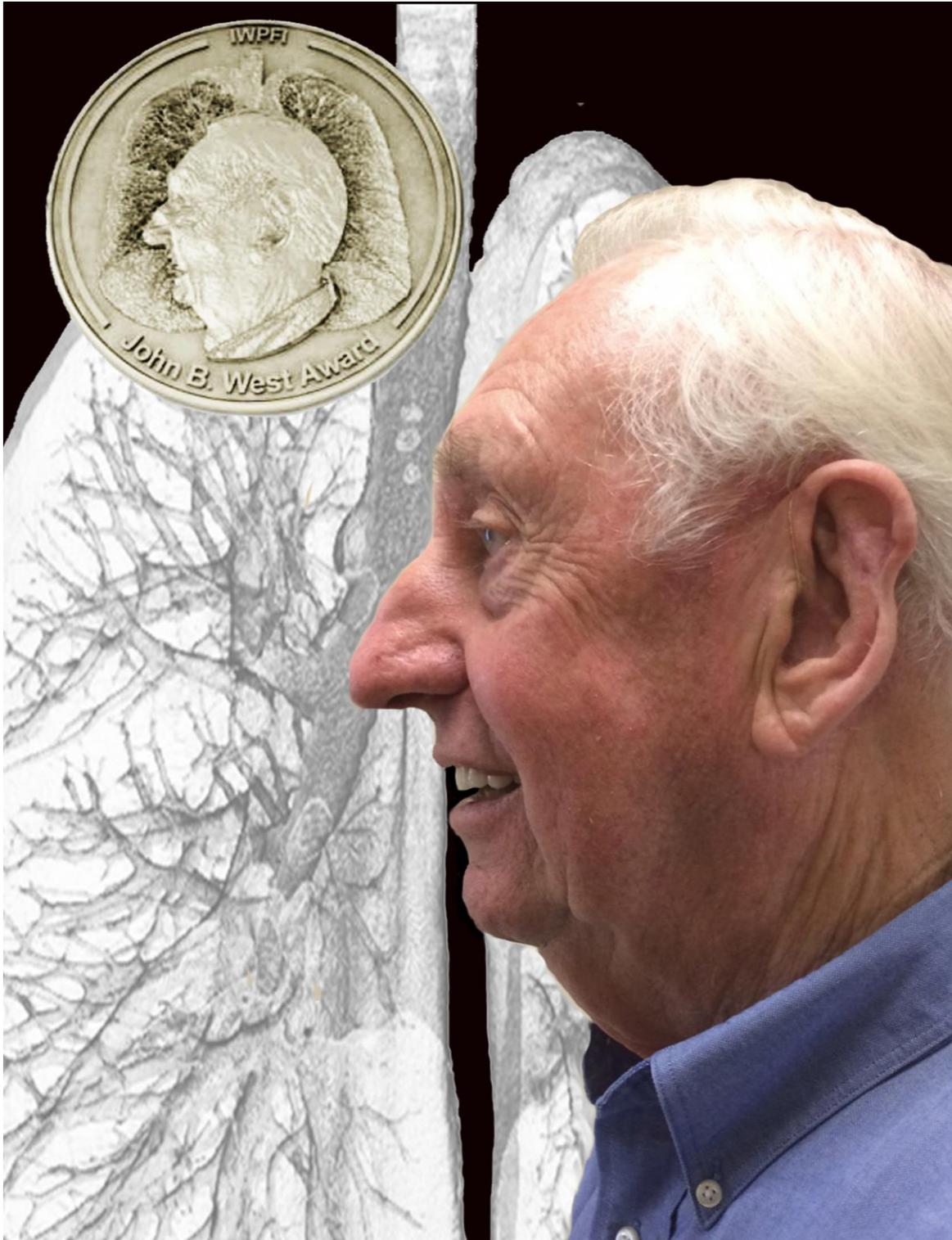


IWPFJ John B. West Award

In recognition of a lifetime contribution to the field of pulmonary functional imaging





John B. West, M.D., Ph.D., D.Sc.

Distinguished Professor of Medicine and Physiology
School of Medicine
University of California, San Diego

John West was born in Adelaide, Australia in 1928 and graduated with a medical degree in 1951 after the six years' course at the age of 23. After a year of residency he moved to London, partly because academic medicine was not well developed in Adelaide at the time, but also because he wanted to see the world.

Dr. West spent about 15 years in London, mainly at the Royal Postgraduate Medical School, Hammersmith Hospital, initially with Drs. Philip Hugh-Jones and Charles Fletcher. In 1956 when the Medical Research Council cyclotron started to produce radioactive oxygen-15 he entered the field of functional lung imaging. By inhaling oxygen-15 and looking at its disappearance from the lung, it became clear that there was a dramatic topographical inequality of blood flow caused by gravity. The mechanism of this was worked out, and this led to other studies on the effects of gravity on the lung including regional differences of ventilation, gas exchange, and alveolar size.

