

2022 TSAA 澳台生命科學學術交流研討會

2022 年 10 月 21 日 禮拜五

10:45 – 16:30 澳洲時間

08:45-14:30 台灣時間

議程表

研討會將以中文進行

10:45 – 11:10
(8:45 – 9:10)

報到

11:10 – 11:15
(8:45 – 9:15)

開幕致詞

旅澳台灣學者協會(TSAA)會長及澳洲紐卡斯爾大學資深講師 **趙志偉** 博士

11:15 – 11:30
(9:15 – 9:30)

貴賓致詞

駐布里斯本台北經濟文化辦事處 **陶令文** 處長

11:30 – 11:40
(9:30 – 9:40)

澳台教育及學術交流推展

駐澳大利亞代表處教育組 **賴碧姬** 組長

11:40 – 11:50
(9:40 – 9:50)

澳台科技交流推展

駐澳大利亞代表處科技組 **林赫** 組長

11:50 – 12:00
(9:50 – 10:00)

澳洲研究經費及獎學金申請

旅澳台灣學者協會秘書及澳洲昆士蘭大學研究員 **黃亮達** 博士

12:00 – 13:15
(10:00 – 11:15)

午餐

13:15 – 14:15
(11:15 – 12:15)

第一場: Genetics and Genomics

郭柏秀 博士, 台灣大學流行病學與預防醫學研究所教授兼公衛系系主任

題目: Application of Taiwan biobank data in health-related topics

胡育誠 博士, 清華大學化學工程學系講座教授

題目: CRISPR technology for regenerative medicine

黃亮達 博士, 澳洲昆士蘭大學分子生物學研究所研究員

題目: Distinguishing causation from association using genetic data

林民軒 博士, 澳洲 QIMR Berghofer Medical Research Institute 研究員

題目: A genetically engineered virus-cell propagation platform for generating defective interfering particles with potent anti-viral properties

小組討論會與 Q&A

主持人: 劉貴玄 博士, 澳洲墨爾本大學 Centre for Eye Research Australia 副教授

14:15 – 14:45
(12:15 – 12:45)

茶敘

14:45 – 15:30
(12:45 – 13:30)

第二場: Neuroscience

潘建源 博士, 台灣大學生命科學系教授及神經生物認知科學中心副主任

題目: The functions of Zn^{2+} in regulating the autophagy, lysosome structure, and amyloid beta in primary cultured rat embryonic cortical neurons

莊凱翔 博士, 澳洲昆士蘭大學 Queensland Brain Institute 副教授

題目: 洗腦--記憶與廢物清除之調控

小組討論會與 Q&A

主持人: TBA

15:30 – 16:30
(13:30 – 14:30)

第三場: Marine Science

健康的海洋，調節著營養鹽與能量循環，牽動著天氣變化並滋養所有的生命。

當代傳奇海洋學家 Sylvia Earle 曾說過”我們對太陽系部分行星的認識，遠超出我們對自己海洋的了解；目前人類擁有的高解析度月球和火星圖集，甚至比地球上深海海床還多。”這精準地指出了現今海洋知識的鴻溝。

當過漁、珊瑚白化、海洋酸化、頻繁的極端氣候事件擴及世界每一個角落，從教科書的內容變成親眼目擊的災難現場，了解海洋現況與其變動的狀態，成為刻不容緩的公民必修課。臺灣與澳洲有一群人將乘風破浪當成日常，於潮間帶與大洋的第一現場，研究著生態系統、演化適應、人類活動影響等與海洋息息相關的議題。本次澳臺生命科學學術交流研討會，邀請三位講者以不同海洋棲地作為引言，分享來自沿岸、大堡礁與深海第一手研究成果，並以多年海洋研究經驗，和與會者討論海洋科學的展望與臺澳海洋研究交流的機會。

劉莉蓮 博士, 中山大學海洋科學系教授, 海洋前瞻科技推展中心主任, 海洋科學院副院長

題目: 空污、氣候變遷 - 近岸無脊椎動物的適應探究

(東沙環礁研究站營運與展望)

魏志潁 博士, 台灣大學海洋研究副教授

題目: 深海峽谷底棲生態及碳循環

(臺灣大學海洋所生漁組生態研究展望與資源)

鍾文松 博士, 澳洲昆士蘭大學 Queensland Brain Institute 研究員

題目: 四億年視覺生理特化競賽 - 魚類, 螳螂蝦與頭足類生存之道

(造訪大堡礁海洋研究站, 經費哪裡申請?)

