



The Hong Kong
Neurosurgical Society



29th ANNUAL SCIENTIFIC MEETING

Neuromodulation & Brain Computer Interface

18 - 19 November 2022 | 8:30am - 5:00pm

Kowloon Shangri-La, 64 Mody Road,
Tsim Sha Tsui, Kowloon

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INCISIONLESS BRAIN SURGERY



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WELCOME MESSAGE



Dear Colleagues and Friends,

Welcome to our 29th Annual Scientific Meeting of the Hong Kong Neurosurgical Society. Our theme this year is "Neuromodulation & Brain Computer Interface".

We are glad to have our good friend and eminent guest joining our meeting in person. Takaomi Taira, Professor at Tokyo Women's Medical University, Past President of the World Society for Stereotactic and Functional Neurosurgery and Japan Society for Stereotactic and Functional Neurosurgery will share with us his experience in using focused ultrasound in movement disorders in a sponsored lecture.

It is our great honour to have Edward Chang, Professor of Neurological Surgery at University of California San Francisco Weill Institute for Neurosciences, USA to elucidate how he decodes and synthesizes speech in human. Kai Miller, Associate Professor of Neurosurgery at Mayo Clinic will share his vast experience in the use of Brain Computer Interface in patients with motor deficits.

When we talk about deep brain stimulation (DBS), Parkinson's disease and other movement disorders always come to people's mind. Chang Jin Woo, Department of Neurosurgery, Yonsei University College of Medicine, Seoul, Past President of the World Society for Stereotactic and Functional Neurosurgery and Korean Neurosurgical Society, will enlighten us in the expedition of the new horizon of DBS for various psychiatric conditions.

Nowadays, there are various developments in neuromodulation which are pertaining to our neurosurgical patients. Our renowned guest speaker, Raymond Onders, Director, Adult Minimally Invasive Surgery, University Hospitals Cleveland Medical Centre, USA, was the surgeon who helped the paralyzed "Superman" star Christopher Reeve to breathe without a ventilator using diaphragmatic pacing stimulation system. Gabriel Wong, an ENT surgeon from New Jersey, USA will explain the use of hypoglossal nerve stimulation for moderate and severe obstructive sleep apnoea patients who cannot tolerate CPAP therapy.

Furthermore, local collaboration with neuroscientists and engineers is crucial if we wish to go an extra mile in advancing neuromodulation and brain computer interface in Hong Kong. There will be a round table discussion on how we can cooperate further with Professors Raymond Tong (CUHK), Thomas Choi (PolyU), and Leanne Chan (CityU).

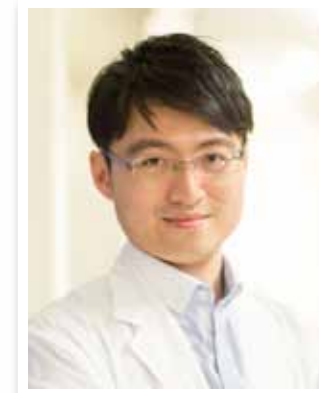
Finally, I would like to take this opportunity to thank Dr. Calvin Mak and the organizing committee, the Secretariat, all helpers, the commercial sponsors, and all of you who participated. I hope you would find the meeting interesting and useful to your practice. I hope we can welcome all our guest speakers in person here in Hong Kong next time.



Dr. Michael Lee

President
The Hong Kong Neurosurgical Society

WELCOME MESSAGE



Dear Members and Friends,

It is my honor to announce the commencement of our 29th Annual Scientific Meeting of the Hong Kong Neurosurgical Society. The theme of the ASM this year is fascinating – connecting the brain with machines, a dream come true by neurosurgeons to improve the neurological functions of patients. This exciting technology may sound distant to some of us, yet the research and clinical application of brain-computer interface, as well as neuromodulation, has gathered much pace in recent years.

We have invited an unprecedentedly high number of world experts to share with us a variety of topics. Prof. Edward Chang and Prof. Kai Miller will enlighten us on the current state-of-the-art development in the brain-computer interface. Three local experts in Engineering including Prof. Raymond Tong (CUHK), Prof. Thomas Choi (PolyU) and Prof. Leanne Chan (CityU), will join us in person to share their innovation in BCI and clinical applications in Hong Kong. Prof. Jin Woo Chang is going to share with us his experience with how Deep Brain Stimulation can benefit patients with psychiatric conditions. Neurosurgeons always treasure friendship and collaboration with other specialties. Prof. Raymond Onders and Prof. Gabriel Wong will shed light on how neuromodulation helps in diaphragmatic stimulation and hypoglossal nerve stimulation. We are also delighted to have Prof. Alok Sharan and Dr. Nader Hejrati to share in the Spine Chapter session. This year, we also have two sponsored lectures, in which Prof. John Thundyil will speak about the application of biomarkers in traumatic brain injury, and, last but not least, Prof. Takaomi Taira is joining us in person in Hong Kong to talk about MRgFUS.

I would like to express my sincere thanks to Dr. Michael Lee for his leadership, all speakers, the Organizing Committee, the IT Subcommittee, the Secretariat, commercial sponsors, and all of you who are participating both online and in person.

Dr. Calvin MAK
Honorary Secretary



ORGANIZING COMMITTEE

COUNCIL MEMBERS & ORGANISING COMMITTEE

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 Dr. Grace HO
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 Dr. Michael SEE
 Dr. Christopher SUM
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PHOTOGRAPHER

Ms Amelia YUNG

GUEST FACULTIES

The Organising Committee would like to thank the following guest faculties for their invaluable contributions to the 29th Annual Scientific Meeting

Edward F CHANG, MD

Joan and Sanford Weill Chair and Jeanne Robertson
 Distinguished Professor of Neurological Surgery
 University of California, San Francisco, USA

Alok SHARAN, MD

Director for Spine and Orthopedics, New Jersey
 Spine and Wellness, USA

Jin Woo CHANG, MD, PhD

Professor, Department of Neurosurgery
 Director of Brain Research Institute
 Yonsei University College of Medicine,
 Seoul, South Korea

Nader HEJRATI, MD

Fellow, University of Toronto, Canada

Kai J MILLER, MD, PhD

Assistant Professor of Neurosurgery
 Mayo Clinic Rochester, USA

John THUNDYIL, MD, PhD

Associate Medical Director for Medical Affairs
 for Asia, Abbott Core Diagnostics

Raymond P ONDERS, MD, FACS

Margaret and Walter Remen Chair of Surgical
 Innovation
 Director of Minimally Invasive Surgery, University
 Hospitals Cleveland Medical Center
 Professor of Surgery
 Case Western Reserve University School of Medicine,
 Cleveland, Ohio, USA

Raymond Kai-yu TONG, PhD

Professor and Chairman, Department of Biomedical
 Engineering
 The Chinese University of Hong Kong

Gabriel WONG, MD, FACS

Advocare ENT Specialty Center, Marlton,
 New Jersey, USA

Thomas Kup-sze CHOI, PhD

Professor and Director of the Centre for Smart Health
 Hong Kong Polytechnic University

Takaomi TAIRA, MD, PhD

Special Adjunct Professor, Hyogo Medical University,
 Hyogo, Japan

Leanne CHAN, PhD

Associate Professor, Department of Electrical
 Engineering
 The City University of Hong Kong



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Prof. Edward F. CHANG, MD

Joan and Sanford Weill Chair and Jeanne Robertson Distinguished Professor of Neurological Surgery
University of California, San Francisco, USA

Edward Chang is the Joan and Sanford Weill Chair and Jeanne Robertson Distinguished Professor of Neurological Surgery at the University of California, San Francisco.

