

Howell Honored with Loevinger–Berman Award

The 2004 Loevinger-Berman Award for Excellence in Medical Internal Radiation Dosimetry (MIRD) was presented to Roger W. Howell, PhD, by Evelyn Watson, chair of the SNM MIRD Committee, at the Continuing Education Session on Radiopharmaceutical Dosimetry: Practical Applications session on June 22 at the annual meeting of the Society in Philadelphia, PA.

Howell, professor of Radiology at New Jersey Medical School of the University of Medicine and Dentistry of New Jersey (UMDNJ; Newark) has published and lectured widely on the biological effects of incorporated Auger electron emitters; macroscopic, microscopic, and cellular dosimetry of tissue-incorporated radionuclides; in vitro and in vivo effects of radionuclides; and the potential of radionuclides for cancer therapy.

The award was established in 1999 by the SNM Awards Committee in honor of Robert Loevinger and Mones Berman, who formulated the MIRD schema for internal dose calculations. The objective of this award is to recognize excellence in the field of internal radiation dosimetry as it relates to nuclear medicine through: (a) research and/or development, (b) significant publication contributions, or (c) advancement of the understanding of internal dosimetry in relation to risk and therapeutic efficacy. Previous award winners were Roger J. Cloutier (1999), Dandamudi V. Rao (2000), Keith F. Eckerman (2001), Sven-Erik Strand (2002), and John W. Poston, Sr. (2003).

Howell received a bachelor's degree in physics in 1982 and a doctorate in 1987 from the University of Massachusetts (Amherst). In 1987, he became an in-



Evelyn Watson, chair of the SNM MIRD Committee, presented Roger Howell with the Loevinger–Berman Award at the 51st Annual Meeting of the SNM in Philadelphia, PA, on June 22.

structor in the Department of Radiology at UMDNJ, where he subsequently served as assistant professor (1989–1995), associate professor (1995–2001), and professor (2001–present). He is chief of the Division of Radiation Research and chair of the UMDNJ Radiation Safety Committee. In 1992 he received the UMDNJ Teaching and Service Award and, in 1995, with coauthors S. Murty Goddu and D.V. Rao, received *The Journal of Nuclear Medicine* Outstanding Manuscript Award in the dosimetry category for their article “A generalized approach to absorbed dose calculations for dynamic tumor and organ masses.” (*J Nucl Med.* 1995; 36:1923–1927). Most recently he has published with colleagues on the cellular effects of nonuniform distributions of ^{131}I (*J Nucl Med.* 2004;45:1050–1058).

Howell served on the MIRD Committee from 1992 to 2000 and has been actively involved with council and advisory committee work with the International Commission on Radiation Units and Measurements and the National Council on Radiation Protection and Measurements. In addition to many other professional society memberships and appointments, he served as the SNM Scientific Program Sub-Chair for Dosimetry/Radiobiology for the 1993, 1994, and 2001 annual meetings, as well as on the Program Committee in additional years.

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Nominees for Loevinger–Berman Award

The MIRD Committee is seeking suggestions for potential nominees for the Loevinger–Berman Award. Anyone who wishes to make recommendations to the committee should list reasons why the nominee is deserving of the award and include a curriculum vitae and references to relevant publications by the nominee. All recommendations will be carefully considered by the committee. Nominations should be sent with supporting material to Evelyn E. Watson, Chair, MIRD Committee, 104 New Bedford Lane, Oak Ridge, TN 37830.

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About the MIRD Committee

The SNM MIRD Committee is tasked with (a) developing and compiling methods for calculating internal radiation dosimetry of distributed radionuclides in humans, compiling and disseminating supporting data needed to implement such methods, and studying dose response for normal organs and tumors to internal emitters; (b) compiling and disseminating data regarding internal dosimetry, absorbed fractions, and dosimetric models; (c) and holding regular meetings to monitor progress of task groups, receive up-

dates on research in the field, and monitor and plan projected publications. In addition to regularly publishing pamphlets and reports on various internal dosimetry topics, the MIRD committee also sponsors regular sessions at the SNM, including continuing education offerings.

Members of the current MIRD Committee include: Evelyn E. Watson, Chair; Stephen R. Thomas, PhD, vice-chair; Henry D. Royal, MD, Board Liaison; and members Wesley E. Bolch, PhD, Aaron B. Brill, MD, PhD, Darrell R. Fisher, PhD, Ruby Meredith, MD, PhD, George Sgouros, PhD, Jeffrey A. Siegel, PhD, Michael G. Stabin, PhD, and Barry W. Wessels, PhD. ✽

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that described the biokinetics of a given radiopharmaceutical, from his or her own animal or human data or perhaps from data found in the literature. Standardized kinetic models were intentionally not included in the code, because kinetics for radiopharmaceuticals change often as new information becomes available and as models change and improve. "MIRDOSE was simply a tool that permitted the calculation of radiation dose estimates using the MIRD technique once the kinetic model was defined by the user," said Stabin.

In addition to compatibility with current operating systems, OLINDA/EXM offers a number of new and innovative features. The software contains all new code (the code was rewritten from scratch in a new language), several new organ models, and a module called EXM (written by RADAR colleagues at CDE, Inc.) that fits kinetic data to specified functions. OLINDA/EXM also permits adjustment of standard phantom organ masses to patient-specific organ masses (measured by techniques such as PET, SPECT, CT, or MRI). Just as with MIRDOSE, OLINDA/EXM users will enter results of kinetic models into the code, which uses them with models of the human body that have been established in the literature to calculate estimates of the radiation dose to organs in the body, as well as effective dose quantities. The dose factors used in OLINDA can also be found on the RADAR Web site. The technical bases for these data appeared in the journal *Health Physics* (2003;85:294–310). The EXM portion of the new code allows users to perform kinetic analyses, fitting sums of exponentials to data gathered in animal or human studies.

The software and supporting documentation were carefully formulated to address all of the concerns ex-

pressed by the FDA 4 years ago. Although the vast majority of the applications of this code are theoretical applications involving diagnostic applications of radiopharmaceuticals, current interests in radiopharmaceutical development clearly suggest the use of such standardized codes in therapeutic applications, retrospectively or otherwise. "The FDA, I think, recognized the importance of this software to the user community," said Stabin. "Once we provided them the appropriate information, they were extremely helpful in delivering critical reviews and advice that helped us navigate the 510K process, and, in the end, this rigorous review process considerably improved our end product." He emphasized that the end result is "not MIRDOSE 4—although we hoped to build on the past successes of MIRDOSE, this is an entirely new product that is more flexible and accessible and linked to a wide range of support data and on-line resources." To learn more about the OLINDA/EXM software, visit the software page on the RADAR Web site (www.doseinfo-radar.com/RADARSoft.html).

The RADAR group is currently working to bring together international physicians and physicists to formulate more standardized tools and methods that can be delivered to practitioners who need them to obtain and analyze dosimetry information. "I just returned from a stimulating time at the European Association of Nuclear Medicine Congress, where it was clear that physicians worldwide want to do good dosimetry for their patients and in their research," said Stabin. "We just have to find ways to make it practical and accessible." The RADAR group is currently working with this international group to organize and disseminate standardized methods, tools, and training materials for internal dose calculations. ✽