Reference dosimetry for beam modalities other than MV photons

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The $N_{D,w}$ formalism can be applied to a range of beam modalities using a range of measurement methods.
What modalities?

Non-standard x-ray beams

Questions will be accepted on other modalities if time permits
What measurement techniques?

A range of primary standard techniques will be described.
Who are the experts?

Ronald Tosh (NIST) – water calorimetry primary standards for high energy photon and electron beams and, more recently, proton beams.

Arman Sarfehnia (Sunnybrook HSC) – calorimetry and other dosimetry techniques applied to brachytherapy dosimetry. Currently investigating primary standards for Gammaknife and MR-linac systems.

Jan Seuntjens (McGill University) – resident AAPM expert on small-field dosimetry but with a long history of primary dosimetry standards and protocol development.

All are past or present members of the AAPM’s Calibration Laboratory Accreditation (CLA) sub-committee