

Hong Kong Biotech Horizon 2017

# 世界生物技術大會：診斷與治療

**Global Congress on Biotechnology: Diagnostics and Therapeutics**

November 22-25, 2017 Hong Kong Science Park

Organizer: Hong Kong Biotechnology Organization

## Meeting Program



# Contents

## **Scientific Content**

Meeting at a Glance.....	1
Programme Committee.....	6
Local Organizers Committee.....	8
Organizers .....	10
Co-Organizers .....	10
Supporting Organizations.....	10
Media Partners.....	10
Sponsors.....	10
Venue Information.....	11
Map of Science Park .....	12

<b>General Information.....</b>	<b>13</b>
---------------------------------	-----------

<b>Programme .....</b>	<b>15</b>
------------------------	-----------

<b>Keynote Speaker Abstracts .....</b>	<b>35</b>
--	-----------

<b>Speaker Abstracts.....</b>	<b>53</b>
-------------------------------	-----------

# Scientific Content

## Meeting at a Glance

Wednesday - 22nd November 2017		
1300-1800	Registration 注册	
1500-1505	Opening Address 开幕辞	Albert Cheung-Hoi Yu 于常海
1505-1525	Opening Ceremony 开幕式	
1525-1555	Hong Kong – The Biotechnology Innovation Hub in the Greater Bay Area 香港 — 粤港澳大湾区的生物科技创新枢纽	Fanny Chiu-Fun Law Fan 罗范椒芬
1555-1635	Exercise, Adiponectin and Brain Health 运动、脂联素和脑健康	Kwok-Fai So 苏国辉
1635-1715	Genetic Counselling in China 中国的遗传咨询	Lin He 贺林
1715-1830	Evening Reception 欢迎招待会	

Thursday - 23rd November 2017		
0800-1930	Registration 注册	
0900-0940	Innovations for Global Health – Problem Solving for the Poor 全球卫生革新 — 为贫困患者解难	Alex Man-Tat Ng 吴文达
Symposium - Modernizing Chinese Medicine: From Basic Research to Applications 中医药：从基础研究到应用		Chair: Christopher Hon-Ki Cheng 郑汉其 Co-Chair: Karl Wah-Keung Tsim 詹华强
0940-1000	Old and New Perspectives of Chinese Medicine in Brain Health 古今中药在脑健康中的应用	Karl Wah-Keung Tsim 詹华强
1000-1020	Development of a Health Product from Chinese Medicine Gou-Teng for Cognitive Impairment 一种用于认知障碍的保健品 — 源于中药钩藤的产品开发	Zhi-Xiu Lin 林志秀
1020-1040	Translating Fructus Aplinia Oxyphylla into New Drugs and Food Supplements for Aging Associated Diseases 将益智仁开发为老龄化相关疾病的新药与食品补充剂	Simon Ming-Yuen Lee 李铭源
1040-1100	Good Manufacture Practice in the TCM Industry 中药业的优良制药规范	Christopher Hon-Ki Cheng 郑汉其
1100-1120	Good Research Practice in Chinese Medicine Clinical Research 优质中医药临床试验 — 良好临床研究规范	Jessica Yuet-Ling Ching 程月玲
1120-1130	Q&A Session 问答环节	
1130-1150	Coffee Break 茶歇	

Lunch Lecture 午餐讲座		Chair: Danny Wei-Jie Chen 陈伟杰
1150-1210	NAMI's Engineered Biomaterials for Targeted Delivery 用于针对性传递的工程生物材料	Connie Kwok 郭秀娟
1210-1240	Advancement in National Biometrology and Standards 国家生物计量和标准的提升	Jing Wang 王晶
1240-1300	Anti-diabetic Mechanism of Resistant Starch Revealed by Metabonomics and Intestinal Microbiota Analysis 基于代谢组学及肠道菌群分析的抗性淀粉 RS 抗糖尿病作用机制研究	Xue-Yong Wang 王学勇
Infectious Disease 传染疾病		
1300-1340	Challenges Facing Infectious Disease Prevention and Control in Guangdong - Hong Kong - Macao Greater Bay Area Today 粤港澳大湾区传染病防控的现状和挑战	Chang-Wen Ke 柯昌文
Symposium - Precision Diagnostics and Therapeutics 精准诊断与治疗		Chair: Michael Meng-Su Yang 杨梦甦 Co-Chair: Joseph Wing-On Tam 谭荣安
1340-1400	Study Cancer Cell Heterogeneity and Metastasis on a Chip 芯片上研究癌细胞的异质性和转移	Michael Meng-Su Yang 杨梦甦
1400-1420	The Elements for Success in Molecular Diagnostic Platform Technology – A Personal Experience and Perspective 分子诊断平台技术的成功要素 — 个人经验和观点	Joseph Wing-On Tam 谭荣安
1420-1440	Precision Medicine with Functional Diagnostics (PDX, CR Micro Tumour and Organoid) 针对功能性诊断的精准医疗 (肿瘤移植模型、微肿瘤的完全缓解及细胞团)	Dan-Yi Wen 闻丹忆
1440-1500	Biomarker and Companion Diagnostics in Precision Medicine 精准医疗中的生物标志物和伴随诊断	Nick Ya-Fei Zhang 张亚飞
1500-1520	Screening and Identification of Early Cancers – Is It Achievable? 早期癌症的筛查与确诊 — 可实现吗?	Rossa Wai-Kwun Chiu 赵慧君
1520-1540	Wnt Signaling – A New Target for Treating Neuropathic and Cancer Pain Wnt 信号通路 — 治疗神经病理性疼痛和癌症疼痛的新靶点	Xue-Jun Song 宋学军
1540-1550	Q&A Session 问答环节	
1550-1610	Coffee Break 茶歇	
Symposium - Biotechnology in Drug Discovery 生物科技药物研发		Chair: Pei-Yuan Qian 钱培元 Co-Chair: Sandy Kwan-Yuk Kwok 郭均钰
1610-1630	Genome-mining Based Drug Lead Discovery 基于基因组的药物先导开发	Pei-Yuan Qian 钱培元

1630-1650	TaiGen Biotechnology – A New Drug R&D Company 太景生物科技 — 新崛起的药物研发企业	Ming-Chu Hsu 许明珠
1650-1710	Toll-like Receptor 2 Co-stimulation Potentiates the Antitumor Efficacy of CAR-T Cells 类鐸受体 2 共同刺激下可增强嵌合抗原受体 T 细胞的抗癌作用	Peng Li 李鹏
1710-1730	Granzyme B-Like Peptide, Liquid Biopsy, and Novel Anti-Cancer Therapy B 肽颗粒酶、液体活检以及新的抗癌疗法	Jennifer Wai-Chun Lo 卢惠珍
1730-1750	The Development of Lipid Nanoparticles for RNA Therapeutics 脂质纳米粒在核酸药物中应用进展	Lin-Xian Li 李林鲜
1750-1800	Q&A Session 问答环节	
1800-1900	Dinner Break 晚休	
Workshop (Supported by Hong Kong Medical & Healthcare Device Industries Association Limited [HKMHDA]) 工作坊 (由香港医疗及保健器材行业支持)		Kevin G. Orr 柯家洋
1900-2100	Tips to Successfully Complete Your CFDA Applications 国家食品药品监督管理总局 申请通关秘籍	Ru-Yi He 何如意
	生物等效性试验在中国仿制药一致性评价中的作用及经验分享	Lan Zhang 张兰

## Friday - 24th November 2017

0800-1900	Registration 注册	
0900-0940	Towards a Cure for Cancer 迈向癌症治愈之路	Guo-Liang Yu 余国良
0940-1020	The Role of Big Data, Analytic Machine Learning and AI in Clinical Trials 大数据、分析机器学习和人工智能在临床试验中的作用	Benny Chung-Ying Zee 徐仲镛
1020-1040	The Nature and Future of Big Data 大数据的本质与未来	Herbert Chia 车品觉
1040-1110	R&D and Industrialization of Antibody Drug 抗体药物研发和产业化	Ya-Jun Guo 郭亚军
1110-1120	Coffee Break 茶歇	
Panel – Accelerating HK Industry-Academia-Research in Translation (Organized by Hong Kong Industry University Research Collaboration Association) 座谈会 – 加速香港产学研转化 (由香港產學研合作促進會协办)		
1120-1150	The Biotech Incubation in Universities 大学之生物科技培育	Chair: Thomas Cheung 张俊勇 Hailson Yu 余梓山 Alfred Tan 陈庆忠 Kenneth Chan 陈炜国

1150-1220	The Industrial Opportunities for Biotech 生物科技的产业机会	Chair: Samson Wai-Ho Tam 谭伟豪 Jonathan Swee-Fu Chee 朱瑞富 Tony Chen 陈业裕 Eric Chen 陈子翔
Panel – Intellectual Property 座谈会 – 知识产权		Chair: Jacqueline Lui 吕许昭棠
1220-1305	Intellectual Property Protection In Life Sciences 生命科学的知识产权保护	Kam-Wah Law 罗金华 Lewis Wai-Hong Ho 何伟康 Andrew Cobden 安德鲁·科布登
1305-1405	Lunch Break 午休	
1405-1445	The Payload Technology for Space Biomedical Research on the Tianzhou – 1 Spacecraft 空间微流控芯片生物医学实验技术及航天飞行搭载	Yu-Lin Deng 邓玉林
1445-1525	The Evolution of Herpes Simplex Viruses as Oncolytic Agents 单纯疱疹病毒作为溶瘤细胞制剂的演化	Bernard Roizman 伯纳德·罗兹曼
Symposium - Cancer Immunotherapy (Sponsored by Shenzhen International Institute for Biomedical Research [SIIBR]) 癌症的免疫疗法 (由深圳罗兹曼国际转化医学研究院赞助)		Chair: Grace Guo-Ying Zhou 周国瑛
1525-1550	Overview of Viral Vectors Used for Gene Therapy 用于基因治疗的病毒载体概述	Xiao-Yan Dong 董小岩
1550-1615	Cancer Immunotherapy - Challenges and Solutions of Companion Diagnostics 癌症免疫治疗 — 伴随式诊断的挑战和解决方案	Yi-Jing He 贺毅憬
1615-1640	Next Generation Animal Cell Culture Bioreactor for Scalable Recombinant Protein Expression 用于可扩展重组蛋白表达的下一代动物细胞培养生物反应器	Xiao Shen 沈潇
1640-1700	Coffee Break 茶歇	
1700-1725	Strategies and Concerns for the Preclinical Assessment and Submission of Drugs that Meet Dual Compliant of US FDA and Chinese FDA 符合中美 FDA 双报要求的药物临床前评估及申报的策略和关注点	Chun-Lin Chen 陈春麟
1725-1750	A New Era of Biopharma in China – New Opportunity and Challenges in MRCT 中国生物制药新时代 — MRCT 新机遇与挑战	James Cai 蔡学钧
1750-1815	Biomedical Investment – Our Logic and Method 生物医药投资 — 我们的逻辑和做法	Da-Jie Tang 汤大杰
1815-1825	Q&A Session 问答环节	
1830-2130	Gala Dinner cum GuangDong - Hong Kong - Macao Greater Bay Area Biotechnology Alliance Inauguration Ceremony 晚宴暨粤港澳大湾区生物科技联盟成立仪式	

## Saturday - 25th November 2017

0800-1600	Registration 注册	
0900-0920	Biotechnology as Culture: The Public Voices of Medical Data and Images in Fashion, Art and Design	Elaine Young 杨绮铃
Symposium - Bio-Metrology, Standardization and Certification (Supported by Hong Kong Council for Testing and Certification [HKCTC]) 生物计量、標準和認證 (由香港检测和认证局支持)		Chair: Albert Cheung-Hoi Yu 于常海
0920-0940	The Role of Mass Spectrometry in Standardisation and Quality Control of Biological Medicines 质谱分析在生物医药标准化和质量控制中的作用	Jun Wheeler 徐钧·惠勒
0940-1000	Recent Status of Bio-metrology in the Government Laboratory 香港政府化验所生物计量学的近况	Ella Lai-Ming Wong 黄礼明
1000-1010	Q&A Session 问答环节	
1010-1030	Coffee Break 茶歇	
Symposium - Advanced Diagnostics and Medical Devices 高级诊断和医疗设备		Chair: Ken Kin-Lam Yung 翁建霖 Co-Chair: Martha Hao 郝梅凤
1030-1045	New Developments in Magnetic Resonance Elastography (MRE) 磁共振弹性成像技术的新发展	Neil Roberts 尼尔·罗伯兹
1045-1100	Application of Mass Spectrometry in IEM Screening and Diagnosis 质谱在 IEM 筛查诊断中的应用	Chun-Hua Zhang 张春花
1100-1115	Association of CNTNAP2 Gene Polymorphism with the Bangladeshi Autism Spectrum Disorder Children CNTNAP2 基因多态性与孟加拉自闭症儿童的关系	Mohammad Safiqul Islam 穆罕默德·萨菲库尔·伊斯兰
1115-1130	Abnormal Cellular Energetics at the Heart of Diseases – New Concept and New Tools to Improve Diagnosis 疾病的核心在于细胞能量异常 — 改进诊断的新概念和新工具	Vincent Petit 文森特·佩蒂特
1130-1145	Enabling Chairside Caries Prediction and Prevention – Novel Diagnostic and Treatment Developed by Bioengineers 实现牙医椅旁的龋齿预测和预防 — 由生物工程师研发的新兴诊断与治疗	Ricky Yin-To Chiu 招彦焘
1145-1200	3D Stem Cell Expansion Using Polystyrene Scaffolds and Perfusion Bioreactor for Stem Cell Therapy 由聚苯乙烯支架和灌注生物反应器造的三维干细胞扩展法用于干细胞治疗	Wing-Keung Lau 刘永强

1200-1215	Making it Easier to Stay Healthy with Saliva Based Testing 唾液测试保健易	Winnie Yuet-Sheung Lun 伦月嫦 Chi Leung
1215-1230	Neural Stem Cell Harvesting and Culturing Technology for Autologous Cell Therapies for Brain Diseases 用于脑部疾病自体细胞疗法的神经干细胞采集和培养技术	Ken Kin-Lam Yung 翁建霖
1230-1240	Q&A Session 问答环节	
1240-1400	Lunch Break 午休	
Business Investment and Pitching 生物科技投资及创投提案		Chair: Dong-Yao Ni 倪东耀
1400-1420	Greater Bay Area and its Business Implication to Hong Kong Technology Industry Including Biomedicines 大湾区及其对香港科技业包括生物医药的商业影响	Simon Man-Lung Tsang 曾文龙
1420-1440	Early Stage Investment in China 进入中国市场的投资指南	Daniel Shi 施旦霁
1440-1610	Business Pitching 创投提案	
1610-1615	Closing 闭幕式	Albert Cheung-Hoi Yu 于常海

## Sunday - 26th November 2017

Public Lecture 公开讲座

*\*Schedule is subject to change*

## President

---

<p>Yu, Albert Neuroscience Research Institute of Peking University Vice Director / Professor Hong Kong Biotechnology Organization Chairman Hong Kong Council for Testing and Certification Chairman HK20 Chairman</p>	<p>于常海 北京大學神經科學研究所 副所長 / 教授 香港生物科技協會 主席 香港檢測和認證局 主席 香港 20 主席</p>
---	--

---

## Scientific Committee

---

<p>Yang, Michael M. (Chair) Head and Yeung Kin Man Chair Professor Biomedical Sciences, City University of Hong Kong</p>	<p>楊夢甦 (主席) 香港城市大學生物醫學系主任</p>
--	-----------------------------------

---

<p>Ba, Sujuan Founder &amp; CEO Asian Fund for Cancer Research</p>	<p>巴素娟 創始人 &amp; CEO 亞洲癌症基金會</p>
--	--

---

<p>Chan, Andros Chairman Hong Kong Medical and Healthcare Device Industries Association</p>	<p>陳令名 主席 香港醫療及保健器材行業協會</p>
---	-------------------------------------

---

<p>Cheng, Christopher Managing Director Hong Kong Institute of Biotechnology</p>	<p>鄭漢其 總監 香港生物科技研究院</p>
--	---------------------------------

---

<p>Chu, Kee Hung Vice President and Chief Scientific Officer CK Life Sciences Int'l. Inc.</p>	<p>朱其雄 副主席 / 科學總監 長江生命科技集團有限公司</p>
---	--

---

<p>Deng, Yulin Dean School of Life Science, Beijing Institute of Technology</p>	<p>鄧玉林 院長 北京理工大學生命科學與技術學院</p>
---	---------------------------------------

---

<p>Hsiao, Wendy Research Professor School of Chinese Medicine, Hong Kong Baptist University</p>	<p>蕭文鸞 教授 香港浸會大學中醫藥學院</p>
---	-----------------------------------

---

Kwan, Hoi Shan Head School of Life Sciences, Chinese University of Hong Kong	關海山 院長 香港中文大學生命科學學院
Lee, Tin Lap Associate Professor School of Biomedical Sciences, Faculty of Medicine The Chinese University of Hong Kong	李天立 副教授 香港中文大學醫學院生物醫學學院
Leung, Nisa Managing Partner Qiming Ventures	梁穎宇 主管合夥人 啟明創投
Leung, Thomas Professor Department of Applied Biology & Chemical Technology, The Hong Kong Polytechnic University	梁潤松 教授 香港理工大學應用科技及化學科技學系
Li, Benjamin Chief Executive Officer Lee's Pharmaceutical Holdings Limited	李小羿 首席執行官 李氏大藥廠控股有限公司
Li, Ying Professor Department of Biomedical Sciences, City University of Hong Kong	李嬰 教授 香港城市大學生物醫學系
Lo, Yuk Lam Vice President Sinovac Biotech Limited	盧毓琳 副主席 科興控股有限公司
Wang, Jing Deputy director division of medical and biological measurement, National institute of metrology (NIM)	王晶 副所長 中國計量科學研究院醫學與生物計量研究所
Wong, Albert Chief Executive Officer Hong Kong Science & Technology Parks Corporation	黃克強 首席執行官 香港科學園公司
Yung, Ken Chairman OPER Technology Limited	翁建霖 主席 蒼新科技
Zhang, Jimmy	張志民

---

Zhou, Grace President Shenzhen International Institute for Biomedical Research (SIIBR)	周國瑛 院長 深圳羅茲曼國際轉化醫學研究院
---	-----------------------------

---

## Local Organizing Committee

---

Wong, Bing Lou (Chair) Chief Technology Officer New B Innovation Limited	黃炳鏐 (主席) 技術主管 新行健醫藥科技有限公司
Chau, Wilton Professor of Practice in Entrepreneurship MBA Programs CUHK Business School, The Chinese University of Hong Kong	周志偉 企業實踐教授 香港中文大學商學院工商管理課程
Chen, Danny Director Venture Bluestone Limited	陳偉傑 Venture Bluestone Limited
Cheung, Jojo Chief Marketing Officer Hong Kong Science & Technology Parks Corporation	張明華 銷售總監 香港科學園公司
Chow, Leo	鄒鑾源
Hao, Martha	郝梅鳳
Liu, Andy CEO Illumi Health	劉安庭 CEO Illumi Health
Lui, Cathy CEO OPER Technology Limited	雷雅萍 CEO 薈新科技
Lui, Jacqueline President Eagle IP Limited	呂許昭棠 主席 鷹翅知識產權有限公司

---

---

Tsui, Victor  
Chief Manufacturing Officer  
Lee's Pharmaceutical Holdings Ltd.

