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BIOGRAPHY

David Thwaites

Professor of Medical Physics and Director of the Institute of Medical Physics, University of Sydney, Australia

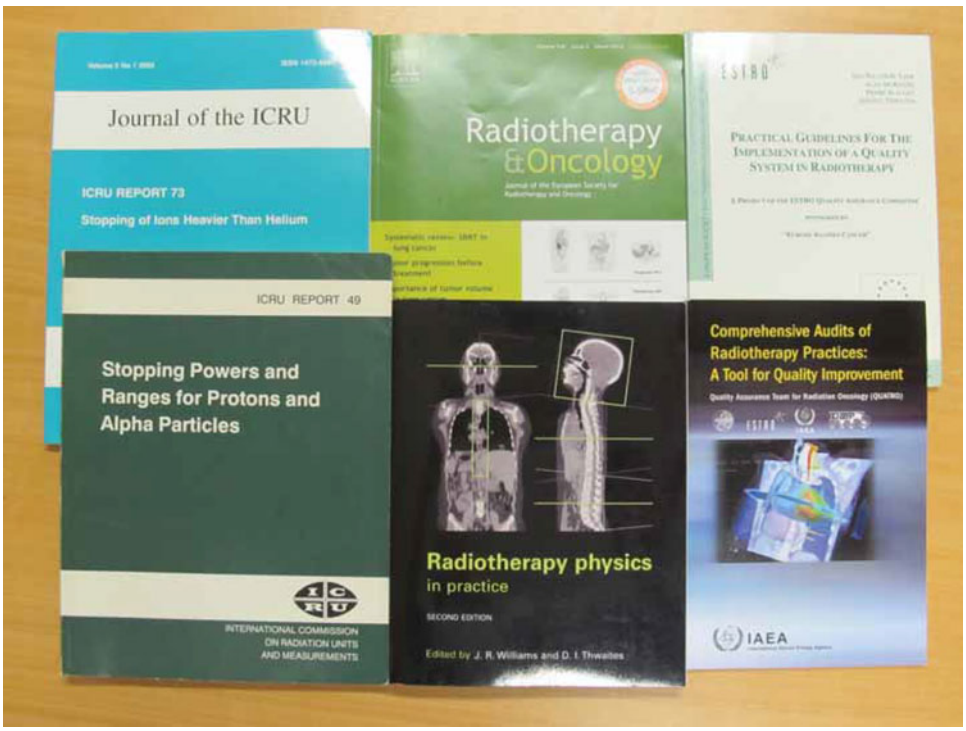
David Thwaites is currently Professor of Medical Physics and Director of the Institute of Medical Physics, University of Sydney, having previously been Head of the Medical Physics and Engineering Department in Leeds Teaching Hospitals, UK, and Professor of Oncology Physics in Leeds University, where he still retains honorary posts. Following a Medical Physics MSc (Aberdeen) and a radiation physics PhD (Dundee) he has held positions in Dundee, Edinburgh and Leeds Universities and in the Edinburgh and Yorkshire Cancer Centres, with short sabbaticals elsewhere, including the Argonne National Lab, IL, and the Niels Bohr Institute, Copenhagen.

Enduring career themes include:

(i) Combining clinical service and academic roles and linking basic, translational and clinical research to practice, reflecting a strong belief that medical physics research should be rooted in and contribute to service quality, service development and patient care.

Career-long research interests include radiation dosimetry, radiation oncology physics, novel radiotherapy technologies and techniques, including imaging and particle therapy applications, and accuracy and precision in radiotherapy. These have produced more than 150 scientific publications, many books and book chapters and membership of editorial boards, e.g. *Physics in Medicine and Biology, Radiotherapy and Oncology*, with current Physics Editorship of the latter. Many research contributions have been taken up in national and international guidelines (e.g. various UK and now Australian bodies, ESTRO, ICRU, IAEA): e.g. data and methods for radiotherapy dosimetry codes of practice; establishment and development of dosimetry inter-comparison/audit programmes; development of quality assurance, quality system and quality audit recommendations and methodologies for radiation oncology and medical physics in the UK, Europe and via the IAEA; establishing/developing research networks and participation in many steering/advisory/evaluation/recommendation groups e.g. for clinical trials, novel technologies, dosimetric methods, quality issues.

(ii) A firm commitment to medical physics education, training and professional standards. Examples (UK-IPEM, UK-RCR, ESTRO, EFOMP, IAEA, IOMP, ISRO) include: staffing and other standards; a well-used text book for trainees; other significant syllabus, teaching and training materials and structures for UK, Europe and developing countries; establishing a national inter-university network for medical physics education and research in Australia; contributing as a member and officer of many professional organisation committees, e.g. at times, a trustee (re governance oversight) of IPEM, leading the Physics group in ESTRO and acting treasurer for IOMP.