小組討論會與 Q&A

主持人: **鍾文松** 博士

16:30pm

會議結束

研討會地點: 駐布里斯本台北經濟文化辦事處會議室 (Level 11, 46 Edward Street, Brisbane QLD, Australia)

線上會議網址: [https://teams.microsoft.com/l/meetup-](https://teams.microsoft.com/l/meetup-join/19%3ameeting_OWJlM2M2MTItZjQ0NS00NGMyLThiMmYtZTNkMWRjNGIzNmVi%40thread.v2/0?context=%7b%22Tid%22%3a%22b6e377cf-9db3-46cb-91a2-fad9605bb15c%22%2c%22Oid%22%3a%22f3c5bc68-82fa-4d63-a9ea-ad4e5142fd53%22%7d)

[join/19%3ameeting_OWJlM2M2MTItZjQ0NS00NGMyLThiMmYtZTNkMWRjNGIzNmVi%40thread.v2/0?context=%7b%22Tid%22%3a%22b6e377cf-9db3-46cb-91a2-fad9605bb15c%22%2c%22Oid%22%3a%22f3c5bc68-82fa-4d63-a9ea-ad4e5142fd53%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_OWJlM2M2MTItZjQ0NS00NGMyLThiMmYtZTNkMWRjNGIzNmVi%40thread.v2/0?context=%7b%22Tid%22%3a%22b6e377cf-9db3-46cb-91a2-fad9605bb15c%22%2c%22Oid%22%3a%22f3c5bc68-82fa-4d63-a9ea-ad4e5142fd53%22%7d)

費用: 免費 (實體參加者供餐點)

報名表: https://docs.google.com/forms/d/e/1FAIpQLSfJBPYAUBuIRd5Gp_wfwR-2uZhjp-7Vr1sVTp4irsw6z7Ugpg/viewform

主辦單位: 旅澳台灣學者協會 (Taiwanese Scholar Association of Australia, TSAA)

協辦單位: 駐布里斯本台北經濟文化辦事處

駐澳大利亞代表處教育組

駐澳大利亞代表處科技組

2022 TSAA AustrTaiwan Life Sciences Symposium

Friday, 21 October 2022

10:45 – 16:30 Australian Eastern Standard Time (AEST)

08:45 – 14:30 Taiwan Time (in red)

PROGRAM

Symposium will proceed in Chinese.

10:45 – 11:10 (8:45 – 9:10)	Registration
11:10 – 11:15 (8:45 – 9:15)	Welcome Fred Chao , TSAA President and Senior Lecturer at The University of Newcastle
11:15 – 11:30 (9:15 – 9:30)	Guest 1 Edward Ling-Wen Tao , Director-General, Taipei Economic and Cultural Office (TECO) in Brisbane, Australia
11:30 – 11:40 (9:30 – 9:40)	Guest 2 Jill Lai , Executive Director, Education Division of TECO in Australia
11:40 – 11:50 (9:40 – 9:50)	Guest 3 Ho Lin , Executive Director, Science & Technology Division of TECO in Australia
11:50 – 12:00 (9:50 – 10:00)	Research funding and scholarship opportunities in Australia Daniel Liang-Dar Hwang , Research Fellow at The University of Queensland
12:00 – 13:15 (10:00 – 11:15)	Lunch
13:15 – 14:15 (11:15 – 12:15)	Section 1: Genetics and Genomics Chair: Guei-Sheung Liu , Associate Professor, University of Melbourne (Genetic Engineering) Po-Hsiu Kuo , Professor, National Taiwan University, Taiwan (Human Genetics and Psychiatric Epidemiology) Title: Application of Taiwan biobank data in health-related topics Yu-Chen Hu , Chair Professor, National Tsing Hua University, Taiwan (Genetics and Tissue Engineering) Title: CRISPR technology for regenerative medicine Daniel Liang-Dar Hwang , Research Fellow, The University of Queensland (Statistical Genetics and Chemosensory Perception) Title: Distinguishing causation from association using genetic data Min-Hsuan Lin , Research Officer, QIMR Berghofer Medical Research Institute (Molecular Virology) Title: A genetically engineered virus-cell propagation platform for generating defective interfering particles with potent anti-viral properties Panel Discussion and Q&A
14:15 – 14:45 (12:15 – 12:45)	Coffee break

14:45 – 15:30
(12:45 – 13:30)

Section 2: Neuroscience
Chair: TBA

Chien-Yuan Pan, Professor, National Taiwan University (Neurobiology and Cognitive Science)

Title: **The functions of Zn²⁺ in regulating the autophagy, lysosome structure, and amyloid beta in primary cultured rat embryonic cortical neurons**