徐啟樂  
生產總監  
李氏大藥廠控股有限公司

---

Orr, Kevin  
Managing Director  
Winner Medical (Hong Kong) Limited

柯家洋  
總經理  
穩健醫療用品股份有限公司

---

## Treasure

---

Hsiao, Wendy  
Research Professor  
School of Chinese Medicine, Hong Kong Baptist University

蕭文鸞  
教授  
香港浸會大學中醫藥學院

---

## Legal Advisory

---

Philip KH Wong, Kennedy YH Wong & Co.

黃乾亨黃英豪律師事務所

### Organizers 主办单位



### Co-Organizers 协办单位



### Sponsors 赞助单位



### Media Partners 媒体伙伴



### Supporting Organizations 支持机构



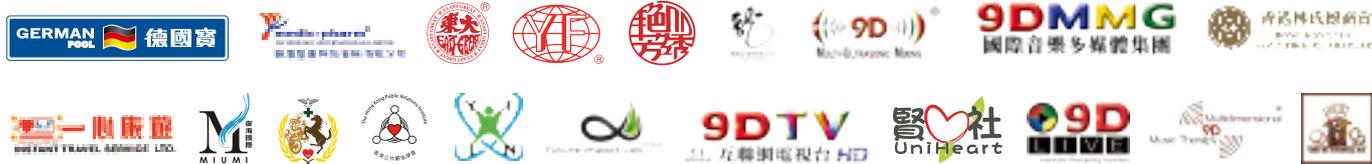
### Co-Organizers 活动协办单位



### Sponsors 活动赞助单位

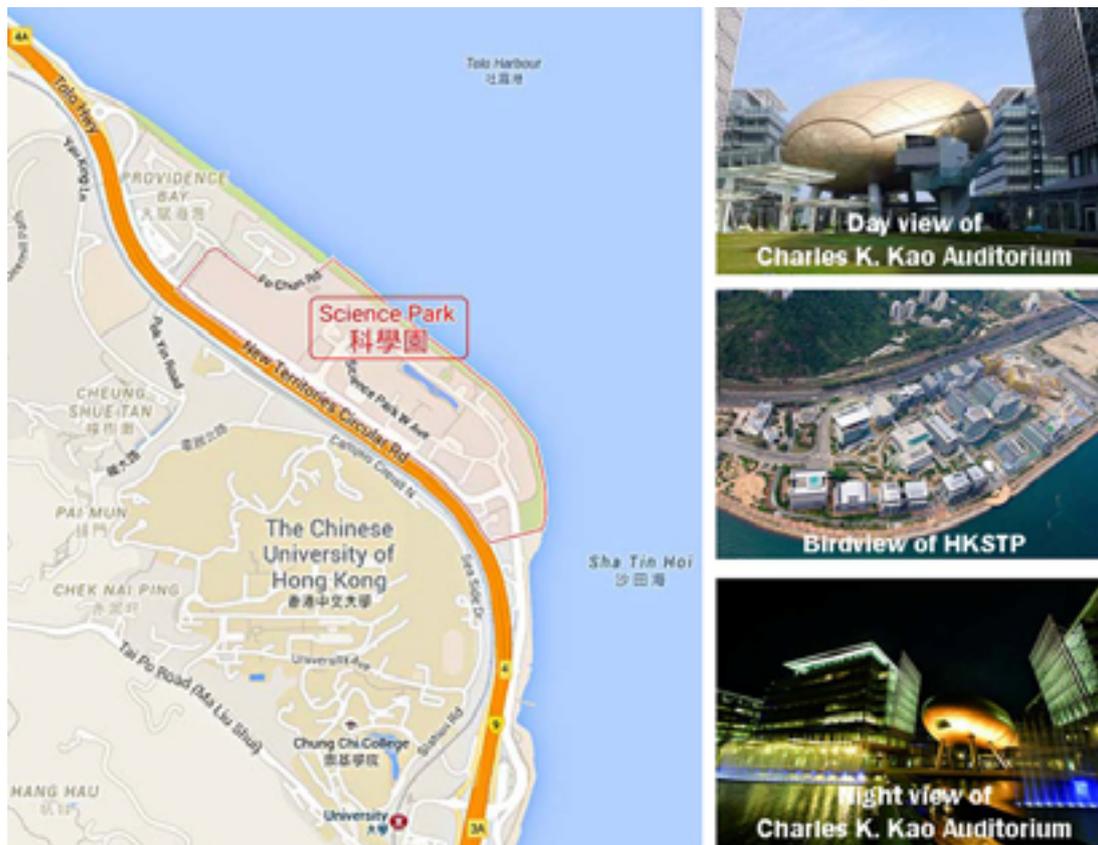


### Supporting Organizations 活动支持机构



## Venue Information

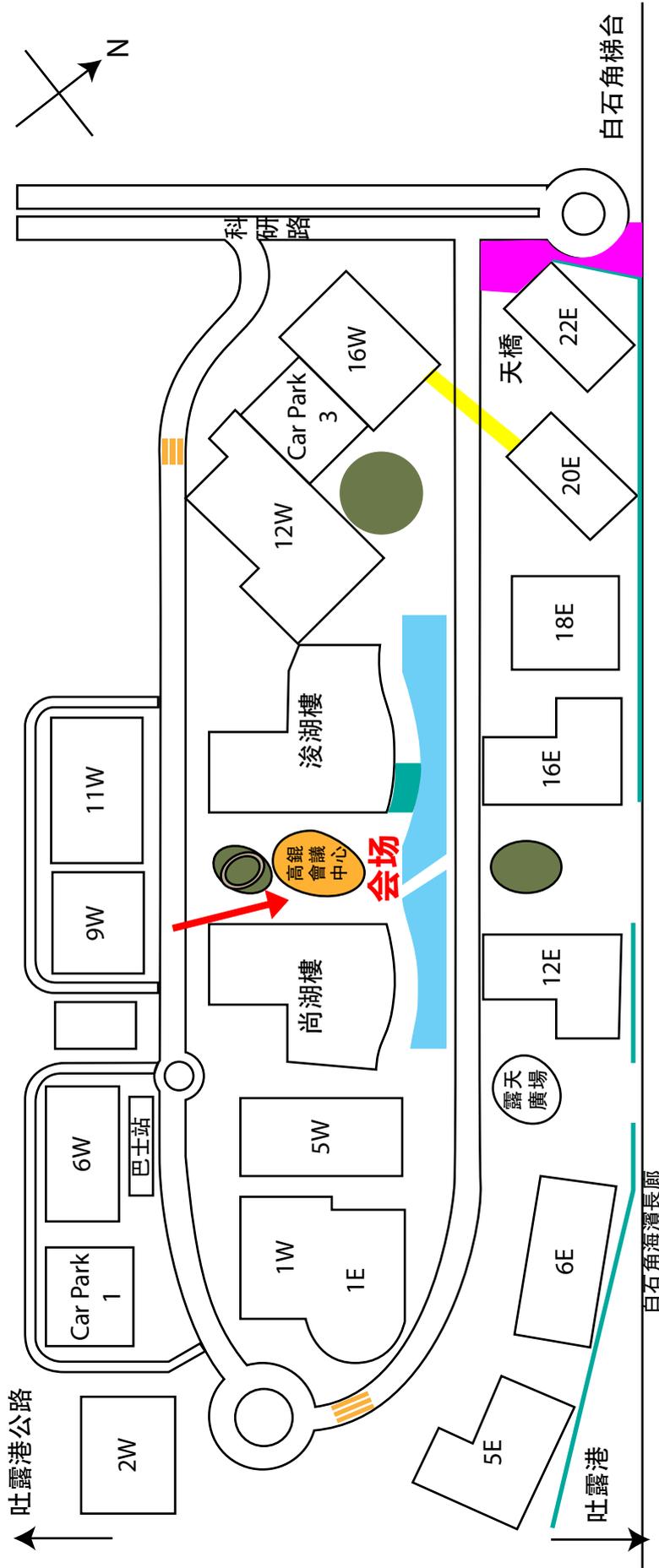
The Hong Kong Science and Technology Park (HKSTP) is a science park in Hong Kong, located in Pak Shek Kok, New Territories, on the boundary of Sha Tin District and Tai Po District. It is also next to the Chinese University of Hong Kong in Ma Liu Shui and is on the Tolo Harbour waterfront. Our Conference will be hosted at the Charles K. Kao Auditorium (The Golden Egg) of the Science Park:



It is an infrastructure that provides a knowledge-based and campus-like environment of 220,000 square metres marketed for high-technology enterprises. It is designed to accommodate companies of all sizes and stages of development and to promote interaction and innovation at both local and global level.



# Map of Science Park



## Useful Tips for Transportation in Hong Kong

Hong Kong is a hustle and bustle city with an excellent transportation system. There are various public transports, such as: Mass Transit Railway (MTR), Bus, Mini bus, Taxi and ferry; all could be paid by cash and octopus card. Visitors are strongly recommended to purchase an Octopus card once arrive Hong Kong. It is available for purchase in every station of the Mass Transit Railway system. The Octopus card is a smart electronic money payment system which allows payment not only for public transport (such as trains, buses, trams, ferries and minibuses), but also at parking meters, convenience stores, supermarkets, fast-food restaurants and most vending machines.



There are some useful Applications which could be downloaded on App stores.



## How to Access to the Congress Venue?

Below is the options access to the Congress Venue: Hong Kong Science Park.

### Travel to Hong Kong Science Park:

#### Option 1: By Taxi (Red Taxi) (Most Convenient Route)

\*For taxi driver: Please go to Phase 2, Hong Kong Science Park, Shatin, New Territories.

(Chinese: 新界大埔區白石角科學園二期)

#### Option 2: By MTR & Minibus (Green)

\*Take Exit B in Shatin MTR Station and turn left, walk until you reach the ramp

\*Walk till the end of the ramp and you will see the stop for green minibus route number 27 is located across the road

\*Take the green minibus route number 27 and get off at Phase 2 of Hong Kong Science Park (10-minute ride)

#### Option 3: By MTR & Bus (KMB)

\*Take Exit B in University MTR Station and turn right to public transport interchange

\*Take KMB Bus route number 272K and get off at Hong Kong Science Park (5-minute ride)

**Pick-up/Drop-off point**

Science Park West Avenue- The Forum (Behind Charles K. Kao Auditorium)

Please use our dedicated pick-up and drop-off facility located directly across from the main Congress venue. Drivers picking people up/dropping people off should use this facility for quick transactions only.

**Parking**

There are over 1,500 parking spaces available at the multi-storey and basement car parks of Hong Kong Science Park Phases 1 and 2.

**Hourly Parking Rates (Private vehicles & Motorcycles)**

Mon-Fri: HKD\$13.00 per hour

Sat, Sun & Public Holidays: HKD\$13.00 per hour (for first 3 hours) HKD\$7.00 per hour (4th hour onwards)

**Payment Method**

Hourly parking: Octopus Card only

**Parking Promotion**

From Monday to Sunday (include public holiday), visitor can enjoy first 2 hours free parking for purchase at HK\$200 or above or first 4 hours free parking for purchase at HK\$400 or above. Each valid receipt is applicable to redeem complimentary parking for one private vehicle or motorcycle only.

# Programme

## Day 1 - 22 November 2017, Wednesday

Afternoon 下午

Registration 註冊

Opening Ceremony 開幕式

Opening Speech 開幕報告



### Fanny Chiu-Fun Law Fan 羅范椒芬

*Topic: Hong Kong - The Biotechnology Innovation Hub in the Greater Bay Area*

**題目：香港 – 粵港澳大灣區的生物科技創新樞紐**

HKSAR Deputy, National People's Congress of the People's Republic of China  
現任香港特別行政區全國人大代表

Member, the HKSAR Executive Council 香港特別行政區行政會議成員

Chairperson, Hong Kong Science and Technology Parks Corporation

香港科技園公司董事會主席

Special Advisor, the China-US Exchange Foundation 中美交流基金會特別顧問

Former Administrative Officer, HKSAR 前香港政府政務官



### Kwok-Fai So 蘇國輝

*Topic: Exercise, Adiponectin and Brain Health*

**題目：運動、脂聯素和腦健康**

Member, the Chinese Academy of Sciences 中國科學院院士

Chair Professor, Department of Ophthalmology, and Jessie Ho Professor in Neuroscience, The University of Hong Kong(HKU)

香港大學醫學院教授、神經科學研究中心主任

Director, GHM Institute of CNS Regeneration at Jinan University,

Guangzhou, China 暨南大學粵港澳中樞神經再生研究院院長

Co-Chairman, the Board of Director of the China Spinal Cord Injury Network

中國脊髓損傷研究協作組董事會聯席主席

Honorary Director, the State Key Laboratory of Brain and Cognitive Sciences

at HKU 腦與認知科學國家重點實驗室名譽院長

Editor-in-Chief, Neural Regeneration Research

中國神經再生研究（英文版）主編



## Lin He 賀林

Topic: *Genetic Counselling in China*

題目：中國的遺傳諮詢

Academician, Chinese Academy of Sciences (CAS) 中國科學院院士

Academician, The World Academy of Sciences (TWAS)

發展中國家世界科學院院士

Director, Bio-X Center of Life Sciences, Shanghai Jiao Tong University (SJTU),  
China 上海交通大學教授， Bio-X 中心主任

Director, Institutes of Biomedical Sciences, Fudan University, China  
復旦大學生物醫學研究院院長

Director, Human Neuropsychiatric Genetics Group (NHGG) of SJTU and CAS,  
China 上海生命科學研究院營養科學研究所神經精神病學實驗室主任教授

---

Evening Reception 歡迎招待會

---

## Day 2 - 23 November 2017, Thursday

Morning 上午

Registration 註冊



**Alex Man-Tat Ng 吳文達**

*Topic: Innovations for Global Health-Problem Solving for the Poor*

題目：全球衛生革新 – 為貧困患者解難

Deputy Director, China Country Office, Bill And Melinda Gates Foundation 比爾及梅琳達·蓋茨基金會北京辦事處副主任

Honorary Assistant Professor, School of Public Health, The University of Hong Kong 香港大學公共衛生學院名譽助理教授

Council Member, Hong Kong Council on Smoking and Health 香港吸煙與健康委員會委員

### Symposium - Modernizing Chinese Medicine - From Basic Research to Applications

#### 中醫藥：從基礎研究到應用

Chair: Christopher Hon-Ki Cheng 鄭漢其 / Co-chair: Karl Wah-Keung Tsim 詹華強



**Karl Wah-Keung Tsim 詹華強**

*Topic: Old and New Perspectives of Chinese Medicine in Brain Health*

題目：中醫藥在腦健康領域的新，舊觀點

Chair Professor, Division of Life Science, The Hong Kong University of Science and Technology 香港科技大學生命科學部講座教授

