

## ACADEMIC ACTIVITIES

### Publication(s) of the week

1. Rao, W. W., Zhu, X. M., Zong, Q. Q., Zhang, Q., Hall, B. J., Ungvari, G. S., and **Xiang, Y. T.** (2019) Prevalence of Prenatal and Postpartum Depression in Fathers: A Comprehensive Meta-Analysis of Observational Surveys. *J Affect Disord* [5yr IF=4.16]
2. **Liu, W.**, Deng, C., Godoy-Parejo, C., Zhang, Y., and **Chen, G.** (2019) Developments in Cell Culture Systems for Human Pluripotent Stem Cells. *World J Stem Cells* **11**, 968-981 [2018IF=3.534]

### BCAT Meeting – Dr. Kaeling TAN

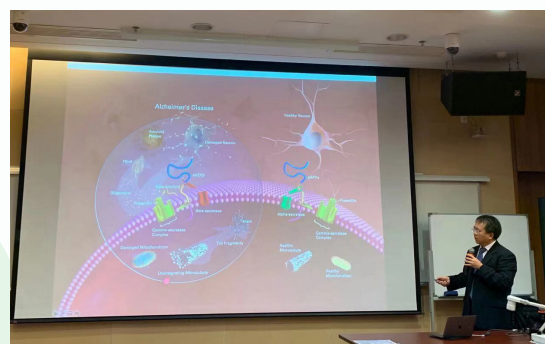
Dr. Kaeling TAN presented a talk on the study of “Transcriptional Response in *Candida glabrata* during Macrophage Phagocytosis” in the BCAT meeting on 27 November. Dr. TAN claimed that *C. glabrata* is an opportunistic fungal pathogen, capable of surviving and growing inside macrophage. This ability is essential for its virulence. However, details on the responses of the immediate *C. glabrata* to macrophage phagocytosis and its survival and multiply within macrophage are waiting for discovery. Dr. TAN presented her work on a systematic analysis on genome-wide transcription changes of *C. glabrata* in high temporal resolution upon macrophage phagocytosis and the regulatory mechanisms underlying specific transcription responses to macrophage.

### Seminar Series

#### Translation Research of Alzheimer’s Disease: From Basic Study to Long-term Care – Prof. Yuan-Han YANG

Prof. Yuan-Han YANG, Professor of Kaohsiung Medical University, presented “Translation Research of Alzheimer’s Disease: From Basic Study to Long-term Care” on 25 November.

Prof. YANG introduced the common causes of mid-to-late Alzheimer’s Disease (AD), multiple approaches combining pharmacological and the non-pharmacological intervention. He also reported the possible relationships among gene, angiotensin converting enzyme gene, clinical phenotype, and blood pressure in AD. Prof. YANG also shared his development on the multiple training modalities to slow the decline of AD for non-pharmacological intervention. Prof. YANG and his team used Chinese calligraphic handwriting and drawing that require integration of the mind and body to the features of Chinese alphabet writing through an interwoven dynamic cortical procession. These activities involved visual perception of the characters, spatial structuring of the characters, cognitive planning, and maneuvering of the writing brush to follow specific characteristic configurations that may augment the capability of possible cognitive reservation. Prof. YANG concluded that they are always considering to establish and maintain a strong therapeutic alliance that is holistic, pragmatic, involving ethical consideration, psycho-education, behavioral and environmental strategies, appropriate pharmacotherapy and non-pharmacological interventions, and patient–caregiver dyad psychosocial well-being is crucial and central to the comprehensive care and treatment in AD.



## Seminar Series

### Constitutive Androstane Receptor (CAR) Activation and Regulatory Mechanisms – Dr. Masahiko NEGISHI

Dr. Masahiko NEGISHI, Senior Investigator of NIEHS, National Institutes of Health, presented “Constitutive Androstane Receptor (CAR) Activation and Regulatory Mechanisms” on 27 November.

