# Prof. HABIB ZAIDI HONORED WITH IOMP'S JOHN MALLARD AWARD

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## I. SHORT BIOGRAPHY

Habib Zaidi was born and grew up in Algeria. He studied graduated in Electrical Engineering in 1990 from the University of Setif in Algeria and then was attracted to the fascinating world of medical physics and started his postgraduate program with extensive research training in Lund University under the supervision of Prof. Sören Mattsson, ending-up with a Ph.D. awarded by the University Geneva in 2000 followed by habilitation (Privat-docent) in 2004 [1].

Fig. 1 Prof. Habib Zaidi, photo taken in 2023.

Habib Zaidi (Fig. 1) is Chief physicist and head of the PET Instrumentation & Neuroimaging Laboratory at Geneva University Hospital and full Professor at the medical school of Geneva University. He is also a Professor of Medical Physics at the University of Groningen (Netherlands), Adjunct Professor of Medical Physics and Molecular Imaging at the University of Southern Denmark (Denmark), Adjunct Professor of Medical Physics at Shahid Beheshti University visiting Professor at Tehran University of Medical Sciences and Distinguished Professor at Óbuda University (Hungary). He is actively involved in developing imaging solutions for cutting-edge interdisciplinary biomedical research and clinical diagnosis. His research is supported by the EEC, Swiss National Foundation, EEC, private foundations and industry (Total >10M+ US$) and centres on hybrid imaging instrumentation (PET/CT and PET/MRI), deep learning for various imaging applications, modelling medical imaging systems using the Monte Carlo method, development of computational anatomical models and radiation dosimetry, image reconstruction, quantification and kinetic modelling techniques in emission tomography as well as statistical image analysis, and more recently on novel design of dedicated PET and PET/MRI scanners. He was guest editor for 14 special issues of peer-reviewed journals dedicated to *Medical Image Segmentation*, *PET Instrumentation and Novel Quantitative Techniques*, *Computational Anthropomorphic Anatomical Models, Respiratory and Cardiac Gating in PET Imaging, Evolving medical imaging techniques*, *Trends in PET quantification (2 parts), PET/MRI Instrumentation and Quantitative Procedures and Clinical Applications, Nuclear Medicine Physics & Instrumentation, and Artificial Intelligence* and serves as founding Editor-in-Chief (scientific) of the *British Journal of Radiology (BJR)|Open*, Deputy Editor for *Medical Physics,* and Associate Editor or member of the editorial board of the *Journal of Nuclear Cardiology*, *Clinical Nuclear Medicine*, *Physica Medica*, *International Journal of Imaging Systems and Technology, Clinical and Translational Imaging*, *American Journal of Nuclear Medicine and Molecular Imaging*, *Brain Imaging Methods (Frontiers in Neuroscience & Neurology), Cancer Translational Medicine* and the *IAEA AMPLE Platform in Medical Physics*. He has been elevated to the grade of fellow of the IEEE, AIMBE, AAPM, IOMP, AAIA and the BIR and was elected liaison representative of the *International Organization for Medical Physics (IOMP)* to the World Health Organization (WHO) and Chair of Subcommittee on Part 1 Examination of the International Medical Physics Certification Board (IMPCB) and the Imaging Physics Committee of the *AAPM* in addition to being affiliated to several International medical physics and nuclear medicine organisations. He is developer of physics web-based instructional modules for the RSNA and Editor of IPEM's Nuclear Medicine web-based instructional modules. He is involved in the evaluation of research proposals for European and International granting organisations and participates in the organisation of International symposia and conferences. His academic accomplishments in the area of quantitative PET imaging have been well recognized by his peers and by the medical imaging community at large since he is a recipient of many awards and distinctions among which the prestigious *2003 Bruce Hasegawa Young Investigator Medical Imaging Science Award* given by the *Nuclear Medical and Imaging Sciences Technical Committee of the IEEE*, the *2004 Mark Tetalman Memorial Award* given by the *Society of Nuclear Medicine*, the *2007 Young Scientist Prize in Biological Physics* given by the *International Union of Pure and Applied Physics (IUPAP)*, the prestigious (100'000$) *2010 Kuwait Prize of Applied sciences* (known as the *Middle Eastern Nobel Prize*) given by the *Kuwait Foundation for the Advancement of Sciences (KFAS)* for "*outstanding accomplishments in Biomedical technology*", the 2013 *John*

