

WINTHROP PHYSICIANS, DRs. STECKER AND RAK, TO SPEAK AT FIRST G20 WORLD BRAIN MAPPING & THERAPEUTIC SCIENTIFIC SUMMIT IN AUSTRALIA

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Mark Menniti Stecker, MD, PhD, Chairman, Department of Neurosciences, Winthrop-University Hospital, and Ramin Rak, MD, FAANS, Co-Surgical Director of the Long Island Brain Tumor Center at Neurological Surgery, PC (NSPC) and attending neurosurgeon at Winthrop, will be among a select group of neuroscience experts and representatives of governments from across the globe to speak at the First Annual G20 World Brain Mapping & Therapeutic Summit. The summit will take place November 13, during a meeting of the G20 nations in Brisbane, Australia.

“We hope to bring all G20 nations on board, so that we can share data, build bridges between physicians and scientists, and develop innovative solutions to mapping the human brain and developing therapies to address the many serious neurologic and psychiatric conditions that affect humanity,” said Dr. Rak, who is a member of the Society for Brain Mapping and Therapeutics (SBMT) Executive Board, and will chair the Science Committee for the SBMT’s 2018 World Brain Mapping and Therapeutics Congress, which will be held in New York. “There is still so little we know about the brain, and this requires an international effort.”

The G20 summit is organized and supported by the SBMT and its Australasian Pacific chapter, along with the Brain Mapping Foundation, Compumedics, Inc., and Amen Clinics.

“Compared to other common diseases, most neurologic illnesses can’t be cured, and we need many more advanced therapies,” said Dr. Stecker. “We have barely scratched the surface in understanding the human brain and how to treat the many disorders that result when its systems go awry. Despite these challenges, many new technologies are coming forward, and it is exciting to be at the start of this promising, high-impact initiative.”

Dr. Stecker added that he hopes the G20 Summit helps stimulate international scientific collaboration in brain research akin to what has taken place at Switzerland's Large Hadron Collider, in which many of the world's leading physicists have come together to explore the fundamental nature of the universe – or the Human Genome Project, in which a massive scientific effort unlocked the genetic “blueprint” of the human race.

The need to map the brain and develop treatments for serious brain disorders has never been greater. According to published studies, disorders of the brain (both neurologic and psychiatric) account for 13% of the global disease burden, surpassing both heart disease (5%) and cancer (10%). The incidence of some devastating brain diseases – including Alzheimer's – will increase dramatically across the globe in coming years.

The purpose of the summit is to create a scientific consortium of nations that will develop a global action plan focused on: the systematic study of the brain; a well coordinated global response to the rising burden of neurological disorders and global alignment of related policies; a well-planned assessment of the future health and economic impact of brain disease, diagnostics and prevention; translation of technologies across scientific disciplines in order to rapidly identify and introduce a new generation of therapeutics, including stem cells; unifying global regulations and guidelines on clinical trials and drug/medical device discovery; and developing global partnerships and new funding initiatives across academic, educational, industry and non-profit organizations.

The summit supports and seeks to expand on President Obama's new, large-scale Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative and the European Union's Human Brain Project – both of which are aimed at revolutionizing our understanding of the brain and developing new treatments -- as well as the neuroscience research initiative recently announced by the Australian government.

Drs. Rak and Stecker will be part of the summit's initial session, which will also feature video keynote addresses by U.S. Rep. Earl Blumenauer (Co-Chair of the Congressional Neuroscience Caucus), U.S. Rep. Chaka Fattah (Chair of the Fattah Neuroscience Initiative), Canadian MP Kirsty Duncan, representatives of the Australian government, and other invited dignitaries from G20 nations; and presentations on brain mapping-related topics by leading neuroscientists from a number of nations' research institutes and government agencies, including the U.S.'s Defense Advanced Research Projects Agency (DARPA), which is part of the BRAIN Initiative.

Dr. Rak will speak on “Direct Brain Mapping During Awake Brain Surgery,” while Dr. Stecker will address “Brain Mapping with Electrical Signals.” Following the presentations, the summit will become a working session on developing multinational collaboration on brain mapping and therapeutics.

