Contents

TSBPN (Taiwanese Society of Biological Psychiatry and Neuropsychopharmacology)
台灣生物精神醫學暨神經精神藥理學學會

CMD (Taiwan Consortium of Mental Disorders)
台灣精神疾病臨床試驗聯盟

TCH (Taipei City Hospital)
臺北市立聯合醫院臨床試驗中心松德院區

NST (Neuroscience Society of Taiwan)
中華民國基礎神經科學學會

歡 迎 詞

台灣生物精神醫學暨神經精神藥理學學會
林式毅 理事長

在這酷熱的週末，感謝大家撥空前來參加我們學會與台灣精神疾病臨床試驗聯盟及中華民國基礎神經科學學會共同舉辦的 2017 生物精神與神經科學聯合年會。這次我們的 keynote speech 邀請到千葉大學的 Kenji Hashimoto 教授為我們主講以(R)-Ketamine 作為抗憂鬱劑之治療效果，下午並規劃有與非侵入性腦刺激技術相關之訓練課程，亦感謝臺北市立聯合醫院臨床試驗中心松德院區協助申請 GCP 的臨床試驗學分。這次的會議感謝許多專家學者與我們分享最新的研究進度，促進學會間之密切交流，相信在一天的豐富精神醫學饗宴後，每個人都可以滿載而歸。最後，感謝學會工作人員對本次研討會的籌畫與各位學員的熱情參與，請不吝於給予我們最深的指教，您的支持是我們最大的動力來源。

歡 迎 詞

中華民國基礎神經科學學會
邱麗珠 理事長

中華民國基礎神經科學學會(Neuroscience Society of Taiwan, NST)自1992 年成立，成立至今已有 25 多年，在過去 12 任理事長與台灣神經科學界前輩們努力下，已經成為台灣引領基礎神經科學研究的一個重要學會。本人和陳易宏教授於今年初自孫以翰理事長與陳儀莊秘書長接棒，深感榮耀及責任重大。我們將以促進台灣神經科學家在國內與國際間的互動交流為重點工作項目，而每年的學會年會和美國神經科學年會(Annual meeting of Society for Neuroscience, SFN2017)舉行 Taiwan Night 是學會的年度大事。

今年年會，我們與台灣生物精神醫學會合辦 (TSBPN)，於 9 月 23 日(星期六) 於張榮發基金會國際會議中心，舉行「2017 精神醫學與神經科學聯合年會」。今年的場地是一個國際級嶄新的會場 (300 坪)，與 TSBPN 合辦讓我們可以在這麼棒的場地開會。

此次年會進行方式，是一個新的嚐試，將全面以壁報發表為主，口頭簡介為輔，廣邀各會員盛情參與，介紹自己團隊的研究主題，擅長研究平台與得意成果。這樣的會議進行，希望可以讓資深學者驚豔年輕新秀的爆發力與無限可能，並讓青年學子得以一窺前輩先進的厚實底子與獨門功夫。

感謝各位會員的熱情支持，目前我們共收到高達 47 個研究團隊報名，進行口頭加壁報發表，充分讓口頭簡介(research blitz)三個時段擠爆。期盼大家可以進一步在壁報發表時段，有充分時間討論，腦力激盪，進行學術交流。

各位會員的熱情踴躍支持是大會成功的保證，與 TSBPN 合辦，更期待能促成基礎研究與臨床神經科學研究的跨領域、跨平台的合作。會議當天我們仍接受僅報名參加會議，我們歡迎新會員，更高興舊會員回娘家，期待您的盛情相挺，共襄盛舉。

2017 生物精神醫學與神經科學聯合年會
2017 Joint Annual Congress
CMD, NST, TCH, TSBPN

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<tr><td>11:00-12:00</td><td colspan="2">(R)-Ketamine: From Party Drug to Rapid-Acting Antidepressant Without Side Effects (602)
Kenji Hashimoto, PhD (Professor)
Division of Clinical Neuroscience, Chiba University Center for Forensic Mental Health, Chiba, Japan</td><td>11:00-12:00</td></tr>
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Lunch (601)</td><td rowspan="3">12:00-13:15</td></tr>
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(必)</td><td>TM 安全性及
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<tr><td>13:50-14:30
(必)</td><td rowspan="2">TMS 技術性操作</td><td rowspan="2">Session 2:
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(必)</td><td>tDCS/tAC 安全性及
神經精神醫學應用</td></tr>
<tr><td>15:10-15:30</td><td colspan="2">Coffee Break (601)</td><td>15:10-15:30</td></tr>
<tr><td>15:30-16:00</td><td rowspan="2">TBS 及非侵入性經顱腦刺激之
新發展</td><td>Session 2:
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有效性審查及風險管理</td><td rowspan="2">Session 3:
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<tr><td>16:30-17:00</td><td>tDCS：儀器操作與臨床實務分享</td></tr>
<tr><td>17:00-17:30</td><td>TMS 的臨床應用研究</td><td>Session 3:
壁報發表 Poster Presentation (601)</td><td>16:40-17:30</td></tr>
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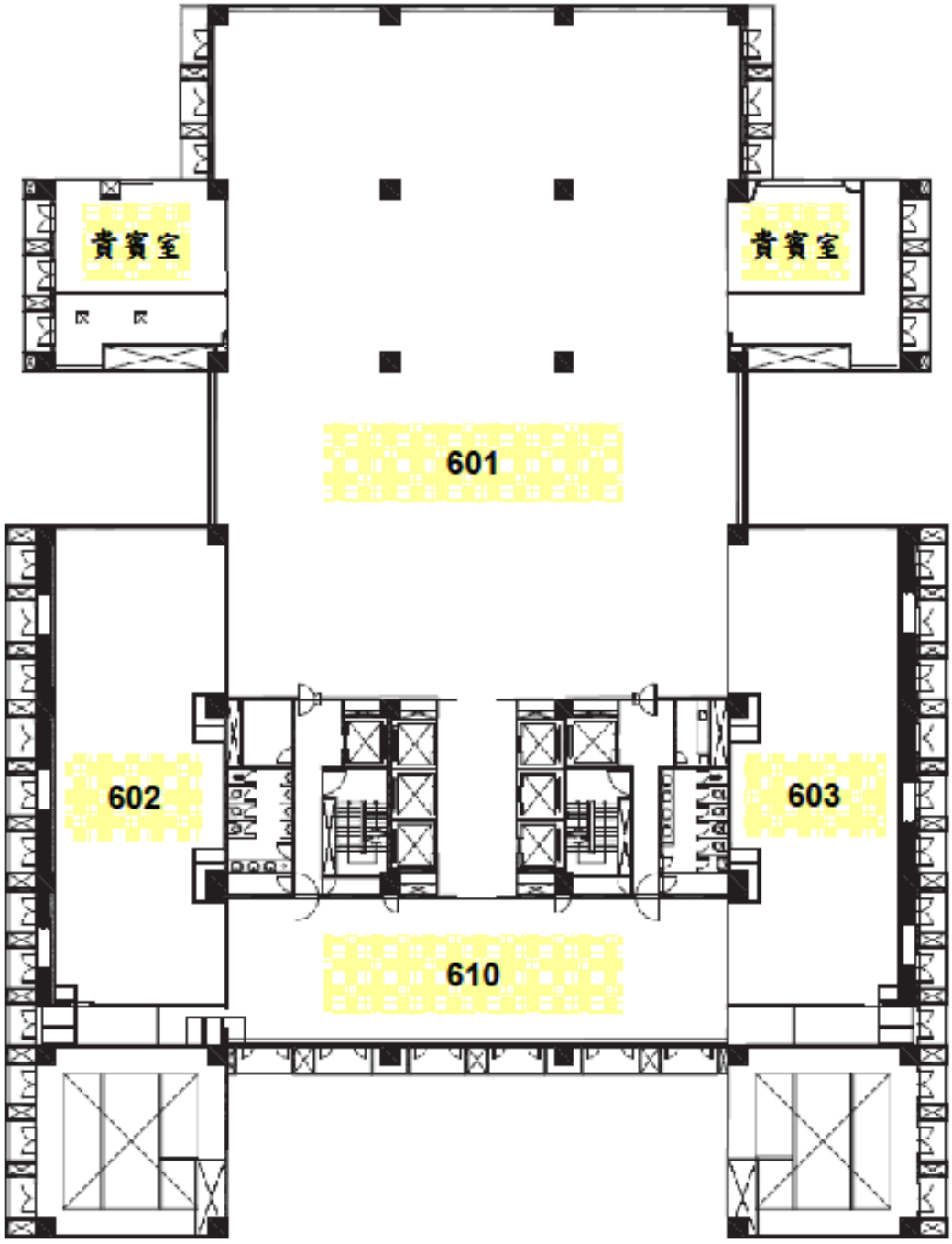
TSBPN 上午議程