Dr. Chang's clinical expertise is surgical therapies for epilepsy, pain, and brain tumors. He specializes in advanced neurophysiologic brain mapping methods, including awake speech and motor mapping, to safely perform neurosurgical procedures in eloquent areas of the brain.

His research focuses on the discovery of cortical mechanisms of high-order neurological function in humans. Dr. Chang's laboratory has demonstrated the detailed functional organization of the human speech cortex and has translated those discoveries towards the development of a speech neuroprosthetic device to restore communication for people living with paralysis.

Dr. Chang is the 2015 Blavatnik National Laureate in Life Sciences and was elected to the National Academy of Medicine.

GUEST FACULTIES



Prof. Jin Woo CHANG, MD, PhD

Professor, Department of Neurosurgery
Director of Brain Research Institute
Yonsei University College of Medicine, Seoul, South Korea

Dr. Chang graduated from Yonsei University College of Medicine in 1983 (Licence No. 25235) No. He completed his neurosurgical residency (Certification No. 562) and fellowship for stereotactic & functional neurosurgery at Severance Hospital, Yonsei University in Seoul, Korea.

Dr. Chang specializes in stereotactic & functional neurosurgery and his main interest is the neuromodulation of the central nervous system with new innovative techniques (electrical stimulation, focused ultrasound and etc).

As a leading pioneer in the field of stereotactic and functional neurosurgery, which is closely related to the rapidly developing field of neuroscience, Dr. Chang has laid the foundation for clinical research for stereotactic & functional neurosurgery in Korea. He is known to have adopted and introduced various cutting-edge techniques in Korea for the first time, such as radiofrequency cingulotomy for obsessive compulsive disorders (OCD) in 1998, and Deep Brain Stimulation (DBS) techniques for the treatment of chronic neurological disorders such as Parkinson's disease (PD) and essential tremor (ET) in 2000.

Dr. Chang also participated for innovative clinical research of MRI-Guided Focused Ultrasound Surgery (MRgFUS) from the primary stage to the treatment of various conditions such as Parkinson's disease, obsessive-compulsive disorder(OCD), and depression. Through his continued research in this technique, he has contributed more than any other person to the wide adoption and understanding of MRgFUS around the world by the suggestion of the special guideline for selecting the optimal candidates of MRgFUS lesioning procedure.

Because of these contributions, he received the William and Francis Fry Honorary Award at the 2021 ISTU meeting.

Since 1993, Dr. Chang has published more than 270 academic papers in SCI(E) journals around the world.

He has been selected as the co-author of prominent neurosurgery textbooks more than 8 times, and he has authored countless domestic papers and textbooks.

Currently Dr. Chang serves as a section editor of World Neurosurgery which is an official journal of World Federation of Neurological Surgeons (WFNS). He is also a member of the editorial board for the official journal of World Society for Stereotactic & Functional Neurosurgery (WSSFN) as well as the official journal of the International Neuromodulation Society (INS).

In addition to his various editorial duties, Dr. Chang served as the president of many domestic academic societies such as Korean Society for Stereotactic & Functional Neurosurgery (KSSFN), Korean Society for Therapeutic Ultrasound (KSTU) and Korean Neurosurgical Society (KNS). And he was serving as the president of World Society for Stereotactic & Functional Neurosurgery (WSSFN) from 2019 to 2022.



GUEST FACULTIES



Prof. Kai J MILLER, MD, PhD

Assistant Professor of Neurosurgery
Mayo Clinic Rochester, USA

I have a passion for human brain circuit dynamics and a dream of translating scientific understanding to clinical reality. My project is to measure from distributed motor circuitry in the human brain by implanting many brain areas and synthesizing electrophysiology from several operative contexts into a common framework for interpretation in an empirically-driven neurophysiological model. Through my diverse training and ongoing research, I developed expertise as a computational neuroscientist developing measurements and models of human motor systems. In parallel with my computational work, I also trained as a neurosurgeon. Upon completion of my clinical training, I joined the Neurosurgery staff at Mayo Clinic in 2019, with adjunct appointments in physiology & biomedical engineering, and pediatrics. My sub-specialty focuses are epilepsy, deep-brain stimulation, and tumor resection in children and adults: this project will draw from all of these contexts, and the insight may benefit them all. My lab, the Cybernetics and Motor Physiology Laboratory, emphasizes basic human neurophysiology and clinical translation for cybernetics, epilepsy and functional neurosurgery. Our goal is to create new devices to 1) control cybernetic prostheses, 2) induce brain plasticity after injury, and 3) intervene with distributed circuits in movement dysfunction.

- a. Miller, KJ, 2019, A Library of Human Electrographic Data and Analyses, *Nature Human Behavior*, 3; 1225–1235, PMID31451738
- b. Miller, K.J., et. al., 2010 Cortical Activity During Motor Movement, Motor Imagery, and Imagery-Based Online Feedback, *PNAS* 107(9)4430–4435, PMC2840149
- c. Miller, K.J., et. al., 2007. Spectral Changes in Cortical Surface Potentials during Motor Movement, *Journal of Neuroscience*, 27(9):2424–2432, PMC6673496
- d. Miller, K.J., et. al., 2012, Human motor cortical activity is selectively phase-entrained on underlying rhythms, *PLoS Computational Biology* 8 (9), e1002655, PMC3435268

GUEST FACULTIES



Prof. Raymond P ONDERS, MD, FACS

Margaret and Walter Remen Chair of Surgical Innovation
Director of Minimally Invasive Surgery, University Hospitals Cleveland Medical Center
Professor of Surgery
Case Western Reserve University School of Medicine, Cleveland, Ohio, USA

Dr Raymond P. Onders is Professor of Surgery at University Hospitals Cleveland Medical Center and Case Western Reserve University School of Medicine in Cleveland, Ohio. He is honored with the Walter and Margaret Remen Chair of Surgical Innovation. Over the last 25 years, he has focused his research efforts on ways to help people breathe naturally using their own diaphragm. He has authored multiple publications and book chapters on the primary muscle of breathing –the diaphragm. He has trained surgeons around the world on the technique of diaphragm pacing to allow patients freedom from tracheostomy mechanical ventilation.

Diaphragm pacing, electrical stimulation of the diaphragm muscle, is a technology aimed at either replacing or delaying the need for mechanical ventilation or maintaining and improving normal breathing. One of his first research subjects was the late Christopher Reeve (Superman). Diaphragm pacing technology was recognized as one of the most important medical innovations at the 6th Medical Innovation Summit. His advancements in the technology of pacing the diaphragm have led to multiple patents. He co-founded the medical device company Synapse Biomedical which helped to bring this technology to patients.