Dr. Rak is a leading expert in intraoperative brain mapping in brain tumor surgeries – the use of sophisticated imaging technologies to plan and guide surgery, in order to get the best understanding of each patient's brain structure and function. He uses brain mapping to guide awake craniotomies – operations in which the patient is awakened and asked to perform certain tasks in order to avoid touching brain areas that control critical functions. In these procedures, Dr. Rak maps the patient's brain using functional MRI (fMRI) scans before the surgery to identify functional areas affected by the tumor - done at the same time as neuropsychological tests that show how and where the patient's brain reacts when the patient completes certain tasks. The fMRI scans are combined with other medical images and programmed into a sophisticated neuronavigation system. This creates a complete picture of brain anatomy and function, and their relationship to tumor structure. These images help guide the surgery.

Dr. Stecker is Board Certified in neurology with added qualification in clinical neurophysiology, neurophysiologic monitoring, and electroencephalography and evoked potentials, and has extensive experience in many areas of neurophysiology. His current research interests include measuring and quantifying electrical brain activity; understanding the mechanisms involved in neuropathy, particularly diabetic neuropathy; studying the properties and characteristics of electrodes used to record from and stimulate the nervous system; and intra-operative neurophysiologic monitoring.

Drs. Stecker and Rak believe that their work together on the G20 Summit will lead to future educational and research collaborations. Among planned research projects, which they hope to undertake at Winthrop's Research and Academic Building (opening in early 2015), are studies of a new ultraviolet camera to better visualize the borders of malignant brain tumors. Developed by NASA's Jet Propulsion Laboratory to study planets and distant galaxies, the camera has been adapted and is being pilot tested by Dr. Keith Black and colleagues at Cedars-Sinai Medical Center, where they are exploring how it can be used to differentiate tumors from healthy brain tissue during surgery. They also hope to bring internationally known neuroscientists to Long Island for educational programs for the region's medical community.

The **Society for Brain Mapping and Therapeutics** is a non-profit scientific society organized for the purpose of encouraging basic and clinical scientists who are interested in the areas of brain mapping, engineering, stem cells, nanotechnology, imaging and medical devices to improve the diagnosis, treatment and rehabilitation of patients afflicted with neurological disorders. The Society achieves its mission through multi-disciplinary collaborations with government agencies, patient advocacy groups, educational institutes and industry as well as philanthropic organizations. To learn more about the G20 Summit and the Society, visit www.worldbrainmapping.org.

About Neurological Surgery, P.C. - Neurological Surgery, P.C. is one of the New York City area's premier neurosurgical groups, offering patients the most advanced treatments of brain and spine disorders. These include minimally invasive procedures such as stereotactic radiosurgery (Gamma Knife®, CyberKnife® and Novalis Tx®), aneurysm coiling, neuro-endoscopy, spinal stimulators, carotid stents, interventional pain management, microdiscectomy, kyphoplasty, and other types of minimally invasive spine surgery. The practice's physicians represent a range of surgical and nonsurgical specialties, combining compassionate care with highly specialized training. They are leaders in the region's medical community, with appointments as chiefs of neurosurgery in some of Long Island's best hospitals. NSPC offers 10 convenient locations in Nassau and Suffolk Counties, as well as in Queens and Manhattan. For more information, call 1-800-775-7784 or visit www.NSPC.com.

About Winthrop-University Hospital - Founded in 1896 by a group of local physicians and concerned citizens, Long Island's first voluntary hospital is a 591-bed university-affiliated medical center and New York State-designated Regional Trauma Center which offers sophisticated diagnostic and therapeutic care in virtually every specialty and subspecialty of medicine and surgery. Winthrop-University Hospital is a major regional healthcare resource with a deep commitment to patient care, medical education and research. In fact, Winthrop will soon open a new four-floor, 95,000-square-foot Research and Academic Center that will include core laboratories, a clinical trial center and classrooms for the medical students who reside at Winthrop as part of the Clinical Campus of Stony Brook University School of Medicine. The facility will greatly enhance the Hospital's bench to bedside research mission, making discoveries more accessible and more quickly available for patients. It will also enable Winthrop to better support its current distinguished scientists. For more information about Winthrop-University Hospital, call 1-866-WINTHROP or visit ww.winthrop.org.