Time	Topic	Speaker	Moderator
08:00-08:25	***Registration***		
08:25-08:35	Opening Remarks	邱麗珠 中華民國基礎神經科學學會理事長 林式毅 台灣生物精神醫學會理事長	
08:35-10:00	Session 1: 研究口頭簡介 Research Blitz	**TSBPN:** 張維紘、陳牧宏、陳俊興、盧孟良、郭柏秀、林彥峰、毛衛中、邱智強 **NST:** 邱麗珠、范碧娟、杜戎珏、李立仁、裴如淳、郭余民、楊尚訓、陳志成、譚俊祥、陳易宏	
10:00-10:15	**Coffee Break**		
10:15-11:00	105 年度論文獎演講與頒獎(TSBPN)	藍先元 李正達 林煜軒	
11:00-12:00	(R)-Ketamine: From Party Drug to Rapid-Acting Antidepressant Without Side Effects	橋本謙二 Kenji Hashimoto 千葉大學	林式毅 Shih-Ku Lin

TSBPN 下午議程

Time	Topic	Speaker	Moderator
12:00-13:00	TSBPN 會員大會		
12:00-13:00	(Lunch Symposium-Room 603)		
Non-invasive Brain Stimulation Workshop			
12:30-13:00	報到		
13:00-13:10	Opening	林式毅 Shih-Ku Lin	
13:10-13:50 (必)	TMS 安全性及 難治療憂鬱症中樞機轉	李正達 Cheng-Ta Li 台北榮民總醫院精神部 腦神經刺激小組召集人	蘇東平 Tung-Ping Su 台北榮民總醫院 前副院長
13:50-14:30 (必)	TMS 技術性操作	呂明桂 Ming-Kuei Lu 中國醫藥大學醫學院生物醫學研究所	藍先元 Hsien-Yuan Lane 中國醫藥大學精神部
14:30-15:10 (必)	tDCS/tACS 安全性及 神經精神醫學應用	阮啟弘 Chi-Hung Juan 中央大學認知神經科學研究所	謝明憲 Ming-Hsian Hsieh 國立台灣大學附設醫院精神醫學部
15:10-15:30	Coffee Break		
15:30-16:00	TBS 及非侵入性經顱腦刺激之 新發展	黃英儒 Ying-Zu Huang 林口長庚紀念醫院 腦神經內科系	劉嘉逸 Chia-Yih Liu 林口長庚紀念醫院一般精神科
16:00-16:30	新醫療器材之安全與 有效性審查及風險管理	錢嘉宏 Chia-Hung Chien 衛生福利部醫粧組	黃條來 Tiao-Lai Huang 高雄長庚紀念醫院精神科
16:30-17:00	tDCS：儀器操作與 臨床實務分享	洪敬倫 Galen Hung 台北市立聯合醫院松德院區成癮防治科	林式毅 Shih-Ku Lin 台灣生物精神醫學會理事長
17:00-17:30	TMS 的臨床應用研究	張維紘 Wei-Hung Chang 國立成功大學附設醫院精神部	吳冠毅 Kuan-Yi Wu 林口長庚紀念醫院精神科
17:30-18:00	Exams for training certification	李正達 Cheng-Ta Li	

財團法人張榮發基金會國際會議中心6樓平面圖



TSBPN Oral Session

No.	**TSBPN Oral Session** **8:35~9:15**	Moderator 林式毅
1	Persistent antidepressant effect of low-dose ketamine and activation in the supplementary motor area and anterior cingulate cortex in treatment-resistant depression: A randomized control study	陳牧宏
2	GWAS, polygenic methods, and complex psychiatric traits	林彥峰
3	Genomic studies in affective disorders	郭柏秀
4	思覺失調症患者體內葉酸濃度與精神病理學及代謝指標之關係	陳俊興
5	The relationship between schizophrenia and metabolic abnormality: From bench to bed	盧孟良
6	Omega 3 and geriatric depression	邱智強
7	Dysfunctional Pre-Attentive Auditory Processing of Negative Emotional Information May Attribute to Impaired Emotional Intelligence in Schizophrenic Patients with Auditory Hallucination	毛衛中
8	The function of frontal cortex might modulate the correlation of BDNF, serotonin and autonomic nervous system.	張維紘

TSBPN Oral Session

8:35~9:15 (Room 602)

1. **Persistent antidepressant effect of low-dose ketamine and activation in the supplementary motor area and anterior cingulate cortex in treatment-resistant depression: A randomized control study**
   台北榮民總醫院 精神部
   陳牧宏
2. **GWAS, polygenic methods, and complex psychiatric traits**
   台北市立聯合醫院松德院區 精神科
   林彥峰
3. **Genomic studies in affective disorders**
   臺灣大學流行病學與預防醫學研究所
   郭柏秀
4. **思覺失調症患者體內葉酸濃度與精神病理學及代謝指標之關係**
   台北市立萬芳醫院 精神科
   陳俊興
5. **The relationship between schizophrenia and metabolic abnormality: From bench to bed**
   台北市立萬芳醫院 精神科
   盧孟良
6. **Omega 3 and geriatric depression**
   台北市立聯合醫院松德院區 精神科
   邱智強
7. **Dysfunctional Pre-Attentive Auditory Processing of Negative Emotional Information May Attribute to Impaired Emotional Intelligence in Schizophrenic Patients with Auditory Hallucination**
   振興醫院 精神科
   毛衛中
8. **The function of frontal cortex might modulate the correlation of BDNF, serotonin and autonomic nervous system**
   國立成功大學醫學院附設醫院 精神科
   張維紘

NST 議程

Session 1: 研究口頭簡介 Research Blitz

No.	NST Oral Blitz Session 1 9:15~10:00	Moderator 孫以瀚
1-1	Clinical Implications of Orexins in Neuropsychiatric Disorders	邱麗珠
1-2	Alpha 6 subunit-containing GABA-A Receptors: A Novel Therapeutic Target for Neuropsychiatric Disorders	范碧娟 /邱麗珠
1-3	SLITRK1 gene and Tourette's Syndrome	杜戎玨 /邱麗珠
1-4	Characterization of mouse models of mental disorders	李立仁
1-5	The Effect of Sarcosine in the Amelioration of Schizophrenia-Related Behavioral and Cognitive Deficits in Mouse Models of NMDAR Hypofunction	裴如淳 /賴文崧
1-6	Molecular mechanisms underlying the interaction between metabolic and mood disorders	郭余民
1-7	The fight against Huntington's Disease using miRNA	楊尚訓
1-8	Acid-sensing: from molecules to behaviors	陳志成
1-9	Thermosensitive mechanisms	譚俊祥
1-10	Histamine H1 Receptor Antagonists Facilitate Electroacupuncture Analgesia	陳易宏

NST Oral Blitz Session 1

9:15~10:00 (Room 602)

1-1 Clinical Implications of Orexins in Neuropsychiatric Disorders

台灣大學醫學院藥理學科 教授

邱麗珠

1-2 Alpha 6 subunit-containing GABA-A Receptors: A Novel Therapeutic Target for Neuropsychiatric Disorders

台大醫院/台大醫學院小兒部 臨床助理教授/主治醫師

范碧娟/邱麗珠 (教授)

1-3 SLITRK1 gene and Tourette's syndrome

臺北市立聯合醫院忠孝院區小兒科暨教研部教學 主治醫師

杜戎玨/邱麗珠 (教授)

1-4 Characterization of mouse models of mental disorders

台灣大學解剖學暨細胞生物學研究所 副教授

李立仁

1-5 The Effect of Sarcosine in the Amelioration of Schizophrenia-Related Behavioral and Cognitive Deficits in Mouse Models of NMDAR Hypofunction

台灣大學心理所 博士生

裴如淳/賴文崧 (教授)

1-6 Molecular mechanisms underlying the interaction between metabolic and mood disorders

成功大學細胞生物與解剖學研究所 教授

郭余民

1-7 The fight against Huntington's Disease using miRNA

成功大學生理學研究所 副教授

楊尚訓

1-8 Acid-sensing: from molecules to behaviors

中研院生物醫學研究所 研究員

陳志成

1-9 Thermosensitive mechanisms

高雄醫學大學臨床醫學研究所 助理教授

譚俊祥

1-10 Histamine H1 Receptor Antagonists Facilitate Electroacupuncture Analgesia

中國醫藥大學針灸研究所 教授

陳易宏

Session 2: 研究口頭簡介 Research Blitz

No.	NST Oral Blitz Session 2 14:00~14:50	Moderator 簡正鼎
2-1	Neural Mechanisms of Episodic Memory	李季湜
2-2	Using Transcranial Magnetic Stimulation to Investigate the Updating Ability in Executive Function and Working memory	周育如
2-3	Neural Mechanism of Learning and Memory under Anesthesia	陳德祐
2-4	CCL5 regulating synaptogenesis promotes memory formation	周思怡
2-5	Paeonol promotes hippocampal synaptic transmission: the role of the Kv2.1 potassium channel	楊金倉 /陳易宏
2-6	The Protective Effect of Acupuncture against the Microglia activation in the Brainstem Induced by Dental Pulp Injury.	Sharmely Sharon Ballon Romero /陳易宏
2-7	Dental pulp stem cells for neurogenesis	陳敏慧
2-8	Neuro-therapeutics screening platform	楊舜任
2-9	Explore the Roles of the Glutamate-Glutamine Cycle on the Regulation of Glutamate and GABA Synaptic Plasticities for Sexual Differentiation	梁淑鈴
2-10	Multimodal analyses on the neurophysiology and neuroimaging for epilepsy	彭徐鈞
2-11	Development of a Multisite, Closed-loop Neuromodulator for the Theranosis of Neural Degenerative Diseases	陳新
2-12	MRI development for Neuroscience Applications	黃聖言

