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dated on: 2025/07/01

The Chinese University of Hong Kong
Department of Psychiatry
Schedule for July, 2025

Date	Time	Activity	Speaker(s)
Jul3	14:30-16:30	Semi-annual orientation program for SH trainees (SH)	Dr. Vincent LEUNG Dr. Brian OR
	14:30-16:30	Introduction Course for New Doctors of TPH/NDH (MUL)	Dr. Pat CHAN, Dr. Winki TAI, Dr. Raymond LEUNG, Dr. Kenneth WONG, Dr. Mandy WONG
Jul10	14:30-16:00	Psychotherapy Case Conference (MUL)*# *Psychotherapy training in NTEC - Induction for trainees*	Psychotherapy trainers and supervisors Moderator: Dr. Irene KAM
	16:00-17:00	Psychotherapy Supervision (MUL)*#	
Jul17	14:30-16:30	Quality Assurance Meeting (SH)# / (TPH)#	
Jul24	14:30-16:00	Academic Lecture (MUL)* *Math + AI + Wearables for Sleep & Mood Disorders* Registration: https://bit.ly/43XsDoU	**Prof. Jae Kyoung KIM** Associate Professor Department of Math Sciences Korea Advanced Institute of Science and Technology
	16:00-17:00	Scientific Workshop (MUL) *Introduction to R for statistical computing* Registration: https://bit.ly/44ML5AR	Dr. Tim LI
Jul31	14:30-15:30	Research Seminar * *Multimodal data fusion for early detection of Alpha-synucleinopathies*	Mr. Neil NI Supervisor: Prof. YK WING Co-supervisors: Dr. Joanne HUANG, Dr. Edward HUI
	15:30-16:30	Research Seminar * *Colonic dysfunction and gut microbiome dysbiosis at prodromal alpha-synucleinopathy – towards a better understanding of aetiology and pathogenesis* Registration: https://bit.ly/44tdwDE	Ms. Dorothy ZHU Supervisor: Prof. YK WING Co-supervisor: Dr. Joanne HUANG

Venue:	*Live video	#Closed meeting	@Non-CME Event	MUL	TPH	SH	1AL
				Seminar Room, Multi-centre, Tai Po Hospital, Tai Po, N.T.	Conference Room 1 G/F, Wing D Tai Po Hospital Tai Po, N.T.	Dining Room Ward 7AB Dept. of Psychiatry 7/F, Shatin Hospital Shatin, N.T.	Rm. 1005, Dining Room Ward 1AL, 1/F Tai Po Hospital Tai Po, N.T.

Please contact 2607-6025 two days before hand to arrange presentation equipment.

http://www.psychiatry.cuhk.edu.hk

香港中文大學
The Chinese University of Hong Kong

香港中文大學醫學院
Faculty of Medicine
The Chinese University of Hong Kong

ACADEMIC LECTURE

Prof. Jae Kyoung KIM

Associate Professor
Department of Math Sciences
KAIST

24 JUL 2025 (THU)

14:30 - 16:00

Webinar

Topic: Math + AI + Wearables for Sleep & Mood Disorders

Abstract:

We are in the era of "Medical Big Data," driven by advancements in experimental and medical techniques. In this talk, I will illustrate how the combination of machine learning and mathematical modeling can be leveraged to analyze big data, yielding valuable insights for more accurate and efficient diagnosis and treatment with focus on sleep disorders. First, I will demonstrate how mathematical modeling and machine learning techniques can be used to dissect the complex sleep patterns of shift workers and individuals with mood disorders, as measured by wearable devices. This innovative approach allows us to identify personalized sleep-wake patterns that effectively minimize daytime sleepiness and mood disorders. This research has led to the development of the mobile application "SleepWake," which provides individuals with tailored sleep schedules, optimizing their overall sleep experience.

