Molecular Imaging Curriculum Overdue

A curriculum for training molecular imaging scientists is being developed by the Education Task Force of the Center for Molecular Imaging Innovation and Translation. The consensus report on the process and recommended content for such a training program was published in the April issue of *The Journal of Nuclear Medicine* (2011;52:650–656). The field of molecular imaging is clearly changing, and scientists who might have previously specialized in radiotracer techniques will now likely use multiple molecular imaging modalities, including MR, optical, and ultrasound imaging in addition to PET and SPECT. The demand for molecular imaging is expanding from what we have all known as diagnostic nuclear medicine to new areas. Molecular imaging is now being used to develop new drugs, including targeted therapies, as well as providing tools to rapidly assess treatment outcomes. It is increasingly used to improve understanding of mammalian biology and provide the basis for personalized medicine. This results in an increased demand for scientists with training in molecular imaging.

The proposed curriculum identifies key areas of knowledge that are important to molecular imaging science and defines levels of competency that are expected for new graduates of a molecular imaging training program. The consensus document also begins to define goals for levels of competency for more experienced molecular imaging scientists as they develop their careers in a specialized area. This consensus document is important because it sets education standards. It will also provide needed uniformity in training programs to bridge the various molecular imaging modalities as well as to assure competency in basics such as math, imaging physics, probe synthesis, physiology, clinical translation, ethics, and regulatory issues. An organized and well-defined program should result in graduates who are well qualified to provide significant advances in the field.

The field of molecular is quite complex, rapidly growing, and continually changing. The curriculum will need to be updated on a regular basis to include new developments. To facilitate the initial design and updates, the task force has created an online forum (www.snm.org/scientists_curriculum) that provides a way for interested parties to provide comments and suggestions.

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50 Years Ago in *JNM*

From the Newsline Editor: The Journal of Nuclear Medicine *(*JNM*) celebrated its 50th anniversary in 2003. With this issue, Newsline begins an occasional look back at the changes and constant factors in our field over the last half century. Fifty years ago the journal was a slim publication that once each year featured a complete list of the names and addresses of all society members as well as all abstracts from the annual meeting. It is fitting that our first excerpted piece is from one of the great names in our field, the late John McAfee, MD, then at Johns Hopkins University (Baltimore, MD), whose presentation at the 8th SNM Annual Meeting in Pittsburgh, PA, on June 14, 1961, was briefly summarized as follows in the pages of* JNM *(1961;2:134). I urge today's readers to consider whether any of the same observations apply today.*

The Future of Nuclear Medicine

Despite considerable interest during the past decade, radioisotopes used both diagnostically and therapeutically have failed to create a sizeable impact upon the practice of medicine. Many large institutions continue to regard radioisotope laboratories as a research luxury rather than a necessity for good patient care. Within the next decade this attitude will probably change drastically as the gap narrows between nuclear physics and instrumentation, and their medical applications. The use of radioisotopes in clinical research will parallel the impact of radioactive tracers upon biochemistry. The role of radioactive tracers in clinical medicine of the future will probably become equal in importance to that of X-ray diagnosis and therapy.

For nuclear medicine to live up to these expectations, many difficulties in present day practice must be overcome. Laboratories must develop additional facilities designed solely for training of personnel. Full-time professional staffs must devote more time to adequate training of physicians. Radionuclides and labeled compounds available for the physician's use, currently quite limited in number, must be increased in number. The present day instrumental facilities of most laboratories include only a few types of gamma detectors. Other instruments will be required to permit use of a wide variety of compounds labeled with beta emitters in diagnostic studies. The rapid advances in instrumental design may reach a plateau in the years ahead, but the era of radiochemistry as applied to medical problems has just begun.

John McAfee, MD, 1961