*S. Laughlin Young Scientist Award* given by the *AAPM*, the 2013 *Vikram Sarabhai Oration Award* given by the *Society of Nuclear Medicine, India (SNMI),* the 2015 *Sir Godfrey Hounsfield Award* given by the *British Institute of Radiology (BIR),* the *2017 IBA-Europhysics Prize* given by the European Physical Society (EPS), the *2019 Khwarizmi International Award* given by the Iranian Research Organization for Science and Technology (IROST) and the *2023 John Mallard Award* given by the IOMP for innovative developments of high scientific quality. Prof. Zaidi has been an invited speaker of over 160 keynote lectures and talks at an International level, has authored over 900+ publications (he is the senior or first author in a majority of these publications), including 395 peer-reviewed journal articles in high ranking journals, most of them in Q1/D1 of their categories (h-index=76, >20'550+ citations | Google scholar as of 15 December 2023), 475 conference proceedings and 42 book chapters and is the editor of four textbooks on *Therapeutic Applications of Monte Carlo Calculations in Nuclear Medicine (2 Editions)*, *Quantitative Analysis in Nuclear Medicine Imaging, Molecular Imaging of Small Animals and Computational anatomical animal models*.

## II. AWARDEE OF IOMP'S JOHN MALLARD AWARD

The **IOMP John Mallard Award** honours a medical physicist who has developed an innovation of high scientific quality and who has successfully translated this innovation in clinical practice.

Amongst several very high calibre nominations from all over the world, the Awards and Honours Committee of the IOMP considered **Prof. Habib Zaidi** as an outstanding medical physicist, with impressive capacity to innovate, develop and translate to clinical setting technological advances in the field of multimodality medical imaging and its application in clinical practice [2]. He has made valuable and seminal contributions in academia, education and mentoring and tutoring of many highly qualified medical physicists. His academic accomplishments in the area of quantitative PET imaging have been well recognized by his peers and by the medical imaging community at large since he is a recipient of many awards and distinctions. He has also been elevated to the grade of fellow of the IEEE, AIMBE, AAPM, IOMP, AAIA and the BIR.

**Some main achievements:**

- He developed versatile PET and CT Monte Carlo simulation packages that have been used extensively in imaging physics research.
- Zaidi is highly recognized for pioneering MRI-guided attenuation correction, carried out in 2002 prior to the advent of hybrid PET/MRI systems, demonstrating his visionary and futuristic outlook and paving the way for a new class of algorithms.
- In collaboration with some colleagues, he developed methodologies for metal artifact reduction in CT and correction of oral contrast medium for artifact-free CT and PET/CT imaging that have been applied in clinical setting.
- In collaboration with some colleagues, he developed a large number of advanced human, primate and small-animal computational models suitable for radiation dosimetry research.
- In collaboration with some colleagues, he developed innovative deep learning-powered algorithms for various multimodality medical image analysis applications, including imaging instrumentation design, image denoising (PET and CT), quantitative image reconstruction, image segmentation, artifact-free imaging, radiation dosimetry and computer-aided diagnosis, prognosis, and outcome prediction. Many of these developments have high potential for clinical translation.
- In addition to being a researcher with more than $10 million in research grants, 400 peer-reviewed publications, he supervised 29 PhD theses and mentored and trained over 22 senior scientists and postdoc fellows.

In recognition of the extraordinary definite impact that Prof. Habib Zaidi had over the entire field of medical physics, the IOMP has decided to award him the **2023 John Mallard Award**.

Congratulations, Prof. Habib Zaidi.

## III. REFERENCES

1. Habib Zaidi web site at https://pinlab.ch/Habib/
2. Announcement of the Award on IOMP web site https://www.iomp.org/announcement-of-2023-john-mallard-awardee-habib-zaidi/

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