Kai-Hsiang Chuang, Associate Professor, The University of Queensland (Functional and Molecular Neuroimaging)

Title: **Brain wash – towards modulating memory formation and waste clearance**

Panel Discussion and Q&A

15:30 – 16:30
(13:30 – 14:30)

Section 3: Marine Science

Chair: **Wen-Sung Chung**, Research Fellow, The University of Queensland

Li-Lian Liu, Professor, National Sun Yat-sen University (Biology of Aquatic Molluscs and Coastal Ecology)

Title: **Exploring the adaptation of nearshore invertebrates to air pollution and climate change**

Chih-Lin Wei, Associate Professor, National Taiwan University (Marine Benthic Ecology)

Title: **Submarine canyon benthic community structure and carbon cycling**

Wen-Sung Chung, Research Fellow, The University of Queensland (Cephalopod neuroecology)

Title: **A 400 million year-old arms-race in marine environments – heterogeneity of visual adaptations in fish, stomatopod and cephalopods**

Panel Discussion and Q&A

16:30

End of Symposium

Location: Taipei Economic and Cultural Office (TECO) in Brisbane Meeting Room (Level 11, 46 Edward Street, Brisbane QLD, Australia)

Virtual: https://teams.microsoft.com/l/meetup-join/19%3ameeting_OWJIM2M2MTItZjQ0NS00NGMyLThiMmYtZTNkMWRjNGIzNmVi%40thread.v2/0?context=%7b%22Tid%22%3a%22b6e377cf-9db3-46cb-91a2-fad9605bb15c%22%2c%22Oid%22%3a%22f3c5bc68-82fa-4d63-a9ea-ad4e5142fd53%22%7d

Fee: Free

Organised by Taiwanese Scholar Association of Australia (TSAA)

Sponsored by TECO in Brisbane, Education Division of TECO in Australia, Science & Technology Division of TECO in Australia

Register Here

https://docs.google.com/forms/d/e/1FAIpQLSfJBPYAUBuIRd5Gp_wfwR-2uZhjp-7Vr1sVTp4irsw6z7Ugpg/viewform

Speaker Biography:

Section 1: Genetics and Genomics

Dr Po-Hsiu Kuo 郭柏秀

Professor, Institute of Epidemiology and Preventive Medicine
Chair, Department of Public Health
Associate Dean, College of Public Health
National Taiwan University, Taiwan
Email: phkuo@ntu.edu.tw

Dr. Kuo is a professor at the Institute of Epidemiology and Preventive Medicine, NTU. She is currently the department chair of public health and the associate dean of the college of public health. She has a broad background in epidemiology, statistical modeling, and population and molecular genetics. During the past few years, she carried out research in quantitative and molecular genetics, psychiatric epidemiology, and bioinformatics, with specific expertise in key research areas of psychiatric disorders. The success of translational psychiatry depends on established knowledge of genomic determinants of the underlying pathogenesis of complex traits and treatment action. Clinical cohorts along with biobank samples provide unique opportunities to facilitate such efforts. A complete list of published work can be found at the link https://www.ncbi.nlm.nih.gov/myncbi/1D_qa57DXfCwda/bibliography/public/.

Dr Yu-Chen (Andy) Hu 胡育誠

Chair Professor, Department of Chemical Engineering
National Tsing Hua University, Taiwan
Email: ychu@mx.nthu.edu.tw

Dr. Yu-Chen Hu was born in 1969 in Taipei. He received his BS degree in Chemical Engineering from National Taiwan University in 1992 and his PhD degree in Chemical Engineering from University of Maryland in 1999, and his post-doc training at National Institutes of Health (USA) from 1999 to 2000. Dr. Hu joined National Tsing Hua University in 2000 and was promoted to Tsing Hua Chair Professor in 2019.

Dr. Hu' research interests include vaccine development, gene therapy, tissue engineering, cancer therapy and synthetic biology. Dr. Hu's lab has developed the enterovirus 71 (EV71) vaccine based on virus-like particle technology and self-amplifying RNA vaccine for porcine disease. He also paves a new avenue to the use of baculovirus as a novel vector for gene delivery, regenerative medicine and cancer therapy. Dr. Hu has combined burgeoning CRISPR technology and synthetic biology for the metabolic engineering of microorganisms and stem cells for production of bio-derived chemicals and tissue regeneration. In particular, he has recently developed various CRISPR activation (CRISPRa) and CRISPR interference (CRISPRi) and CRISPRai platforms to modulate stem cell differentiation so as to improve regeneration of cartilages, bones and nerves.