Dr. NEGISHI described CAR and PXR as the orphan members of the nuclear hormone receptor superfamily and therefore, he started his research on this area. Then his laboratory became the first laboratory to characterize CAR as a phenobarbital-activated receptor, and leading to subsequent studies by numerous laboratories around the world to establish CAR and PXR as xenobiotic-activated transcription factors. Dr. NEGISHI found that CAR and PXR regulate a large set of genes that encode for enzymes and transporters involved in the metabolism and excretion of xenobiotics including therapeutic drugs. They also regulate the hepatic metabolism of endobiotics such as glucose, fatty acids, bilirubin and bile acids. In addition, Dr. NEGISHI presented his recent studies that CAR and PXR activate the GADD45 genes to trigger cell signals, such as the p38 and JNK pathways, altering the cell death, cycle and/or migration. Therefore, Dr. NEGISHI believed that CAR and PXR implicated in various diseases such as diabetes and liver injuries and tumors, and he will continue to decipher the molecular mechanisms by which these signal molecules regulate phosphorylation/de-phosphorylation of CAR and how xenobiotics utilize this mechanism to activation of CAR.



## Seminar Series

### Precision Medicine in ARDS and Sepsis – Prof. Hiabo ZHANG

Prof. Hiabo ZHANG, Professor of St. Michael's Hospital, University of Toronto, presented “Precision Medicine in ARDS and Sepsis” on 29 November.

Prof. ZHANG introduced the cause of acute respiratory distress syndrome (ARDS) that it constitutes a syndrome of acute hypoxemic respiratory failure that develops primarily from disruption of lung endothelial and epithelial integrity associated with excessive inflammatory responses. ARDS also causes a mortality rate of 30 - 40% and sepsis accounts for 75% of all predisposing causes of ARDS. Therefore, Prof. ZHANG has been working on the pharmacological therapy for ARDS. He claimed that the identification of ARDS and sepsis endotypes facilitated the focusing on precision therapeutic interventions in the cohorts of patients for the heterogeneity of ARDS and sepsis. He concluded that novel therapeutics which targeting multiple mechanisms of injury, maintaining or augmenting host defenses to pathogens, and facilitating the lung repair process are promising for ARDS therapy.



## PhD ORAL DEFENSE

### PhD Oral Defenses by Jingyun TAN and Gang FENG of Prof. Xuanjun ZHANG's group

Mr. Jingyun TAN and Mr. Gang FENG supervised by Prof. Xuanjun ZHANG completed their PhD oral defenses on 27 and 28 November. Their thesis titles are "Development of Cyano Structures for Optical and Chiroptical Sensing" and "Design of the Bioorthogonal Reaction Strategy for Microtubule Functionalization", respectively.

Mr. Jingyun TAN presented his development on the cyan chemistry by proposing novel synthesis strategy, investigating the relationship between structure and optical properties, exploiting various sensing applications especially for Reactive Oxygen Species (ROS) detection. He reported that he firstly constructed the spiro pyrrol-pyran (SPP) scaffold that the derivatives showed tunable emission colours, high quantum yields, large Stokes shifts, excellent stability and cell permeability. He claimed that this development showed a great potential as candidates in optical and biological field. He further reported his research that green emitting spirocyclic fluorophores and phenylboronic acid bearing probes were successfully connected to form FRET probes for ratiometric sensing of ONOO<sup>-</sup> and pH values by utilizing poly(vinyl alcohol) (PVA) as a bridge. Taking the advantage of the conformational change of phenothiazine moiety, he also explored the uncharted territory, chiroptical detection of hypochlorite.



Mr. Gang FENG presented his research about functionalizing intercellular microtubule with bioorthogonal probes for *in-situ* hydrogen sulfide detection. He also reported a novel *in-situ* generated fluorescence conjugation in the Reppe anhydride - tetrazine bioorthogonal reaction. He developed a ratiometric fluorescent pH probe RB-RA-TZ-2 for intracellular pH mapping in living cells. He also developed a paclitaxel derivate bioorthogonal probe RT-2 to functionalize *in vitro* polymerized microtubule for *in-situ* ATP detection. He concluded that his study benefits both *in vitro* and intracellular microtubule-related studies.

## High School Talk to School of the Nations

Prof. Chuxia DENG delivered a high school talk “Cancer: How Much Do We Know? What Should We Do?” to the students of School of the Nations on 27 November. Prof. DENG shared the causes, therapies and risks of cancer, and the importance and development of precision medicine for cancer. After this talk, Prof. DENG had an in-depth discussion with the Form 5 and Form 6 students who are highly interested in cancer and biomedical sciences. The students discussed and consulted on cancer study and their future undergraduate study proactively. Prof. DENG encouraged them to further their studies in biomedical sciences and contribute to the health of mankind and the society.

