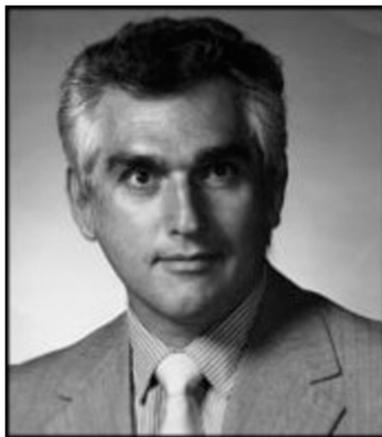


Monte Blau, PhD, 1926–2019

One of the pioneers of nuclear medicine, Monte Blau, PhD, died on May 1, 2019. Born on June 17, 1926, he was the younger son of Rose and Samuel Blau. He lived with his parents and brother Sidney in the Sea Gate section of Brooklyn, NY. He attended Brooklyn Technical High School and began his undergraduate studies at the Polytechnic Institute of Brooklyn. During World War II, Monte enlisted in the Navy and trained as a radio repair technician. He was sent to the Pacific theater, but hostilities had ended by the time he arrived. Shortly after his discharge in 1946, he married his high school sweetheart Guitta Drimer. Guitta also grew up in Sea Gate, and they had known each other since childhood. Monte resumed his education and earned a BS in Chemistry from Brooklyn Polytech in 1948.

Monte's professional path started with his PhD training in the Department of Chemistry at the University of Wisconsin (Madison), where he studied reaction mechanisms with chlorine isotopes. These experiments led to his postdoctoral studies at Yale University (New Haven, CT) from 1952 to 1953, using radionuclides for archeological and geological dating. He then moved to Montefiore Hospital (New York, NY), where he studied ^{45}Ca kinetics in humans. He next went to the Department of Biochemistry at Roswell Park Memorial Institute (Buffalo, NY). During his earlier days in Buffalo, he worked with Drs. Eugene Day and David Pressman, prominent scientists known for their work with antitumor antibodies. They jointly published many early studies using radiolabeled antibodies for tumor imaging. Monte's collaboration with George Moore, MD, then director of Roswell Park Memorial Institute, led to the demonstration that ^{131}I -labeled albumin was useful for imaging brain tumors by detecting a breakdown of the blood-brain barrier. For many years this was the method of choice for detecting the presence of primary or metastatic brain tumors, before it was replaced by ^{203}Hg -chlormerodrin and later by other radiolabeled agents. In 1957, Blau joined Merrill Bender, MD, a close friend and collaborator at Roswell, in the Nuclear Medicine Department. Blau and Bender formed a formidable team (*J Nucl Med.* 2004; 45[6]:30N). For several decades they maintained an enduring partnership and contributed to diverse areas of nuclear medicine imaging.

Blau and Bender jointly developed the "first" large-scale crystal-based photoscanner with good sensitivity and a fo-



Monte Blau, PhD

cus collimator for scanning different organs. Parts of the scanner later evolved into the autofluoroscope scanner, marketed by Baird-Atomic, Inc., for studying first-pass cardiac output. Many new radiopharmaceuticals were developed for routine clinical studies, including ^{75}Se -selenomethionine, ^{203}Hg -chlormerodrin, ^{137}Ba for first-pass heart studies, and ^{18}F -fluoride for PET imaging. ^{18}F -fluoride has enjoyed a newly emergent interest, because it is now approved by the U.S. Food and Drug Administration for imaging metastatic disease to bone. A range of radiopharmaceuticals, nuclear medicine instruments, and procedures with continuing utility are an enduring legacy of Blau and Bender for major developments in the nuclear medicine community.

Monte was one of the most well-rounded scientists in the field. He had a wealth of knowledge covering all aspects of nuclear medicine. These included radiochemistry, biochemistry, physiology, physics, and instrumentation, as well as clinical medicine. On this scientific foundation, he was able to develop new radiopharmaceuticals and build and implement scanners for nuclear medicine clinics.