(iii) A strong interest in developing and supporting local, national and international collaborations, networks and teams between inter-disciplinary professional groups, based on the principle that ensuring effective engagement of medical physicists with partner clinicians and clinical services and a focus on quality and clinical needs ensures the best outcome for the patient. This applies equally to professional organisation work as to service, education and research activity and these combined contributions have also gained recognition, e.g. nominated/elected to the Boards of ESTRO and ISRO, awarded FRCR (UK Royal College of Radiologists) for contributions to education and practice of clinical oncology in the UK and, recently announced, to receive the 2014 Emmanuel van der Scheuren award for contributions to education, to ESTRO and to radiation oncology in Europe.

David Thwaites: Significant Publications

1. Thwaites, DI, Departures from Bragg's rule of stopping power additivity for ions in dosimetric and related materials, Nucl. Instr. Methods B 69 (1992) 53–63; and preceding referenced papers, same author 1978–1992
2. Berger, MJ, Inokuti M, Andersen, HH, Bichsel, H, Powers, D, Seltzer, SM, Thwaites DI, and Watt, DE, Stopping Powers and Ranges for Protons and Alpha Particles, ICRU Report 49 (ICRU, Bethesda) (1993); and the linked Bimbot et al. (incl Thwaites DI); Stopping of ions heavier than helium, ICRU report 73 (ICRU: Bethesda), Journal of the ICRU, 5 (2005) no 1
3. Williams, JR, and Thwaites, DI, Radiotherapy Physics in Practice, Oxford University Press, 1993 and 2nd edition (2000)
4. Thwaites, DI, Williams, JR, Aird, EG, Klevenhagen, SC, and Williams, PC, A dosimetric intercomparison of megavoltage photon beams in UK radiotherapy centres, Phys. Med. Biol. 37 (1992) 445–461
5. Thwaites, DI, Scalliet, P, Leer JWH, and Overgaard, J, Quality assurance in radiotherapy Radioth. Oncol. 35 (1995) 61–74
6. Nisbet, A, and Thwaites, DI, A dosimetric intercomparison of electron beams in UK radiotherapy centres, Phys. Med. Biol. 42, 2393–2409 (1997)
7. Dobbs, J, and Thwaites, DI, Quality assurance and its conceptual framework, Chapter 1 of Physics Aspects of Quality Control in Radiotherapy, (eds: Mayles, P, et al.); IPEM report 81 (IPEM, York), (1998); currently being updated (2013)
8. Leer. JWH, McKenzie, AL, Scalliet, P, and Thwaites, DI, Practical Guidelines for the Implementation of a Quality System in Radiotherapy, ESTRO Series: Clinical Physics for Radiotherapy (ESTRO—Garant, Leuven), (1998)
9. Thwaites, DI, DuSautoy, A, Jordan, T, McEwan, M, Nisbet, A, Nahum, A, and Pitchford, WG, The IPEM code of practice for electron dosimetry for radiotherapy

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10. Thwaites, DI, Mijnheer, BJ, and Mills, JA; Quality assurance of external beam radiotherapy, chapter 12 of Radiation Oncology Physics, a handbook for teachers and students, IAEA: Vienna, 2005; IAEA educational report series, STI/pub/1196 www.iaea.org
11. McKerracher, C, and Thwaites, DI, Phantom scatter factors for small MV photon fields, Radiother. Oncol. 86(2008) 272–275; and preceding referenced papers, same authors 1999–2008
12. Sykes, JR, Brettle DS, Magee, DR, Thwaites, DI, Investigation of uncertainties in image registration of cone beam CT to CT on an image guided radiotherapy system, Phys. Med. Biol. 54 7263–7283 (2009)
13. CEP Centre for Evidence based Purchasing, UK Dept of Health) report 10071. X-ray tomographic image guided radiotherapy systems, Sykes, J, Lindsay, R, Stanley, S, Thwaites DI, et al.; CEP/PASA (2010), www.dh.gov.uk/cep/catalogue
14. Cranmer-Sargison G, Weston S, Evans, JA, Sidhu NP Thwaites, DI, Implementing a newly proposed Monte Carlo based small field dosimetry formalism for a comprehensive set of diode detectors. Med. Phys. 38(12) 6592–6602 (2011); with Cranmer-Sargison G, Weston S, Evans, JA, Sidhu NP, and Thwaites DI, Monte Carlo modelling of diode detectors for small field MV photon dosimetry: detector model simplification and the sensitivity of correction factors to source parameterization, Phys. Med. Biol. 57 (2012) 5141–5153
15. Cranmer-Sargison G, Weston S, Sidhu NP, Thwaites DI, Experimental small field 6 MV output ratio analysis for various diode detector and accelerator combinations, Radiother. Oncol. 100, 429–435 (2011); with Cranmer-Sargison G, Charles PH, Trapp J, Thwaites DI, A methodological approach to reporting corrected small field relative outputs, Radiother. Oncol. in press (2013)