Drug Administration

SNMMI and Partners Continue Support for H.R. 3772

On June 18 SNMMI and its Appropriate Payment Coalition Partners, the Medical Imaging Technology Alliance and the Council on Radionuclides and Radiopharmaceuticals, Inc., described renewed joint efforts to continue promoting H.R. 3772, the Medicare Diagnostic Radiopharmaceutical Payment Equity Act of 2019. This act would extend equitable reimbursement for approved PET agents and thereby stimulate development of new diagnostic radiopharmaceuticals. Three radiopharmaceuticals used to diagnose Alzheimer disease are currently scheduled to be bundled on September 30.

Participants in these joint efforts have been organized into teams—each including perspectives from industry, providers, and patients—that virtually visit specific congressional offices. In all, the teams intend to participate in more than 50 meetings, educating congressional representatives and staff about the importance of nuclear medicine and molecular imaging, as well as about the financial burden of COVID-19 on hospital systems. Severe reductions in revenue-producing elective procedures, coupled with the demands of COVID-19, may mean hospitals will be reluctant to support innovative nuclear medicine services because of inadequate reimbursement.

The SNMMI and its partners urged interested individuals to send a letter of support to congressional representatives before the end of the current session. More information and instructions on submitting such letters is available at <https://snmmi.quorum.us/campaign/23260/> and <https://www.snmmi.org/Issues/Advocacy/content.aspx?ItemNumber=34002&navItemNumber=34003>.

SNMMI