Director, Center for Chinese Medicine R&D, The Hong Kong University of Science and Technology 香港科技大學中藥研發中心主任



**Zhi-Xiu Lin 林志秀**

*Topic: Development of a Health Product from Chinese Medicine Gou-Teng for Cognitive Impairment*

題目：一種用于認知障礙的保健品 — 源于中藥鉤藤的產品開發

Associate Professor, School of Chinese Medicine, The Chinese University of Hong Kong 香港中文大學中醫學院副教授

Director, Hong Kong Institute of Integrative Medicine, The Chinese University of Hong Kong 香港中西醫結合醫學研究所主任

Member, The Chinese Medicines Industry Subcommittee, Hong Kong Chinese Medicine Development Committee 香港中醫藥發展委員會中藥業小組委員



**Simon Ming-Yuen Lee 李銘源**

Topic: *Translating Fructus Aplinia Oxyphylla into New Drugs and Food Supplements for Aging Associated Diseases*

題目：將益智仁開發為老齡化相關疾病的新藥與食品補充劑

Professor, Institute of Chinese Medicine Sciences, University of Macau, Macau 澳門大學中華醫藥研究院教授



**Christopher Hon-Ki Cheng 鄭漢其**

Topic: *Good Manufacture Practice in the TCM Industry*

題目：中藥業的優良製藥規範

Research Professor, School of Biomedical Sciences, The Chinese University of Hong Kong 香港中文大學生物醫學學院教授

Managing Director, Hong Kong Institute of Biotechnology 香港生物科技研究院院長

Director, CUHK Shenzhen Research Institute 香港中文大學深圳研究院院長



**Jessica Yuet-Ling Ching 程月玲**

Topic: *Good Research Practice in Chinese Medicine Clinical Research*

題目：優質中醫藥臨床試驗 — 良好臨床研究規範

Chief Nursing Officer (Research), Department of Medicine and Therapeutics, CUHK 香港中文大學醫學院內科及藥物治療學系總護士長

Convener (R&D), Hong Kong Institute of Integrative Medicine, CUHK 香港中文大學香港中西醫結合醫學研究所，研究及發展組召集人

Clinical Research Manager, Institute of Digestive Disease, CUHK 香港中文大學消化疾病研究所臨床研究經理

Q&A Session 問答環節

Coffee Break 茶歇

Afternoon 下午

**Lunch Lecture 午餐講座**

Chair: Danny Wei-Jie Chen 陳偉杰



**Danny Wei-Jie Chen 陳偉杰**

Director, Venture Bluestone Limited



**Connie Kwok 郭秀娟**

*Topic: NAMI's Engineered Biomaterials for Targeted Delivery*

題目：用于針對性傳遞的工程生物材料

Director of Research and Development (Healthcare), Nano and Advanced Materials Institute Limited  
納米及先進材料研發院有限公司研究發展總監（保健）



**Jing Wang 王晶**

*Topic: Advancement in National Biometrology and Standards*

題目：國家生物計量和標準的提升

Deputy Director, Division of Medical and Biological Measurement, National Institute of Metrology (NIM) 中國計量科學研究院醫學與生物計量研究所副所長  
Co-chair, Quality Group in Microbial Measurements Steering Group (MSG)  
生物定量工作組聯合主席  
Secretary-General, The National Technical Committee of Biometrology (NTCB) 全國生物計量技術委員會秘書長



**Xue-Yong Wang 王學勇**

*Topic: Anti-diabetic Mechanism of Resistant Starch Revealed by Metabonomics and Intestinal Microbiota Analysis*

題目：基于代謝組學及腸道菌群分析的抗性澱粉 RS 抗糖尿病作用機制研究

Professor, PhD Supervisor, Beijing University of Chinese Medicine  
北京中醫藥大學教授，博士研究生導師

**Infectious Disease 傳染疾病**



**Chang-Wen Ke 柯昌文**

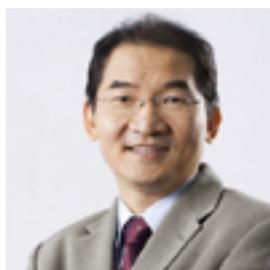
*Topic: Challenges Facing Infectious Disease Prevention and Control in Guangdong - Hong Kong - Macao Greater Bay Area Today*

題目：粵港澳大灣區傳染病防控的現狀和挑戰

Chairman and Chief Specialist, Institute of Pathogenic Microbiology, Guangdong Centre for Disease Control and Prevention  
廣東省疾病預防控制中心病原微生物檢驗所所長及首席專家

## Precision Diagnostics and Therapeutics 精準診斷與治療

Chair: Michael M. Yang 楊夢甦 / Co-chair: Joseph Wing-On Tam 譚榮安



### Michael Meng-Su Yang 楊夢甦

Topic: *Study Cancer Cell Heterogeneity and Metastasis on a Chip*

題目：芯片上研究癌細胞的異質性和轉移

Head of Department of Biomedical Sciences; Chair Professor of Chemistry and Biomedical Sciences, City University of Hong Kong  
香港城市大學生物醫學系主任及講座教授



### Joseph Wing-On Tam 譚榮安

Topic: *The Elements for Success in Molecular Diagnostic Platform Technology - A Personal Experience and Perspective*

題目：分子診斷平臺技術的成功要素 — 個人經驗和觀點

Chairman, DiagCor Bioscience 達雅高生物科技有限公司主席



### Dan-Yi Wen 閻丹憶

Topic: *Precision Medicine with Functional Diagnostics (PDX, CR Micro Tumour and Organoid)*

題目：針對功能性診斷的精準醫療（腫瘤移植模型、微腫瘤的完全緩解及細胞團）

President and CEO, Shanghai LIDE Biotech., Co. Ltd  
上海立迪生物技術股份有限公司董事長兼執行總裁



### Nick Ya-Fei Zhang 張亞飛

Topic: *Biomarker and Companion Diagnostics in Precision Medicine*

題目：精準醫療中的生物標志物和伴隨診斷

Chairman and CEO, QIAGEN (Suzhou) Translational Medicine Co. Ltd. 凱杰（蘇州）轉化醫學研究有限公司董事長及總裁



### Rossa Wai-Kwun Chiu 趙慧君

Topic: *Screening and Identification of Early Cancers - Is It Achievable?*

題目：早期癌癥的篩查與確診 — 可實現嗎？

Choh-Ming Li Professor, Chemical Pathology 卓敏化學病理學教授  
Assistant Dean (Research), Faculty of Medicine, The Chinese University of Hong Kong 香港中文大學醫學院研究 — 助理院長



**Xue-Jun Song 宋學軍**

Topic: *Wnt Signaling - A New Target for Treating Neuropathic and Cancer Pain*

題目: Wnt 信號通路 — 治療神經病理性疼痛和癌癥疼痛的新靶點

Professor, Neurobiology, Anesthesiology, and Oncology 南方科技大學教授  
Director, SUSTech Center for Pain Medicine, Southern University of Science and Technology (SUSTech), Shenzhen 南方科技大學疼痛醫學中心主任

Q&A Session 问答环节

Coffee Break 茶歇

**Biotechnology in Drug Discovery 生物科技藥物研發**

Chair: Pei-Yuan Qian 錢培元 / Co-Chair: Sandy Kwan-Yuk Kwok 郭均鈺



**Pei-Yuan Qian 錢培元**

Topic: *Genome-mining Based Drug Lead Discovery*

題目: 基于基因組的藥物先導開發

David von Hanseemann Professor of Science, Division of Life Science;  
Chair Professor, Division of Life Science, The Hong Kong University of Science and Technology  
香港科技大學戴維馮漢澤曼科學教授及生命科學部講座教授



**Ming-Chu Hsu 許明珠**

Topic: *TaiGen Biotechnology - A New Drug R&D Company*

題目: 太景生物科技 — 新崛起的藥物研發企業

Founder, Chairman & CEO, TaiGen Biotechnology Co., Ltd.  
太景生物科技創辦人、董事長暨執行長



**Peng Li 李鵬**

Topic: *Toll-like Receptor 2 Co-stimulation Potentiates the Antitumor Efficacy of CAR-T Cells*

題目: 類鐸受體 2 共同刺激下可增強嵌合抗原受體 T 細胞的抗癌作用

Principal Investigator, Guangzhou Institute of Biomedicine and Health, Chinese Academy of Sciences  
中國科學院廣州生物醫藥與健康研究院首席研究員



**Jennifer Wai-Chun Lo 盧惠珍**

*Topic: Granzyme B-Like Peptide, Liquid Biopsy, and Novel Anti-Cancer Therapy*

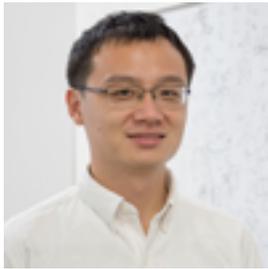
題目：B 肽顆粒酶、液體活檢以及新的抗癌療法

CEO and President, BioJENC LLC 行政總裁

---

Q&A Session 問答環節

---



**Lin-Xian Li 李林鮮**

*Topic: The Development of Lipid Nanoparticles for RNA Therapeutics*

題目：脂質納米粒在核酸藥物中應用進展

Assistant Professor, Karolinska Institutet

---

Q&A Session 問答環節

---

Evening 晚上

---

Dinner Break 晚休

---

**Workshop (Supported by Hong Kong Medical & Healthcare Device Industries Association Limited [HKMHDIA])**

**工作坊 (由香港醫療及保健器材行業支持)**

Chair: Kevin G. Orr 柯家洋

---



**Kevin Ka-Yeung Orr 柯家洋**

Managing Director, Winner Medical (Hong Kong) Limited

穩健醫療用品股份有限公司 總經理

---

**Ru-Yi He 何如意**

*Topic: Tips to Successfully Complete Your CFDA Applications*

題目：國家食品藥品監督管理總局申請通關秘籍

Chief Scientist, Center for Drug Evaluation (CDE), China Food and Drug Administration (CFDA) 中國食品藥品監督管理總局審評中心 首席科學家

**Lan Zhang 張蘭**

*Topic: Bioequivalence in Generic drug application and re-evaluation in China*

題目：生物等效性試驗在中國仿製藥一致性評價中的作用及經驗分享

Director, Drug Research at Xuanwu Hospital of Capital Medical University  
首都醫科大學宣武醫院藥物研究室主任

## Day 3 - 24 November 2017, Friday

Morning 上午

Registration 註冊



### **Guo-Liang Yu 餘國良**

*Topic: Towards a Cure for Cancer*

題目：邁向癌癥治愈之路

Chairman of the Board, Crown Biosciences Inc  
中美冠科生物技術有限公司董事長



### **Benny Chung-Ying Zee 徐仲鏘**

*Topic: The Role of Big Data, Analytic Machine Learning and AI in Clinical Trials*

題目：大數據、分析機器學習和人工智能在臨床試驗中的作用

Assistant Dean (Research), Faculty of Medicine, The Chinese University of Hong Kong 香港中文大學醫學院助理院長（研究）

Head, Graduate Division of Public Health 公共衛生學院生物統計學教授

Director, Centre for Clinical Research and Biostatistics

臨床研究及生物統計中心中心主任

Honorary Professor, Department of Clinical Oncology and the Department of Statistics, The Chinese University of Hong Kong

香港中文大學臨床腫瘤學和統計系名譽委任教授

Chair, Joint CUHK-NTEC Clinical Research Ethics Committee

香港中文大學及醫管局新界東聯網臨床研究倫理委員會主席



### **Herbert Chia 車品覺**

*Topic: The Nature and Future of Big Data*

題目：大數據的本質與未來

Venture Partner, Sequoia Capital China 紅杉資本中國基金專家合伙人

Former Vice president, Alibaba Group Holdings Ltd. 阿裏巴巴集團前副總裁



**Ya-Jun Guo 郭亞軍**

Topic: *R&D and Industrialization of Antibody Drug*

題目: 抗體藥物研發和產業化

CEO, Mabtech Holdings (HK) Ltd 邁博太科 (香港) 控股有限公司行政 裁

Principal Scientist, 973 Program, Antibody Project

國家 973 計劃抗體項目首席科學家

Director, State Key Laboratory of Antibody-Drug and Targeted Therapy, China

中國抗體藥物和靶向治療國家重點實驗室主任

Director, National Engineering Research Center for Antibody Medicine, China

中國抗體藥物國家工程研究中心主任

Professor, Sidney Kimmel Cancer Center, USA

美國加利福尼亞大學西德尼腫瘤中心 教授

Professor, Cancer Center, School of Medicine, University of Nebraska, USA

美國內布拉斯加州立大學醫學院腫瘤中心教授

Coffee Break 茶歇

**Panel - Accelerating HK Industry-Academia-Research in Translation (Organized by Hong Kong Industry University Research Collaboration Association)**

**座談會 - 加速香港產學研轉化 (由香港產學研合作促進會協辦)**

1st Panel: The Biotech Incubation in Universities 大學之生物科技培育

Chair: Thomas Cheung 張俊勇



**Thomas Cheung 張俊勇**

Founder, Chinagrowth Group Limited



**Hailson Yu 餘梓山**

Deputy Director, Technology Transfer Office, University of Hong Kong

香港大學技術轉移處的副處長



**Alfred Tan 陳慶忠**

Head, Knowledge Transfer Office, Hong Kong Baptist University  
香港浸會大學知識轉移處主管



**Kenneth Chan 陳焯國**

President of eHealth Consortium (eHC) 電子健康聯盟主席

2nd Panel: The Industrial Opportunities for Biotech 生物科技的產業機會  
Chair: Samson Wai-Ho Tam 譚偉豪



**Samson Wai-Ho Tam 譚偉豪**

Chairman, Group Sense Limited 權智有限公司主席



**Jonathan Swee-Fu Chee 朱瑞富**

Formerly Chief Investment Officer, Eagle Ride Investment  
鷹力投資控股有限公司前投資總監



**Tony Chen 陳業裕**

Business Development Director, Hong Kong X-Tech Startup Platform  
業務發展總監，香港 X 科技創業平臺



**Eric Chen 陳子翔**

Founder & Chief Commercial Officer, Vitargent (International) Biotechnology Limited 水中銀 (國際) 生物有限公司創辦人及首席商務官

**Panel – Intellectual Property Protection In Life Science**

**座談會 — 生命科學的知識產權保護**

Chair: Jacqueline Lui 呂許昭棠



**Moderator: Jacqueline Lui 呂許昭棠**

President, The Hong Kong Institute of Patent Practitioners Limited (HIPP)  
香港專利代理人公會會長

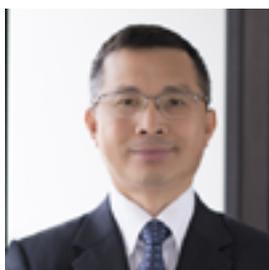
President, Eagle IP 鷹翅知產有限公司總裁

Member, the Working Group under the Advisory Committee on Review of the Patent System in Hong Kong, Commerce and Economic Development, the Government of Hong Kong SAR

商務及經濟發展局轄下香港專利制度檢討諮詢委員會工作小組成員

Member, the Asian Practice Committee of the Intellectual Property Owners Association (IPO) 知識產權擁有人協會亞洲業務委員會成員

Former Member, the Steering Committee on Innovation and Technology of the Government of Hong Kong SAR 香港創新及科技督導委員會前成員



**Kam-Wah Law 羅金華**

Partner, Squire Patton Boggs



**Lewis Wai-Hong Ho 何偉康**

Partner, Loeb & Loeb 樂博律師事務所合伙人



**Andrew Cobden 安德魯·科布登**

Counsel, Hogan Lovells

---

Afternoon 下午

---

Lunch Break 午休

---



**Yu-Lin Deng 鄧玉林**

*Topic: The Payload Technology for Space Biomedical Research on the Tianzhou - 1 Spacecraft*

題目：空間微流控芯片生物醫學實驗技術及航天飛行搭載

Academician and Vice President, Department of Life Sciences, International Academy of Astronautics 國際宇航科學院院士兼生命科學部副主席  
Dean and Professor, School of Life Sciences, Beijing Institute of Technology 北京理工大學生命學院教授  
Director, Beijing Key Laboratory of Bio-Separation and Bio-Analysis in Bio-medicine and Pharmaceuticals 生物醫藥分離分析北京市重點實驗室主任  
Chairman, Life Electronics of Chinese Institute of Electronics  
中國電子學會生命電子學分會主任委員  
Councilor, Institute of Complex Medical Engineering (ICME)  
國際復合醫學工程學會 ( ICME ) 理事  
Member, Committee on Space Research (COSPAR), Chinese National Committee 國際空間研究委員會 COSPAR 中國委員會委員  
Vice Chairman, China Association of Medical Equipment Point-of-Care Testing (POCT) Equipment Technology Expert Committee  
中國醫學裝備協會現場快速檢測 (POCT) 裝備技術專業委員會副理事長  
Vice Chairman, Chinese Society of Astronautics, Aerospace Medical Engineering and Biology Branch  
中國宇航學會航天醫學工程與生物學分會副主任委員

---



**Bernard Roizman 伯納德·羅茲曼**

Topic: *The Evolution of Herpes Simplex Viruses as Oncolytic Agents*

題目：單純疱疹病毒作為溶瘤細胞制劑的演化

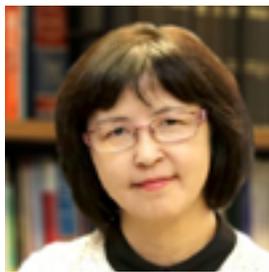
Honorary Chairman, Shenzhen International Institute for Biomedical Research (SIIBR) 深圳羅茲曼國際轉化醫學研究院榮譽院長  
Professor, Chicago University, USA 美國芝加哥大學資深教授  
Academician, Academy of Sciences, Medical College and Inventor Academy of Sciences, USA 美國科學院，醫學院，發明家學院三院院士  
Foreign Academician, Chinese Academy of Engineering 中國科學院工程院外籍院士  
“Father of Herpes Virus”，world-authority figure in Oncolytic Herpes Virus 國際病毒領域泰鬥 – “疱疹病毒之父” • 溶瘤疱疹病毒世界權威

**Symposium - Cancer Immunotherapy  
(Sponsored by Shenzhen International Institute for Biomedical Research [SIIBR])**

**癌癥的免疫療法（深圳羅茲曼國際轉化醫學研究院贊助）**

Shenzhen International Institute for Biomedical Research (SIIBR), established since January 2015, is led by Professor Benard Roizman. The research focus of SIIBR is in cancer and acute and chronic microbial infection.