NST Oral Blitz Session 2

14:00~14:50 (Room 603)

2-1 Neural Mechanisms of Episodic Memory

中正大學心理系 教授

李季湜

2-2 Using Transcranial Magnetic Stimulation to Investigate the Updating Ability in Executive Function and Working memory

東華大學諮商與臨床心理系 副教授

周育如

2-3 Neural Mechanism of Learning and Memory under Anesthesia

成功大學心理系 助理教授

陳德祐

2-4 CCL5 regulating synaptogenesis promotes memory formation

台北醫學大學神經再生學程 助理教授

周思怡

2-5 Paeonol promotes hippocampal synaptic transmission: the role of the Kv2.1 potassium channel

中國醫藥大學中醫研究所 博士生

楊金倉/陳易宏 (教授)

2-6 The Protective Effect of Acupuncture against the Microglia activation in the Brainstem Induced by Dental Pulp Injury

中國醫藥大學針灸研究所 學生

Sharmely Sharon Ballon Romero/陳易宏 (教授)

2-7 Dental pulp stem cells for neurogenesis

台灣大學臨床牙醫學研究所 教授兼所長

陳敏慧

2-8 Neuro-therapeutics screening platform

生技中心生物製藥研究所 研究員

楊舜任

2-9 Explore the Roles of the Glutamate-Glutamine Cycle on the Regulation of Glutamate and GABA Synaptic Plasticities for Sexual Differentiation

長庚大學生理暨藥理學科 助理教授

梁淑鈴

2-10 Multimodal analyses on the neurophysiology and neuroimaging for epilepsy

交通大學生醫電子轉譯研究中心/電子研究所 助理研究員

彭徐鈞

2-11 Development of a Multisite, Closed-loop Neuromodulator for the Theranosis of Neural Degenerative Diseases

清華大學電機系 教授

陳新

2-12 MRI development for Neuroscience Applications

中研院生醫所 助研究員

黃聖言

Session 3: 研究口頭簡介 Research Blitz

No.	**NST Oral Blitz Session 3** **15:45~16:40**	Moderator 陳景宗
3-1	Glia-Neuron Interactions in the Fly Visual System: Development and Degeneration	孫以瀚
3-2	Neuron-glia interactions during spreading depression	周寧
3-3	Molecular regulation of gliogenesis and neuroinflammation	王之彥 /曾淑芬
3-4	Lifespan extension and neuronal aging: a fly's perspective	連文瑜 /詹智強
3-5	The making of dendrites	簡正鼎
3-6	Water-reward memory in *Drosophila*	吳嘉霖
3-7	Constructing the attention deficit hyperactivity disorder model in *Drosophila* with analytic social conduct observatory	蕭伯彥
3-8	Neural activity enhances neurite outgrowth of retinal explants	焦傳金
3-9	Olfactory Experience- and Developmental Stage-Dependent Control of CPEB4 Regulates c-Fos mRNA Translation for Granule Cell Survival	曾慶三 /黃怡萱
3-10	Channelopathy of $GABA_A$ and Glycine receptors	吳東川
3-11	Disease-related perturbation of human ion channel biosynthesis	湯志永
3-12	Once upon a time, a salmon is trying to swim back the birth place	陳佩君
3-13	Antiarrhythmics cure brain arrhythmia: The imperativeness of ERG K^+ channels in parkinsonian discharges	王冠勳、黃琛琁 /楊雅晴

NST Oral Blitz Session 3

15:45~16:40 (Room 603)

3-1 Glia-Neuron Interactions in the Fly Visual System: Development and Degeneration

中研院分子生物研究所 特聘研究員

孫以瀚

3-2 Neuron-glia interactions during spreading depression

中國醫藥大學生物醫學研究所 助理教授

周寧

3-3 Molecular regulation of gliogenesis and neuroinflammation

成功大學生命科學系 博士後研究員

王之彥/曾淑芬 (教授)

3-4 Lifespan extension and neuronal aging: a fly's perspective

台灣大學生理學研究所 博士生

連文瑜/詹智強 (助理教授)

3-5 The making of dendrites

中研院分子生物研究所 特聘研究員

簡正鼎

3-6 Water-reward memory in *Drosophila*

長庚大學生物化學科 副教授

吳嘉霖

3-7 Constructing the attention deficit hyperactivity disorder model in *Drosophila* with analytic social conduct observatory

清華大學腦科學研究中心 博士後研究員

蕭伯彥/江安世 (教授)

3-8 Neural activity enhances neurite outgrowth of retinal explants

清華大學系統神經科學研究所 教授

焦傳金

3-9 Olfactory Experience- and Developmental Stage-Dependent Control of CPEB4 Regulates c-Fos mRNA Translation for Granule Cell Survival

中研院生醫所 博士生

曾慶三/黃怡萱 (副研究員)

3-10 Channelopathy of $GABA_A$ and Glycine receptors

中國醫藥大學生物醫學研究所 助理教授

吳東川

3-11 Disease-related perturbation of human ion channel biosynthesis

台灣大學生理學研究所 教授

湯志永

3-12 Once upon a time, a salmon is trying to swim back the birth place

成功大學生理學研究所 助理教授

陳佩君

3-13 Antiarrhythmics cure brain arrhythmia: The imperativeness of ERG K^+ channels in parkinsonian discharges

長庚大學生物醫學研究所 學生

王冠勳、黃琛琁/楊雅晴 (副教授)

TSBPN 105 年度論文獎得獎人

張文和理事長論文獎

藍先元- Add-on treatment of benzoate for schizophrenia: a randomized, double-blind, placebo-controlled trial of D-amino acid oxidase inhibitor*JAMA Psychiatry 2013; 70(12): 1267-75.*

楊森論文獎

李正達- Peripheral and central glucose utilizations modulated by mitochondrial DNA 10398A in bipolar disorder. *Psychoneuroendocrinology 2015; 55: 72-80.*

楊森論文獎

林煜軒- Time distortion associated with smartphone addiction: Identifying smartphone addiction via a mobile application (App). *J. of Psychiatric Research 2015; 65: 139-145.*

Add-on Treatment of Benzoate for Schizophrenia: A Randomized, Double-blind, Placebo-Controlled Trial of D-Amino Acid Oxidase Inhibitor

Hsien-Yuan Lane

Department of Psychiatry and Graduate Institute of Biomedical Sciences, China Medical University Medical College, Taichung, Taiwan

Hypofunction of N-methyl-D-aspartate receptor (NMDAR) plays an important role in the pathophysiology of schizophrenia. To date, several trials on adjuvant NMDA-enhancing agents revealed beneficial, but limited, efficacy for positive and negative symptoms. Another method to enhance NMDA function is to raise the levels of D-amino acids by blocking their metabolism. Sodium benzoate is a D-amino acid oxidase (DAAO) inhibitor. To examine the clinical and cognitive efficacy and safety of add-on treatment of sodium benzoate for schizophrenia, a randomized, double-blind, placebo-controlled trial was conducted. Fifty-two patients with chronic schizophrenia who had been stabilized with antipsychotics were enrolled into a 6-week, add-on treatment of 1-g/d sodium benzoate or placebo. Clinical efficacy and side-effects were assessed biweekly. Cognitive functions were measured before and after the add-on treatment. As a result, benzoate produced a 21% improvement in Positive and Negative Syndrome Scale (PANSS) total score and large effect sizes in PANSS total and subscales, Scales for the Assessment of Negative symptoms (SANS), Global Assessment of Function (GAF), Quality of Life (QoL), Clinical Global Impression (CGI), and improvement in the neurocognition subtests. Benzoate was well tolerated. In summary, benzoate adjunctive therapy significantly improved various symptom domains and neurocognition in patients with chronic schizophrenia.

