

Professor CARMEL J. CARUANA BSc(Melit), MSc(Birm, UK), PhD(Prague) FIPEM

Prof. Carmel J. Caruana is head and professor of Medical Physics at the University of Malta. In Malta, he pioneered the teaching of physics for the BSc/MSc Radiography, for trainee Radiologists (FRCR) and drove the development of the Medical Physics profession from the time when it was totally unknown to the point when it was recognized legally as a healthcare profession. On the European stage he was elected Chairperson for Education and Training of the EFOMP and worked on the 'European Guidelines on the Medical Physics Expert' where he was lead author for the role and Education and Training chapters. He wrote the chapter for Medical Physicists in the MEDRAPET document. He subsequently extended the concepts of the European MPE Guidelines to other specialty areas of Medical Physics (e.g., MR Safety Expert and MR Safety Officer) and revamped the EFOMP policy statement on E&T (EFOMP PS12.1). He pushed for a model education and training programme for MPEs, the result being the EUTEMPE-RX, an FP7 programme targeted towards MPEs in Diagnostic and Interventional Radiology. During his term as EFOMP Chair for E&T he set up the EFOMP School for MPEs in Prague. As a sign of appreciation for this initiative he was in 2016 awarded honorary membership of the Czech Association of Medical Physicists. Carmel has been Associated Editor on the Editorial Board of *Physica Medica - European Journal of Medical Physics* for many years. As editorial board member he has championed the causes of the importance of scientific research into professional issues, E&T, management and strategic planning for MPs and now these are accepted topics for submission. He is now considered as a world leader in these areas and one of the foremost authorities on EU legislation. In his activities at the European and International levels he has provided vision for the development of the Medical Physics profession and presented on the challenges to the profession all over Europe and beyond. In the last few years he has championed the importance of preparing the next generation of medical physics leaders through his courses on leadership. As a sign of recognition of his scientific, educational and professional service to patient and profession he has been elected as Fellow of the UK Institute of Physics and Engineering in Medicine (FIPEM).

List of Publications

(books, book chapters, books edited, full articles in journals and conference proceedings)

Books, Book chapters, Books Edited

Invited chapter author (2005): Book title: Scientific and Strategic Leadership (in progress).

Walter A., Mannheim, J.G. and CARUANA, C.J., (Eds) (2021). *Imaging Modalities for Biological and Preclinical Research: A Compendium, Volume 1, Ex vivo biological imaging*. Institute of Physics: Bristol.

Walter, A., Mannheim, J.G. and CARUANA, C.J., (Eds) (2021). *Imaging Modalities for Biological and Preclinical Research: A Compendium, Volume 2. Preclinical imaging, multimodality imaging and outlook*. Institute of Physics: Bristol.

CARUANA, C.J. (2020). *Book: Leadership and Challenges in Medical Physics*. Institute of Physics Publishing - Institute of Physics and Engineering in Medicine. This is the first ever book on leadership and soft skills for Medical Physicists.

CARUANA, C.J. (2019). Two chapters in Ed J. Babar et al (eds) European Diploma in Radiology: the Essential Guide. Chapter 11 (part): Safety in radiology and imaging procedures; Chapter 12: Principles of imaging techniques and processing. Springer.

CARUANA, C.J. (2016). Book chapter: Regulatory structures and issues in the European Union. In Vetter, R.J. & Stoeva, M. S. (Eds.), *Radiation protection in medical imaging and radiation oncology* (pp.207-227). Boca Raton: CRC Press.

CARUANA, C. J. (2014). Book chapter: The role of the medical physics expert. In E. Guibelalde, S. Christofides, C. J. CARUANA, S. Evans & W. van der Putten (Eds.). *European guidelines on the medical physics expert (Radiation Protection Series 174)* Chapter 2 pp 11-14. Publications Office of the European Union, Luxembourg: European Commission.

CARUANA, C. J. (2014). Book chapter: Qualification and curriculum frameworks for the medical physics expert in Europe - inventory of learning outcomes for the medical physics expert in Europe. *European guidelines on the medical physics expert (Radiation Protection Series 174)* (pp. Chapter 3 (pp 15-20) and Annex I (pp 1-59)). Luxembourg: Publications Office of the European Union.

