

2011 PSTA WINNER CITATIONS

PRESIDENT'S SCIENCE AND TECHNOLOGY MEDAL 2011



Professor Soo Khee Chee

Director, National Cancer Centre Singapore

“For his distinguished, strategic and far-sighted contributions to Singapore’s clinical services and healthcare landscape, particularly in spearheading research led improvements in clinical care, and catalysing research in the public healthcare environment”

Professor Soo Khee Chee is the founding Director of the National Cancer Centre Singapore (NCCS), which is now a leading cancer institution renowned both locally and internationally for being at the cutting edge of cancer research. Under his strong leadership and foresight, the NCCS led in pursuing and promulgating the now widely accepted multi-disciplinary and holistic approach to cancer management in order to achieve the highest standards in cancer prevention, diagnosis and treatment. NCCS’ integrated structure and intense clinical practice have enabled it to bridge the chasm between pre-clinical research and clinical practice. Notable examples are its groundbreaking research that has established chemo-radiation as the new standard for nasopharyngeal cancer treatment, and NCCS’ international status in cell-based cancer immunotherapy. Both these research-directed advances in cancer care are the accomplishments of multi-disciplinary teams led by NCCS’ clinician scientists. As a result of its clinical and translational research, the NCCS has developed new and advanced protocols in cancer treatments, with six of its doctors winning outstanding awards from the prestigious American Society of Clinical Oncology (ASCO). In recognition of his outstanding service and contribution to the nation, Professor Soo was awarded the Public Administration Medal (Gold) in the 2003 National Day Awards.

Establishing The National Cancer Centre Singapore

Professor Soo has grown the NCCS since its establishment in 1997, from a department within the Singapore General Hospital (SGH) to an autonomous internationally recognised tertiary centre known for being at the leading edge of cancer treatment and research. Due to his foresight, NCCS now exhibits the hallmarks of a US National Cancer Institute (NCI)-designated comprehensive cancer centre programme: namely, demonstrated commitment to rapid translation of basic research findings into clinical applications; critical mass of high-quality, interactive clinician and laboratory researchers; and a group of opinion leaders dedicated to mentoring the next generation of cancer researchers.

Through Professor Soo’s initiatives, the NCCS developed key research capabilities that have become essential in the translation of basic findings into clinical applications that can benefit the patient. The NCCS is at the forefront of research in areas such as head and neck cancers, nasopharyngeal cancer, liver cancer, lung cancer and lymphoma. NCCS has one of the largest numbers of clinical

trials within a Singaporean medical institution. In 2010 alone, there were more than 140 planned, active, and completed Phase I-IV clinical trials. This is a ten-fold increase in the volume of trials since 1999. Due to the high number of clinical trials and patient throughput, the NCCS has become the lead investigator in a number of multinational & multicentre clinical trials in cancer. Its Asia-Pacific Hepatocellular Cancer Consortium has completed five international trials while another four are ongoing. It leads an international trial on head and neck cancer, involving 26 cancer centres in 15 different countries, and another phase III trial on colorectal cancer ready to recruit more than 2,000 patients.

Reflecting the importance and commitment to research, a quarter of NCCS' annual turnover is dedicated to research, as are more than a quarter of the staff. As a result, within the short span of 10 years since its inception, the NCCS produced over 1,000 peer reviewed papers, of which more than 30% are above the benchmark Journal Impact Factor (JIF) of 5. This has made the NCCS most productive in terms of research dollars spent.

Establishing Clinician Scientists

Despite Professor Soo's heavy national and cluster level commitments, he is devoted to grooming and developing clinician scientists. He has personally mentored a successful cadre of at least nine clinicians and seven clinician scientists, and continues to support the new generation of talents. He motivates his scientists to acquire research training that equips them to address clinically relevant needs and to engage in collaborative investigations that advance basic, pre-clinical research to clinical cancer care. In recognition of this exceptional work, Professor Soo was awarded the National Outstanding Clinician Mentor Award in 2008. Indeed, through his constant encouragement, NCCS arguably has Singapore's highest proportion of clinician scientists among its clinical faculty.