Peripheral and central glucose utilizations modulated by mitochondrial DNA 10398A in bipolar disorder

Li CT, Bai YM, Hsieh JC, Lee HC, Yang BH, Chen MH, Lin WC, Tsai CF, Tu PC, Wang SJ, Su TP

Bipolar disorder (BD) is highly heritable and associated with dysregulation of brain glucose utilizations (GU). The mitochondrial DNA (mtDNA) 10398A polymorphism, as a reported BD risk factor, leads to deficient glycolytic energy production by affecting mitochondrial matrix pH and intracellular calcium levels. However, whether mtDNA-10398A has functional effects on the brain and how our body responds remain elusive. We compared peripheral and central glucose-utilizing patterns between mtDNA A10398G polymorphisms in BD and their unaffected siblings (BDsib). Since siblings carry identical mtDNA, we hypothesized that certain characteristics co-segregate in BD families. We recruited twenty-seven pairs of non-diabetic BD patients and their BDsib and 30 well-matched healthy control subjects (HC). The following were investigated: mtDNA, fasting plasma glucose/insulin, cognitive functions including Montreal Cognitive Assessment (MoCA), and brain GU at rest. Insulin resistance was rechecked in sixty-one subjects (19-BD, 18-BDsibib, and 24-HC) six months later. We found that BD-pairs (BD+BDsib) carried more mtDNA-10398A and had higher fasting glucose, even after controlling for many covariates. BD-pairs had abnormally lower dorso-prefrontal-GU and higher cerebellar-GU, but only BD demonstrated lower medio-prefrontal-GU and MoCA. Subjects carrying mtDNA-10398A had significantly lower prefrontal-GU (FWE-corrected $p<0.05$). An abnormal inverse pattern of insulin-GU and insulin-MoCA correlation was found in BD-pairs. The insulin-MoCA correlation was particularly prominent in those carrying mtDNA-10398A. mtDNA-10398A predicted insulin resistance 6 months later. In conclusion, mtDNA-10398A was associated with impaired prefrontal-GU. An up-regulation of glucose utilizations was found in BD-pairs, probably compensating for mtDNA-10398A-related energy loss.

KEYWORDS:

Bipolar disorder; Gene; Glucose homeostasis; Mitochondria; Polymorphism

Time distortion associated with smartphone addiction: Identifying smartphone addiction via a mobile application (App)

Lin YH, Lin YC, Lee YH, Lin PH, Lin SH, Chang LR, Tseng HW, Yen LY, Yang CC, Kuo TB

BACKGROUND:
Global smartphone penetration has brought about unprecedented addictive behaviors.

AIMS:
We report a proposed diagnostic criteria and the designing of a mobile application (App) to identify smartphone addiction.

METHOD:
We used a novel empirical mode decomposition (EMD) to delineate the trend in smartphone use over one month.

RESULTS:
The daily use count and the trend of this frequency are associated with smartphone addiction. We quantify excessive use by daily use duration and frequency, as well as the relationship between the tolerance symptoms and the trend for the median duration of a use epoch. The psychiatrists' assisted self-reporting use time is significant lower than and the recorded total smartphone use time via the App and the degree of underestimation was positively correlated with actual smartphone use.

CONCLUSIONS:
Our study suggests the identification of smartphone addiction by diagnostic interview and via the App-generated parameters with EMD analysis.

KEYWORDS:

Empirical mode decomposition; Internet addiction; Mobile application; Smartphone addiction

Keynote Speech

Moderators

Shih-Ku Lin, MD 林式穀醫師

Chair, Department of Psychiatry,
Taipei City Hospital and Psychiatric Center
Associate professor, College of Medicine,
Taipei Medical University

Dr Shih-Ku Lin graduated from Kaohsiung Medical College in 1981, and received his psychiatric residency training in Taipei City Psychiatric Center (TCPC). After completing the training and acquired Board Certified Psychiatrist qualification, he had his fellowship of child psychiatry at Kansas University Medical Center in 1988. In 1993 he was appointed as the Chief of Department of Addiction Science at TCPC and has led this department for 11 years. Since his residency, he followed Professor Wen-Ho Chang in academic researches and participated in the founding of Taiwanese Society of Biological Psychiatry and Neuropsychopharmacology (TSBPN) and served the first secretary of this Society. Dr Lin also founded Taiwanese Society of Addiction Science and served the first President in 2008. Currently he is the President of TSBPN. He had more than twenty years' experiences in clinical trials and his research interest includes psychopharmacology, addictive disorders and many others. Dr Lin has published more than one hundred peer reviewed articles and has reviewed articles for many international journals.

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Keynote Speech

Speaker

Kenji Hashimoto, Ph.D. 橋本謙二

Division of Clinical Neuroscience,
Chiba University Center for Forensic Mental Health,
Chiba, Japan

Biography

Dr. Hashimoto received PhD degree from Kyushu University, Faculty of Pharmaceutical Sciences (Fukuoka, Japan) in 1988. After Dr. Hashimoto worked at NIH/NIDA (Baltimore, MD, USA), National Center of Neurology and Psychiatry (Tokyo, Japan), and Domestic Pharmaceutical company (Saitama, Japan), he moved to Chiba University Graduate School of Medicine (Chiba, Japan) at 2001. He is a full professor of Chiba University Center for Forensic Mental Health (Chiba, Japan) from 2005. He has published more than 600 original and review articles, and book chapters.

Place of birth: Fukuoka, Japan

Research Carrier:

2005 to date	Professor of Division Clinical Neuroscience, Chiba University Center for Forensic Mental Health (Chiba, Japan)
2003 – 2005	Associate Professor of Department of Psychiatry, Graduate School of Medicine, Chiba University (Chiba, Japan)
2001 – 2003	Assistant Professor of Department of Psychiatry, Graduate School of Medicine, Chiba University (Chiba, Japan)
1996 – 2001	Research Scientist of Pharmaceutical Industry (Saitama, Japan)
1993 – 1996	Research Scientist of National Center of Neurology and Psychiatry (Tokyo, Japan)
1991 – 1993	Visiting Fellow, National Institute on Drug Abuse, National Institutes of Health (NIH) (Baltimore, MD, USA)

1986 – 1991	Research Instructor at the Faculty of Pharmaceutical Sciences, Fukuyama University (Fukuyama, Hiroshima, Japan).

Education:

1982 – 1986	Post-graduate student at Kyushu University (Faculty of Pharmaceutical Sciences) (Fukuoka, Japan)
1982	Graduated from Kyushu University (Faculty of Pharmaceutical Sciences) (Fukuoka, Japan)

Original articles (in English) > 470
Book Chapter (in English) 10
Google Scholar Citation: H-index = 65 (June 26, 2017)

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(*R*)-Ketamine: From Party Drug to Rapid-Acting Antidepressant without Side Effects

Kenji Hashimoto

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The *N*-methyl-D-aspartate receptor (NMDAR) ketamine has been widely used as a club drug in the world, and ketamine abuse is also popular in Taiwan. Interestingly, ketamine has rapid-acting and sustained antidepressant effects for treatment-resistant patients with major depressive disorder and bipolar disorder. The ketamine's antidepressant actions are the most important discovery in the field of depression research in half a century. However, the precise molecular mechanisms underlying ketamine's antidepressant actions are unknown. Previously, we reported that (*R*)-ketamine (Ki = 1.4 μM for NMDAR) has greater potency and longer-lasting antidepressant actions than (*S*)-ketamine (Ki = 0.30 μM for NMDAR) in rodents. Unlike (*S*)-ketamine, (*R*)-ketamine does not appear to cause psychotomimetic side effects, abuse potential, and loss of parvalbumin (PV)-positive cells in the prefrontal cortex. In addition, using a conscious monkey PET, we reported that (*S*)-ketamine, but not (*R*)-ketamine, caused a marked release of dopamine in the striatum, suggesting that (*S*)-ketamine-induced dopamine release might be associated with its acute psychotomimetic and dissociative symptoms in human. Taken all together, (*R*)-ketamine appears to be a potent, long-lasting and safe antidepressant, relative (*S*)-ketamine. However, there is now the buzz about ketamine and its metabolite (2*R*,6*R*)-hydroxynorketamine (HNK). I would like to discuss the preclinical data of the enantiomers of ketamine and its metabolites as rapid-acting and sustained antidepressants.

Non-invasive Brain Stimulation Workshop

Moderators

Tung-Ping Su, MD　蘇東平 教授

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Professor, Division of Psychiatry, Faculty of Medicine, National Yang-Ming University, Taipei, Taiwan

Hsien-Yuan Lane, MD, PhD　藍先元 教授

Distinguished Professor and Director, Graduate Institute of Bioedical Sciences,
Director, Brain Disease Research Center & Department of Psychiatry,
China Medical University and Hospital, Taichung, Taiwan

Ming H. Hsieh, MD, PhD 謝明憲教授

Attending Psychiatrist and Clinical Assistant Professor, Department of Psychiatry, National Taiwan University Hospital, Taiwan

Non-invasive Brain Stimulation Workshop

Speaker

Cheng-Ta Li, M.D., Ph.D　李正達醫師

Attending Psychiatrist,
Department of Psychiatry,
Taipei Veterans General Hospital, Taiwan
Lab head, Functional neuroimaging and brain stimulation lab, Department of Psychiatry, Taipei Veterans General Hospital
Associate Professor, Department of Psychiatry, National Yang -Ming University

Dr. Li was bron in Taichuang, graduated from medical school of National Yang-Ming University, and received psychiatric training mainly at the Taipei Veterans General Hospital. He obtained his Ph.D title from Institute of Brain Science, National Yang-Ming University. As a physician scientist, he devotes himself in the field of brain imaging (esp. Positron emission tomography-PET) and brain stimulation for long and the main interest of his researcch is on mood disorders such as depression and bipolar disorder.