深圳羅茲曼國際轉化醫學研究院（The Shenzhen International Institute for Biomedical Research, SIIBR）于2015年1月注册成立，研究院由伯納德·羅茲曼（Bernard•Roizman）教授領銜。研究院以腫瘤和急性慢性微生物感染治療為重點研究領域。



**Moderator: Grace Guo-Ying Zhou 周國瑛**

Director, Shenzhen International Institute of Biomedical Research, China 深圳羅茲曼國際轉化醫學研究院院長  
Ph.D. Shanghai Institute of Biochemistry, Chinese Academy of Sciences 中國科學院上海生物化學研究所博士  
CEO, ImmVira Co., Ltd., Shenzhen, China  
深圳市亦諾微醫藥有限公司首席執行官  
Director, Institute of Genome and Drug Quality, Beijing Institute of Biotechnology Industry 北京亦創生物技術產業研究院基因藥物質量研究所所長  
Distinguished Professor, State Key Laboratory of Respiratory Diseases, Guangzhou Medical University 廣州醫科大學呼吸病國家重點實驗室特聘教授  
Former Associate Professor, Department of Microbiology, University of Chicago, USA 前美國芝加哥大學微生物系副教授





### Xiao-Yan Dong 董小岩

*Topic: Overview of viral vectors used for gene therapy*

題目：用于基因治療的病毒載體概述

Founder, Beijing FivePlus Molecular Medicine Institute Co. Ltd.(5+MMI) 北京五加和分子醫學研究有限公司創始人  
 Director, Department of Molecular Medicine, Beijing Institute of Biotechnology Industry 北京亦創生物技術產業研究院分子醫學研究所所長  
 Zhongguancun Park Leading Talent ” 中關村領軍人才”  
 Beijing E-Town Talents, Innovative and Entrepreneur Talents Project  
 “新創工程·亦麒麟領軍人才”



### Yi-Jing He 賀毅憬

*Topic: Cancer Immunotherapy - Challenges and Solutions of Companion Diagnostics*

題目：癌癥免疫治療 – 伴隨式診斷的挑戰和解決方案

Associate Professor, Moffitt Cancer Center, USA 美國墨菲特癌癥中心副教授  
 Chairman, Shenzhen INDA Biotechnology Co. Ltd.  
 深圳因答生物科技有限公司 董事長



### Xiao Shen 沈瀟

*Topic: Next Generation Animal Cell Culture Bioreactor for Scalable Recombinant Protein Expression*

題目：用于可擴展重組蛋白表達的下一代動物細胞培養生物反應器

Founder, Chairman, Cantonbio Ltd, Guangzhou  
 廣州漢騰生物科技有限公司創始人董事長  
 Member, European Animal Cell Engineering Association and the Asian Animal Cell Engineering Association  
 歐洲動物細胞工程協會及亞洲動物細胞工程協會會員  
 中國僑聯創業聯盟理事  
 廣州市開發區創業英才”  
 “廣東省珠江人才計劃引進創新團隊帶頭人”

Coffee Break 茶歇



### Chun-Lin Chen 陳春麟

*Topic: Strategies and Concerns for the Preclinical Assessment and Submission of Drugs that meet dual compliants of US FDA and Chinese FDA*

題目：符合中美 FDA 雙報要求的藥物臨床前評估及申報的策略和關注點

CEO, Shanghai Medicilon Inc. 上海美迪西生物醫藥股份有限公司首席執行官



**James Xue-Jun Cai 蔡學鈞**

*Topic: A New Era of Biopharma in China - New Opportunity and Challenges in MRCT*

題目：中國生物製藥新時代 – MRCT 新機遇與挑戰

Director, Global Regulatory Affairs for JAPAC, Amgen Inc.  
安進公司日本及亞太地區藥政事務總監



**Da-Jie Tang 湯大杰**

*Topic: Biomedical Investment- Our Logic and Method*

題目：生物醫藥投資：我們的邏輯和做法

Founding Partner, Triwise Capital Management Ltd., Shenzhen  
深圳前海勤智國際資本管理有限公司創始合伙人總裁  
Executive Vice President, Shenzhen Science and Technology Entrepreneurship Promotion Association 深圳市科技創業促進會常務副理事長  
Adjunct Professor, Southwestern University of Finance and Economic, Guangdong University of Finance & Economic, Shenzhen Audencia Business School, Xidian University, China University of Mining and Technology 西南財經大學、廣東財經大學、深圳南特商學院、西安電子科技大學，中國礦業大學兼職教授

Q&A Session 问答环节

Evening 晚上

**Gala Dinner cum GuangDong - Hong Kong - Macao Greater Bay Area Biotechnology Alliance Inauguration Ceremony**

**晚宴暨粵港澳大灣區生物科技聯盟成立儀式**

Morning 上午

Registration 注册

**Elaine Young 楊綺鈴**

*Topic: Biotechnology as Culture: The Public Voices of Medical Data and Images in Fashion, Art and Design*

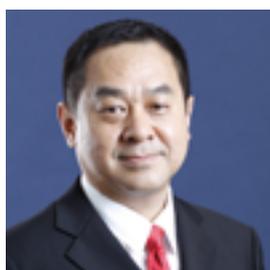
題目：質譜分析在生物醫藥標準化和質量控制中的作用

Founder  
LAByrinth PROJECT

**Bio-Metrology, Standardization and Certification**  
(Supported by **Hong Kong Council for Testing and Certification [HKCTC]**)

**生物計量（香港檢測和認證局支持）**

**Chair: Albert Cheung-Hoi Yu 于常海**



**Albert Cheung-Hoi Yu 于常海**

Congress President 大會主席  
Hong Kong Biotechnology Organization Chairman 香港生物科技協會 主席  
Hong Kong Council for Testing and Certification Chairman 香港 20 主席  
HK20 Chairman 香港檢測和認證局 主席  
Neuroscience Research Institute of Peking University Vice Director / Professor  
北京大學神經科學研究所 副所長



**Jun Wheeler 徐鈞·惠勒**

*Topic: The Role of Mass Spectrometry in Standardisation and Quality Control of Biological Medicines*

題目：質譜分析在生物醫藥標準化和質量控制中的作用

Principal Scientist, Head of Proteomics and Mass Spectrometry, National Institute for Biological Standard and Control (NIBSC)  
英國國家生物制品檢定所 ( NIBSC ) 蛋白質組學和質譜首席科學家



**Ella Lai-Ming Wong 黃禮明**

*Topic: Recent status of Bio-metrology in the Government Laboratory*

題目：香港政府化驗所生物計量學的近況

Chemist (Pharmaceutical Chemistry Sec), Government Laboratory, HKSAR  
香港政府化驗所化驗師 (藥劑化驗組)

Q&A Session 問答環節

Coffee Break 茶歇

**Advanced Diagnostics and Medical Devices**

**高級診斷及醫療設備**

**Chair: Ken Kin-Lam Yung 翁建霖    Co-Chair: Martha Hao 郝梅鳳**



**Neil Roberts 尼爾·羅伯茲**

*Topic: New Developments in Magnetic Resonance Elastography (MRE)*

題目：磁共振彈性成像技術的新發展

Chair of Medical Physics and Imaging Science, Edinburgh Imaging facility, The Queen's Medical Research Institute (QMRI), University of Edinburgh  
英國愛丁堡大學女王醫學研究所 愛丁堡成像設施 醫學物理與影像科學系主任



**Chun-Hua Zhang 張春花**

*Topic: Application of Mass Spectrometry in IEM Screening and Diagnosis*

題目：質譜在 IEM 篩查診斷中的應用

Director, MILS (Matsumoto Institute of Life Science), Japan

日本鬆本生命科學研究所 主任

Vice director, NPO Life Science, Japan 日本 NOP 生命科學副主任

Researcher, Kanazawa Medical University, Japan 日本金澤醫科大學 研究員

Visiting professor, Capital Institute of Pediatrics Beijing, China

中國首都兒科研究所 客座教授

Visiting professor, Haikou People Hospital Haikou

中國海口市海口人民醫院 客座教授

Member, editorial board of International Journal of Pediatrics

國際兒科學雜誌 編輯委員



**Mohammad Safiqul Islam 穆罕默德·薩菲庫爾·伊斯蘭**

*Topic: Association of CNTNAP2 Gene Polymorphism with the Bangladeshi Autism Spectrum Disorder Children*

題目：CNTNAP2 基因多態性與孟加拉自閉癡兒童的關係

Professor and Chairman, Department of Pharmacy, Noakhali Science and Technology University 諾克哈裏科技大學藥學系教授及主任



**Vincent Petit 文森特·佩蒂特**

*Topic: Abnormal cellular energetics at the heart of diseases: new concept and new tools to improve diagnosis*

題目：疾病的核心在於細胞能量異常：改進診斷的新概念和新工具

CEO, METAFORA biosystems 麥塔弗亞生物系統公司 行政總裁



**Ricky Yin-To Chiu 招彥燾**

*Topic: Enabling Chairside Caries Prediction and Prevention – Novel Diagnostic and Treatment Developed by Bioengineers*

題目：實現牙醫椅旁的齲齒預測和預防 – 由生物工程師研發的新興診斷與治療

CEO, Phase Scientific International Ltd. 相達生物科技國際有限公司行政總裁



**Wing Keung Lau 劉永強**

*Topic: 3D Stem Cell Expansion using Polystyrene Scaffolds and Perfusion Bioreactor for Stem Cell Therapy*

題目：由聚苯乙烯支架和灌注生物反應器造的三維幹細胞擴展法用於幹細胞治療

Co-founder and CEO, 3D Biotek 3D Biotek 聯合創辦人，首席執行官



**Winnie Yuet-Sheung Lun 倫月嫦 / Chi Leung**

*Topic: Making it Easier to Stay Healthy with Saliva Based Testing*

題目：唾液測試保健易

Co-founder, eNano Health Limited 依納康科技有限公司聯合創始人



**Ken Kin-Lam Yung 翁建霖**

Topic: Neural Stem Cell Harvesting and Culturing Technology for Autologous Cell Therapies for Brain Diseases

題目：用于腦部疾病自體細胞療法的神經幹細胞采集和培養技術

Professor and Associate Head, Faculty of Science, Hong Kong Baptist University 香港浸會大學生物系教授

Q&A Session 問答環節

Lunch Break 午休

**Business Investment and Pitching**

**生物科技投資及創投提案**

**Chair: Dong-Yao Ni 倪耀**

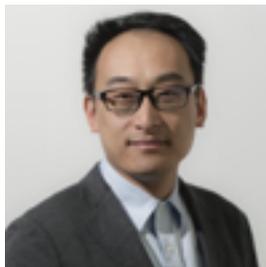


**Simon Man-Lung Tsang 曾文龍**

Topic: Greater Bay Area and its business implication to Hong Kong technology industry including biomedicines

題目：大灣區及其對香港科技業包括生物醫藥的商業影響

Head of Innovation & Technology, InvestHK, Hong Kong SAR 投資推廣署創新及科技行業主管



**Daniel Shi 施旦霽**

Topic: Early Stage Investment in China

題目：進入中國市場的投資指南

Founder and CEO, 23Seed 思德投資創辦人，首席執行官

**Business Pitching 創投提案**

Closing 閉幕式

# Keynote Speakers

## Topic: Innovations for Global Health: Problem Solving for the Poor

題目：全球衛生革新 – 為貧困患者解難

Albert Cheung-Hoi Yu 于常海

Congress President 大會主席

Hong Kong Biotechnology Organization Chairman 香港生物科技協會 主席

Hong Kong Council for Testing and Certification Chairman 香港 20 主席

HK20 Chairman 香港檢測和認證局 主席

Neuroscience Research Institute of Peking University Vice Director / Professor

北京大學神經科學研究所 副所長

## Topic: Innovations for Global Health: Problem Solving for the Poor

題目：全球衛生革新 – 為貧困患者解難

Alex Man-Tat Ng 吳文達

Deputy Director, China Country Office, Bill And Melinda Gates Foundation

比爾及梅琳達·蓋茨基金會北京辦事處副主任

Honorary Assistant Professor, School of Public Health, The University of Hong Kong

香港大學公共衛生學院名譽助理教授

Council Member, Hong Kong Council on Smoking and Health 香港吸烟與健康委員會委員

### Abstract

while scientists are announcing new breakthroughs each year to satisfy our inner urge to push the boundaries, to understand the unknowns, to cure the incurable diseases, to extend human lifespan unimaginable almost 90 years ago when Sir Alexander Fleming first stumbled upon penicillin, the access to solutions derived from these scientific breakthroughs is more unequal than ever before.

At the Gates Foundation, we believe all lives have equal value and every person deserves a chance to live a healthy and productive life. Over the past 17 years, we have been tackling areas of greatest need and where we have the greatest impact - for example, polio eradication, development of a HIV vaccine, malaria elimination. While we might have had episodic successes, we have also faced our fair share of failures.

I would like to use this opportunity to share the foundation's philosophy on philanthropy, what we do, how we invest in innovations, and some examples of where we have been successful in problem solving for the poor. If you innovate with the poor in mind, you are guaranteed to positively impact everyone, and use science to address inequality.

### Biography

Dr. Alexander Ng leads a team that works to build health partnerships with key stakeholders in China, including the Chinese government, the private sector and global health actors. Their aim is to identify, develop and deliver high-quality, low-cost health products for use in developing countries, in order to tackle endemic diseases and other urgent health needs. Alex's team also works with local partners to design and deliver programs that address domestic health challenges such as TB.

Alex joined the foundation in 2015 after 9 years at McKinsey & Co., where he was an Associate Partner. From 2011 to 2015 Alex co-lead McKinsey's Healthcare Practice and Corporate Finance Practice in China, where he served public, private and social sector clients on strategy, health system reform, operations transformation and investments.

Alex completed his undergraduate and medical studies at the University of Auckland, New Zealand, and a postgraduate diploma in Health Informatics at the University of Otago, New Zealand. From 2004 to 2005 he served as Chief Resident at Auckland's Middlemore Hospital - a tertiary referral hospital for south Pacific, before beginning an MPH in Health Policy and Management at the Harvard School of Public Health which he completed in 2006.

Since 2010, Alex has served as Honorary Professor of the School of Public Health at the University of Hong Kong and he has also been a Council Member of Hong Kong Council of Smoking and Health since 2012.

## Topic: The Evolution of Herpes Simplex Viruses as Oncolytic Agents

題目：單純疱疹病毒作為溶瘤細胞制劑的演化

Bernard Roizman 伯納德·羅茲曼

Honorary Chairman, Shenzhen International Institute for Biomedical Research (SIIBR)

深圳羅茲曼國際轉化醫學研究院榮譽院長

Professor, Chicago University, USA 美國芝加哥大學資深教授

Academician, Academy of Sciences, Medical College and Inventor Academy of Sciences, USA

美國科學院，醫學院，發明家學院三院院士

Foreign Academician, Chinese Academy of Engineering 中國科學院工程院外籍院士

“Father of Herpes Virus” , world-authority figure in Oncolytic Herpes Virus

國際病毒領域泰鬥— “疱疹病毒之父” • 溶瘤疱疹病毒世界權威

### Abstract

Viruses: as oncolytic agents: Principles, Practices and Promises

The idea that viruses could be used as oncolytic agents dates back more than 50 years. The idea stems from two observations. Foremost innate immune responses are frequently compromised in cancer cells. As a consequence many viruses and in particular debilitated viruses grow better in cancer cells than in normal cells. Moreover adventitious viruses are frequently isolated from tumors. The approval of AMGEN' s oncolytic herpes simplex viruses (oHSV) has stimulated a search for novel agents

The successful oncolytic virus must have 3 very important properties. Foremost it must be safe. Since a single administration is unlikely to kill all cancer cells it should be possible to administer the virus multiple times without loss of potency as a consequence of interactions with the host immune responses. Lastly, the virus must be able to carry non viral genes and enable the expression of gene products that specifically target cancer cells or at the very least enhance host immune responses to cancer cells.