He has given invited lectures around the world and presented his research at numerous scientific meetings. He has helped spread this knowledge training surgeons to do the diaphragm pacing operation in over 30 countries which has helped countless patients worldwide. His present research focuses on using diaphragm pacing to shorten the time to wean from a ventilator on all intensive care unit patients which is one of the largest health care expenditures in the United States. With the possibility of a shortage of ventilators early in the COVID-19 pandemic, he worked and obtained emergency use authorization by the FDA of the new temporary pacing system in April of 2020. This has led to multiple new applications of the use of temporary diaphragm pacing wires to decrease ventilator times significantly in high risk cardiac patients and lung transplant patients.

He earned his M.D. at Northeastern Ohio Universities College of Medicine in 1988, and in 2010 he received the Distinguished Alumni Award, its highest honor, for his work in advancing medicine. Dr. Onders joined the University Hospitals staff in 1997, following his service with the military where he was a Major in the United States Air Force. From 2015 to 2017, he was interim Chairman Department of Surgery and Surgeon-in-Chief at University Hospitals Case Medical Center and Case Western Reserve University School of Medicine. He also managed for 8 years until 2022 the general surgical and trauma service line at 16 hospitals in the University Hospitals System across northern Ohio. He is active in many medical and surgical organizations and has been President of Midwest Surgical Association and Cleveland Surgical along with being on the Board of several large surgical organizations. He was inducted as a fellow in the American Spinal Injury Association in 2019. Among his multiple other honors, include the Maurice Saltzman Award presented on behalf of the Mount Sinai Health Care Foundation, Crain's Cleveland Business 2008 Health Care Heroes for Advancements in Health, the Rescuer of Humanity Award presented by Values in Action Foundation, and the ALS Association's Bob Feller Legacy Award in 2013 for his work with Lou Gehrig's disease.



GUEST FACULTIES



Prof. Gabriel WONG, MD, FACS

Advocare ENT Specialty Center, Marlton, New Jersey, USA

Dual board-certified otolaryngologist and sleep medicine physician practicing at Advocare ENT Specialty Center in South Jersey since 2005. Provides comprehensive treatment for adult and pediatric disorders of the head & neck with specialization in thyroid & parathyroid surgery and obstructive sleep apnea.



Prof. Takaomi TAIRA, MD, PhD

Special Adjunct Professor, Hyogo Medical University, Hyogo, Japan
Adjunctive Professor, Airlangga University, Surabaya, Indonesia
Advisor, Kumagaya General Hospital
Past President, World Society for Stereotactic and Functional Neurosurgery
Past President, Japan Society for Stereotactic and Functional Neurosurgery
Past Chairman, Stereotactic and Functional Neurosurgery Committee, World Federation of Neurosurgical Societies

Positions

2022	Retired from Tokyo Women’s Medical University Special Adjunct Professor, Hyogo Medical University Advisor, Kumagaya General Hospital, Saitama, Japan
2021	Adjunctive Professor, Airlangga University, Surabaya, Indonesia
1999-2022	Director of functional neurosurgery, Department of Neurosurgery, Tokyo Women’s Medical University
1996	Ph.D. from Tokyo Women’s Medical University
1992-1998	Clinical instructor, Department of Neurosurgery, Tokyo Women’s Medical University
1991-1992	Research fellow, Department of Neurosurgery, University of Amsterdam, Amsterdam, The Netherlands (Professor Andries Bosch)
1988-1989	Registrar in neurosurgery, Department of Neurosurgery, University of Birmingham, Birmingham, UK (Professor Edward Hitchcock)
1982-1988	Resident in neurosurgery, Tokyo Women’s Medical University

Education

1988	Board certification, Japanese Society of Neurosurgery
1982	Graduated from Kobe University, School of Medicine, M.D.

GUEST FACULTIES



Prof. Alok SHARAN, MD

Director for Spine and Orthopedics, New Jersey Spine and Wellness, USA

Dr. Alok Sharan is a Board-certified Spine Surgeon who is a pioneer in Awake Spine Surgery. His practice focuses on minimally invasive spine surgery. Dr. Sharan is a leading authority both nationally and internationally on the Awake Spinal Fusion procedure. Currently, he serves as the Director for Spine and Orthopedics at New Jersey Spine and Wellness.

Dr. Sharan obtained his undergraduate degree after being selected to the highly competitive Medical Program at Boston University. As part of this program he went on to receive his MD degree from the University of Medicine and Dentistry of New Jersey. He completed his spine surgery fellowship at the New York University Hospital.

Dr. Sharan was awarded the Best Doctor by the New York Magazine Best Doctor, and Westchester Magazine Best Doctor.

He has received numerous academic distinctions for his research with over 100 publications, abstracts, and book chapters. He has co-edited a textbook entitled Basic Science of Spinal Diseases.

Dr. Sharan currently serves as a Deputy Editor for the publication Clinical Spine Surgery.



Dr. Nader HEJRATI, MD

Fellow, University of Toronto, Canada

Dr. Nader Hejrati graduated from the medical school at the University of Zurich and completed his neurosurgical training in Switzerland. He completed his Residency at the combined Neurosurgery and Spine center at the University Hospital of Basel in Switzerland, before he moved to Toronto for a combined research and clinical fellowship at the University of Toronto with Prof. Michael Fehlings. His most recent achievements include the prestigious AO Spine North America Fellows Top Research Paper Award 2022 for his research in the field of bioengineered neural stem cells, and the Best Paper Award 2022 at the North American Spine Society NASS 2022. Following completion of his fellowship, he will be starting his new appointment as a Consultant Spine Surgeon at the Cantonal Hospital St. Gallen, one of only four nationwide accredited AO Spine centers.



GUEST FACULTIES



Dr. John THUNDYIL, MD, PhD

Associate Medical Director for Medical Affairs for Asia, Abbott Core Diagnostics

Dr. John is a trained medical physician with a PhD in Neurology majoring in Acute and Chronic neuronal injury mechanisms.

He has worked in premier institutes like the University of Queensland, Australia and the National Neuroscience Institute (NNI), Singapore, and has authored more than 25 publications.

He also has an extensive experience in pre-clinical, translational, and Ph II to PhIV clinical trials in immunology, neurology and transplant therapy areas

He is currently the Associate Medical Director for Medical Affairs for Asia at Abbott Core Diagnostics, and has been involved in projects on use of biomarkers in cardiology (High Sensitive Troponin-1 (hsTnI), natriuretic peptides (BNP and NT-proBNP), endocrinology (TRAb), neurology (mT BI assay).