Establishing the Duke-NUS Graduate School of Medicine

Professor Soo was instrumental in his role of establishing academic medicine in the Outram campus, recognising the need for a strong academic foundation for medical excellence and research. Professor Soo was among the prime movers in obtaining the Government's support for the establishment of a new world-renowned medical school in the Outram campus. He was the chairman of the Graduate Medical School Protem Committee (2003-2006), working tirelessly towards this objective, which culminated in the Government's decision to establish the Duke-NUS Graduate Medical School (GMS) in Singapore. The presence of this new medical school and the close collaboration that has now been established with SingHealth has significantly transformed SingHealth's institutional milieu. Professor Soo and his team are currently in the midst of formulating academic clinical departments and programmes necessary for the proper institutional structures for academic research to be established from the clinical departments on the campus. Within the next two years, there will be at least 10 such academic clinical programmes established in collaboration with Duke-NUS GMS.

For his efforts in establishing Duke-NUS GMS, Professor Soo was appointed its Vice Dean of Clinical and Faculty Affairs. He holds the distinction as the first recipient of the Duke-NUS Graduate Medical School Benjamin Sheares Professorship in Academic Medicine, in recognition of his pioneering contributions to research, scholarship and clinical service which have significantly impacted the practice of medicine in Singapore.

Establishing the Research Framework in SingHealth

Professor Soo has played a significant role in championing and leading biomedical research efforts in Singapore's healthcare institutions. As Deputy CEO for Research and Education in SingHealth, he has led in the strategic centralisation of several R&D resources from individual healthcare institutions to the SingHealth cluster-level to catalyse research. Under his leadership, SingHealth established the SingHealth Experimental Medicine Centre (SEMC) – the first AAALAC accredited facility in Singapore; the SingHealth Tissue Repository (STR) – which is currently the largest tissue repository in Singapore, with a collection of more than 100,000 tissue samples and biospecimens; and the Centralised Institutional Review Board (CIRB).

In addition, Professor Soo was a key player in the decision to establish the Investigational Medicine Unit (IMU) at SingHealth, which was one of the two national early-phase clinical trial units established in 2009 with capabilities in micro-dosing and first-in-man studies to test novel drugs, devices, biologics, and diagnostics. The IMU is now able to carry out the first-in-man Phase I and Phase II clinical trials. He has thus been instrumental in the creation of a whole research eco-system of tremendous value to pharmaceutical companies. These efforts to centralise and establish these core facilities at SingHealth are essential to facilitating research collaborations across institutions, and enabling clinicians to do research. As a result, there are significant on-going research collaborations with multinational pharmaceutical companies such as Bayer, GlaxoSmithKline and AstraZeneca.

Establishing Keystone Industrial Collaborations

Professor Soo serves as a member of the EDB-chaired Biomedical Sciences Industry Strategy Group. He contributes to and provides guidance on national strategies to engage big pharmaceutical companies, championing the role of the clinician scientists in such collaborations. Professor Soo's vision and personal leadership were instrumental in the inking of the recent Economic Development Board (EDB) - led \$100 million research investment-cum-collaboration with Roche. This collaboration is significant as it places Roche scientists side-by-side with Singaporean scientists in an equal partnership that allows intellectual cross-fertilisation and the directed efforts to solve industry-relevant and clinically significant problems. This collaboration will develop new research competencies in Singapore through the setting up of a translational medicine hub in SingHealth in areas such as radiochemistry and exploratory pathology, as well as establish a new model of research collaboration between industry and the public sector. For his significant role in the Roche collaboration, he is now the Chairman of the Roche-Singapore Joint Steering Committee.

For his distinguished, strategic and far-sighted contributions to Singapore's clinical services and healthcare landscape, particularly in spearheading research led improvements in clinical care, and catalysing research in the public healthcare environment, Professor Soo is awarded the President's Science and Technology Medal 2011.