Dr. Hu has won the Asia Research Award, Outstanding Research Award twice (Ministry of Science and Technology, 2006, 2014), BEST Biochemical Engineering Achievement Award, Wu Ta-You Memorial Award, Jin Kai-Yin Award, Mao Gao-Wen Award, Outstanding Academia-Industry Research Award and Outstanding Young Investigator Award in Taiwan. He is a fellow of American Institute for Medical and Biological Engineering (AIMBE), as well as a Fellow Biomaterials Science and Engineering (FBSE), International Union of Societies for Biomaterials Science and Engineering. He also currently serves as the associated editor of Current Gene Therapy, deputy editor of Journal of Taiwan Institute of Chemical Engineers, and Coordinator of Chemical Engineering Division, Ministry of Science and Technology.

Section 1: Genetics and Genomics

Dr Daniel Liang-Dar Hwang 黃亮達

Institute for Molecular Bioscience
The University of Queensland, Australia
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Dr Hwang is a Research Fellow at the Institute for Molecular Bioscience, The University of Queensland. He studied Biochemical Science and Technology as an undergraduate at the National Taiwan University and a Masters in Biotechnology at the University of Pennsylvania. Following graduation, he conducted research at the Monell Chemical Senses Center where he first developed a keen interest in genetics and the perception of smell and taste (See his taste work in [The Conversation](#)). Later he was awarded scholarships to complete a master's degree in Nutrition at the University of Washington and a PhD degree in Genetic Epidemiology at The University of Queensland. Dr Hwang develops and applies statistical methodologies to large-scale high-dimensional data to understand how genes influence human sensory perception, dietary behaviour and related chronic disorders (e.g., obesity, cardiometabolic disease and cancer). He is a Leadership Team member of the [Global Consortium for Chemosensory Research](#), a global initiative to understand the link between smell loss and COVID-19 and foster the advancement of chemosensory science at large. He is on the editorial boards of *Twin Research and Human Genetics* and *Frontiers in Genetics*. A complete list of work can be found at: <https://researchers.uq.edu.au/researcher/20291>.

Dr Min-Hsuan Lin 林民軒

Department of Infection and Inflammation
QIMR Berghofer Medical Research Institute, Australia
Email: Min-Hsuan.Lin@qimrberghofer.edu.au

Dr Min-Hsuan Lin obtained his PhD in the field of molecular virology from the University of Queensland in 2013 with a “Dean’s Award for Research Higher Degree Excellence”. Next he was recruited to post-doctoral positions at the University of Pittsburgh USA and Chang Gung University Taiwan. In 2017, he joined HIV and Molecular Virology laboratory at QIMR Berghofer as a research officer. He has investigated important human viral pathogens including human immunodeficiency virus (HIV), respiratory syncytial virus (RSV), Epstein Barr Virus (EBV) and dengue virus (DENV) and SARS-CoV-2 research. His team established a patented cell culture-based platform to produce a potent broad-spectrum antiviral agent that can inhibit DENV, RSV, ZIKA virus and SARS-CoV-2 replication.

Section 2: Neuroscience

Dr Chien-Yuan Pan 潘建源

Professor, Department of Life Science
Deputy Chair, Neurobiology and Cognitive Science Center
National Taiwan University, Taiwan
Email: cypan@ntu.edu.tw

Chien-Yuan Pan accepted his Ph. D. from the Institute of Biochemistry, Yang-Ming University. He is currently a professor in the Department of Life Science, National Taiwan University; he has served as the director of the Animal Resource Center since 2016–2019 and deputy chair of the Neurobiology and Cognitive Science Center since 2017. Dr. Pan focuses his research in 3 directions to verify the intracellular mechanisms of synaptic transmission and neurodegeneration. 1. Effects of Ca^{2+} -sensor proteins in modulating Ca^{2+} homeostasis and neuronal activities; 2. Functions of Zn^{2+} homeostasis in autophagy and neurodegeneration; 3. Apply nanotechnology such as nanowire field effect transistor (NW-FET) or specialized microscopy techniques to characterize neuronal activities. Recently, Dr. Pan adopted a modified epifluorescence tracking method and found that lysosomes could not maintain their integrity after the depletion of the intracellular Zn^{2+} concentration. For neurons treated with dopamine, Zn^{2+} -depletion blocked the formation of autophagosomes and enhanced neuron survival. The sensitive NW-FET revealed that the concentration of Zn^{2+} surrounding glutamate-stimulated neurons could reach ~ 100 nM, which is high enough to bind with amyloid β . Dr. Pan's research illustrates the importance of Ca^{2+} and Zn^{2+} homeostasis in modulating neuronal functions.