Prof. Raymond Kai-yu TONG, PhD

Professor and Chairman, Department of Biomedical Engineering
The Chinese University of Hong Kong

Prof. Raymond Kai-yu Tong is the Professor and Chairman in the Department of Biomedical Engineering, the Chinese University of Hong Kong. His research interests include Rehabilitation Robotics (e.g. Hand of Hope), Brain-Computer Control Interface (BCI), Neural Engineering, Functional Electrical Stimulation(FES) and Cognitive Assessment Software. Prof. Tong has been honoured with the “Global Ageing Influencers 2021” award at the 9th Asia Pacific Eldercare Innovation Awards Ceremony held by the Ageing Asia in Singapore. His research, innovation and service have received Awardee of the 2013 Ten Outstanding Young Persons (Hong Kong); the Grand Prix Award(the highest honor) of the International Exhibition of Inventions of Geneva 2012; Winner Award(e-Health) (the highest honor) in the Asia Pacific ICT Award 2012; and HKIE innovation awards for young members(2008), gold awards in international invention exhibitions(2004, 2007, 2010, 2015, 2016). Webpage: <http://www.bme.cuhk.edu.hk/kytong>

GUEST FACULTIES



Prof. Thomas Kup-sze CHOI, PhD

Professor and Director of the Centre for Smart Health
Hong Kong Polytechnic University

CHOI Kup-Sze (Thomas) has been engaging in cross-disciplinary research spanning across computer science, medicine and healthcare for over two decades. He has conducted research in computer graphics, haptics and virtual reality, with a range of applications including soft-tissue biomechanics, surgical simulation, rehabilitation and clinical education. Thomas has put more emphasis on artificial intelligence research, developing machine learning algorithms and applications for healthcare, e.g., prediction of elderly quality of life, dementia risk, post-surgery mortality and cancer risk through data-driven approaches. The work has also been extended to the development of intelligent algorithms to identify movement intentions in brain computer interface applications. Thomas earned his Ph.D. degree in Computer Science and Engineering from the Chinese University of Hong Kong. He is currently a Professor with the Hong Kong Polytechnic University, and the Director of the Centre for Smart Health.



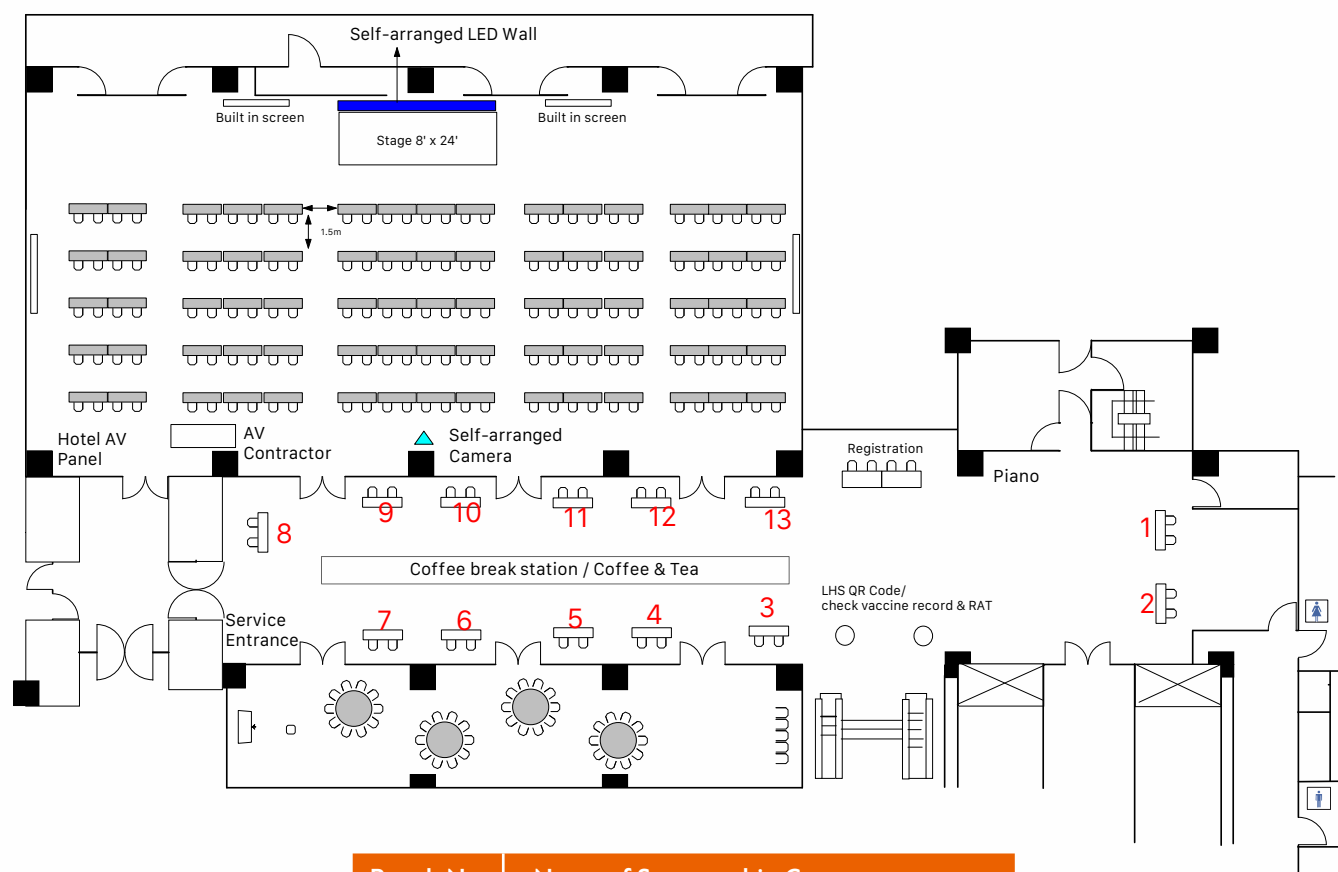
Prof. Leanne CHAN, PhD

Associate Professor, Department of Electrical Engineering
The City University of Hong Kong

Dr. Leanne Chan is now Associate Professor at Department of Electrical Engineering at The City University of Hong Kong. She received her BEng degree in Electrical and Electronic Engineering from The University of Hong Kong, and obtained her MSc degree in Electrical Engineering and PhD degree in Biomedical Engineering from The University of Southern California. She conducted post-doctoral research in visual neuroscience at Developmental Neuroscience Department at Saban Research Institute, Children's Hospital of Los Angeles in 2009. She joined The City University of Hong Kong as an Assistant Professor in 2011. Her research focuses on the development of neural implant utilizing neurophysiological and biosignal processing techniques with a focus on restoring vision in animal model of retinal degeneration. After joining The City University of Hong Kong, she also broadens her research interests in computer vision.

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For vertical muscles and for horizontal Strabismus of less than 20 prism diopters (PD): 1.25 to 2.5 U in any one muscle. B. For horizontal strabismus of 20 to 50 PD: 2.5 to 5.0 U in any one muscle. C. For persistent VII nerve palsy of one month or longer duration: 1.25 to 2.5 U in medial rectus muscle. **Hyperphagia:** 1.25 to 2.5 U (0.05 to 0.1 mL) volume at each site injected into medial and lateral pre-tarsal orbicularis oculi of upper lid and into lateral pre-tarsal orbicularis oculi of lower lid. **VII Nerve Disorders (Hemifacial Spasm):** should be treated as for unilateral blepharospasm. **Cervical Dystonia (Spasmodic Torticollis):** Dosing must be tailored to the individual based on the patient's head and neck position, localization of pain, muscle hypertrophy, patient's bodyweight, and patient response. Type I (head rotated toward side of shoulder elevation): injection to Sternocleidomastoid (50-100 U) at least 2 sites. Levator scapulae (50 U, 1-2 sites). Scalene (25-50 U, 1-2 sites). Sphenius capitis (25-75 U, 1-3 sites). Trapezius (25-100 U, 1-4 sites). Type II (head rotated away): injection to Sternocleidomastoid (25-100 U) at least 2 sites. Levator scapulae (50 U, 1-2 sites). Scalene (25-75 U, 1-2 sites). Trapezius (25-100 U, 1-4 sites). Type III (bilateral posterior cervical muscle spasm with elevation of the face): injection to Sphenius capitis and cervicis (50-200 U, 2-8 sites, treat bilaterally). **Spasticity in Juvenile Cerebral Palsy Patients ≥2 years old:** 4 U/kg administered by injecting 2 cc of reconstituted BOTOX® into each of two sites in medial and lateral heads of gastrocnemius muscle of the affected lower limb(s). **Primary Hyperhidrosis of the Axillae:** 50 U of BOTOX® (2.0 mL) is injected intradermally to each axilla in multiple sites. **Local Spasticity associated with Stroke in Adults:** The exact dosage and number of injection sites should be tailored to the individual. 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PROGRAMME AT-A-GLANCE