In 1960 Dr. West learned that Sir Edmund Hillary was planning a physiological expedition to the Himalayas, and he applied and was accepted in spite of the fact that he had never previously done any climbing. This was the so-called Silver Hut expedition where a small group of physiologists wintered at an altitude of 5800 m (19,000 ft.) just south of Everest and carried out an extensive physiological program. Subsequently measurements were extended up to an altitude of 7440 m (24,400 ft.) on Mt. Makalu. This began a long interest in high-altitude medicine and physiology and culminated in him leading the 1981 American Medical Research Expedition to Everest during which 5 people reached the summit, and the first physiological measurements on the summit were made. The basic scientific question addressed in these studies is how is it possible for humans to survive in the extreme oxygen deprivation of these great altitudes that are right at the limit of human tolerance. His interest in this field continues to this day with a project on oxygen enrichment of room air at high altitude which promises to be critically important for commuters who need to work at very high altitudes. He served as editor of the journal, *High Altitude Medicine & Biology* for more than 10 years.

Because of his interest in the effects of gravity on the lung, he thought it would be valuable to study the lung in weightlessness, and took a period of sabbatical leave at the NASA Ames Research Center in 1967-1968. During this time he submitted a proposal to NASA to study pulmonary function in astronauts. This was funded the following year and he enjoyed continuous financial support from NASA until 2006. Experiments were conducted on four Spacelabs in orbit, and on the International Space Station. Of all the organs in the body, the lung is arguably the most vulnerable to gravity, and the basic question here is how is lung function altered by exposure to weightlessness in both the short and long terms.

Dr. West is a dedicated teacher. He was in charge of the physiology course for first year medical students at UCSD for 35 years and his little red book *Respiratory Physiology: The Essentials* has been translated into 13 languages and is used all over the world.



Professor Dr. Hans Ulrich Kauczor
Recipient
2021 IWPMI John B. West Award

Hans Ulrich Kauczor is a dedicated internationally known and respected leader in chest radiology with a strong focus on functional lung imaging. Over more than 20 years, he devoted his career especially to the development on novel MRI and CT technology and analysis techniques. He pioneered proton lung MRI techniques with and without contrast media for perfusion and ventilation analysis, assessed cellularity of lung cancer and explored the use of Fluor and hyperpolarized Helium for lung ventilation and microstructure imaging. He investigated single and multi-energy CT as well as micro-CT for development of novel quantitative lung imaging biomarkers and respective processing tools

including artificial intelligence. With his research in many landmark single and multicenter studies, he contributed substantially to improve imaging for patients with COPD, CF, interstitial lung disease, pneumonia, pulmonary embolism, pulmonary hypertension and lung cancer. He has continuously received and completed research funding by the Federal Ministry for Education and Research (BMBF), Deutsche Forschungsgemeinschaft (DFG) and European Commission. So far, he has published more than 1000 articles in peer reviewed journals and holds two patents.

Hans Ulrich Kauczor studied Medicine at Bonn and Heidelberg Medical School from 1983-89. From 1989-91 he served as research resident at the German Cancer Research Center (DKFZ) in Heidelberg and then as radiology resident at Mainz University Hospital from 1991-1998. In 1998 he wrote his Habilitation in Mainz on „Functional Imaging of pulmonary ventilation using CT and MRI“. Hans Ulrich Kauczor is Professor and Chairman of Radiology, Medical Director of the Department of Diagnostic and Interventional Radiology of the University Hospital Heidelberg and speaker of the Translational Lung Research Center Heidelberg and member of the Board of the German Center of Lung Research (DZL). Hans Ulrich Kauczor is member and former president of the Fleischner Society, member and former president of the European Society of Thoracic Imaging (ESTI) and founding member of the IWPMI. He recently became a member of the prestigious German National Academy of Sciences “Leopoldina”.



Professor Edwin JR van Beek
Recipient
2022 IWPFJ John B. West Award

Edwin JR van Beek has been a true pioneer and international leader in the field of Pulmonary Functional Imaging since around the time of creation of the field. His highest impact work significantly advanced the diagnosis, methodologies and therapy of pulmonary embolism. Furthermore, Edwin developed hyperpolarized Helium gas MRI with translation into clinical studies in patients with CF, COPD and alpha-1-antitrypsin deficiency. He has been building bridges between functional hyperpolarized gas MRI, functional CT imaging

and applied lung MRI methods, which substantially advanced our understanding and knowledge of the pathophysiology of lung diseases. Using CT he advanced the clinical translation of computer aided analysis of lung texture in patients with fibrosis and the detection, classification and growth rate of lung nodules using conventional methods as well as deep learning. Edwin combined cardiac and pulmonary research and developed cardiac multimodality imaging as outcome and event predictor as part of the SCOTHEART investigators. As part of the COPDGene original protocol development group and imaging core he contributed to major advances in COPD research by combining imaging with deep phenotyping. Edwin authored and co-authored more than 450 peer-reviewed publications, was awarded over 50 million pounds of research grant money and served as internationally renowned educator and lecturer.

Edwin van Beek graduated from Erasmus University Medical School in Rotterdam Netherlands in 1987. After studying Medicine (1990-1994) and Diagnostic Radiology (1994-1999) at the Academic Medical Center in Rotterdam, he became Senior Clinical Lecturer at University of Sheffield, UK (1999-2003), and Professor of Radiology at University of Iowa (2004-2009), before appointment of the current role as SINAPSE Chair of Clinical Radiology at University of Edinburgh, UK, in 2009. Edwin is member of the Fleischner Society and founding member of the IWPFJ.

Prior John B. West Award Recipients:

2013 - Eric A. Hoffman, PhD, Iowa City, Iowa, USA

2015 - Willi Kalander, PhD Ehrlangen, Germany

2017 - Michiaki Mishima MD, PhD Kyoto, Japan

2019 - Warren Gefter MD, Philadelphia, USA