<https://homepage.ntu.edu.tw/~deptlifesci/?menu=faculty&item=ChienYuanPan>

Dr Kai-Hsiang Chuang 莊凱翔

Associate Professor, Queensland Brain Institute
The Centre for Advanced Imaging
The University of Queensland, Australia
Email: k.chuang@uq.edu.au

Dr Kai-Hsiang Chuang received his Ph.D. degree in electrical and biomedical engineering from the National Taiwan University, Taiwan, in 2001. During his graduate study, he developed methods for improving the detection of brain activity using functional magnetic resonance imaging (MRI). He undertook postdoctoral research at the National Institutes of Health, USA, from 2003 to 2007, where he focused on understanding brain connectivity using functional and molecular imaging. He joined the Agency for Science Technology and Research (A*STAR), Singapore, in 2008 as head of the MRI Group. He established the first preclinical imaging facility in Singapore and facilitated research collaboration across academia, clinic and industry. His lab pioneered functional connectivity imaging of the rodent brain to understand the basis and function of resting-state brain network, and the development and application of MRI biomarkers for treatment development. In late 2015, he moved to the University of Queensland, Australia, as an Associate Professor with the Queensland Brain Institute and the Centre for Advanced Imaging. His current research focuses on understanding the functional connectome of behaviour using multimodal techniques, and developing novel imaging biomarkers for diagnosis and prognosis. He is serving on the editorial boards of *Frontiers in Brain Imaging Methods*, *NeuroImage* and *Scientific Reports*.

Section 3: Marine Science

Dr Li-Lian Liu 劉莉蓮

Professor, Department of Oceanography
Director, Frontier Center for Ocean Science and Technology
Deputy Dean, College of Marine Sciences
National Sun Yat-sen University, Taiwan
Email: lilian@mail.nsysu.edu.tw

Dr. Li-Lian Liu obtained her Ph.D. from the Department of Zoology and Physiology, Louisiana State University (USA). She is a professor at the Department of Oceanography, National Sun Yat-sen University. Currently, she serves as the Director of the Frontier Center for Ocean Science and Technology and the Deputy Dean of the College of Marine Sciences. Her research interests are the anthropogenic impacts on marine invertebrates and conservation biology. She studies environmental hormones, especially organotin pollution and imposex, including snails from marine and freshwater ecosystems. She also conducted shallow-water hydrothermal vent and giant clam research for conservation in Taiwan. Besides, she is a pioneer in studying the fate of particulate matter (PM) in marine environments. Her research team published a world-first research finding on PM1 that released from fossil fuels would accumulate in marine biota when they enter the ocean.

Dr Chih-Lin Wei 魏志潋

Associate Professor, Institute of Oceanography
National Taiwan University, Taiwan
Email: clwei@ntu.edu.tw

Dr Chih-Lin Wei is an associate professor at the Institute of Oceanography, National Taiwan University. He is interested in how environments shape and control the distribution, diversity, and ecosystem functioning of deep-sea communities and how human activities, climate changes, or natural disturbances may affect these biological attributes. His recent works focus on two general areas. One uses macroecological approaches to study environmental controls on the deep-sea ecosystem at broad spatial and long-term time scales. The other is a multi-year study on the high-energy, active submarine canyons off SW Taiwan. He is interested in how the submarine canyons of different origins, evolutions, and morphologies may affect the benthic communities. How does the heterogeneous seafloor off SW Taiwan contribute to the regional diversity and carbon cycling of the otherwise monotonous muddy seafloor? He hopes to answer these questions to understand the ecological contribution of these geologically prominent but little-studied ecosystems.

Dr Wen-Sung Chung 鍾文松

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Dr Wen-Sung Chung obtained his PhD from the University of Queensland (Australia) in 2014. He has extensive experience working in marine environments, including dozens of deep sea expeditions in the Pacific and Indian Ocean; hundreds of hours diving in the well-lit reef and under the constantly dark deep sea using a manned submersible. He also has a long track record in cephalopod biology, as a taxonomist (published a book *Guide to the Cephalopods of Taiwan*), visual neuroscientist (fish and cephalopod), brain imaging pioneer in cephalopods. He leads the ground-breaking work of cephalopod neuroscience which brings it to the same technological level as mammals using MRI-based technology. His work unfolds numerous neuroanatomical adaptations in the sensory and learning brain regions through the ecologically-informed comparative approach. These timely achievements are recognised by cephalopod and neuroscience communities (e.g. commentaries by *Nature Index* and *Current Biology*) and featured in multiple documentary productions (BBC).