He ever visited Molecular Imaging Branch of the National Instiute of Mental Health for 1 year and learned the ropes of PET from Dr. Robert Innis. Over the past 5 years, he has published several great papers in high-impact journals, such as Brain, Cerebral Cortex, Neuroimaging, British Journal of Psychiatry, Bipolar disorders, Sleep, and Molecular Psychiatry. The most important findings from his research line involve hypofrontality in treatment-resistant unipolar depression, epidemiological and neuroimaging links between treatment-resistant depression and bipolar disorders, and brain stimulations in the treatment of refractory depression. Now he serves as a reviewer in many SCI journals, including Neuroimaging, Plos One, Schizophrenia Research, Journal of the Chinese Medical Association, 台灣精醫...etc. In addition, Dr. Li is appointed by Taiwanese Society of Biological Psychiatry and Neuropsychopharmacology (TSBPN) as the convenor of the Brain Electromagnetic Stimulation and Treatment committee (BEST), which is intiated in 2006, joined by leading TMS/tDCS psychiatrists and researchers in Taiwan, and still recruiting experts in the field. The major purpose is to provide essentials for the clinical and research use of TMS/tDCS on psychiatric disorders.

■ Selected publications:

1. **Cheng-Ta Li,** Ya-Mei Bai, Yu-Lin Huang, Ying-Sheue Chen, Tzeng-Ji Chen, Ju-Yin Cheng, Tung-Ping Su. Antidepressant Resistance in Unipolar Depression Predict Subsequent Bipolarity: The 1996-2007 National Health Insurance Database in Taiwan. British Journal of Psychiatry. 2012 Jan; 200: 45-51 **(SCI, IF=7.343)**
2. **Cheng-Ta Li***, Mu-Hong Chen, Chi-Hung Juan, Hsiang-Hsuan Huang, Li-Fen Chen, Jen-Chuen Hsieh, Pei-Chi Tu, Ya-Mei Bai, Shin-Jen Tsai, Ying-Chiao Lee, and Tung-Ping Su*. Efficacy of Prefrontal Theta-Burst Stimulation in Refractory Depression: A Randomized Sham-Controlled Study. Brain, March, 2014 **(SCI, IF=10.226**)
3. **Cheng-Ta Li**, Jen-Chuen Hsieh, Hsiang-Hsuan Huang, Mu-Hong Chen, Chi-Hung Juan, …, and Tung-Ping Su*. Cognition-Modulated Frontal Activity in Prediction and Augmentation of Antidepressant Efficacy: A Randomized Controlled Pilot Study. Cerebral Cortex, Aug, 2014 **(SCI, IF = 8.325)**

Safety of Repetitive Transcranial Magnetic Stimulation (rTMS) and Treatment-Resistant Depression (TRD)

Cheng-Ta Li M.D., Ph.D.

Department of Psychiatry, Taipei Veterans General Hospital, Taiwan

A growing body of evidence reveals that repetitive transcranial magnetic stimulation (rTMS) is beneficial for the treatment of neuropsychiatric disorders. For example, in 2008, US Food and Drug Administration (US-FDA) approved the first TMS device – the Neuronetics NeuroStar TMS System for the clinical treatment of medication-resistant depression. Afterwards, by providing data to support substantial equivalence to the NeuroStar system, many TMS devices (e.g., Brainsway in 2013, Magstim and Magventure in 2015) also obtained the FDA clearance for the indication of treatment-resistant depression. Recent evidence-based practice guidelines classified rTMS as a first-line treatment for patients who have failed at least one antidepressant medication. When considering TMS as a potential therapeutic interventions and research tool, it is important to know that TMS is a class II medical device that could result in some unwanted physiological and functional brain changes, if not using properly. Without acknowledging major and common side effects and following the safety guideline of TMS, participants receiving the application of TMS may risk major side effects, such as seizure, brain irreversible damage, or hearing problems. The first presentation of the workshop, as organized by the TSBPN task force (i.e., Brain Electromagnetic Stimulation and Treatment committee-BEST) today would focus on safety issues of rTMS and will also bring about the updated information regarding central mechanisms of treatment-resistant depression (TRD). In brief, following the 1998 safety guideline of TMS and avoiding the application on subjects with contraindications to TMS devices (e.g., cardiac pacemaker and cochlear implants), rTMS is a well-tolerated form of non-invasive brain stimulation and participants may only have some mild and common side effects like self-limiting headache and scalp discomfort. TRD has more brain abnormalities than non-TRD. The antidepressant mechanisms of rTMS include a normalization of prefrontal dysfunctions, a regulation of abnormal brain circuitry, an increase of central serotoninergic releases from brainstem…etc.

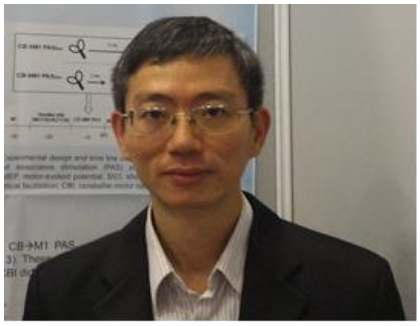
Note:

Non-invasive Brain Stimulation Workshop

Speaker

Ming-Kuei Lu, MD, PhD 呂明桂醫師

Attending Physician, Department of Neurology,
China Medical University Hospital
Assistant Professor, Graduate Institute of Biomedical Sciences, China Medical University



Dr. Lu graduated from China Medical University and received his neurological residency training in the China Medical University Hospital, Taichung, Taiwan (1999-2002). He has served as an attending neurologist in the Department of Neurology, China Medical University Hospital since 2004. Following the clinical electrophysiological training by Prof. Chon-Haw Tsai in Taichung, he pursued his Ph.D. training mentored by Prof. Ulf Ziemann at Johann Wolfgang Goethe University of Frankfurt (2007-2010). His major interests focus on studying electrophysiology of movement disorders with movement related cortical potentials and transcranial magnetic stimulation. He has published several peer-reviewed articles regarding this field. He is currently a faculty of Department of Neurology in China Medical University and an active member of Taiwan Movement Disorder Society and Taiwan Society of Clinical Neurophysiology.

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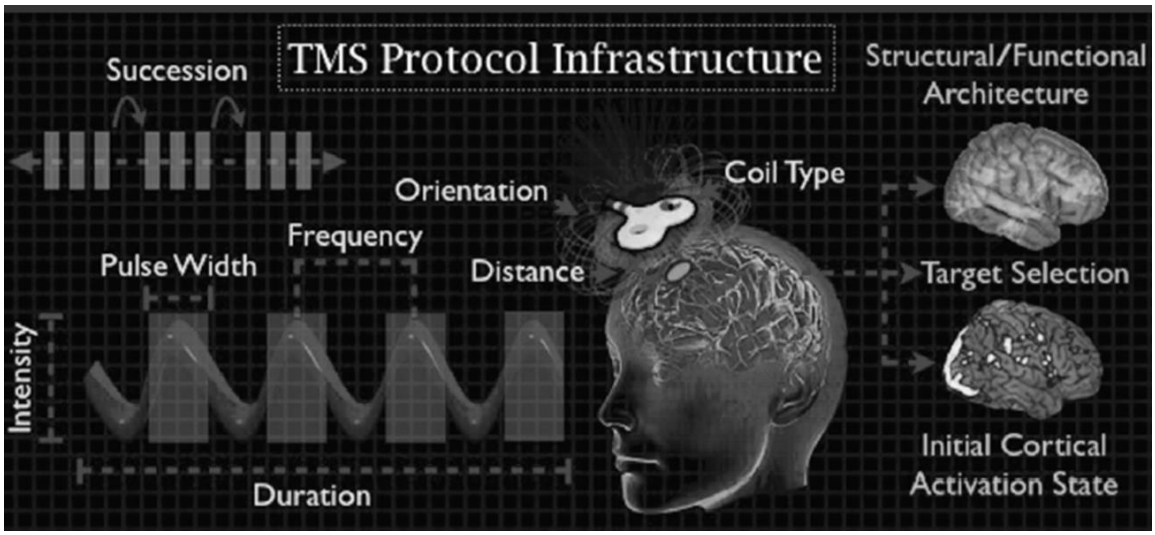
Technical Introduction of Transcranial Magnetic Stimulation

Ming-Kuei Lu

Department of Neurology, China Medical University Hospital; Graduate Institute of Biomedical Science, China Medical University, Taichung, Taiwan

Transcranial magnetic stimulation (TMS) is a neurostimulation and neuromodulation technique, based on the principle of electromagnetic induction of an electric field in the brain. Evidence has accumulated that demonstrates that TMS provides a valuable tool for interventional neurophysiology applications, modulating brain activity in a specific, distributed, cortico-subcortical network so as to induce controlled and controllable manipulations in behavior (1). Nevertheless, some technical issues should be borne in mind because the effect of TMS is usually influenced by the operating techniques. In this talk the technical concerns will be introduced for single-pulse, paired-pulse and repetitive TMS. The TMS protocol infrastructure and the individual factors potentially determining TMS effect can be summarized with the illustration published by Rubens and Zanto (2).