His expertise also provided excellent leadership in the field. He became the chair of the Department of Nuclear Medicine at the University of Buffalo from 1974 to 1983. As chair, he also trained numerous graduate students and residents while maintaining a strong research program. He served in many leadership positions in the Society of Nuclear Medicine (SNM), including as president from 1972 to 1973. He was the founding member of the International Symposium on Radiopharmaceutical Chemistry, which later evolved into the International Society of Radiopharmaceutical Sciences under the umbrella of SNM. He was actively involved as an original member of the Medical Internal Radiation Dose Committee, which set standards for calculation of radiation dose exposure for radiopharmaceuticals on which many of today's methods are based.

He received many honors and awards throughout his career, including the Georg Charles de Hevesy Nuclear Medicine Pioneer award in 1980 (*J Nucl Med.* 1980;21:609), and many other awards that are too numerous to list.

In person, Monte was generous with his time in mentoring students and trainees in nuclear medicine. He was straightforward in his point of view—some might say

that his method of choice when delivering an opinion was often “totally unvarnished.” In his presence, both students and colleagues were always keenly aware of his no-nonsense attitude and benefited from his critiques and guidance. In national and international meetings in which he served as session chair, discussions after the presentations were always interesting and lively. Audiences in these meeting sessions enjoyed the open scientific discussion and memorable point/counterpoint exchanges. The discussions often led to focusing of ideas and resulted in better scientific collaborations.

His passing is a tremendous loss for the nuclear medicine community, but his contributions to this field will continue to influence and guide our future. For those of us who were fortunate to have met and worked with Monte, we owe a special debt of gratitude for the indelible impact he made on our lives and careers.

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- Competency-based evaluation: Under this approach, proposed AUs would be required to demonstrate competency in radiation safety topics and radiation safety–related job duties through a formal competency evaluation (e.g., an examination or preceptor attestation).
 - Credentialing of AUs: Under this approach, the NRC would no longer review and approve T&E qualifications for all AUs under 10 CFR part 35. Instead, licensees would develop and use their own policies and procedures to make self-determinations of whether their credentialed physicians have the appropriate T&E to be an AU for 1 or more radiopharmaceuticals under 10 CFR 35.300. Licensees would be required to maintain a training program that ensures compliance with the requirements in 10 CFR 35.41, “Procedures for Administrations Requiring a Written Directive,” and 10 CFR part 20, “Standards for Protection Against Radiation.”
 - Team-based approaches: These could remove prescriptive T&E requirements for AUs, focus training requirements on the competency of the entire team, or revise the current 700-hour T&E requirement for AUs based on pairing the AU with another individual with expertise in administering radiopharmaceuticals.
 - Radiopharmaceutical team: Licensees would need a team to administer radiopharmaceuticals under 10 CFR 35.300. The team would minimally include an AU, a radiation safety officer, and a nuclear medicine technologist.
 - Licensees would need both an AU and an authorized administrator to administer radiopharmaceuticals under 10 CFR 35.300.
 - Partner limited-trained AUs with licensed nuclear pharmacists: The T&E for AUs would be at least 400 hours; however, the AU would be required to physically partner with an authorized nuclear pharmacist (ANP) for all administrations of radiopharmaceuticals. Unlike the other team-based approaches, prescriptive T&E would be required for the AU in this approach because of the AU’s more prominent role in administration of radiopharmaceuticals. The minimum of 400 hours of T&E for the physician partnering with an ANP would be focused on supervised work experience and patient cases, and preceptor attestation would be required. The AU would be responsible for administration of radiopharmaceuticals in accordance with the written directive, and the ANP would be responsible for radiation safety–related duties.
- It is unclear which approach or mix of approaches the NRC will choose. A decision on new rule making is expected later this year. SNMMI continues to monitor this topic closely.

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