

MIRD Committee Report
December 10, 2009, updated December 29 2009

The committee met in Deerfield Beach, FL, November 19-20, 2009. An abridged report of the proceedings follows:

1. The Committee welcomed Dr. Yuni Dewaraja from the University of Michigan as a new member of MIRD. (the current roster of MIRD Committee members is attached to this report)
2. Dr. Amin Kassis of Harvard was chosen as the next Loevinger-Berman Award recipient.
3. At the 2009 annual meeting, the Committee sponsored and organized, jointly with SNM, a combination of the 3rd International Radiopharmaceutical Dosimetry Symposium and the Alpha-Emitter Symposium. By all measures the symposia were a success and may have provided a net financial benefit to SNM. All 389 seats were booked. A central feature of the sessions – a lead-off clinical invited expert speaker, followed by proffered physics/dosimetry abstracts gave an opportunity for a greater interaction amongst the dosimetry/physics community and physicians. Early morning refresher courses were very well attended and made up a significant component of the Symposia.
4. The abridged form of Pamphlet 22 that reviews the dosimetry and radiobiology of alpha-particles has been accepted by JNM and is expected to come out in the February issue. As agreed upon with the Journal Editor, the abridged version indicates that the full pamphlet is available at the SNM web site: http://interactive.snm.org/docs/MIRD_alpha_paper_Mar%2011_09_Jun%2019_09.pdf. The Committee has previously discussed proposing this to SNM for publication as a monograph that may be sold by SNM.
5. The Committee discussed plans for a follow-up to Pamphlet 21 which was published earlier this year and which describes a dosimetry formalism that has also been adopted by the ICRP. The equations and symbols used in the MIRD dosimetry formalism now match those of ICRP. Pamphlet 21 also sets the stage for a follow-up document that would address the needs of nuclear medicine, in particular, regarding the use of effective dose. In the discussion, Committee Members noted that the current weighting factors are appropriate for protection and radiation safety purposes but not in the case of medical radionuclide imaging for diagnosis. For example, the weighting factor for breast is averaged over sex and age and is then used to obtain an effective dose that is typically examined by RDRC and IRB Committees. In an IRB application to investigate an imaging agent for prostate cancer, this is clearly problematic. Likewise, an age-averaged weighting factor for thyroid would provide too conservative an estimate of the effective dose for a cardiac imaging agent since the thyroid of children is much more radiosensitive than that of adults. Given the potential impact of the work discussed, the Committee decided that it would be more appropriate to first issue a Commentary that the nuclear medicine and regulatory community could review before issuing a MIRD Committee pamphlet describing a weighting scheme appropriate to medical imaging.
6. The two intern projects were reviewed. Dr. Ande Bao will work with Dr. Zanzonico on the dosimetry of bone lesion palliation therapy with ¹⁷⁷Lu-EDTMP. This is an effort that is of interest to the IAEA since ¹⁷⁷Lu is easily and widely available. The project involves experimental work that Dr. Zanzonico has agreed to host at Memorial Sloan-Kettering Cancer Center and also partially subsidize in terms of materials and instrumentation. In light of SNM's current budgetary constraints, funding from the IAEA is being sought to support Dr. Bao's travel to NYC. If needed, Dr. Zanzonico, would be willing to host Dr. Bao in his home for the duration of the experimental work. This project is on hold until funding for travel can be secured.

The second intern, Ann McCann presented her efforts via teleconference call. Her project is to implement Pamphlet 20, the kidney dosimetry/radiobiology model into a web-based teaching module to be placed on the SNM web site.

7. The Committee briefly discussed the impact of the MIRD Commentary on a proposed name for a dosimetry unit applicable to deterministic effects. Publication of this document has led the ICRU (International Commission on Radiation Units and Measurements) to request MIRD Committee representation on an upcoming meeting to discuss the issue of deterministic radiation effects and associated named quantities/units.
8. The Committee discussed how to best follow-up on the Bd Commentary. An effort by the external-radiotherapy community to quantify normal tissue effects in external radiotherapy was noted. Completion of this effort by the external beam community will provide the data needed to prepare a Pamphlet describing a formalism and associated weighting factors for deterministic effects.
9. Looking forward, the Committee will complete a multi-year effort to update the Cristy-Eckerman S values used in OLINDA (1, 2) with S values based on the University of Florida phantoms (3-10). These phantoms are based on direct segmentation of patient images and better account for the marrow-bone architecture (11-32); the resulting red-marrow S values are expected to be substantially more accurate than current values for this important and often dose-limiting organ. ICRP will also use S values derived from these phantoms for future tabulations of radiopharmaceutical doses (e.g., as in ICRP 53). The S-values will be made available on the SNM web site, along with a web tool for their use in absorbed dose calculations.

BUDGET REQUEST: The MIRD Committee asks for a \$5,200 budget to support the following:

Dr. Bao intern project at MSKCC	\$1150
1. Dr. Bao's roundtrip travel to NY from San Antonio	250.
2. Food and Lodging in NYC for one week	900.
Support for one meeting of the Committee in 2010 to advance agenda items (9 members x 450 travel and accommodations)	\$4050

MIRD Committee Membership List*(Current as of November 2009)*

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