Biography:

Jae Kyoung Kim is an Associate Professor in the Department of Mathematical Sciences at KAIST and the Chief Investigator of the Biomedical Mathematics Group at the Institute for Basic Science (IBS). He received his Ph.D. in Applied and Interdisciplinary Mathematics from the University of Michigan and completed his postdoctoral training at the Mathematical Biosciences Institute at The Ohio State University. His research lies at the intersection of nonlinear dynamics, stochastic processes, and scientific computing, with a strong emphasis on solving real-world biomedical problems. He has developed mathematical models that have directly contributed to the development of new drugs and digital therapeutics for sleep disorders.

Dr. Kim's interdisciplinary work has been widely recognized. He is a recipient of the prestigious Human Frontier Science Program (HFSP) Young Investigator Award, the Young Researcher Award from the Korean Society for Industrial and Applied Mathematics (KSIAM), the Sangsan Young Mathematician Award from the Korean Mathematical Society, the 30 Young Scientists of Korea Award, and the Choi Seok-jung Award.

Registration is required. For enquiries, please contact pci-event-app@cuhk.edu.hk or 26076025.
Please display the registration name for joining the Zoom lecture.

*Prof. Kim will deliver the lecture via Zoom.

REGISTER NOW

Scientific Workshop - Workshop series on Artificial Intelligence and Data Analysis

香港中文大學
The Chinese University of Hong Kong

CU Medicine HONG KONG
香港中文大學醫學院
Faculty of Medicine
The Chinese University of Hong Kong

Dr. Tim LI

Assistant Professor
Department of Psychiatry
Faculty of Medicine
The Chinese University of Hong Kong

24 JUL 2025 (THU) & 16:00 - 17:00

Seminar Room, Multicentre, Tai Po Hospital

Workshop 1: Introduction to R for statistical computing

R is a widely-used programming language for statistical computing and data analysis. This workshop covers fundamental programming skills including importing datasets, data management, basic operations (such as arithmetic, logical, and relational operations), control structures (like loops and conditional statements), as well as working with packages and libraries in R.

Sign Up

The workshop series will include practical exercises in data analysis using R. Attendees are advised to bring their laptops with R and RStudio installed (https://posit.co/download/rstudio-desktop).

The workshops will cover a range of skill levels, starting from basic and progressing to advanced. It is recommended to attend all workshops for the full learning experience.

For enquiries, please contact pci-event-app@cuhk.edu.hk or 2607602

香港中文大學
The Chinese University of Hong Kong

香港中文大學醫學院
Faculty of Medicine
The Chinese University of Hong Kong

Research Seminar

Date: 31 Jul 2025 (THU)

Time: 14:30 - 15:30

Venue: Zoom

Register Now

Mr. Neil NI

Supervisor: Prof. YK WING

Co-supervisors: Dr. Joanne HUANG, Dr. Edward HUI

Topic: Multimodal data fusion for early detection of Alpha-synucleinopathies

Abstract:

Among alpha-synucleinopathies neurodegeneration, the most common disorder is Parkinson's disease (PD). PD is characterized by both motor and non-motor disturbances. By the time PD is clinically diagnosed, substantial and irreversible neuronal loss has already occurred, manifesting as severe motor impairments such as tremor, rigidity, and bradykinesia. However, subtle motor signs (e.g., mild tremor) and non-motor disturbances (e.g., sleep or mood changes) often emerge years before clinical diagnosis, offering a potential window for early intervention. Currently, detecting these early signs relies on costly in-person visits that lack standardized quantitative measures for prodromal symptoms, resulting in low sensitivity for early detection. Advances in digital medicine enable capturing these diverse prodromal signs. Combined with AI-machine learning methods for multimodal data fusion, this approach paves the way for sensitive, scalable, and remote assessment of early alpha-synucleinopathies. To translate these technological opportunities into clinically meaningful tools, our research group has established a prospective cohort comprising healthy controls, prodromal PD (i.e., patients with idiopathic REM sleep behavior disorder), and early-stage PD patients. This cohort is supported by rich clinical and digital phenotyping data, including socio-demographic profiles, risk factors, mood and sleep assessments, and wearable/home-based sensor data (e.g., actigraphy and home polysomnography). In addition, we have developed and validated a smartphone-based application that delivers a comprehensive battery of assessments across five key domains: neurocognition, motor function, speech, facial expression, and lifestyle risk factors.