Programme at a glance

Venue: Kowloon Shangri-La, Tsim Sha Tsui, Kowloon

Time	18 November 2022 (Friday)
08:00 - 08:25	Registration
08:25 - 08:30	Opening Speech Dr. Calvin Mak
08:30 - 09:30	Free Paper I – General / Paediatrics Chairpersons: Dr. K.M. Leung & Dr. C Poon
09:30 - 10:30	Keynote Lecture I – Prof. Edward F. Chang Decoding words from the human brain Chairpersons: Dr. F.C. Cheung & Dr. C.F. Fung
10:30 - 10:50	Tea Break
10:50 - 11:20	Keynote Lecture II – Prof. Gabriel Wong Inspire: A New Treatment for Obstructive Sleep Apnea through Hypoglossal Nerve Stimulation Chairpersons: Dr. H.M. Chiu & Dr. Y.T. Kan
11:20 - 11:50	Keynote Lecture III – Prof. Raymond P. Onders Neuromodulation in spinal cord injury – diaphragmatic pacing Chairpersons: Prof. Gilberto Leung & Dr. S.T. Wong
11:50 - 12:30	Free Paper II – Functional Chairpersons: Dr. W.M. Lui & Dr. H.T. Wong
12:30 - 13:30	Lunch
13:30 - 14:10	Sponsored Lecture: Prof. Takaomi Taira How to use the innovative MRgFUS in the recent years to treat movement disorders issue and the recent application of MRgFUS in Japan Chairpersons: Dr. P.H. Chan & Dr. Danny Chan
14:10 - 15:00	Free Paper III – Tumor / Skull Base Tumor Chairpersons: Dr. Derek Wong & Dr. X.L. Zhu (online)
15:00 - 15:30	Keynote Lecture IV – Prof. Jin Woo Chang Deep Brain Stimulation for psychiatric conditions Chairpersons: Dr. Michael Lee & Dr. T.L. Poon
15:30 - 15:50	Tea Break
15:50 - 16:20	Free Paper IV (Video) Chairpersons: Dr. Y.C. Po & Dr. W.K. Wong
16:20 - 17:00	Free Paper V – Vascular Chairpersons: Dr. K.Y. Pang & Dr. S.C. Yuen
19:00 - 22:30	ASM Dinner Venue: Kowloon Shangri-la Grand Ballroom Guest Speaker: Dr. Jason Chan Kai-Yue, MH, JP

POSTER PRESENTATION / EXHIBITION

PROGRAMME AT-A-GLANCE

Venue: Kowloon Shangri-La, Tsim Sha Tsui, Kowloon

Time	19 November 2022 (Saturday)
08:30 - 08:45	Registration
08:45 - 09:45	Keynote Lecture V – Prof. Kai J. Miller 1. Electrocorticography-based brain-computer interfaces 2. Development of motor neuroprosthesis and way forward Chairpersons: Dr. S.T. Chan & Prof. W.S. Poon (online)
09:45 - 10:15	Spine Chapter Lecture 1. Awake Spinal Fusion – Prof. Alok Sharan 2. Time is Spine: New updates on acute spinal cord injury – Dr. Nader Hejrati Chairpersons: Dr. David Sun, Dr. Y.H. Tse & Dr. David Chan (online)
10:15 - 10:30	Tea Break
10:30 - 11:10	Free Paper VI – Spine / Trauma Chairpersons: Dr. K.Y. Chan & Dr. W.K. Mak
11:10 - 11:50	Free Paper VII – Endovascular Chairpersons: Dr. Dawson Fong & Dr. Larry Wong
11:50 - 12:20	Free Paper VII – Endovascular Chairpersons: Dr. Y.W. Fan & Dr. C.P. Yu
12:20 - 12:30	Group photo & Announcement
12:30 - 13:40	Sponsored Lunch Symposium 1. Biomarkers in Traumatic Brain Injury – Exploring Their Utility In Clinical Practice – Dr. John Thundyil 2. Potential utility of blood based biomarker for mild traumatic brain injury – Dr. William Ho Chairpersons: Dr. W.M. Hung & Dr. S.C. So
13:40 - 15:20	Local Round Table Discussion 1. Non-invasive BCI in motor rehabilitation and prosthesis – Prof. Raymond Tong (CUHK) 2. Machine learning application in EEG and BCI: Identifying limb movement intentions with intelligent algorithms – Prof. Thomas Choi (PolyU) 3. Advances in Neurostimulation of Retina: restoring vision and beyond – Prof. Leanne Chan (CityU) 4. Round Table Discussion and Way Forward – All speakers, panelists and audience Chairpersons: Dr. Michael Lee, Dr. S.T. Wong & Prof. Ken Yung (HKBU)
15:20 - 15:40	Tea Break
15:40 - 16:00	SRS Chapter Lecture: The Pearls of 2022 ISRS Congress – Dr. Jason Ho Moderator: Dr. K.Y. Yam
16:00 - 16:50	Free Paper IX – Glioma Chairpersons: Dr. T.C. Tan & Dr. C.K. Wong
16:50 - 17:00	Concluding Remarks Dr Michael Lee

POSTER PRESENTATION / EXHIBITION



PROGRAMME : FREE PAPER SESSIONS DAY 1



Sessions on 18 November 2022		
Free Paper I - General / Paediatrics Chairpersons: Dr. K.M. Leung & Dr. C. Poon		
08:30 - 08:40	Early Discharge Support through Telecare for Reducing Caring Distress of Caregivers	Rachel Lam
08:40 - 08:50	Transcranial Cerebral Oximetry for Prediction of Delayed Cerebral Ischemia Following Subarachnoid Hemorrhage	Mei-ting Wong
08:50 - 09:00	Clinical Profiles and Early Outcomes in Medulloblastoma Patients: 3-year Experience of Hong Kong Children's Hospital	Ray Yip-mang O
09:00 - 09:10	A Local Review into Infantile High Grade Glioma Patient Outcome	Katrina Cheuk-wai Chau
09:10 - 09:20	20-year follow-up analysis of ventriculoperitoneal shunt placement in our locoregional center	Shek-ching Lam
09:20 - 09:30	Comparison of pupil size and reactivity rating between manual observation and the use of automated pupilometer in Neurosurgical patients	Shu-wah Chau
Free Paper II - Functional Chairpersons: Dr. W.M. Lui & Dr. H.T. Wong		
11:50 - 12:00	Does hybrid PET/MRI alter management decisions in patients with drug resistant epilepsy?	Ben Kin-long Luk
12:00 - 12:10	Early experience on directional lead for deep brain stimulation (DBS) for idiopathic Parkinson's disease in a tertiary neurosurgical center	Ka-wing See
12:10 - 12:20	The more the better? - Retrospective study on how the extent of hippocampal resection affects the outcomes of mesial temporal lobe epilepsy	William Xue
12:20 - 12:30	DTI -mapped corticospinal tract for guiding deep brain stimulation (DBS) in patients with Parkinson's disease	Janice Hiu-ching Law
Free Paper III - Tumor / Skull Base Tumor Chairpersons: Dr. Derek Wong & Dr. X.L. Zhu		
14:10 - 14:20	Importance of multidisciplinary management in skull base pathologies	William Wai-yin Chung
14:20 - 14:30	Surgical outcomes of endoscopic transorbital approach (ETOA) to skull base	Chat-fong Ng
14:30 - 14:40	Primary CNS lymphoma (PCNSL) a diagnostic challenge, our experience at Tuen Mun Hospital	Berkley Cheung
14:40 - 14:50	Characteristics and clinical course of patients with brain metastases - a local center 2-year review	Yuki Ho-kei Ip
14:50 - 15:00	Craniofacial resection in treating locally advanced nasopharyngeal cancer recurrence - A case series	Chun-to Poon