For paired-pulse TMS, the interstimulus interval between the two TMS and the intensity of the first TMS are determinants to the motor response. For repetitive TMS, many biological and environmental factors may affect TMS response. With a concept of essential technical settings would be helpful in troubleshooting and understanding the variability of the TMS response.

(1) Rossi S, Hallett M, Rossini PM, et al. Safety, ethical considerations, and application guidelines for the use of transcranial magnetic stimulation in clinical practice and research. Clin Neurophysiol 2009;120:2008-39.
(2) Rubens MT and Zanto TP. Parameterization of transcranial magnetic stimulation. J Neurophysiol 2012;107(5):1257-9.

Note:

Non-invasive Brain Stimulation Workshop

Speaker

Chi-Hung Juan, PhD 阮啟弘教授

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Chi-Hung Juan earned his PhD in 2002 from the Department of Experimental Psychology from University of Oxford, UK. He then carried out his post-doctoral training in Vanderbilt University, USA by carrying out a series of microstimulation and unit recording studies in awake-behaving monkeys. In 2003, he became an assistant professor in Institute of Cognitive Neuroscience, National Central University. Since then, he has setup an integrative laboratory for testing human subjects involving eye-tracking, Transcranial Magnetic Stimulation (TMS), transcranial direct/alternative current stimulation (tDCS; tACS), electroencephalogram (EEG), a frameless stereotaxy system, and electromyography. At that time, it was the first ever non-invasive brain stimulation laboratory with complementary recording techniques for investigating human behavior in Taiwan. For the past years, he has been investigating the cognitive functions associated with self-control and elucidating the psychological and neural mechanisms of its subcomponents, such as visual attention, visual working memory, and inhibitory control, in order to form an integrative theory of these functions. He has also been a pioneer in the application of non-invasive brain stimulation methods (e.g. TMS, tDCS; tACS) for investigating the psychological and neural basis for human cognition and also studying ways to affect and improve cognitive performance in individuals. To date he has published more than 80 papers which appeared in *PNAS, Brain, Journal of Neuroscience, Cerebral Cortex Neuroimage, Human Brain Mapping, Brain Stimulation* and other international peer-reviewed journals and has trained 10 postdocs, 10 doctoral graduates, 27 MSc students. He also maintains very active international and domestic collaborations with cognitive and clinical neuroscience researchers.

The applications and safety guidelines of transcranial Direct Current Stimulation (tDCS) in clinical neuroscience

Chi-Hung Juan (阮啟弘)

Institute of Cognitive Neuroscience, National Central University, Taiwan

The Brain Research Center, National Central University, Taiwan

In recent years, the international neuroscientific communities have intensive investigation and discussion in the non-invasive brain stimulation techniques (e.g. TMS, tDCS, tACS etc). National Institute of Health, USA has also been calling a large scheme of research proposals in this domain to seek for better interventional protocols for treating neuropsychiatric disorders. In this talk, I will introduce current tDCS safety guidelines and a series of recent studies in which different tDCS methods were applied to investigate various issues in cognitive and clinical neuroscience. I aim to provide new insights to the potential applications of non-invasive brain stimulation techniques in the intervention of neurological and psychiatric disorders in our community.

Note:

Non-invasive Brain Stimulation Workshop

Moderators

Chia-Yih Liu, MD　劉嘉逸 醫師

Associate professor and Vice chair, Faculty of Medicine, Chang Gung University
Attending physician, Department of Psychiatry, Chang-Gung Medical Center

Tiao-Lai Huang, MD 黃條來 醫師

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Kuan-Yi Wu, MD 吳冠毅醫師

Attending Psychiatrist and Assistant Professor, Department of Psychiatry, Chang Gung Memorial Hospital, Taoyuan, Taiwan

Non-invasive Brain Stimulation Workshop

Speaker

Ying-Zu Huang, MD, MSc, PhD

黃英儒醫師

Director, Neuroscience Research Center,
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Professor, Department of Neurology, Chang Gung University College of Medicine and Chang Gung Memorial Hospital, Taoyuan, Taiwan

Dr. Ying-Zu Huang was graduated from Taipei Medical University as a medical doctor. He received a master degree of biomedical engineering from National Cheng Kung University, and then worked with Prof John Rothwell and obtained a PhD degree from Institute of Neurology at Queen Square, University College London in the UK. Dr. Huang is a neurologist, and is currently a Professor and Physician Scientist of Chang Gung Memorial Hospital and Chang Gung University. He is the director of Neuroscience Research Center of Chang Gung Memorial Hospital at Linkou, an Associate Editor of BMC Neurology, a member of the editorial board of Clinical Neurophysiology Practice, a Councilor of Institute of Complex Medical Engineering and the ex-president of Taiwan Society of Clinical Neurophysiology. The clinical interest of Dr. Huang is movement disorders, including Parkinson's disease, dystonia and tremor. Dr Huang is best known for his invention of theta burst stimulation, which has become one of the most well-known protocols of repetitive transcranial magnetic stimulation in the world. In the past few years, Dr Huang has focused his research on the mechanism of theta burst stimulation, human plasticity, the pathophysiology of movement disorders and the clinical application of non-invasive transcranial brain stimulation.

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Theta burst stimulation and updates in non-invasive transcranial brain stimulation

TBS 及非侵入性經顱腦刺激之新發展

Ying-Zu Huang/黃英儒

Department of Neurology, Chang Gung University College of Medicine/Chang Gung Memorial Hospital, Taoyuan, Taiwan

Non-invasive techniques of transcranial brain stimulation have been developed to modulate the brain function. As the first patterned protocol of repetitive transcranial magnetic stimulation (rTMS), theta burst stimulation (TBS) is given in bursts instead of regular pulses seen in conventional rTMS. With the help of the unique stimulation pattern, TBS may efficiently induce a modulation effect outlasting the stimulation for up to an hour after 20-192 seconds of stimulation. Since TBS is usually given at a lower stimulus intensity (e.g. 80% active motor threshold or 70% rest motor threshold) and the stimulation time is short, coil overheat is rarely seen before the end of stimulation. Moreover, TBS is convenient to use because only a single set of rTMS machine is required to produce all the protocols of TBS. Several protocols other than TBS, such as quadripulse stimulation (QPS), high density transcranial direct current stimulation (HD-tDCS) and paired associative stimulation (PAS) conjugating different areas, have been also developed in the past decade, aiming for different purposes and/or to improve focality and variability. In the present talk, updates of protocols of non-invasive transcranial brain stimulation will be introduced. Mechanisms, benefits and limitations of these protocols will be discussed.

Note:

Non-invasive Brain Stimulation Workshop

Speaker

Chia-Hung Chien, PhD 錢嘉宏博士

Division of Medical Devices and Cosmetics, Taiwan Food and Drug Administration (TFDA)

Dr. Chia-Hung Chien received his Ph.D. degrees in electrical engineering from the National Taiwan University. His research specialties are medical instrument design and bio-signal analysis. He is currently affiliated with the Division of Medical Devices and Cosmetics in the Taiwan Food and Drug Administration (TFDA). His main responsibility is to supervise the medical device regulation in general, such as regulatory consultation, clinical trial, pre-market review and post-market surveillance. Prior to join TFDA, he started his career in medical device in 1997 as a R&D engineer in a device company where he was engaged in the device regulatory issues regarding the safety standards and the quality system management. In 1998 he passed the national qualification exam and served until 2014 in the Department of Biomedical Engineering at the National Taiwan University Hospital (NTUH). During his tenure at the NTUH, he was in charge of various department affairs regarding administration, information, teaching, quality control, and engineering technology. In addition, he set up the first ISO 17025-complied testing laboratory in Taiwan for the electrical safety assessment of medical devices, while improved the clinical trial management system of medical device and actively participated in the reviewing activities. Currently, he continues to engage with the NTUH as a committee member of the Research Ethics Committee. He is also a member of both the Academic Committee and the Certification Referee Committee in the Taiwanese Society of Biomedical Engineering, and a part-time assistant professor teaching clinical engineering in the Biomedical Engineering Department at the Chung Yuan Christian University.