CARUANA, C. J. (2014). Book chapter: Learning outcomes in radiation protection for medical physicists and medical physics experts. *MEDRAPET guidelines on radiation protection education and training of medical professionals in the European Union (Radiation Protection Series 175)* Chapter 7 pp 73-75. Luxembourg: Publications Office of the European Union: European Commission.

CARUANA, C. J. (2011). The tuning process and the masters in medical physics in Europe -a personal vision. In S. Tabakov, P. Sprawls, A. Krisanachinda and C. Lewis (Eds.). *Medical physics and engineering - education and training*. (pp. 117-127). Trieste: Abdus Salam International Centre for Theoretical Physics (ICTP) Press.

Full Articles in Journals and Conference Proceedings

Petro Julkunen, Jessica Fitzpatrick, Panagiotis D. Bamidis, Carmel J. CARUANA, Alexei Katashev, Tiina Laitinen, Sander Onur, Torsten Rahne (2025). EFOMP policy statement no 20: The role of medical physicists and medical physics experts in physiological measurement and related therapies. *Phys Med*, 130:104923.

Pace, A., CARUANA, C. J., Agius, S., & Pace, E. (2024). New Medical Physics Specialties: A Study of the General Medical Physicist Speciality in the Netherlands, an initial report. *Medical Physics International*, 12(1).

Pace, E., CARUANA, C. J., Bosmans, H., Cortis, K., D’Anastasi, M., & Valentino, G. (2024). An inventory of patient-image based risk/dose, image quality and body habitus/size metrics for adult abdomino-pelvic CT protocol optimisation. *Phys Med*, 125:103434.

Pace, A., **CARUANA**, CJ., Agius, S., & Pace, E. (2024). New Medical Physics Specialties: A Study of the General Medical Physicist Speciality in the Netherlands, an initial report. *Medical Physics International*, 12(1).

CARUANA, C. J., & Pace, E. (2023). A Novel Curricular Model for Medical Physics and Radiation Protection Education—An Alternative Possible Way Forward for Africa? *Medical Physics International*. Vol 11(1).

Dobbe Danielle, **CARUANA Carmel J.** (2024). **Meet the Professor: Carmel J Caruana, University of Malta.** European Medical Physics Newsletter. Spring 2024.

Byrne B, Marcu L, Mazzoni LN, **CARUANA CJ**, Barry A, Martín GM, Stasi M, Ruiz S, Medina AL, Platoni K, Maas AJJ, Agius S, Koutsouveli E, Gilligan P. (2023). EFOMP Malaga Declaration 2023: An updated vision on Medical Physics in Europe. *Physica Medica* 111: 102620.

Pace Eric, **CARUANA Carmel J.**, Bosmans Hilde, Cortis Kelvin, D’Anastasi Melvin, Valentino Gianluca (2024). Initial Exploratory study of issues relevant to optimisation of abdomino-pelvic CT studies of Maltese obese patients. (*to be finalised and submitted for review*).

Cassar Julia, Agius Sam, **CARUANA Carmel J.** (2024). Report of the Malta Association of Medical Physics Annual Conference November 2023. European Medical Physics Newsletter. Spring 2024.

Galea Kristian, **CARUANA Carmel J.**, Pace Eric. (2024) First graduates of the BSc Physics, Medical Physics and Radiation Protection at the University of Malta. European Medical Physics Newsletter. Spring 2024.

CARUANA CJ. (GUEST EDITORIAL, 2023) Invited editorial. About developing a new profession – Medical Physics in Malta. *Malta Journal of Health Sciences*: Volume 10: Issue 2.

CARUANA Carmel J. (December 2023). A historical overview of the development of the Qualifications Framework for Medical Physics in Europe. European Medical Physics Newsletter.

Schembri J., **CARUANA Carmel J.**, Agius S. (2023). AN INITIAL SWOT AUDIT OF THE MEDICAL PHYSICS PROFESSION IN MALTA: THE PERSPECTIVE OF MEDICAL PHYSICISTS. *Medical Physics International Journal*. Vol.11, No.1.

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CARUANA, C.J., Bert, C., Rossetti, V., Theodorou, K. and Colgan, N. (2023) Erasmus+ voluntary traineeships (in Medical Physics and Radiation Protection) for physics and engineering students. *European Medical Physics News* March 2023.

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CARUANA C.J. (2021). Developing strategic leadership skills is crucial for the future of medical physics. *Proceedings Medical Physics in the Baltic States 2021*. 4-6 November 2021, Kaunas, Lithuania.

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