PROGRAMME : FREE PAPER SESSIONS DAY 1

Sessions on 18 November 2022		
Free Paper IV (Video Session) Chairpersons: Dr. Y.C. Po & Dr. W.K.Wong		
15:50 - 16:20	Double-Barrel STA-MCA Bypass for Intracranial Atherosclerotic Disease	Carmen Yim
	High-flow extracranial-intracranial bypass followed by balloon test occlusion for trapping of the petrous internal carotid artery	Christopher Hiu-fung Sum
	Application of intraoperative indocyanine green injection and doppler ultrasonography for nasoseptal flap harvest in endoscopic transsphenoidal surgeries	Kam-tong Yeung
	Endoscopic Biportal - transorbital and transnasal - Excision of recurrent NPC: Surgical anatomy and technique nuance	Chat-fong Ng
	Retrograde stenting via contralateral internal carotid artery approach in stent-assist coil embolization of the posterior communicating artery aneurysm	Xiao Xiao
	When Neurosurgeon meets Cardiothoracic surgeon: Combined exoscopic and video assisted thoracoscopy excision of posterior mediastinal dumbbell tumor	Siu-fu Shek
Free Paper V -Vascular Chairpersons: Dr. K.Y. Pang & Dr. S.C. Yuen		
16:20 - 16:30	Redefining the operability boundary in intermediate Supplemented Spetzler-Martin grade patients by additional risk stratification and outcome analysis	Christopher Hiu-fung Sum
16:30 - 16:40	Frameless and framebased stereotactic radiosurgery for cerebral AVM: a focus on obliteration	Zhexi He
16:40 - 16:50	A long term outcome analysis in large to giant aneurysms: a single centre retrospective study	Hiu-ming Leung
16:50 - 17:00	Hematoma drain with thrombolysis versus craniotomy in hypertensive intracerebral hemorrhage	Sean Hing-chi Wong



PROGRAMME : FREE PAPER SESSIONS DAY 2



Sessions on 19 November 2022		
Free Paper VI – Spine / Trauma Chairpersons: Dr. K. Y. Chan & Dr. W.K. Mak		
10:30 - 10:40	Middle Meningeal Artery Embolization for Chronic Subdural Hematoma: A Case Series for Evaluation of its Safety and Effectiveness	Mei-ting Wong
10:40 - 10:50	Exploration of Diagnostic Value of Quantitative EEG in Post-Concussion Syndrome and Outcome Review of Transcranial Direct Current Stimulation	Jasmine Wenzhe Ye
10:50 - 11:00	Spinal Canal and Paraspinal Arteriovenous Fistulas: Case Reports and single-centre experience	Prubdial Singh Pannu
11:00 - 11:10	Use of split spinous laminectomy in resection of benign intradural extramedullary masses: a retrospective case series	Laura Lok-wa Leung

Free Paper VII – Endovascular Chairpersons: Dr. Dawson Fong & Dr. Larry Wong		
11:10 - 11:20	Application of RAPID Automated CT Perfusion software in acute ischemic stroke secondary to large vessel occlusion	Shek-ching Lam
11:20 - 11:30	Long term outcomes in stent-assisted embolization for ruptured cerebral aneurysms in the acute period: a retrospective review	Hannaly Cheuk-hang Lui
11:30 - 11:40	Side Branch Occlusion Following Flow-diverter Treatment - A Single Centre Review	Cheuk-him Ho
11:40 - 11:50	Safety and efficacy of WEB device in treatment of wide neck, bifurcation intracranial aneurysm: a single-centre experience	Florence Chan

Free Paper VIII – Endovascular Chairpersons: Dr. Y.W. Fan & Dr. C.P. Yu		
11:50 - 12:00	Persistence of Posterior Communicating Artery Aneurysms After Flow Diverters and Change in Strategies	Xiao Xiao
12:00 - 12:10	Cerebral AVM embolization with pressure cooker technique - a 3-year single centre retrospective review	Kwan-chun Chan
12:10 - 12:20	A seven-year single-center retrospective review of patient outcome with endovascular treatment of ruptured wide-necked cerebral artery aneurysms in the emergency setting	Jamie Hei-tung Wong

PROGRAMME : FREE PAPER SESSIONS DAY 2

Sessions on 19 November 2022		
Free Paper IX – Glioma Chairpersons: Dr. T.C. Tan & Dr. C.K. Wong		
1600 – 1610	Awake Craniotomy: Introducing an Intraoperative Brain Mapping Programme and a Review of Initial Results for Glioma Resection	Carmen Yim
1610 – 1620	A Case Series: Prognostic factor of Grade 4 glioma	Yan-wa Ho
1620 – 1630	Does temporalis muscle thickness correlate with glioblastoma survival?	Alexander Woo
1630 – 1640	Towards a personalized approach in predicting prognosis of low-grade glioma	Erica On-ting Chan
1640 – 1650	Ommaya Reservoir Insertion for Intraventricular Chemotherapy: Two-decade Experience in Queen Mary Hospital	Ray Yip-mang O