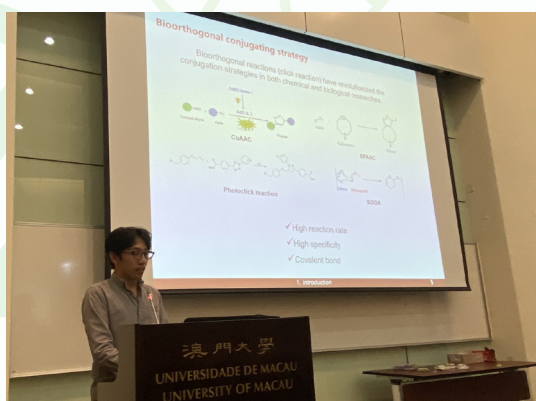


## STUDENT ACTIVITY

### FHS Postdoc Student Seminar - Presented by Prof. Yunlu DAI's group and Prof. Xuanjun ZHANG's group

On 28 November, Mr. Jie LI of Prof. Yunlu DAI's group presented “Semiconducting Polymer Nanotheranostics for NIR-II/Photoacoustic Imaging-guided Photothermal Initiated Nitric Oxide/ photothermal Therapy” and Mr. Gang FENG of Prof. Xuanjun ZHANG's group presented “Construction of Ratiometric Fluorescent Probe Based on Inverse Electron-demand Diels–Alder Reaction for pH Measurement in Living Cells”.

The next seminar will be held on 12 December, and presented by the group members of Prof. San Ming WANG and Prof. Douglas Xiaohua ZHANG.



## UPCOMING EVENT

### Nuclear Medicine Scientific Symposium

Macao Society of Nuclear Medicine and Molecular Imaging Inauguration Ceremony and  
2019 Macao Scientific Symposium of Nuclear Medicine and Molecular Imaging

# 澳門核醫及分子影像學會成立典禮 暨 2019澳門核醫及分子影像學研討會

• December 8 2019 09:30-18:20 •

澳門大學圖書館演講廳E2-G012

E2-G012 Lecture Hall of Wu Yee Sun Library  
University of Macau

FHS is going to hold “2019 Macao Scientific Symposium of Nuclear Medicine and Molecular Imaging” on 7 and 8 December 2019 in E2-G012, the UM Library. This event is jointly sponsored by Macao Society of Nuclear Medicine and Molecular Imaging. Experts and researchers from Macao, Hong Kong, China, and overseas are invited to attend this symposium and share their latest research developments in nuclear medicine. On 8 November, the Society is going to host its “Macao Society of Nuclear Medicine and Molecular Imaging Inauguration Ceremony”. You are cordially invited to take part in these two events.

Let's join this symposium together!

December				
Mon	Tues	Wed	Thurs	Fri
2	3	4	5	6
	<p><b>Training for Particle Metrix ZetaView Classic Z PMX 120-Z</b> Time: 15:00 – 17:00 Venue: N22-4035a</p>			
9	10	11	12	13
<p><b>Holiday</b> (The first working day after the Feast of Immaculate Conception)</p>			<p><b>Oral Defense</b> Ang LI Supervisor : Prof. Chris Koon Ho WONG Time: 10:00 Venue: N6-G010</p> <p><b>Oral Defense</b> Yuan WANG Supervisor : Prof. Lijun DI Time: 15:00 Venue: N6-2022</p> <p><b>FHS Postdoc/ Student Seminar</b> Field: Data science &amp; Cancer research Host: Prof. San Ming WANG and Prof. Douglas ZHANG Time: 17:00-18:00 Venue: N22-G002</p>	<p><b>Seminar Series</b> Regulation of D1 Dopamine Receptor Signaling in Physiology and Diseases Speaker: Prof. Xuechu ZHEN Host: Prof. Wenhua ZHENG Time: 09:30 - 10:30 Venue: E12-G021</p>
16	17	18	19	20
<p><b>Seminar Series</b> Mapping Cell Landscapes by Single-cell Analysis Speaker: Prof. Guoji GUO Host: Prof. Renhe XU Time: 16:00 - 17:00 Venue: N22-G002</p>		<p><b>Oral Defense</b> Rui MA Supervisor : Prof. Henry Hang Fai KWOK Time: 16:30 Venue: N6-G022</p> <p><b>B-CAT Meeting #22</b> Speaker: Prof. Zhen YUAN Time: 17:00 Venue: E12-G004</p>		