The presentation focuses on oHSV. It traces the evolution of oHSV from very weak agents with low potency and suitable for a very small, select group of patients to the upcoming generation of very potent viruses specifically targeted to cancer cells

### Biography

Bernard Roizman received his doctorate degree from Johns Hopkins University and remained on the Hopkins faculty. He transferred to the University of Chicago in 1965. He currently holds the rank of Distinguished Service Professor in the Departments of Microbiology and Molecular Genetics & Cell Biology in University of Chicago. Roizman is internationally recognized as having contributed the technical and intellectual underpinnings to the field of human herpesvirus research. He is also credited with the training of major contributors to virology in USA, Europe, and Asia. Recognitions for his research contributions include election to the National Academy of Sciences, Institute of Medicine, American Academy of Arts and Science, and American Academy of Microbiology. He is also an honorary member of the Hungarian Academy of Sciences and a foreign Member of the Chinese Academy of Engineering. He is the recipient of honorary degrees from Governor' s State University (USA), University of Ferrara (Italy), University of Paris (France), and University of Valladolid (Spain), the ICN International Prize in Virology, the J. Allyn Taylor International Prize in Medicine, Bristol-Myers Squibb Award for Distinguished Achievement in Infectious Disease Research, and the Abbott-ASM Lifetime Achievement Award. He currently also serves as Honorable President for Shenzhen International Institute for Biomedical Research (SIIBR).

伯納德·羅茲曼博士畢業于約翰·霍普金斯大學。1965年進入美國芝加哥大學。現任美國芝加哥大學微生物、分子基因生物學系以及細胞生物學系的終身教授。羅茲曼博士一直致力於對疱疹病毒分子生物結構的全方位解讀，還在美國、歐洲和亞洲地區培養出大批病毒學領域的專家。羅茲曼博士在醫學科學上的不凡成就讓他在國際上獲得了諸多榮譽：成功當選美國國家科學院、美國醫學科學院兩院院士、美國藝術與科學研究院院士、美國微生物科學院院士，同時還是匈牙利科學院榮譽會員、中國工程院外籍院士；在美國州長州立大學（Governor's State University）、意大利費拉拉大學（University of Ferrara）、法國巴黎大學（University of Paris）和西班牙巴利亞多利德大學（University of Valladolid）擁有榮譽博士學位；獲得多項國際獎項，包括ICN國際病毒學研究獎、J. Allyn Taylor 國際醫學獎、Bristol-Myers Squibb 杰出成就獎和 Abbott-ASM 終身成就獎等，目前還擔任深圳羅茲曼國際轉化醫學研究院（SIIBR）的榮譽院長。

## Topic: The Role of Big Data, Analytic Machine Learning and AI in Clinical Trials

題目：大數據、分析機器學習和人工智能在臨床試驗中的作用

Benny Chung–Ying Zee 徐仲鎡

Assistant Dean (Research), Faculty of Medicine, The Chinese University of Hong Kong

香港中文大學醫學院助理院長（研究）

Head, Graduate Division of Public Health 公共衛生學院生物統計學教授

Director, Centre for Clinical Research and Biostatistics 臨床研究及生物統計中心中心主任

Honorary Professor, Department of Clinical Oncology and the Department of Statistics, The Chinese University of Hong Kong 香港中文大學臨床腫瘤學和統計系名譽委任教授

Chair, Joint CUHK–NTEC Clinical Research Ethics Committee

香港中文大學及醫管局新界東聯網臨床研究倫理委員會主席

### Abstract

Due to rapid science and technology advancement in the last decades, we now possess high personal computing power, increased data mobility due to internet, and efficient cloud computing environment that gives us unlimited resources to store and process information. Big data generation is therefore a natural consequence, but big data is usually associated with unstructured, potentially bias, and highly confluent data. Sometimes the term “big data” is synonymous with “messy data” .

Traditionally, clinical trial data were used to be highly structured due to rigid requirements of scientific integrity and serious consideration of human ethical concerns, A lot of statistical designs and methodologies were developed because of their ability to make definitive efficacy conclusions and patients’ safety assessments, e.g. interim analysis, data monitoring, etc.

Most people feel that big data alone would not have much impact to the highly regulated world of clinical trial, however, big data together with sophisticated analytic and machine learning may provide disruptive effect on the existing clinical trial practice. In this talk, a few selected topics and applications will be discussed: 1) patient recruitment strategy using big data analytic; 2) risk-based monitoring will become more sophisticated; 3) data management can be done in real time to rapidly identify safety or operational signals requiring action to avoid significant and potentially costly issues such as adverse events and unnecessary delays; 4) advances in instrumentation through miniaturized biosensors and the evolution in smartphones and their apps allowing smart devices to gather large quantities of real-world data not previously available to scientists; 5) remote monitoring of patients through sensors and devices represents an immense opportunity. This kind of data could be used to facilitate R&D, analyze drug efficacy, enhance future drug sales, and create new economic models that combine the provision of drugs and services; 6) it may enhance the use of “large simple trial” design to be implemented in regular patient care settings, making each clinical encounter an opportunity for learning. This idea has not been taken seriously in the past because the statistical methodology to draw meaningful conclusion based on this type of study has a lot of limitations and challenges. However, machine learning and AI may change the situation and provides reasonable arguments to deal with complex effects.

The prospect of Hong Kong in clinical trials research is going to be rely on how much we can be at the forefront development of science and technology and how innovative and disruptive is our inventions. The ability to develop smart trial design, sophisticated analytic methods for data management, advancement in device development, and ideas that may take the lead in drug development, all of these will determine where we are in the spot light of clinical trial research.

## Biography

Prof. Benny Zee is Assistant Dean (Research) for the Faculty of Medicine and also Professor and Head of the Division of Biostatistics and Director of the Centre for Clinical Research and Biostatistics in the JC School of Public Health and Primary Care, Chinese University of Hong Kong (CUHK). He is Director of Clinical Trials and Biostatistics Lab in the CU Shenzhen Research Institute (SZRI) and serves as an Executive Committee member in the Centre for Entrepreneurship and holds honorary appointments in the Department of Clinical Oncology and the Department of Statistics of CUHK. He is also the Chairman of the Joint CUHK–NTEC Clinical Research Ethics Committee since 2006. Professor Zee obtained his Ph.D in Biostatistics from the University of Pittsburgh USA in 1987. He then joined the National Cancer Institute of Canada Clinical Trials Group (NCIC CTG) as Senior Biostatistician, and faculty member in the Department of Community Health and Epidemiology and the Department of Mathematics and Statistics of Queen’ s University Canada from 1987–2001. He remains as Adjunct Professor with Queen’ s University after he joined CUHK and is actively promoting international academic activities and collaborations.

Professor Zee has strong interest in various aspects of multi-centre clinical trials, including statistical methods, data management, drug and medical device development. He has experience in the development of efficient data management and “big data” research using advanced computer technology, plus ample experience in working with industry to design and to carry out clinical trials that satisfy both academic interest and industry objectives. He has tremendous experience in the development of hospital infrastructure such as Ethics Committee, GCP Centre and Risk-based Quality Assurance team to carry out clinical research in hospitals that satisfies regulatory and international requirements. He is also active in medical devices development such as “automatic retinal imaging analysis (ARIA)” for stroke risk assessment and early detection of dementia, and commercializing the technology through Health View Bioanalytic Limited established in the Hong Kong Science Park. He had published more than 200 international peer reviewed journal articles and serves in various committees including advisory committees for drug development and data & safety monitoring committees for international drug trials.

徐仲鏞教授是香港中文大學醫學院助理院長（研究）也是公共衛生學院生物統計學教授 / 臨床研究及生物統計中心的中心主任及香港中文大學臨床腫瘤學和統計系的名譽委任教授，同時任中文大學深圳研究院臨床試驗及生物統計實驗室主任。自 2006 年以來，他也是香港中文大學及醫管局新界東聯網臨床研究倫理委員會主席。徐教授於 1987 年從美國匹茲堡大學獲得了生物統計學博士后，加入了加拿大國家癌症研究所的臨床試驗中心任高級生物統計主任。從 1987 年至 2001 年，他在加拿大皇后大學 (Queen’ s University Canada) 的社區衛生及流行病學系和數學及統計系任教。他加入香港中文大學之後，積極推動國際學術活動，仍然作為加拿大皇后大學的兼職教授。

徐教授對多中心臨床試驗擁有濃厚的興趣，其中包括統計方法，數據管理以及新藥及醫療器械的研發。他有在高效率的數據管理程序方面發展的經驗，善於採用先進的計算機技術作「大數據」的分析，在臨床試驗設計上，既能達到學術上的目標也能滿足業界的的要求。徐教授在建立醫院管理結構上，尤其是在倫理委員會，國家藥物臨床試驗管理架構，以及建基於風險評估的質量管理上有豐富經驗，且能達至國際水平。他也投入醫療器械的研發，例如以「全自動視網膜圖像分析」作篩選早期中風及認知障礙，也參與中文大學創業研究中心的工作。徐教授發表了超過二百篇國際論文，曾參與商界的藥物研發當顧問和統籌數據及安全監測小組。

## Topic: Challenges Facing Infectious Disease Prevention and Control in Guangdong - Hong Kong - Macao Greater Bay Area Today

題目：粵港澳大灣區傳染病防控的現狀和挑戰

Chang-Wen Ke 柯昌文

Chairman and Chief Specialist, Institute of Pathogenic Microbiology, Guangdong Centre for Disease Control and Prevention 廣東省疾病預防控制中心病原微生物檢驗所所長及首席專家

### Abstract

中國倡導的“一帶一路”戰略作為合作共贏與和平友誼之路貫穿亞歐非大陸。為了深化與沿綫國家基礎設施互聯互通及經貿合作，廣東率先提出建設粵港澳大灣區，攜手參與“一帶一路”建設，深化粵港澳合作，共建健康灣區，同時也改變了大灣區的傳染病的流行現狀，並對傳染病的防控提出了新的挑戰。隨着大灣區貿易自由化的進一步發展，本地區和亞歐非之間的人員流動和貿易往來更加頻繁，易于造成傳染病的傳播和流行，如近年來在廣東就出現了登革熱、基孔肯雅熱等輸入性傳染病引起的本地暴發疫情，也出現了輸入性 MERS、寨卡和瘧疾等本地罕見的傳染病。本地流行的季節性流感、人感染 H7N9 禽流感等傳染病也有輸出到香港地區和一些亞洲國家。為了應對傳染病跨區域傳播的挑戰，應用現代快速分子診斷技術、高通量多病原分子檢測技術、以及新一代測序技術開展新發和罕見傳染病的快速診斷、傳染病病原譜和疾病負擔研究，以及新發傳染病從動物到人的預警監測研究等，成為大灣區傳染病防控的關鍵。同時加強地區間多部門合作，及時分享傳染病流行和疾病負擔的監測信息也是預防和有效控制新發傳染病的最有效的手段。

關鍵詞：大灣區，傳染病預防控制，疾病負擔，新一代測序技術，多部門合作

### Biography

Dr. Ke Changwen is a microbiologist who focuses on laboratory diagnosis and molecular epidemiology study of infectious diseases. He fights infectious disease pandemics with an unprecedented early-warning system to forecast, pinpoint and control new plagues before they kill millions. He is the visiting professor in pathogenic microbiology and epidemiology at Sun Yat-sen University, Southern Medical University and Shantou University.

Dr. Ke received his Bachelor Degree in Medicine from West China Medical University in 1989 and his Master Degree in Biochemistry and Molecular Biology from Sun Yat-sen University in 2007. As a visiting researcher, he worked in Department II of Virology, National Institute of Infectious Diseases, Japan, from 2003 to 2004.

Dr. Ke has published over 70 articles and chapters. His work has been published in EID, JV, JCM, and PLOS ONE. He has received research support totaling over 10 million RMB Yuan in grants and contracts from the provincial and national and international science foundation, including: WHO, USAID, USAPHL and China-US Collaborative Program on Emerging and Re-emerging Infectious Diseases.

柯昌文，主任技師。現任廣東省疾病預防控制中心微生物檢驗所所長，主要研究方向為登革熱病毒、流感病毒、戊肝病毒、腸道病毒的分子流行病學、各類突發事件的病原學診斷技術和新發和再發傳染病的病原學監測等。擔任國家病原微生物實驗室生物安全專家委員會委員、中華預防醫學會生物安全技術與裝備委員會常務委員、中國醫藥生物技術協會生物安全專業委員會常務委員、廣東省微生物學會常務理事、廣東省預防醫學會病原微生物與生物安全專業委員會主任委員；中國病原生物學雜誌、中國病毒病雜誌和華南預防醫學雜誌編委；中山大學、汕頭大學和南方醫科大學兼職碩士生導師。

承擔國家和省級課題 10 多項，承擔和參加國際合作項目 10 多項。

發表文章 70 多篇，其中核心期刊 20 篇，SCI 收錄期刊 50 餘篇；主編 / 主譯著作 2 部，參編 2 部，以第一完成人獲 2016 年廣東省科學技術獎二等獎一項。

## Topic: The Nature and Future of Big Data

題目：大數據的本質與未來

Herbert Chia 車品覺

Author of bestseller Big Data 暢銷書《決戰大數據》作者

Venture Partner of Sequoia Capital China 紅杉資本中國基金專家合伙人

President of Youedata Big Data Research Institute 國信優易數據研究院院長

Member of HKSAR Committee on Innovation, Technology and Re-industrialisation

香港特區創新科技及再工業化委員會委員

Advisor to the Big Data Committee of Guiyang City 貴陽市大數據委顧問

Expert at Big Data Laboratory of Shanghai Bureau of Justice 上海市司法局大數據實驗室專家

Deputy Director, Expert Committee of China Computer Federation CCF 大數據委副主任

Director, Wuzhen Institute 烏鎮智庫理事

Adjunct Professor at School of Management of Zhejiang University 浙江大學管理學院兼職教授

Education Steering Committee (for big data projects) of Tsinghua University

清華大學（大數據項目）教育指導委員

Deputy Director of the Working Group for big data standardization of China National Information Standardisation Committee 全國信標委大數據標準工作組副組長 (2015-2017)

Group vice president in Alibaba 原阿裏巴巴集團副總裁

Former Independent Director of AliHealth (HK: 00241) 原阿裏健康（HK: 00241）獨立董事

Chairman of data management committee of Alibaba group 原阿裏數據委員會會長

Leader of Ali Data Team in 2014 which was named China's Best Information Technology Team by Top CIO 2014 年領導阿裏數據團隊獲得 Top CIO 評選為中國最佳信息化團

One of the Ten Most Influential Big Data Entrepreneurs in China by the State Information Center in 2017 2017 年被國家信息中心選為中國十大最具影響力大數據企業家

### Abstract

過去的經驗讓我知道，要成功開發一件成功的數據產品，往往最關鍵的是對業務的理解，而非數據的多寡或者擁有最牛的算法。同理企業如果要成為一間數據驅動的公司，也絕非因為找到了幾個最牛的數據科學家，而是整體的團隊及文化的建立。大多公司在高速前進的同時，數據變得越來越亂而不自知，大數據一下子變成亂數據一團。所以我以為頂層設計在此時變得更加重要。

### Biography

With over 10 years of experience in data strategy and analytics, Mr Chia has formed his own unique way of data-thinking and data-management, and has original insights in the future of big data. Under his own leadership, his team at Ali Data accomplished a series of important milestones in the area of big data applications, including setting up a business and decision analysis framework for Alibaba's various business groups, developing intelligent data products, setting up a data-driven operation team for the Group, successfully launching the public and proprietary Data Asset Management systems, and releasing the Data Protection Pact and so on.

擁有十幾年豐富的數據實戰經驗，并在實踐中形成了獨特的數據化思考及管理方式，對大數據未來趨勢有獨到見解；親自領導阿裏數據團隊在大數據實踐領域取得了一系列重要成果，包括為阿裏建立集團各事業群的業務及決策分析框架，開發智能化的數據產品，成立了驅動集團數據化的運營團隊，成功發起了公共與專有數據資產管理體系，還發布了數據安全規範等。

## Topic: Advancement in National Biometrology and Standards

題目：國家生物計量和標準的提升

Jing Wang 王晶

Deputy Director, Division of Medical and Biological Measurement, National Institute of Metrology (NIM)

中國計量科學研究院醫學與生物計量研究所副所長

Co-chair, Quality Group in Microbial Measurements Steering Group (MBSG)

生物定量工作組聯合主席

Secretary-General, The National Technical Committee of Biometeorology (NTCB)

全國生物計量技術委員會秘書長

### Abstract

With the fast development of the biotechnology, biosciences and Bio-economic, they are active globally, similar in China. The quality and safety are given a big need and must be ensured with bio-industry products and services. The high quality measurement as a key component in this process needs to be assured including validity, comparability, independently of where and when they have been made. It urgently need international and region certified traceability and standards of measurement which enables such comparability to be achieved. Especially Biometrology provide quality assurance with validity, comparability and comparability for biological measurement including genes, proteins, cells, microbiology and so on. Biometrology is for the biosciences developing faster and ever greater attention from National Metrology Institute, national and international metrology organization with its impact on health, bio-manufacturing, agriculture, energy and the environment. Biometrology is cornerstone of CQ.