PROGRAMME: POSTER PRESENTATION 18 & 19 NOVEMBER 2022



Ref. No.	Title	Author
P01	Solitary Spinal Extradural Plasmacytoma Causing Spinal Compression: A case Report	Hoi-kin Leung
P02	Intraoperative Cortical-MCA Pressure Monitoring in EC-IC Bypass	Carmen Yim
P03	Calcitriol promotes macrophage phagocytosis through LRP1 upregulation in Glioblastoma Multiforme	Henry Hei Chan
P04	Splenectomy improves functional outcome of experimental intracerebral haemorrhage (ICH) in mouse models through increased haematoma resorption	Hei-tung Shek
P05	The role of intra-tumoral CXCR3 in glioblastoma (GBM)	Travis Yui-hei Chan
P06	The effect of Temozolomide on Chaperon-mediated Autophagy in GBM cells	Wan-jun Tang
P07	Systematic Review of Acute Traumatic Central Cord Syndrome (SyRAT review) – the role, timing and obstacles of surgery and prognostic factors	Shueng-chit Chu
P08	Neuroprotective potential of the MasR agonist in the experimental intracerebral haemorrhage	Cuiting Zhang
P09	Vacuum extraction as a treatment modality for neonatal skull depression	Sarah Sau-ning Lau
P10	Mind-reading - early experience of applying local field potentials (LFP) from subthalamic nuclei (STN) in deep brain stimulation (DBS)	William Xue
P11	The role of adjuvant radiation to patient with atypical meningioma	Yi-pin Hsieh
P12	The baby and the brain – a case report on a ruptured arteriovenous malformation (AVM) during pregnancy	Christy Sophia Lam
P13	One man with “two” diseases – Co-existence of craniopharyngioma and functioning pituitary adenoma presenting with acromegaly: A case report and literature review on pituitary collision tumor	Sheung-chit Chu
P14	Application of Hyperbaric Oxygen Therapy (HBOT) for brain abscesses: 2 cases in Hong Kong	Ka-kin Chan
P15	Intra-ventricular Diffuse Midline Glioma, H3K27M-Altered: A Case Report	Mei-ting Wong
P16	Hybrid Surgery in Cervical Myelopathy: Case Report and Literature Review	Chun-lai Wong
P17	Varicella Zoster Virus (VZV) vasculopathy and spinal subarachnoid haemorrhage	Prubdial Singh Pannu
P18	A case report of a spontaneous cervicomedullary junction haemangioblastoma and its literature review	Ka-biu Wong
P19	Management of Hyponatremia in Neurosurgical patients: a pilot study involving the use of dietary meal-based modifications	Laura Lok-wa Leung

PROGRAMME: POSTER PRESENTATION 18 & 19 NOVEMBER 2022

Ref. No.	Title	Author
P20	Intraoperative anaphylaxis due to Gelofusine in patient undergoing glioma excision: A Case Report	Charlene Yat-che Chau
P21	Neurocysticercosis in Hong Kong – a case report and literature review	Calvin Leung
P22	Classification-based Surgical Management of Neurogenic Tumors of the Spine: A Five-Year Retrospective Review of 16 Cases at Prince of Wales Hospital	Luk-hin Ying
P23	Revealing the Neural Basis of Muscle Synergies in Humans through Direct Electrical Stimulation on the Cortex	Jodie Xie
P24	Management Outcomes of Spontaneous Intracerebral Hemorrhage admitted to a Neurosurgical Unit in Hong Kong	Tsz-chung Chan
P25	Use of tolvaptan for hyponatraemia in conservatively managed head injury patients: two case reports	Tsun-ming Mo
P26	Effect of half-half solution on serum sodium level in neurosurgical patients	Nikky Yuk-ki Lai
P27	Brain death diagnosis in patient with end-of-life ventilation and organ donation	Wentao Fang
P28	A Single Centre Prospective Study of Intracranial Aneurysm Flow Diverting Stent Treatment	Charlotte Yi-sum Poon
P29	Tele-psychological counselling services for patients with high grade glioma	Venus Tang
P30	Application of Mapping Intraoperative Neuromonitoring Device (MIND) for Awake Craniotomy	Gabriel Tze-chung Wu
P31	Timing of Concurrent Temozolomide Chemoradiotherapy in Glioblastoma Patients and Its Impact on Overall Survival: A 14-year Multicentre Retrospective Analysis	Brandon Lok-hang Chan
P32	Surgical Management of Drug Refractory Epilepsy: A Single Centre Retrospective Review on Post-operative Quality of Life	Him-pui Law
P33	Assessment of the impact of ultra-early aneurysm treatment on outcomes in patients with poor neurological status after intracranial aneurysm rupture	Suet-wing Tam
P34	“Spooky Action at a Distance”: A Report of Two Cases of Distant Wounded Glioma Syndrome	Wui-chung Poon
P35	Efficacy test for intermittent theta burst stimulation in motor rehabilitation in post-stroke patients in a tertiary centre in Hong Kong	Joyce Sze-yuet Kwong
P36	Cell-type-based Pathway Analysis in Experimental Subarachnoid Hemorrhage	George Kwok-chu Wong

PROGRAMME : NURSING SESSION



19 November 2022		
Way Forward In Preparing Ourselves For Challenges Chairpersons: Ms. M.Y. Chang & Mr. Nobel C.K. Hung		
10:30 - 10:38	Integrating simulation training into the clinical nursing practice of perioperative care in a neurosurgical setting	Isabella So-pik Lai
10:38 - 10:46	Improving Nurse's Compliance of Ventilator Care Bundle CQI Program in Neurosurgery	Hsueh-erh Chang
10:46 - 10:54	High fidelity simulation learning for health care professionals: An in-situ simulation training	Cheuk-hang Fung
10:54 - 11:02	Development of Neurosurgery Integrated Model Nurse Clinic	Sau-man Leung
11:02 - 11:15	Q&A & Discussion	
11:15 - 11:50	Discussion Forum – the current practice on ICP / EVD	

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Indications:

Supportive treatment where standard surgical techniques appear insufficient. For improvement of hemostasis. As a tissue glue to improve wound healing or to support sutures in vascular surgery, in gastrointestinal anastomoses, in neurosurgery and in surgical interventions where contact with cerebrospinal fluid or dura mater may occur (e.g. in ENT, ophthalmic and spinal surgery); as a tissue adhesive, to promote the adhesion of the separated tissue (e.g. skin, fascial flaps, nerves).

The efficacy in fully heparinized patients has been proven.

Contraindications:

Tisseel must not be applied intravascularly.

Tisseel must not be applied in case of hypersensitivity to the active substances or to any of the excipients.

For prescription, please refer to full product insert.

References:

1. TISSEEL (Summary of Product Characteristics), 2015
2. FLOSEAL Hemostatic Matrix (Instruction for Use), 2016
3. HEMOPATCH (Instruction for Use), 2019

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Indications:

FLOSEAL Matrix is indicated in surgical procedures (other than in ophthalmic) as an adjunct to hemostasis when control of bleeding, by ligature or conventional procedures is ineffective or impractical.

Contraindications:

- Do not inject or compress FLOSEAL Matrix into blood vessels. Do not apply FLOSEAL Matrix in the absence of active blood flow, e.g., while the vessel is clamped or bypassed, as extensive intravascular clotting and even death may result.
- To avoid a risk of allergic anaphylactic reaction and/or thromboembolic events, which may be life-threatening, do not inject FLOSEAL Matrix into a vessel or tissue.
- Do not use FLOSEAL Matrix in patients with known allergies to materials of bovine origin.
- Do not use FLOSEAL Matrix in the closure of skin incisions because it may interfere with the healing of the skin edges due to mechanical interposition of gelatin.

For safe and proper use of this device, refer to the full instructions for use.