新醫療器材之安全與有效性審查及風險管理

錢嘉宏博士

衛生福利部食品藥物管理署醫粧組

醫療器材是被人為設計，其風險及預期用途是可被預測控制的，而且主要是透過物理性作用於人體而達其效用，不同於藥品是透過藥理、免疫或代謝的方法作用於人體。而藉由產品上市前審查到上市後安全監督的全生命週期管理，以確保醫療器材使用的安全、效能及品質。而新醫療器材因未有實際的使用經驗，對其安全及效能在其上市前會有較嚴謹的審查，甚至會被要求透過臨床試驗來提供其安全與效能的作證資料，而臨床試驗前也需提供完整的臨床前安全功能測試及風險評估，才會被同意用於人體試驗上。本次報告將概略介紹整個醫療器材全生命週期管理架構及新醫療器材審查管理的要項。

Medical Devices are designed for human usage. Their intended applications and risks have been evaluated and controlled during the development processes. Different from medicinal products, medical devices achieve their primary actions by affecting the structure or any function of human body, not by pharmacological, immunological or metabolic means. The quality, safety and efficacy of medical devices are safe-guarded by the regulations covering the device lifecycle management, from the pre-market assessment to post-market surveillance. As for the innovative medical devices, the market application in general demands more evidence regarding the device safety and efficacy. To initiate of a clinical trial of such device, a complete risk evaluation and a thorough pre-clinical functional assessment are always inquired for the approval to test it in human. The report here provides a brief introduction regarding the framework of the device complete lifecycle management and the assessment key points of the pre-market approval for the innovative medical devices.

Note:

Non-invasive Brain Stimulation Workshop

Speaker

Galen Chin-Lun Hung, MD 洪敬倫醫師

Attending Psychiatrist, Department of Psychiatry,
Taipei City Psychiatric Center, Taipei City Hospital
Assistant professor, School of Medicine,
National Yang-Ming University

Dr. Hung is attending psychiatrist at the Taipei City Psychiatric Center, Taipei City Hospital. He is in charge of the psychosomatic specialty ward 7D, which provides an integrative inpatient services for patients with neurotic disorders. He also leads a group providing mindfulness-based cognitive therapy (MBCT) for depressed patients in a continuous basis.

Dr. Hung received his Doctor of Medicine at National Yang-Ming University. He then acquired Master of Science at Harvard School of Public Health. His residency training was with Taipei City Psychiatric Center. Afterwards, he completed a fellowship at the Depression Clinical and Research Program, Massachusetts General Hospital. Dr. Hung is a certified MBCT teacher by the Center for Mindfulness, UC San Diego.

Dr. Hung sought to integrate mindfulness-based treatment and innovative technology to provide a comprehensive program for patients with mood disorders. His research interests include psychiatric epidemiology, mobile health and brain stimulation methods, including transcranial direct-current stimulation (tDCS) and transcranial magnetic stimulation (TMS).

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Transcranial Direct-Current Stimulation: Device Demonstration and Pearls of Clinical Application

Galen Chin-Lun Hung

Department of Psychiatry, Taipei City Psychiatric Center, Taipei City Hospital

Transcranial Direct-Current Stimulation (tDCS) is a non-invasive brain stimulation technique, which has shown a potential in treating several psychiatric disorders, including depression, anxiety and substance misuse. However, as a novel treatment modality, the optimal montage and stimulation protocol remain to be determined. Meanwhile, clinicians may not be familiar with the operation of tDCS device and the application in patients with psychiatric disorders. Hence, we would like to provide a hands-on experience with device demonstration and stimulation program setup. Meanwhile, we will share some clinical experiences regarding the management of side effects and emotional reactivity during treatment with tDCS.

Note:

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Speaker

Wei Hung Chang, MD 張維紘醫師

Attending Staff, Department of Psychiatry,
National Cheng Kung University Hospital

Dr. Wei-Hung Chang was graduated from National Cheng Kung University, and received his psychiatry residency training in National Cheng Kung University Hospital. After completing the training and acquired Board Certified psychiatrist qualification, he served as an attending staff in National Cheng Kung University Hospital, Dou-Liou branch. He is now the attending staff of Department of Psychiatry, National Cheng Kung University Hospital. He also joined the PhD program in National Cheng Kung University, Institute of Clinical Medicine. Dr Chang's main clinical and academic interests include psychiatric-neuroimaging, geriatric psychiatry and repetitive transcrainal magnetic stimulation treatment for OCD and MDD.

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TMS 的臨床應用研究

Wei Hung Chang
Department of Psychiatry, National Cheng Kung University Hospital

Repetitive transcranial magnetic stimulation (rTMS) could be applied in many aspects of psychiatric illnesses. Different frequences, locations and protocols gave us different results. For example, the augmentation therapy of high frequency rTMS for the refractory MDD have been demonstrated as the effective treatment in many meta-analytic studies. Furthermore, other psychiatric illnesses, such as negative and positive symptoms of Schizophrenia, impulsivities and mood control on Bipolar disorder, and the obsessional and compulsory behavior on OCD has also been well studied in different protocols. Also, the improvement of cognitive impairment after using rTMS in many psychiatric illnesses has been found. Due to the intolerabilities of side effects in geriatric psychiatric patients, rTMS offered alternative methods for certain psychiatric illnesses. The memory impairment, on the other hand, could be modified temporarily by rTMS. Besides the clinical application, the combinations of different modalities, such as EEG, SPECT, and fMRI give us more understandings of the mechanisms in different diseases. The alternations of certain neuroendocrinologies in different diseases have also been noticed. Although several limitations, such as inconveniences of the therapies and potential risks of seizures, rTMS is relatively safe clinical treatment tools in neuropsychiatric fields.

Note:

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TSBPN-03	Chieh-Hsin Lin 林潔欣	Blood Levels of D-Amino Acid Oxidase vs. D-Amino Acids in Reflecting Cognitive Aging
TSBPN-04	Jane Pei-Chen Chang 張倍禎	Omega-3 Polyunsaturated Fatty Acids (n-3 PUFAs) in Patients with Cardiovascular Diseases (CVDs) Comorbid Major Depressive Disorder (MDD): a Double Blind-Placebo Controlled Trial
TSBPN-05	Ying Chih Cheng 鄭映芝	A Meta-Analysis of the Effect of Apolipoprotein E Ɛ4 Carrier Status on the Cognitive Response to Acytelcholinestease Inhibitors in Patients with Alzheimer's Dementia
TSBPN-06	Chun-Hung Chang 張俊鴻	Brain Stimulation in Alzheimer's Disease
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TSBPN-08	Chang-Chih Tsou 鄒長志	The Neurod Gene: Predicting Individual Risks and Personality Variations in Heroin Dependence
TSBPN-09	Chang-Chih Tsou 鄒長志	Do Nerve Growth Factor Beta Gene Polymorphisms Predict the Risk of Late-Onset Heroin Dependence in Men?
TSBPN-10	Yen-Feng Lin 林彥鋒	Prediction of Plasma Levels of Quetiapine and its Metabolites in Taiwanese Psychiatric Patients
TSBPN-11	Shih-Ku Lin 林式穀	Defined Daily Dose and Chlorpromazine Equivalent in Comparison of Antipsychotic Drug in 6 Asian Countries: Reap AP1 to AP4
TSBPN-12	Yen-Feng Lin 林彥鋒	Genome-wide Genetic Correlations between Psychiatric and Non-Psychiatric Phenotypes and their Causal Relationships

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TSBPN-20	Wan-Chen Lee 李宛臻	Effects of Maintenance Electroconvulsive Therapy (M-ECT) on Cognitive Function in a Patient with Treatment-resistant Schizophrenia: a Case Report
TSBPN-21	Mong-Liang Lu 盧孟良	Leptin/adiponectin Ratio as a Potential Biomarker for Metabolic Syndrome in Patients with Schizophrenia
TSBPN-22	Wei-Hung Chang 張維紘	Serotonin Modulated the Correlations between Obsessive-compulsive (OC) Trait and Heart Rate Variability in Normal Healthy Subjects
TSBPN-23	Wei-Chung Mao 毛衛中	Auditory Hallucinations may Interfere the Perceptive Processing of Negative Emotional Information and Emotional Intelligence in Schizophrenia
TSBPN-24	Ya-Chin Lee 李雅縉	Genome-wide Methylome and Transcriptome Profiles of Manic Episode in Bipolar Disorder
TSBPN-25	Chun-Hsin Chen 陳俊興	The Associations between Genetic Variants of the Methylenetetrahydrofolate Reductase C677T and A1298C and Metabolic Profiles in Patients with Schizophrenia in Taiwan
TSBPN-26	Chih-Chiang Chiu 邱智強	Omega 3 and Geriatric Depression