In this study, we aim to build an end-to-end software and machine learning framework that fuses these multimodal digital signals to 1) quantitatively assess motor and non-motor disturbances and 2) detect alpha-synucleinopathies at their early stages. There are several key technical challenges, including the extraction of clinically meaningful features from heterogeneous data, managing high-dimensional data and missing modalities, modeling cross-modal relationships, and ensuring model interpretability. To overcome these challenges, our methodological approach includes: (1) assemble cross-sectional multimodal dataset with healthy controls, prodromal PD and PD patients from our cohort with rigorous data curation workflow; (2) representation learning, domain-informed feature engineering and harmonization across data modalities; (3) combinatory analysis, feature selection and dimensionality reduction techniques to reduce dimensionality while preserving signal; (4) predictive modeling for disease staging and progression forecasting using state-of-the-art machine learning and deep learning techniques and model interpretation techniques.

By integrating digital phenotyping with advanced analytics, this work aims to generate reproducible, quantitative digital biomarkers that sensitively track the earliest trajectories of α-synucleinopathies. The resulting end-to-end software platform will process diverse digital data such as smartphone and wearable, execute automated quality control and analytics, and deliver interpretable metrics for early detection, subtyping, and severity assessment. This system powers precision-medicine trials in Parkinson's disease and related alpha-synucleinopathies and contributes to digital medicine innovation.

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Research Seminar

Date: 31 Jul 2025 (THU)

Time: 15:30 - 16:30

Venue: Zoom

Register Now

Ms. Dorothy ZHU

Supervisor: Prof. YK WING

Co-supervisor: Dr. Joanne HUANG

Topic: Colonic dysfunction and gut microbiome dysbiosis at prodromal alpha-synucleinopathy – towards a better understanding of aetiology and pathogenesis

Abstract:

α-synucleinopathies, including Parkinson's disease (PD), are neurodegenerative diseases characterized by abnormal accumulation of α-synuclein in nervous systems. Non-motor features, such as idiopathic/isolated REM sleep behavior disorder (iRBD), constipation, and olfactory loss often emerge prior to neurological features and serve as early markers of PD. Among these, constipation is one of the earliest indicators, with PD-related constipation ("α-Syn-related constipation") differing from constipation in non-PD individuals by its greater severity and treatment resistance. Nevertheless, there is a lack of specific biomarkers for early identification of α-Syn-related constipation, and the mechanistic link between constipation and α-synucleinopathy neurodegeneration remains unclear. Emerging evidence highlights objectively measured colonic features, such as colonic transit time (CTT), may overcome the subjectivity inherent to self-reported symptoms and improve the clinical utility of constipation in PD identification. Additionally, the gut microbiome may play a role in the pathogenesis of PD, with distinct gut dysbiosis identified in both PD patients and the prodromal stage of iRBD. Such dysbiosis may induce intestinal barrier disruption and subsequent inflammatory responses, potentially bridging colonic dysfunction to neurodegenerative processes.

This study aimed to comprehensively characterize colonic dysfunction in patients with iRBD, a most specific prodromal stage of PD, from the perspective of clinical profile, courses, aetiology and potential pathophysiology (i.e., gut dysbiosis). This is a case-control study including controls and video polysomnography (vPSG) confirmed iRBD patients, both with and without chronic constipation assessed by Rome-IV criteria (i.e. Control-nonCC, Control-CC, RBD-nonCC, RBD-CC). Colonic functions will be measured subjectively (e.g., questionnaire and stool diary) and objectively (e.g., CTT and gut microbiota). Through establishing multidimensional investigation among subjective/objective colonic measures, gut microbiota features, lifestyle factors (e.g., physical activity and diet), clinical comorbidities and medications, as well as neurodegenerative biomarkers, this research will advance current understanding of the aetiologies and pathogenesis related to α-Syn-related constipation, and ultimately facilitate the early detection and intervention of PD and other α-synucleinopathies in future.

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