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Contraindications:

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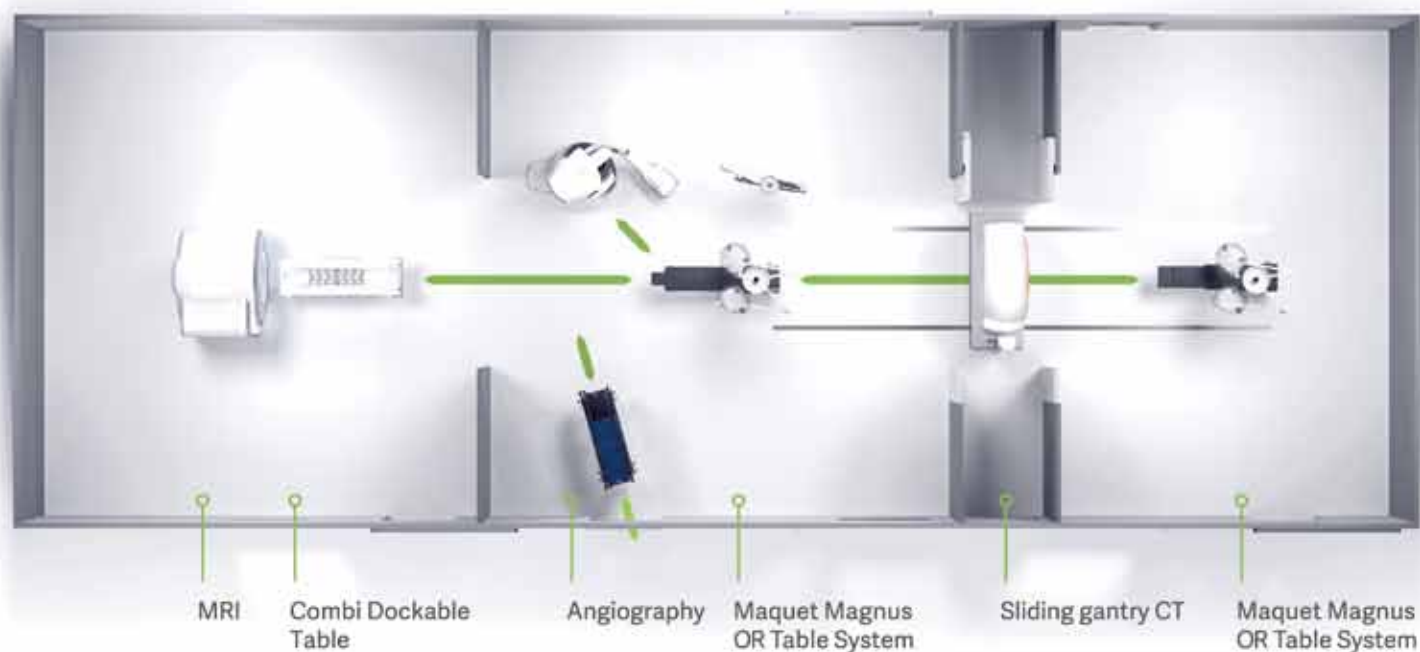
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From the EF-14 study,*

From the EF-14 study,*



Doubled 5-year survival rate¹

13% with Optune plus TMZ vs. 5% with TMZ alone ($p=0.004$)¹



HRQoL maintained over time with Optune²

Patients reflected that addition of Optune did not affect HRQoL except for more itchy skin²



Improved overall survival beyond the first recurrence on Optune plus TMZ³

11.8 months with the continued use of Optune plus 2L systemic treatment vs. 9.2 months with 2L systemic treatment only (HR=0.70; 95%CI: 0.48-1.00; $p=0.049$)³



Low toxicity³

Toxicity profile was similar in patients treated with Optune + 2L chemotherapy after first recurrence compared with patients treated with Optune + TMZ as maintenance therapy³

Only 13% of Optune users reported a medical device site reaction, and none was severe³

***Study design of the EF-14 study¹** In the multicenter, open-label, randomized, phase 3 EF-14 study, 695 patients with newly diagnosed GBM whose tumor had been resected or biopsied and had completed concomitant radiochemotherapy were randomized 2:1 to receive Optune plus TMZ or TMZ alone. The primary endpoint was PFS, and the secondary endpoint was OS. If tumor progression occurred, second-line therapy was offered per local practice. However, in the experimental group, Optune could be continued until second radiologic progression occurred or for a maximum of 24 months. A post hoc analysis was performed to evaluate the efficacy and safety of Optune when added to second-line treatment according to physician's best choice after first disease recurrence among the patients who were enrolled in the trial.

Abbreviations: 2L, second-line; GBM, glioblastoma multiforme; HRQoL, health-related quality of life; TMZ, temozolomide; TTFields, tumor-treating fields.
References: 1. Stupp R et al. Effect of tumor-treating fields plus maintenance temozolomide versus maintenance temozolomide alone on survival in patients with glioblastoma: a randomized clinical trial. *JAMA*. 2017;318(23):2306-2316. 2. Taghvaeei MJB et al. Influence of treatment with tumor-treating fields on health-related quality of life of patients with newly diagnosed glioblastoma: a secondary analysis of a randomized clinical trial. *JAMA Oncol*. 2018;4(4):495-504. 3. Kesari S et al. Tumor-treating fields plus chemotherapy versus chemotherapy alone for glioblastoma at first recurrence: a post hoc analysis of the EF-14 trial. *CNS Oncol*. 2017;6(3):185-193.

Indications for Use

Optune is intended as a treatment for adult patients (18 years of age or older) with histologically confirmed glioblastoma multiforme (GBM). **Newly diagnosed GBM** Optune (NovoTTFields-200A) Treatment Kit is intended for the treatment of patients with newly diagnosed GBM after surgery with adjuvant temozolomide, concomitant to maintenance temozolomide. The treatment is intended for adult patients, 18 years of age or older, and should be started more than 4 weeks after surgery and radiation therapy with adjuvant temozolomide. Treatment may be given together with maintenance temozolomide (according to the prescribing information in the temozolomide package insert) and after maintenance temozolomide is stopped. **Recurrent GBM** Optune (NovoTTFields-200A) Treatment Kit is intended for the treatment of patients with recurrent GBM who have progressed after surgery, radiotherapy and temozolomide treatment for their primary disease. The treatment is intended for adult patients, 18 years of age or older, and should be started more than 4 weeks after the latest surgery, radiation therapy or chemotherapy. **Contraindications** The directions below are written in the language directed to the patient. Do not use Optune Treatment Kit if you are pregnant, think you might be pregnant, or are trying to get pregnant. If you are a woman who is able to get pregnant, you must use birth control when using the device. Optune Treatment Kit was not tested in pregnant women. Do not use Optune Treatment Kit if you have significant additional neurological disease (primary seizure disorder, dementia, progressive degenerative neurological disorder, meningitis or encephalitis, hydrocephalus associated with increased intracranial pressure). Do not use Optune Treatment Kit if you are known to be sensitive to conductive hydrogels like the gel used on electrocardiogram (ECG) stickers or transcutaneous electrical nerve stimulation (TENS) electrodes. In this case, skin contact with the gel used with Optune Treatment Kit may commonly cause increased redness and itching, and rarely may even lead to severe allergic reactions such as shock and respiratory failure. Do not use Optune if you have an active implanted medical device, a skull defect (such as, missing bone with no replacement) or bullet fragments. Examples of active electronic devices include deep brain stimulators, spinal cord stimulators, vagus nerve stimulators, pacemakers and defibrillators. Use of Optune together with implanted electronic devices has not been tested and may lead to malfunctioning of the implanted device. Use of Optune together with skull defects or bullet fragments has not been tested and may possibly lead to tissue damage or render Optune ineffective. Ref: Commercial Optune Physician Instructions For Use Version 1.1, Document number QSD-QH-711 EN/HR, Release date Dec 2020.

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