### Biography

Dr. Wang Jing is an academic leader of bio-metrology, responsible for establishing national bio-metrological standard and bio-measurement technology platform. From 2003, she embarked on the national measurement and metrology on bioanalysis. Until 2005 she finally established a bio-measurement technology research platform of nucleic acid, protein, microbiology, cell, bio-active components, fatty acid and biotoxin.

From 2003, as a representatives of county, she first attend the meeting of BIPM/CCQM bio analyze working group (BAWG) and becoming BAWG member. She is ISO members of the Council Task Force on Biotechnology in 2009. Now she also is co-chair of Quantity group in Microbial Measurements Steering Group (MBSG), the National Technical Committee of Biometrology (NTCB)' s secretary-general, Members of a council in Chinese Society for Measurement (CSM) and Beijing Food Institute (BFI).

She has done many studies on the safety and life sciences. Principal Investigator and Head of National science and technology key project of Study on the traceability and delivery technology of bio-safety. Topic Responsible Person of National project of research on the measurement technology and standard of Food, Chinese traditional medication and natural products effective ingredient. She gained S&T Award of AQSIQ and Beijing 7 times from 2005 to 2015 and have finished 11 national standards. In 2017, Dr. Wang and her team got First Prize of Science and Technology Progress Award which given by Chinese Society of Measurement. She has published four books.

王晶博士是生物計量學的學術帶頭人，負責制定國家生物計量標準和生物測量技術平臺。2003年她開始對生物分析方法進行國家測量和計量。到2005年建立了對核酸、蛋白質、微生物、細胞、生物活性成分、脂肪酸和毒

素檢測的生物測量技術研究平臺。

2003 年，作為國家代表，王博士第一次參加國際計量局 / 物質量諮詢委員會生物分析工作組，成為工作組成員。2009 年成為生物技術工作委員會 ISO 成員。目前擔任生物定量工作組聯合主席、全國生物計量技術委員會秘書長、中國計量測試學會和北京食品學會理事會成員。

王晶博士從事過許多關於安全和生命科學的研究。國家科技攻關項目關於生物安全技術可追溯性和傳遞技術研究的學術帶頭人和首席研究員；國家食品、中藥及天然藥物有效成分檢測技術與標準研究國家課題負責人。自 2005 年到 2015 年，7 次獲得國家質檢總局及北京的科技獎勵，完成 11 項國家標準。2017 年，王博士和她的研究小組獲得中國計量測試學會頒發的科學技術進步獎一等獎；已編著 4 本書籍。

## Topic: Exercise, Adiponectin and Brain Health

題目：運動、脂聯素和腦健康

Kwok-Fai So 蘇國輝

Member, the Chinese Academy of Sciences 中國科學院院士

Chair Professor, Department of Ophthalmology, and Jessie Ho Professor in Neuroscience, The University of Hong Kong(HKU) 香港大學醫學院教授、神經科學研究中心主任

Director, GHM Institute of CNS Regeneration at Jinan University, Guangzhou, China

暨南大學粵港澳中樞神經再生研究院院長

Co-Chairman, the Board of Director of the China Spinal Cord Injury Network

中國脊髓損傷研究協作組董事會聯席主席

Honorary Director, the State Key Laboratory of Brain and Cognitive Sciences at HKU

腦與認知科學國家重點實驗室名譽院長

Editor-in-Chief, Neural Regeneration Research 中國神經再生研究 (英文版) 主編

### Abstract

We have shown that in depressed animals, adiponectin may play a significant role in mediating the effects of exercise on hippocampal neurogenesis and depression, possibly by activation of the ADNR1/AMPK signaling pathways, and also raise the possibility that adiponectin and its agonists may represent a promising therapeutic treatment for depression.

We then have investigated the effects of Baduanjin Qigong exercise on adiponectin and to evaluate whether adiponectin is involved in the antidepressive effects of Qigong exercise on chronic fatigue syndrome (CFS)-like illness. Baduanjin Qigong significantly increased adiponectin levels in females with CFS-like illness. Decreases in depression symptoms were associated with increases in adiponectin levels following Qigong exercise, indicating that the potential contribution of adiponectin to Qigong exercise elicited antidepressive effects in human subjects.

### Biography

Director of GHM Institute of CNS Regeneration at Jinan University, Guangzhou, China; Chair of Anatomy in the Department of Ophthalmology and the State Key Laboratory of Brain and Cognitive Sciences, Jessie Ho Professor in Neuroscience, The University of Hong Kong; ([http://www.eyeinst.hku.hk/Prof\\_So.htm](http://www.eyeinst.hku.hk/Prof_So.htm)), member of the Chinese Academy of Sciences, member of the Advisory Committee, Ministry of Education/ 2011 Program, member of Biological and Medicine Council/ Ministry of Education, member of Consultative Committee/ the national 973 Program/ major national research funding program in China ([www.973.gov.cn/](http://www.973.gov.cn/)), Director of China Spinal Cord Injury Network (ChinaSCINet), Co-Chairman of the Board of Director of the ChinaSCINet ([www.chinascinet.org](http://www.chinascinet.org)), and Editor-in-Chief of Neural Regeneration Research ([www.nrronline.org](http://www.nrronline.org)). Received PhD degree from MIT. He is one of the pioneers in the field of axonal regeneration in visual system. He was the first to show lengthy regeneration of retinal ganglion cells in adult mammals with peripheral nerve graft. He is currently using multiple approaches to promote axonal regeneration in the optic nerve and spinal cord. His team identifies neuroprotective and regenerative factors including: exercise, wolfberry, trophic factors, peptide nanofiber scaffold, and environmental manipulation. 1995 obtained the Natural Science Award of the National Natural Science Foundation of China. 1999 was elected Member of the Chinese Academy of Sciences. 2015 was elected US National Academy of Invention Fellow. He is the author and co-author of over 420+ publications ([http://scholar.google.com/citations?hl=en&user=SUPKYiQAAAAJ&view\\_op=list\\_works](http://scholar.google.com/citations?hl=en&user=SUPKYiQAAAAJ&view_op=list_works)); co-inventors of 25 patents.

By Beijing Team

暨南大學粵港澳中樞神經再生研究院院長；眼科及腦與認知科學國家重點實驗室院長，香港大學神經科學研究中心主任 ([http://www.eyEinst.hku.hk/Prof\\_So.htm](http://www.eyEinst.hku.hk/Prof_So.htm))；中國科學院院士，國家教育部諮詢委員會委員，2011 年生物和醫學教育委員會成員、國家 973 計劃、國家重大科研資助項目諮詢委員會成員（中國 [www.973.gov.cn/](http://www.973.gov.cn/)），中國脊髓損傷網主任、董事會聯席主席（[www.chinascinet.org](http://www.chinascinet.org)）、神經再生研究期刊總編輯（[www.nrronline.org](http://www.nrronline.org)）。在麻省理工學院獲得博士學位。他是視覺系統軸突再生領域的開拓者之一，是第一個用外周神經移植，來顯示成年哺乳動物視網膜神經節細胞的長時間再生。目前，他正在利用多種方法促進視神經和脊髓軸突再生。他的團隊確定了神經保護和再生的因素包括：運動、枸杞、營養因子、肽納米纖維支架和環境影響。1995 年獲得中國國家自然科學基金會自然科學獎；1999 年當選為中國科學院院士；2015 年當選美國國家發明學會院士。編著及合著超過 420 本出版物（[http://scholar.google.com/citations?hl=en&user=SUPKYiQAAAAJ&view\\_op=list\\_works](http://scholar.google.com/citations?hl=en&user=SUPKYiQAAAAJ&view_op=list_works)），是 25 項專利的共同發明人。

## Topic: Genetic Counselling in China

題目：中國的遺傳諮詢

Lin He 賀林

Academician, Chinese Academy of Sciences (CAS) 中國科學院院士

Academician, The World Academy of Sciences (TWAS) 發展中國家世界科學院院士

### Abstract

賀林院士就中國遺傳諮詢的發展歷程、發展現狀及存在的問題做了詳細介紹，展示了近兩年來中國遺傳諮詢發展的速度之快。中國遺傳諮詢培訓借鑒北美遺傳諮詢師培訓的課程設置，與國際接軌的同時，又加以創新。培訓採用初級、中級、高級三級教學模式，由易到難，逐級提升，並結合創新型的網絡遠程培訓教學，邀請國內外知名遺傳學專家以直播的形式進行臨床遺傳諮詢病例分享，建立病例分享庫，多位一體、全方位進行遺傳諮詢培訓。目前已成功培訓了 3000 餘位優秀的遺傳諮詢專業人員，填補了我國市場上遺傳諮詢的空白，為中國遺傳諮詢職業化奠定了基礎。中國遺傳諮詢事業正在飛速發展，中國遺傳諮詢職業化的時代正在到來。

### Biography

Academician, Chinese Academy of Sciences (CAS)

Academician, The World Academy of Sciences (TWAS)

Dr. He received his Ph.D. from University of the West of Scotland, UK (1987–1991), completed Post-Doctoral research at University of Edinburgh, UK (1991–1992) and became Senior Fellow of MRC Human Genetics Unit at University of Edinburgh, UK (1993–1995). In 1996, he became a researcher at the Chinese Academy of Sciences, and subsequently as Project Leader at Shanghai Institutes for Biological Sciences (Institute of Neurosciences), and the subsidiary Institute of Physiology and Institute for Nutritional Sciences. In 2000, he became Professor at Shanghai Jiao Tong University, and in 2001, Director of Bio-X Research Institute (2001 until present). From 2007 to 2012, he served as Professor at Fudan University, and Director of its Institute of Biomedical Sciences.

Academic Roles: Founding chairman of International Society of Translational Medicine; Chairman of East Asian Union of Human Genetics; Chief Scientist of the National 973 Program; member of the Expert Steering Committee for the 863 Programs; judging panel of the National Natural Science Foundation of China; the State Council Degree Assessment Committee; Chairman of the Chinese Board of Genetic Counselling; honorary professors, director of academic committee and members of a number of universities, research institutions, key laboratories and other major projects.

Dr. He is currently serving as Deputy Editor of Experimental Biology and Medicine, and is on the editorial board of more than 10 science magazines such as Human Molecular Genetics, Cell Research, Psychiatric Genetics, Human Genetics etc. He has published more than 500 SCI papers, 17 monographs, as well as over 20 patents and applications worldwide.

Academic honors: National Distinguished Young Scholars, Distinguished Professor of the Ministry of Education “Chang Jiang Scholars Programme”, Hong Kong ‘Qiu Shi’ Outstanding Young Scholar Award, Shanghai Technology Elite, “Ho Leung Ho Lee” Award, State Council allowance, The NARSAD Distinguished Investigator Award, Biology Award of The World Academy of Sciences (TWAS), Tan Jiazhen Life Science Achievement Award, First Honour of Ministry of Education Science and Technology (Natural Science), Shanghai Science and Technology Progress Award, the second prize of the State Natural Science Award etc.

Political Honors: member of Shanghai CPPCC National Committee, member of CPPCC National Committee, Chairman of Shanghai Luwan District Association for Science and Technology, Honorary Chairman of Shanghai Huangpu District Association for Science and Technology, Vice Chairman of Shanghai Committee of The China Democratic League, member of the Standing Committee of The China Democratic League, member of the Standing Committee of Shanghai Federation of Returned Overseas, member of the Central Committee of All-China Federation of Returned Overseas Chinese, Vice Chairman of Expert Committee.

#### 中國科學院院士

##### 發展中國家世界科學院院士

1987–1991 年英國西蘇格蘭大學博士學位，1991–1992 年英國愛丁堡大學博士後研究，1993–1995 年在英國 MRC 愛丁堡人類遺傳學研究所高年資研究員；1996 年起任中國科學院研究員，先後擔任中國科學院上海生命科學中心（上海腦研究所）、上海生理研究所和營養科學研究所課題負責人；2000 年起任上海交通大學教授，2001 年起擔任 Bio-X 研究院院長（2001–至今）；2007 年起任復旦大學教授，生物醫學研究院院長（2007–2012）。

學術任職：首屆世界轉化醫學學會主席，東亞人類遺傳學聯盟主席。兩任國家 973 計劃首席科學家，十五、十一五國家 863 計劃主題和領域專家，數屆國家自然科學基金委員會評委，國務院學位評定委員會成員，中國遺傳學會遺傳諮詢分會主任委員。多所大學、研究機構、重點實驗室或重大項目的名譽教授、學術委員會主任或委員等職。目前被聘為 Experimental Biology and Medicine 副主編，Human Molecular Genetics, Cell Research, Psychiatric Genetics, Human Genetics 等十多種科學雜誌的編委。發表 SCI 論文 500 餘篇，主編和參編專著 17 部，申請和已獲授權專利 20 多項。

學術榮譽：國家杰出青年、教育部《長江學者獎勵計劃》特聘教授、國家百千萬跨世紀人才計劃第一層面人選（1999），香港“求是”杰出青年、上海市科技精英、“何梁何利”獎、國務院津貼、美國國家精神分裂癥與抑鬱癥研究聯盟（NARSAD）“杰出研究者”獎、第三世界科學院生物獎、談家楨生命科學成就獎、上海市科技功臣等。並且，還獲得了教育部科學技術（自然科學）一等獎，上海市科學技術進步一等獎，國家自然科學獎二等獎等。

政治榮譽：上海市政協委員，全國政協委員，上海市盧灣區科協主席，上海市黃浦區科協名譽主席，民盟上海市委副主委，民盟中央常委，上海市僑聯常委，中國僑聯中央委員，專家委員會副主任。

## Topic: R&D and Industrialization of Antibody Drug

題目：抗體藥物研發和產業化

Ya-Jun Guo 郭亞軍

CEO, Mabtech Holdings (HK) Ltd 邁博太科 ( 香港 ) 控股有限公司行政總裁

Principal Scientist, 973 Program, Antibody Project 國家 973 計劃抗體項目首席科學家

Director, State Key Laboratory of Antibody-Drug and Targeted Therapy, China

中國抗體藥物和靶向治療國家重點實驗室主任

Director, National Engineering Research Center for Antibody Medicine, China

中國抗體藥物國家工程研究中心主任

Professor, Sidney Kimmel Cancer Center, USA 美國加利福尼亞大學西德尼腫瘤中心 教授

Professor, Cancer Center, School of Medicine, University of Nebraska, USA

美國內布拉斯加州立大學醫學院腫瘤中心教授

### Abstract

Antibody drugs are the hottest research fields in gene recombination technology, making breakthroughs in major diseases such as cancer, autoimmune diseases and metabolic diseases. China's monoclonal antibody drug research and development institutions and enterprises have excelled and flourished, keeping up with the international development forefront and promoting exponential growth in this area. Antibody drug technology continues to innovate and evolve: The discovery of new targets have led to the identification of monoclonal antibody drugs that are able to target malignant tumours and autoimmune diseases with success. Advancements are being made in the treatment of chronic and metabolic diseases; new structures appeared in the form of bispecific antibodies, small molecule antibodies, antibody-conjugated drugs, antibody prodrugs and others. The scale of antibody drug production has reached tens of thousands of liters and the expression level continues to increase, giving light to the usage of disposable bioreactors for large-scale production. On the policy side, clear guidelines in the Drug Administration Law, Pharmacopoeia, The Technical Guidelines for Development and Evaluation of Biologically Similar Drugs, and the Drug Marketing Authorization Holder, has become the essential components that foster the development, evaluation, registration and production of antibody drugs. Source: National Center for Antibody Drugs National Engineering Research Center, Director of the State Key Laboratory of Antibody Drugs and Targeted Therapy

## Topic: Towards a Cure for Cancer

題目：邁向癌癥治愈之路

Guo-Liang Yu 餘國良

Chairman of the Board, Crown Biosciences Inc 中美冠科生物技術有限公司董事長

### Abstract

In last four decades, human has battled the most devastating malignancy, cancers. we have won some small battles but largely we failed to save lives. The hope of converting life threatening cancers into chronic conditions that can be managed in long term cares has increased significantly. In addition to target therapeutics, the recent advances in immunotherapy including check point inhibitors and Immuno-stimulating cell therapies open doors for finding cures for cancers. This presentation will describe our efforts of understanding cancer biology using PDX, Biomarker discovery and combination therapy.

Dr. Yu, a brilliant innovator, successful serial entrepreneur and generous coach, has extensive knowledge in developing technologies, founding startups, leading companies to success, and building and fostering communities to support other scientists/entrepreneurs. In this workshop, Dr. Yu will share his invaluable knowledge and perspectives on how to make an impact in building successful companies.

