Michael J. Welch, PhD, 1939–2012

Michael J. Welch, PhD, a pioneer in radiochemistry and a noted educator, innovator, and leader in the nuclear medicine community for almost half a century, died on May 6 at Barnes–Jewish Hospital (St. Louis, Mo), surrounded by friends, family, and longtime colleagues. He was a professor of radiology, of chemistry, of developmental biology, and of biomedical engineering, and program head and founder of the Oncologic Imaging Program at Siteman Cancer Center, all at Washington University (St. Louis). At his death, Washington University, where he spent 45 years developing radiolabeled compounds and exploring their effectiveness in diagnosis and therapy, lowered flags across the campus to half-staff for a 3-day period of community reflection and celebration of his extraordinary accomplishments.

Welch was born and spent his early years in Stoke-on-Trent in England, where he was the only child of school teachers who encouraged his interest in chemistry and mathematics. He earned a BA with honors and an MA in natural sciences from Cambridge University and, in 1965, received his doctorate in chemistry from the University of London. After a year as a research associate under Alfred P. Wolf at the Brookhaven National Laboratory (Upton, NY), he became an assistant professor of radiation chemistry at the Mallinckrodt Institute of Radiology at Washington University School of Medicine. He went to Mallinckrodt in 1967 at the urging of Michel Ter-Pogossian, PhD, the groundbreaking physicist who was already investigating the biomedical uses of short-lived positron-emitting radionuclides, work that would later contribute to the development of PET. Together they completed the set-up of the first in-hospital cyclotron in the United States, in the basement of a building that is now part of Barnes-Jewish Hospital.

Throughout his career, Welch specialized in the synthesis of new radiolabeled compounds for medical imaging, with a special emphasis on the growing numbers of applications in PET. He was both a prime mover and an integral part in the development of PET as it transitioned from a compelling investigative idea through early studies to widespread clinical acceptance and integration with other modalities. For example, Welch performed the first human study of a receptor ligand, $^{77}$Br-bromoestradiol, presaging one of the most common biomedical applications of PET. He was a highly creative scientist. He pioneered the use of biologic systems (as distinct from organic synthesis) to make imaging agents. A prime example was the photosynthetic production of $^{11}$C-glucose by Swiss chard leaves (with a final “drug” product that was green from the chlorophyll extracted along with the glucose). His success in these efforts lay in his ability to see beyond the immediate physical and chemical aspects of basic work to potential future applications and then to reach out and galvanize cooperative interest and participation from across the widest spectrum of specialists. His unique approach to scientific creativity embraced the need to involve others in looking for practical applications of novel radiolabeled agents.

His prodigious lifetime output of more than 630 scientific papers and chapters is a testimony to the breadth of his work and the range of colleagues whose collaboration he enjoyed. He first published in the peer-reviewed medical literature in 1968, with 5 publications, and his productivity continued unabated throughout his long career. His first publication in *The Journal of Nuclear Medicine* came in 1968, with “The laboratory preparation of indium-labeled compounds” (J Nucl Med. 1968;9:426–427). His most recent in this journal is in the same issue with this In Memoriam: “Small-animal PET of steroid hormone receptors predicts tumor response to endocrine therapy using a preclinical model of breast cancer.” He remained vigorous and scientifically active almost to the end of his life, and it is likely that numerous publications bearing his name are still in preparatory stages and will continue to appear as reminders of his lasting influence on coinvestigators.

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Outstanding JNMT Articles for 2011

Norman E. Bolus, MSPH, MPH, CNMT, editor of the Journal of Nuclear Medicine Technology (JNMT), presented awards at the 2012 SNM Annual Meeting to the authors of 3 articles chosen as the most outstanding 2011 JNMT contributions. The lead authors or their representatives received plaques and the first and second place recipients receive honoraria in a ceremony during the annual business meeting of the SNMTS, held this year on June 11 in Miami, FL.

Douglass C. Vines, David E. Green, Gen Kudo, and Harald Keller, from the Princess Margaret Hospital (Toronto, Canada), received the first-place award for “Evaluation of mouse tail-vein injections both qualitatively and quantitatively on small-animal PET tail scans” (J Nucl Med Technol. 2011;39:264–270).


“These papers represent the broad range of investigative endeavor that makes up the rapidly changing world of nuclear medicine and molecular imaging technologies,” said Bolus. “We congratulate this year’s awardees and all those whose contributions continue to make JNMT a vital resource.”

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Welch’s enthusiasm for his research and his ability to make vital connections with other disciplines made him a notable and beloved educator. The list of individuals who trained with him as graduate students and postgraduate fellows includes the names of some of the most noted individuals in molecular imaging today and likely the names of others who will one day become leaders in the field.

He was recognized with honors and awards too numerous to mention in this limited space. He was elected to the Institute of Medicine in 1999 and received many of his field’s highest honors—SNM alone awarded him its highest honors—the Paul C. Aebersold Award (1980), the Berson–Yalow Award (twice, in 1988 and 1990), the Georg Charles de Hevesy Nuclear Medicine Pioneer Award (1992), and the Benedict Cassen Prize in 2004. In 2008, SNM named a new award for outstanding contributions to radiopharmaceutical research in his honor.

A memorial service was held on June 4 at Graham Chapel on the Washington University campus. Welch is survived by a son, Colin Welch, of New Canaan, CT; a daughter, Lesley Tomlin, of Kirkwood, MO; 5 grandchildren; and by his longtime companion and nuclear medicine contributor, Mickey Clarke, of St. Louis.

A foundation has been established to honor his work and memory. According to the Web site of the Michael J. Welch Foundation, efforts will be directed to support “new talent as part of his legacy as well as support research in molecular imaging and radiopharmaceutical chemistry.” Long-term goals of the foundation include: contribution to or sponsorship of lecture series within the field; fellowship endowment; and sponsorship of a graduate student to attend the SNM annual meeting and presentation ceremony for the Dr. Michael J. Welch Award. Memorial contributions can be made through the Web site at www.mjwelchfoundation.org.

As his longtime colleagues, it would be remiss of us, even in this formal In Memoriam, to fail to note Mike’s outstanding personal characteristics. He loved sports (especially soccer) and music (especially rock), adored his family and those close to him, traveled with enthusiasm to the far corners of the globe, delighted in others’ success, fought for the issues he believed in, and had a dry sense of humor that lightened everyone’s load even in dark times. He was simply a great human being, larger than life in so many ways. Although he will be keenly missed, he leaves a scientific and personal legacy that will burn bright and continue to illuminate our specialty for many years into the future.

Robert J. Gropler, MD
Barry Siegel, MD
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