SONG Erwei
Professor of Breast Surgery
Member of Chinese Academy of Sciences,
Director of Health Science Center
President of Sun Yat-sen Memorial Hospital,
Sun Yat-sen University
China

For his work in the areas of tumor ecosystem and immunotherapy

Erwei Song is Professor of Breast Surgery at Sun Yat-sen University (SYSU), Member of Chinese Academy of Sciences, CMB (China Medical Board) Distinguished Professor and Fellow of the Royal Society of Biology (UK). Currently, he serves as Director of Health Science Center and President of Sun Yat-sen Memorial Hospital, SYSU. Erwei obtained his M.D. and Ph.D. at Zhongshan Medical School, and was trained as a surgeon at Sun Yat-sen Memorial Hospital, SYSU. He received post-doctoral training at Harvard Medical School in 2002 and became an instructor at the CBR Institute of Biomedical Research at Harvard in 2004.

As a clinician scientist, Erwei is keen to address scientific questions derived from clinical practice. He is the pioneer of breast-conserving surgery (BCS) in China, a new surgical concept in contrast to mastectomy, which preserves breast microenvironment tissues for the activation of anti-tumor immunity. As a surgeon, Erwei has compiled the first Chinese Experts Guidelines for Breast-conserving Surgeries of Early Breast Cancer. His early publication "RNA interference targeting Fas protects mice from fulminant hepatitis" in *Nature Medicine* was the first to report that siRNA could be used therapeutically in whole animal disease model. This finding was selected as one of the "**Top Ten breakthroughs of the year 2003**" by *Science*, and has paved the foundation for clinical RNAi therapeutics.

Erwei's contribution to cancer immunology is indisputable. In 2022, Trends in Immunology published a feature review of his s proposal of "effector immune cell deployment (EICD)", a revolutionary concept that depicts the most comprehensive approach to reflect cold and hot tumor immunotyping, which includes the priming, circulation, activity, trafficking, and fate of antitumor effector immune cells. In over 30 years of immunological research, he has uncovered important subtypes of cancer-associated immune cells, receptors, juxtracrine and pathways that has resulted in a paradigm shift in the field of cancer immunotherapy. He uncovered various new subtypes of cancer-associated immune cells and mesenchymal cells, and elaborated on their mechanisms, providing new insights for cancer immunotherapy. Erwei recently

proposed the "**Theory of Tumor Ecosystem**", which emphasizes on the importance of viewing cancer as a viable ecosystem where host internal environment is vital for cancer cell survival and growth. On November, 2022, Erwei was awarded with The World Academy of Sciences (TWAS) in Medical Sciences for proposing and reinforcing "the Theory of Tumor Ecosystem". His latest book on "Tumor Ecosystem: an ecological view of cancer growth and survival" was published by Springer Nature Publishing in June 2023.

Erwei has published 166 SCI research articles in internationally-recognized journals, which include *Nature, Cell, Cancer Cell, Nature Immunology, Nature Cell Biology, Nature Cancer, Science Translational Medicine, Nature Communications*, etc. By far, his research papers have been cited nearly 15,000 times. As the corresponding author, he has published 77 research articles, with one of them being cited for more than 1,500 times.

As an active member of the society, Erwei serves as Chair of Breast Tumor Experts Committee of Chinese Society of Clinical Oncology (CSCO), and Vice Chair of Surgeon Society, Chinese Medical Doctor Association. He also serves as the Associate Editor for Science China-Life Sciences and has chaired an international Cell Symposium for Cell Press on "Functional RNAs".