### Biography

Dr. Guo-Liang Yu is the Executive Chairman of Crown Bioscience Inc., a publically-listed personalized oncology platform company with ~600 employees globally. He co-founded Epitomics Inc., an antibody biotechnology company, and served as Chairman, President and CEO for 10 years prior to its acquisition by Abcam for \$170 million.

Dr. Yu's success is driven by his scientific curiosity and passion for translating scientific discovery to real products. After graduating from Fudan University in Shanghai, China, he came to the United States in 1984 to pursue advanced studies. He obtained his Ph.D. from UC Berkeley, where he and Dr. Greider discovered telomerase and its mechanism in Dr. Blackburn's lab. Drs. Blackburn and Greider received Nobel Prize in 2009 for their discovery.

Dr. Yu later joined Dr. Frederick Ausubel's lab at Harvard University to pursue the question of how plants defend themselves against pathogens without an immune system, and was the first person in the world to identify a plant disease resistance gene. In 1993, when genomics was still in its infancy, Dr. Yu joined Human Genome Sciences Inc. as one of the first few senior scientists, identifying human gene targets for drug discovery. Among several important drug targets he studied was BLYs, the first successfully genomic target for the development of a lupus antibody drug Benlysta, which was approved by FDA in 2010.

In 1998, Dr. Yu was attracted to identifying plant genes with economic value in agriculture and in bio-energy. He was Senior Vice President of R&D at Mendel Biotechnology Inc. where his team analyzed the function of a complete set of plant transcription factors, and ultimately identified several valuable traits such as enhanced crop yield, disease resistance, and drought tolerance. Dr. Yu has co-authored 43 peer-reviewed scientific articles that have been referenced by the scientific community over 6000 times. He is a co-inventor of more than 429 patents.

Dr. Yu is the founding president of the Chinese Biopharmaceutical Association (CBA) and serves on the boards of several professional organizations in the United States and China, including BayHelix, Chinese-American Bio/Pharmaceutical Society (CABS), National Foundation of Cancer Research, Ray Wu Memorial Foundation, University of Pacific. Dr. Yu is generous in coaching young entrepreneurs, and he has co-found a dozen startup companies in biotech and the healthcare sector, including Immune-Onc Therapeutics, Inc. in Palo Alto. He is also a venture partner at OrbiMed Venture LLC.

## Topic: The Payload Technology for Space Biomedical Research on the Tianzhou - 1 Spacecraft

題目：空間微流控芯片生物醫學實驗技術及航天飛行搭載

Yu-Lin Deng 鄧玉林

Academician and Vice President, Department of Life Sciences, International Academy of Astronautics

國際宇航科學院院士兼生命科學部副主席

Dean and Professor, School of Life Sciences, Beijing Institute of Technology

北京理工大學生命學院教授

Director, Beijing Key Laboratory of Bio-Separation and Bio-Analysis in Biomedicine and Pharmaceuticals

生物醫藥分離分析北京市重點實驗室主任

Chairman, Life Electronics of Chinese Institute of Electronics 中國電子學會生命電子學分會主任委員

Councilor, Institute of Complex Medical Engineering (ICME) 國際復合醫學工程學會 ( ICME ) 理事

Member, Committee on Space Research (COSPAR), Chinese National Committee

國際空間研究委員會 COSPAR 中國委員會委員

Vice Chairman, China Association of Medical Equipment Point-of-Care Testing (POCT) Equipment Technology Expert Committee

中國醫學裝備協會現場快速檢測 (POCT) 裝備技術專業委員會副理事長

Vice Chairman, Chinese Society of Astronautics, Aerospace Medical Engineering and Biology Branch 中國宇航學會航天醫學工程與生物學分會副主任委員

### Abstract

In order to study the possible interactions between the nervous system and the immune system in space environment (microgravity and radiation), and to find out possible impact and potential damage that may be done to the astronauts' body, we performed a biomedical experiment on China's first cargo spacecraft Tianzhou-1. In the experimental payload, two types of human cells were co-cultured on the microfluidic chips to complete two sets of experiments for 15 days after the launch on April 20, 2017. The payload features spacecraft-compatible power and data interfaces for real-time data telemetry, remote control and data download to the ground control center.

Microfluidic chip has been emerging as a powerful tool for the researches in chemical and biological areas. The controllable fluid and versatile design help to establish human-like structure which makes it an ideal supporter for the study of cell biology. We presented a fully automatic microfluidic cell perfusion culture device containing a multi-layer microfluidic chip for dynamic cell co-culture with temperature controlling system and real-time microscopic imaging system. The observation data of the cell culture status and protein content test result was transmitted to the ground through the spacecraft. This small volume, low power consumption, steady and automated device with real-time detection may perfectly meet the demanding of various applications which need cell culture procedures.

This work was supported by the Ministry of Science and Technology of China for the National Key Scientific Instrument and Equipment Development Project (2012YQ040140).

Keywords: Tianzhou-1, cell culture, microfluidic chip, microgravity

### Biography

Vice President and Secretary-General of Life Electronics of Chinese Institute of Electronics

Vice Chairman of the Medical Equipment Evaluation Expert Committee of Beijing Food and Drug Administration

Member of the Expert Committee in the National Hi-tech R&D Program (863 Program) - “deep-space exploration and spatial research technologies”

Elected in 2013 as Academician of Department of Life Sciences Communication of International Academy of Astronautics

Devoted to integrating life science and analytical diagnostic technology, as well as promoting innovations in biotechnologies, Deng is one of China’s leading experts in space biomedical science research. Supported by the National Science and Technology Support Program, “Microfluidic Chip Gene Amplification Device” (SZ-8 / 231-450) was developed by the research team led by Prof. Deng and was successfully implemented in China’s triumphant launch of Shenzhou VIII spacecraft in November 2011. This experimental device was designed to study how space environment cause DNA mutations and biomolecular changes.

Microfluidic Chip Technology was said to be the future direction of spatial biomedical research according to NASA United States. Deng’s research project on Shenzhou-8 was China’s first-ever scientific research project aboard in a space capsule, and the world’s third space experiment. Preliminary experimental result supported further research projects in China’s space bio-cabin and in China’s manned space station.

鄧玉林博士，二級教授，博士生導師。國際宇航科學院院士兼生命科學部副主席，北京理工大學生物醫藥分離與分析北京市重點實驗室主任。入選百千萬人才工程國家級人選、教育部新世紀人才以及國防科技 511 人才工程，享受政府特殊津貼等。目前擔任的學術職務包括：中國電子學會生命電子學分會理事長、國際復合醫學工程學會（ICME）理事、國際空間研究委員會 COSPAR 中國委員會委員、中國醫學裝備協會現場快速檢測（POCT）裝備技術專業委員會副理事長、全國衛生產業企業管理協會臨床醫學檢驗專家委員會常務副理事長、中國宇航學會航天醫學工程與生物學分會副主任委員、中國空間科學會空間生命起源與進化專委會副主任委員，中國人民解放軍裝備發展部載人航天預研專家組成員等。主要研究領域屬於神經生物學、空間生物學和生物分析技術的交叉領域。幾年來牽頭承擔了包括國家 863 計劃、國家重大科學儀器開發專項、國家科技支撐計劃、國家自然科學基金重點和民用航天專項等多項國家重點重大科研項目。學術論文 470 餘篇，其中 SCI 論文 280 多篇，申請發明專利六十餘項，其中授權專利 37 項。

# Speakers

Alfred Tan 陳慶忠

Head, Knowledge Transfer Office, Hong Kong Baptist University 香港浸會大學知識轉移處主管

Andrew Cobden 安德魯·科布登  
Counsel, Hogan Lovells

## Topic: Good Manufacturing Practice in the TCM Industry

題目：中藥業的優良制藥規範

Christopher Hon-Ki Cheng 鄭漢其

Research Professor, School of Biomedical Sciences, The Chinese University of Hong Kong

香港中文大學生物醫學學院教授

Managing Director, Hong Kong Institute of Biotechnology 香港生物科技研究院院長

Director, CUHK Shenzhen Research Institute 香港中文大學深圳研究院院長

Christopher H.K. Cheng

School of Biomedical Sciences and the Hong Kong Institute of Biotechnology, The Chinese University of Hong Kong

### Abstract

Following the trend of the global pharmaceutical industry, many good practices such as GAP, GLP, GMP, GCP and GSP have been developed and some of them gradually introduced to Hong Kong, with the objective of safeguarding product consistency and safety. Among these good practices, Good Manufacturing Practice (GMP) is fundamental to the drug manufacture industry and has becoming a norm internationally. Suffered from the quality incident in 2009, a big leap achieved by the Hong Kong pharmaceutical manufacturing industry has successfully brought Hong Kong to become the 47th PIC/S member in January 2016.

The issue of whether we should adopt mandatory GMP in the manufacture of TCM has been a matter of much debate for years in Hong Kong. The current TCM manufacture industry in Hong Kong is getting more complex than in year 2003. Issues such as the long queue of assessment and approval of registration licenses; the rather rigid regulatory control on any changes; a highly competitive marketing environment, etc. have continued to plague the industry. Although a date for mandatory GMP implementation in Hong Kong has not been set yet, both the Government and the industry should start thinking and planning ahead on how to achieve a sustainable and healthy industry for TCM products in Hong Kong in line with global trends.

### Biography

Christopher Hon Ki CHENG

Research Professor, Developmental and Regenerative Biology Programme, School of Biomedical Sciences, CUHK.

Managing Director, Hong Kong Institute of Biotechnology.

Director, CUHK Shenzhen Research Institute.

Prof. Cheng has served as a faculty member at the Chinese University of Hong Kong over 30 years. Throughout his academic career, Prof. Cheng has published over 200 peer-reviewed research papers and review articles in various international journals on areas of endocrinology, reproduction, chemical analyses, natural product research and drug development. He is regularly invited to review manuscripts submitted to various international journals. He is engaged in the editorial activities of international journals. He has also published many articles and book chapters on the assessment and development of TCM as therapeutic agents or functional foods. Together with his collaborators on natural product research in Mainland China, Prof. Cheng was awarded a Second Class State Natural Science Award of China in the year 2009. Prof. Cheng has successfully obtained numerous grants from various organizations to support his research, notably from the RGC, ITF and NSFC. He has also served as grant reviewers in Hong Kong and overseas, and as a visiting professor of a number of universities. Having supervised over 54 graduate students pursuing their Ph.D./M.Phil. degrees in his laboratory, Prof. Cheng regularly serves in thesis committees

of graduate students in CUHK as well as in other universities. Prof. Cheng' s commitment to research excellence is not only limited to his own laboratory. As the Managing Director of the Hong Kong Institute of Biotechnology, he is committed to the development of biotechnology and the Chinese medicine industry in Hong Kong. In addition, Prof. Cheng is also the Director of the CUHK Shenzhen Research Institute dedicated towards developing the activities of the university in Mainland China on areas of research, education and entrepreneurship.

鄭漢其

香港中文大學生物醫學學院研究教授

香港生物科技研究院院長

香港中文大學深圳研究院院長

鄭漢其教授在香港中文大學任教凡三十餘年。鄭教授從事學術研究至今，已發表了超過 200 篇文章，并為世界各地多份國際期刊審閱有關內分泌、生殖、化學分析、天然產物研究及藥物開發的文章。鄭教授亦擔任國際期刊的編輯委員會工作。鄭教授發表了多篇評估及研發以中醫藥作為治療藥物或功能食品的文章和書籍章節。在分子生物學及細胞生物學領域有良好及扎實的研究基礎，與國內外相關實驗室建立了很好的學術合作關係。鄭教授致力和國內學者合作，并于 2009 年獲國家頒發國家自然科學獎二等獎。鄭教授的研究工作獲得多個機構的撥款支持，其中包括香港的研究資助局和創新及科技基金，與及國家的自然科學基金。同時，鄭教授亦為多個本地及海外研究基金的評審員。鄭教授的實驗室曾成功地訓練超過 54 個研究生，并經常參與香港中文大學及其他大學研究生畢業論文的評審工作。除此，鄭教授同時兼任香港生物科技研究院院長，致力推動生物科技及中藥製造業在香港的發展。近年大學致力發展在內地的產學研方面的工作，鄭教授現亦擔任香港中文大學深圳研究院的院長，積極推動大學在內地的發展。

## Topic: NAMI's Engineered Biomaterials for Targeted Delivery

題目：用于針對性傳遞的工程生物材料

Connie Kwok 郭秀娟

Director of Research and Development (Healthcare), Nano and Advanced Materials Institute Limited  
納米及先進材料研發院有限公司研究發展總監 (保健)

### Abstract

In this talk, various innovative yet practical biomaterial strategies in devising different targeted delivery systems, such as nano carrier, micro depot, oral dissolving film, micro vapor and micro particle, for a number of product applications in topical, transdermal, oral, pulmonary and implantable administration will be discussed.

### Biography

Dr. Connie Kwok oversees the market segment of Healthcare Sector in NAMI. She received her B.Sc. (Hons) in Engineering Chemistry from Queen's University, Canada, M.Sc. in Chemical Engineering and Ph.D. in Bioengineering from the University of Washington, USA where her research interests focused on drug delivery, biomaterials, surface modifications/characterization for drug/device combination product applications.

Dr. Connie Kwok has over 15 years of industrial experience in the United States and Hong Kong. She started her career at Integra LifeSciences and was involved in skin tissue engineering. She developed slow-release, antimicrobial artificial skin templates for severely burnt patients. She then joined Abbott Vascular (formerly Guidant Vascular) and took part in their critical developments of Drug Eluting Stents (DES). She also developed a number of bioactive DES coatings to prevent stent restenosis as well as worked out relevant testing protocols for new product evaluations. She was a two-time winner of the Guidant Excellence Awards for her significant contributions there. Later, she moved on to Marina Biotech (formerly Nastech Pharmaceuticals) and helped design new adjustable-dose nasal delivery devices for protein drug formulations. She was also responsible for the quality of primary container closures and in charge of protein formulation projects where drugs were intended to be delivered nasally without sacrificing the bioavailability.

Dr. Connie Kwok was a member of Controlled Release Society (CRS) and Society for Biomaterials (SFB) where she earned a prestigious Ph.D. Student Award for her research excellence and originality. She is the first author of over 20 US patents and journal publications.

## Topic: Application of Mass Spectrometry in IEM Screening and Diagnosis

題目：質譜在 IEM 篩查診斷中的應用

Chun-Hua Zhang 張春花

Director, MILS (Matsumoto Institute of Life Science), Japan 日本鬆本生命科學研究所 主任

Vice director, NPO Life Science, Japan 日本 NOP 生命科學 副主任

Researcher, Kanazawa Medical University, Japan 日本金澤醫科大學 研究員

Visiting professor, Capital Institute of Pediatrics Beijing, China 中國首都兒科研究所 客座教授

Visiting professor, Haikou People Hospital Haikou 中國海口市海口人民醫院 客座教授

Member, editorial board of International Journal of Pediatrics 國際兒科學雜誌 編輯委員

### Abstract

About 800 kinds of metabolic disorders in human have been reported. Metabolom analysis can provide clues that directly lead to diagnoses of enzyme dysfunction and the related genetic mutations. In our laboratory, using gas chromatography / mass spectrometry (GC/MS) analysis combined with blood amino acid profile and acylcarnitine profile analysis by tandem mass spectrometer (MS/MS) enables the simultaneous measurement of multiple categories of compounds and offers reliable and quantitative evidence for the screening or diagnosis of more than 150 IEMs. The detail will be reporting.

### Biography

Curriculum Vitae of Dr. Chunhua Zhang

Current Positions

Director, MILS (Matsumoto Institute of Life Science), Japan

Director, MILS International, Japan

Vice director of NPO Life Science, Japan

Researcher of Kanazawa Medical University, Japan

Director of MILS (Beijing) Medical Laboratory, China

Visiting professor of Capital Institute of Pediatrics Beijing, China

Visiting professor of Haikou People Hospital Haikou, China

Guest professor of Jinan University, Guangzhou, China

Board of Advisors of MILS International India, India

Visiting professor of Beijing children hospital, China

Visiting professor of Anhui children hospital, China

Member of editorial board of International Journal of Pediatrics

Member of editorial board of Chinese Pediatric Emergency Medicine

Field research

Pediatrics, Inborn Error Metabolism (IEM), Bio-medical mass spectrometry, GC/MS, Chemical diagnosis of IEM

Dr. Zhang, 1986 graduated from Chinese medical university, 1997 acquired MD from Kanazawa Medical University. She studied in IEM chemical diagnosis and biomedical mass spectrometry analysis from 1992 until today. Since 1998, she started high-risk screening of IEM and chemical diagnosis service to clinical pediatrics, extended over a long term and was making an effort for study and knowledge spread of IEM in Asian country. She established an international IEM screening laboratory network consisting of trained MS technicians and IEM medical experts. The goal of this network is to regulate the setup of IEM testing laboratories, sample treatment methods, detection conditions, and data reporting, as well as to ensure reliable technical support for equipment. Her activity contributed toward development of Asian IEM study and diagnosis.