NST Poster Presentation 1

10:15~11:00 (Room 601)

P1 **Clinical Implications of Orexins in Neuropsychiatric Disorders**

Oral 1-1 台灣大學醫學院藥理學科 教授

盧冠伶、何嘉浚/邱麗珠 (教授)

P4 **Alpha 6 subunit-containing GABA-A Receptors: A Novel**

Oral 1-2 **Therapeutic Target for Neuropsychiatric Disorders**

台大醫院/台大醫學院小兒部 臨床助理教授/主治醫師

范碧娟

P7 **SLITRK1 gene and Tourette's syndrome**

Oral 1-3 臺北市立聯合醫院忠孝院區小兒科暨教研部教學 主治醫師

杜戎玨

P10 **Characterization of mouse models of mental disorders**

Oral 1-4 台灣大學解剖學暨細胞生物學研究所 副教授

李立仁

P13 **The Effect of Sarcosine in the Amelioration of**

Oral 1-5 **Schizophrenia-Related Behavioral and Cognitive Deficits in Mouse Models of NMDAR Hypofunction**

台灣大學心理所 博士生

裴如淳/賴文崧 (教授)

P16 **Molecular mechanisms underlying the interaction between**

Oral 1-6 **metabolic and mood disorders**

成功大學細胞生物與解剖學研究所 教授

郭余民

P19 **The fight against Huntington's Disease using miRNA**

Oral 1-7 成功大學生理學研究所 副教授

楊尚訓

P22 **Acid-sensing: from molecules to behaviors**

Oral 1-8 中研院生物醫學研究所 研究員

陳志成

P25 **Thermosensitive mechanisms**

Oral 1-9 高雄醫學大學臨床醫學研究所 助理教授

譚俊祥

P28 **Histamine H1 Receptor Antagonists Facilitate Electroacupuncture Analgesia**

Oral 1-10

中國醫藥大學針灸研究所 教授

陳易宏

P31 **Animal Models of central post-stroke pain and approaches for its treatments**

中研院生醫所 博士後研究員

管永惠/ 徐百川（研究員）

P34 **Coupled symmetric and asymmetric circuits underlying spatial orientation in fruit flies**

清華大學系統神經科學研究所 學生

李宛儒/ 羅中泉 (副教授)

P38 **GNB4 mutations lead to Dominant Intermediate F type of Charcot-Marie-Tooth Disease**

陽明大學基因體科學研究所 研究助理

張資敏/范明基（教授）

P42 **Depression-like behavior by SPAK deficiency was remedied by escitalopram**

天主教耕莘醫療財團法人耕莘醫院教學研究部醫學研究中心

副研究員

黃春霖

P45 **Long-range GABAergic neurons mediate inter-dentate gyrus inhibition**

陽明大學 博士生

顏廷耘/ 連正章 (教授)

NST Poster presentation 2

14:50~15:45 (Room 601)

P2 **Neural Mechanisms of Episodic Memory**

Oral 2-1 中正大學心理系 教授

李季湜

P5 **Using Transcranial Magnetic Stimulation to Investigate the**

Oral 2-2 **Updating Ability in Executive Function and Working memory**

東華大學諮商與臨床心理系 副教授

周育如

P8 **Neural Mechanism of Learning and Memory under Anesthesia**

Oral 2-3 成功大學心理系 助理教授

陳德祐

P11 **CCL5 regulating synaptogenesis promotes memory formation**

Oral 2-4 台北醫學大學神經再生學程 助理教授

周思怡

P14 **Paeonol promotes hippocampal synaptic transmission: the role of**

Oral 2-5 **the Kv2.1 potassium channel**

中國醫藥大學中醫研究所 博士生

楊金倉/陳易宏 (教授)

P17 **The Protective Effect of Acupuncture against the Microglia**

Oral 2-6 **activation in the Brainstem Induced by Dental Pulp Injury**

中國醫藥大學針灸研究所 學生

Sharmely Sharon Ballon Romero/陳易宏 (教授)

P20 **Dental pulp stem cells for neurogenesis**

Oral 2-7 台灣大學臨床牙醫學研究所 教授兼所長

陳敏慧

P23 **Neuro-therapeutics screening platform**

Oral 2-8 生技中心生物製藥研究所 研究員

楊舜任

P26 **Explore the Roles of the Glutamate-Glutamine Cycle on the**

Oral 2-9 **Regulation of Glutamate and GABA Synaptic Plasticities for Sexual Differentiation**

長庚大學生理暨藥理學科 助理教授

梁淑鈴

P29 **Multimodal analyses on the neurophysiology and neuroimaging**
Oral 2-10 **for epilepsy**
交通大學生醫電子轉譯研究中心/電子研究所 助理研究員
彭徐鈞

P32 **Development of a Multisite, Closed-loop Neuromodulator for the**
Oral 2-11 **Theranosis of Neural Degenerative Diseases**
清華大學電機系 教授
陳新

P35 **MRI development for Neuroscience Applications**
Oral 2-12 中研院生醫所 助研究員
黃聖言

P37 **Structural and functional interrogation of supramammillary-hippocampal pathway**
陽明大學神經科學研究所 博士生
Ajibola Musa Iyiola/ 連正章 (教授)

P40 **Signal propagation and balance in a simulated fly brain network**
清華大學生物資訊所 學生
王誠德/ 羅中泉 (副教授)

P43 **Identification of genes that promote axonal regeneration of injured cortical neurons**
清華大學分子醫學研究所 博士生
張筑芠/ 陳令儀（教授）

P46 **High Fat diet (HFD) feeding induced histological changes in the hypothalamus and anxiety-like behaviors in C57BL/6 mice**
成功大學生科系 學生
黃暉庭/ 曾淑芬 (教授)

NST Poster presentation 3

16:40~17:30 (Room 601)

P3 **Glia-Neuron Interactions in the Fly Visual System: Development**
Oral 3-1 **and Degeneration**
中研院分子生物研究所 特聘研究員
孫以瀚

P6 **Neuron-glia interactions during spreading depression**
Oral 3-2 中國醫藥大學生物醫學研究所 助理教授
周寧

P9 **Molecular regulation of gliogenesis and neuroinflammation**
Oral 3-3 成功大學生命科學系 博士後研究員
王之彥/曾淑芬 (教授)

P12 **Lifespan extension and neuronal aging: a fly's perspective**
Oral 3-4 台灣大學生理學研究所 博士生
連文瑜/詹智強 (助理教授)

P15 **The making of dendrites**
Oral 3-5 中研院分子生物研究所 特聘研究員
簡正鼎

P18 **Neural circuits for long-term water-reward memory processing in**
Oral 3-6 **thirsty *Drosophila***
長庚大學生物化學科 副教授
吳嘉霖

P21 **Constructing the attention deficit hyperactivity disorder model in**
Oral 3-7 ***Drosophila* with analytic social conduct observatory**
清華大學腦科學研究中心 博士後研究員
蕭伯彥/江安世 (教授)

P24 **Neural activity enhances neurite outgrowth of retinal explants**
Oral 3-8 清華大學系統神經科學研究所 教授
焦傳金

P27 **Olfactory Experience- and Developmental Stage-Dependent**
Oral 3-9 **Control of CPEB4 Regulates c-Fos mRNA Translation for Granule Cell Survival**
中研院生醫所 博士生
曾慶三/黃怡萱 (副研究員)

P30 **Channelopathy of $GABA_A$ and Glycine receptors**

Oral 3-10 中國醫藥大學生物醫學研究所 助理教授

吳東川

P33 **Disease-related perturbation of human ion channel biosynthesis**

Oral 3-11 台灣大學生理學研究所 教授

湯志永

P36 **Once upon a time, a salmon is swimming back to the birth place:**

Oral 3-12 **Trafficking of voltage gated potassium channel 2.1 (Kv2.1) and ATP sensitive potassium channel (KATP) in the dopaminergic projection pathways**

成功大學生理學研究所 助理教授

陳佩君

P39 **Antiarrhythmics cure brain arrhythmia: The imperativeness of**

Oral 3-13 **ERG K^+ channels in parkinsonian discharges**

長庚大學生物醫學研究所 學生

王冠勳、黃琛琁/楊雅晴 (副教授)

P41 **Are They the Same? A Method for Comparing Neuronal Morphology**

中研院物理所 研究助理

強敬哲/ 羅中泉 (副教授)

P44 **Too Simple or Too Complex: Simplifying Multicompartmental Integrate-and-Fire Neurons in *Drosophila***

清華大學系統神經科學研究所 研究助理

Alexander James White/ 羅中泉 (副教授)

P47 **CPEB2 activates GRASP1 mRNA translation and promotes AMPA receptor surface expression, long-term potentiation and memory**

中研院 IBMS 博士生

呂文心/ 黃怡萱 (副研究員)