## Topic: Strategies and Concerns for the Preclinical Assessment and Submission of Drugs that meet dual compliants of US FDA and Chinese FDA

題目：符合中美 FDA 雙報要求的藥物臨床前評估及申報的策略和關注點

Chun-Lin Chen 陳春麟

CEO, Shanghai Medicilon Inc. 上海美迪西生物醫藥股份有限公司首席執行官

### Biography

Chun-Lin Chen got B.S. (1983) and M.S. (1986) from China Pharmaceutical University. During 1986-1991, Chun-Lin Chen worked as Assistant Professor in China Pharmaceutical University. In 1994, Dr. Chen got Ph.D. in Pharmacology and Toxicology from Oklahoma State University and then he obtained postdoctoral training in Pharmaceutical Department of St. Jude Children's Research Hospital. During 1997-2002, Dr. Chen served as Director of Pharmaceutical Department at Parker Hughes Cancer Center, Parker Hughes Institute, St. Paul, USA. In 2002, Dr. Chen joined Vertex Pharmaceuticals as a Staff Investigator at Department of Pharmacokinetics and Metabolism, Non-clinical Drug Evaluation Division, Vertex Pharmaceuticals Incorporated, Cambridge, USA.

Dr. Chen was the founder and CEO of Medicilon Inc. Medicilon has grown into one of the top drug discovery service companies in China. Medicilon's core business is to provide preclinical chemistry, ADMET and biology services to pharmaceutical companies and biotech companies. Now Medicilon has the largest AAALAC-certified animal research facility in Shanghai complementing 3 technology platforms, including structural biology, non-human primate experimental lab and isotope lab. The company has built a fully integrated drug discovery research and development technology platform to provide high quality preclinical and IND filing services to CFDA and US FDA since year 2004. Medicilon strive to improve services to satisfy their global clients' needs.

In addition, Dr. Chen currently serves as Associate Director for Pharmacokinetics and Drug Metabolism Section of Shanghai Pharmacological Society, Committee Member for Pharmacokinetics and Drug Metabolism Section of Chinese Pharmacological Society and Adjunct Professor for China Pharmaceutical University. Dr. Chen has been served as governmental funding reviewer for drug discovery programs in various Hi-Tech Parks including Xiamen, Wuhan and Shanghai. Dr. Chen got several awards including Excellent Teacher Award from China Pharmaceutical University, Research Excellent Award from Oklahoma State University, Excellent returnee award and 1000 Plan Award from Chinese government.

陳春麟博士在中國藥科大學獲得了學士(1983)及碩士學位(1986), 並留校參與生物化學教研室教學工作(1986-1991), 從事生化藥物的教學和研究。在中國藥科大學學習和工作其間, 他多次獲得優秀學生獎並獲得優秀教師獎。陳春麟博士又于美國俄克拉何馬州立大學(Oklahoma State University)獲得藥理學及毒理學博士學位(1994), 從事新抗心率失常藥物的藥理、毒理及生物化學研究。他的博士論文曾獲美國俄克拉何馬州立大學優秀論文獎, 并被提名為美國研究生科學院的優秀論文。

陳博士在設計藥代動力學, 藥物代謝和藥代動力學模型方面, 獲得了豐富的經驗。隨後, 他在美國聖朱迪兒童研究醫院(St Jude Children's Research Hospital)Relling 博士和 Evans 博士的實驗室做博士後工作, 從事藥代動力、藥物代謝和藥物毒理學方面的研究(1994年4月~1997年2月), 並參與美國標準化肝臟庫的建設和各項藥物代謝及藥物遺傳學研究。

1997年陳博士加入美國派克-休斯研究所(parker Hughes Institute and Parker Hughes Cancer Center) 並擔任藥物科學部門主任, 負責抗艾滋病毒及抗腫瘤新藥的藥代動力學和藥物代謝研究, 他負責抗艾滋

Scientific Content

病毒藥物 Stampidine 已經進入臨床研究。2002 年他以資深科學家的身份加入 Vertex 藥物公司 (Vertex Pharmaceuticals), 負責抗腫瘤新藥及心血管藥物的藥代動力學和藥物代謝研究。陳博士負責抗腫瘤新藥 VX-680 已受 FDA 批准供進一步臨床研究。他負責的另一個新抗肝炎病毒藥物 VX - 950 也已在美國和日本進行臨床研究。1998 陳博士被國際專業人士名錄 Who is Who 收錄及 1998-1999 被科學和工程第四版專業人士名錄 Who is Who 收錄。陳博士曾經是中國藥學會和中國生物化學協會會員。陳博士是美國藥物學家協會 (AAPS) 會員, 美國毒理協會 (SOT) 會員, 美國藥理與治療學協會 (FASEB) 會員。多次應邀講座。

General Information

在設計心血管藥物、抗艾滋和抗癌新藥的藥代動力學和代謝方面, 陳春麟博士有着很深的造詣, 他已在國內外期刊上發表過 80 餘篇研究論文并擁有 3 項美國專利。參與編寫吳悟桐主編的《現代生化藥學》。

Programme

2003 年, 陳博士組建了美國美迪西公司 Medicilon 公司 (Medicilon Inc), 主持公司的日常事務。2004 年 2 月陳春麟博士回國創建上海美迪西生物醫藥股份有限公司, 在新型藥物設計、臨床前研發, 制藥中間體、組合化合物的研究、生物靶點蛋白結晶等領域為國內外客戶進行技術服務。美迪西被譽為中國最頂尖的藥物研發外包服務公司 (CRO) 之一, 在上海建立了中國第一家集化合物合成、化合物活性篩選、結構生物學、藥效學評價、藥代動力學評價、毒理學評價、劑劑研究和新藥註冊為一體的符合國際標準的綜合技術服務平臺, 并得到了國際藥品管理部門的認可。美迪西是中國本土 CRO 中最早實現國際化的公司之一, 2008 年與美國 MPI Research 公司合作建立美迪西普亞, 專注于臨床前的藥代動力學和安全評價研究。美迪西普亞的動物實驗設施獲得 AAALAC (國際動物評估與認證協會) 認證和中國食品藥品監督管理局 GLP 證書, 并已達到美國食品藥品管理局 GLP 標準。新公司采用全新的管理理念和組織結構, 以及建設符合美國 FDA 標準的動物實驗設施, 開展滿足美國 FDA 的 GLP 標準和國際動物福利保護要求的研究服務。

Keynote Speaker

陳春麟博士創建的上海美迪西和美迪西普亞公司從最初的二十多人發展至現在的八百餘人, 產值從最初的一二十萬發展為現在的數億元, 研究場所從一千平米發展為四萬多平米。公司先後被認定為“上海市高新技術企業”“技術先進型服務企業”、“上海市研發公共服務平臺”“浦東新區企業研發機構”, 2008 年獲得張江高科技園區“服務外包企業明星獎”, 同時是“上海浦東新區企業博士後工作站”“中國藥科大學生命科學基地”“華東師範大學實習基地”。

陳博士領銜下的美迪西藥代動力學團隊、藥效學團隊和毒理學團隊的技術和研究實力已經達到國際先進水平, 其實時定量采血技術、非人靈長類藥代技術、非人靈長類藥效學評價技術以及符合美國 FDA 的 GLP 標準的毒理學研究技術居國際前列。陳博士亦是將美國 GLP 標準及 AAALAC 標準引入中國的留學生中的先行者, 通過美迪西工作的開展, 符合國際標準的技術和研發理念在中國得以推廣和使用, 促進了中國在此領域的發展, 對中國生物醫藥行業開發符合國際標準的新藥具有裏程碑的意義。同時正在建設中的非人靈長類動物模型研究中心將填補國內在這一領域的空白。

Speaker

陳博士現擔任上海藥理學會藥物代謝動力學專業委員會副主任委員及上海浦東生物醫藥學會副理事長等。陳春麟還受聘為中國藥科大學生命科學院客座教授。2009 年, 陳春麟被中組部授予“千人計劃”創業類高層次人才。

## Topic: Biomedical Investment- Our Logic and Method

題目：生物醫藥投資：我們的邏輯和做法

Da-Jie Tang 湯大杰

Founding Partner, Triwise Capital Management Ltd., Shenzhen

深圳前海勤智國際資本管理有限公司創始合伙人總裁

Executive Vice President, Shenzhen Science and Technology Entrepreneurship Promotion Association

深圳市科技創業促進會常務副理事長

Adjunct Professor, Southwestern University of Finance and Economic, Guangdong University of Finance

& Economic, Shenzhen Audencia Business School, Xidian University, China University of Mining and

Technology 西南財經大學、廣東財經大學、深圳南特商學院、西安電子科技大學、中國礦業大學兼職教授

### Biography

Founding Partner, Triwise Capital Management Ltd., Shenzhen

Ph.D. in Industrial Economics from Jinan University, Master in Money & Banking from Xiamen University

20 years of experience in investment and financing, mergers and acquisitions, industrial consolidation and business management

First Vice President of the local PE Shenzhen Innovation Investment Group and managed more than 10 funds with overall scale exceeding 4 billion yuan; Deputy General Manager of Shenzhen Airport Group and led many multinational mergers and acquisitions; Managing Director of Shenzhen High- Investment Group, the largest guarantee agency in China; Investment Manager of E Fund Management Co., Director of China Southern Fund Management Co..

Impressive records of successful investment cases in the past, e.g. Palio Technologies and Echo Semiconductor were named "National High-quality investment projects 2016-2017" by the China Investment Association, Star Technology was ranked third in "China's Top 50 most investment-worthy enterprises" by Zero2IPO. Representative cases in biomedical investment includes Kang Fang Biological, ImmVira Co. (oncolytic virus), Family Doctor, Shenzhen Inda Biotechnology Co., etc..

Executive Vice President, Shenzhen Science and Technology Entrepreneurship Promotion Association

Secretariat of Shenzhen Alumni Association at Xiamen University

Adjunct Professor, Southwestern University of Finance and Economic, Guangdong University of Finance & Economic, Shenzhen Audencia Business School, Xidian University, China University of Mining and Technology

Publications including "China Securities Investment Fund behavior and market impact research", "National Investment Bank Management and Operation."

深圳前海勤智國際資本管理有限公司創始合伙人總裁

暨南大學產業經濟學博士，廈門大學貨幣銀行學碩士。

20年投融資、并購、產業整合和企業管理方面經驗。

曾任本土PE第一名深圳市創新投資集團副總裁，負責十多支基金的總體管理，規模超過40億元；深圳機場集團副總經理，并主導多起跨國并購；國內最大擔保機構深圳高新投集團董事總經理；易方達基金投資部經理、南方基金董事。

擁有眾多成功的投資案例，其中：掌淘科技、艾科半導體被中國投資協會評為“2016-2017年度國家優質投資項目”，星環科技被清科評為2016年度“中國最具投資價值企業50強”第3名。生物醫藥領域代表性投資案例有：康方生物、亦諾微（溶瘤病毒）、家庭醫生，因答生物等。

深圳市科技創業促進會常務副理事長。

廈門大學深圳校友會秘書長。

西南財經大學、廣東財經大學、深圳南特商學院、西安電子科技大學，中國礦業大學兼職教授。

出版專著《中國證券投資基金行為與市場影響研究》、《各國投資銀行管理與運作》。

## Topic: Early Stage Investment in China

題目：進入中國市場的投資指南

Daniel Shi 施旦霽

Founder and CEO, 23Seed 思德投資創辦人，首席執行官

### Abstract

1. How China's "Mass entrepreneurship and innovation" effect the Chinese startup eco-system – aAn overview about the raise of startups, incubators/accelerators, early-stage funds, angel investors
2. An overview of early stage investment in different sectors in China
3. How Chinese early stage investors value startups – product stage, average check-size, key components that investors are looking for
4. Ways to land an early stage investment in China – company structure, approach to investors in China through incubators/acclerators, pitch, attitude
5. The exit strategy for early stage investment in China
6. Suggestion to teams try to enter Chinese market – local partners, patent protection, market development, press, govt

### Biography

Born and raised in China Zhejiang Province, went to Melbourne Australian at age of 16, graduated from Bachelor of IT from RMIT and Master of IT from University of Sydney major in Database.

After graduated from master degree Daniel worked as a Data Analyst in ACNielsen, then worked as Business Intelligence consultant for MBF, Macquarie Bank, BT Finance, Optus in Australia.

Daniel went back to China in 2007 to start his own startup in SAAS, then sold this company in 2008 then later joined ISPACE in ZhangJiang Hi Tech Park Shanghai as a manager for the incubator for 5 years until 2013.

At Mar 2013, Daniel resigned from ISPACE to started his own incubator & early stage investment business branded as 23Seed.

Late 2013, 23Seed online system developed to assist startup information aggregation and analysis for early stage investment. In Feb 2014, Daniel invested in 24Tidy as its angel investor, later that year, 24tidy received investment from Sequoia and now it is one of the largest O2O company in China for services oriented business.

Now Daniel led 23Seed to become a unique incubator and early stage investment firm, 23Seed-HUB is one of the national co-working space, 23Seed Investment portfolio accumulated over 50 startups in US, Israel and China. In 2016, Daniel led 23Seed and CBN TV station produced TV reality show called “The Next Unicorn” , that select the best startups from 7 global cities and compete in Shanghai for a price of 10M RMB.

Recently, 23Seed just ranked the top 50 early stage investment firm of 2016 in China by ChinaVenture, And has offices in Shanghai, Sydney and Silicon Valley, and looking at tech startups from all over the world.

施旦霽出生于中國浙江省，16歲時至澳大利亞墨爾本，于墨爾本皇家理工學院獲得IT學士學位以及悉尼大學數據分析碩士學位。大學畢業後 Daniel 曾在 ACNielsen 擔任數據分析師，之後在澳大利亞 MBF, Macquarie Bank, BT Finance, Optus 擔任商業智能顧問。後 Daniel 于 2007 年回到中國，創辦了一家 SAAS 公司，于 2008 年出售該公司。後來加入在上海張江高科技園區的 ISPACE，擔任孵化器經理 5 年，直到 2013 年。

2013年3月，Daniel從ISPACE辭職，設立了自己的孵化器和早期投資公司——23Seed。

2013年底左右，開發了23Seed在綫系統，以幫助創業者將信息進行聚合和分析。2014年2月，Daniel做為天使投資人投資了24Tidy，同年年底，24Tidy還獲得了紅杉的投資，目前24Tidy是中國面向服務業務的O2O最大的公司之一。

Daniel正帶領着23Seed成為獨一無二的孵化器和早期投資公司，23Seed-HUB是全國聯和辦公空間之一，23Seed在美國、以色列以及中國的創業投資項目已超過50個。2016年，Daniel協23Seed與第一財經制作一檔全球跨國創業真人秀——尋找獨角獸，該節目是從7個全球城市中選出最優秀的創業公司在上海進行總決選，獲勝的創業公司獲得了23Seed的1000萬元人民幣投資。

最近，23Seed被ChinaVenture列入2016年度中國前50強的早期投資公司，并在上海，悉尼和硅谷設有辦事處，尋找全球的科技創業項目。

## Topic: Precision Medicine with Functional Diagnostics (PDX, CR micro tumour and Organoid)

題目：針對功能性診斷的精準醫療（腫瘤移植模型、微腫瘤的完全緩解及細胞團）

Dan-Yi Wen 聞丹憶

President and CEO, Shanghai LIDE Biotech., Co. Ltd 上海立迪生物技術股份有限公司董事長兼執行總裁

### Abstract

The rapid pace of discoveries in tumor biology, imaging technology, and human genetics hold promise for an era of personalized oncology care. The successful development of functional diagnostic tools has generated much hope and hype about the delivery of safer and more effective new treatments for cancer.

NCI recommended to use three functional diagnostic model systems to replace traditional ATCC cell line or NCI-60 panel in oncology drug screening. Three edge tools are: Conditional Reprogrammed Cell Lines (CR Micro Tumor); Organoid and Patient Derived Xenograft (PDX). In these systems, interactions between cancer cells and stromal cells are preserved to some degree. Because the tumor microenvironment can influence drug efficacy and the development of drug resistance, CR, Organoid and PDXs should be better models for developing anticancer therapies and screening drugs for precision medicine applications than earlier models.

We have established a functional diagnostics service platform. Translational application of this platform promotes the discovery of novel therapeutic approaches that can be assessed in clinical trials and provides personalized therapeutic options for individual patients where standard clinical options have been exhausted. Together these new functional diagnostic tools can greatly accelerate the evolution of precision medicine and its implementation into routine cancer care.

### Biography

Danyi Wen, President & CEO of Shanghai LIDE Co. Ltd. Register on 2011, Shanghai LIDE focus on providing services and biomarker product R&D to support “Personalized Precision Medicine”. There are two subsidiary companies under Shanghai LIDE: Xian LIDE Biotech and Shanghai LIWEN Clinical Testing Lab. Shanghai LIDE was public listed on New Third Board (Over the counter trading) on Aug 2016.

B.S from the Forth Military Medical University; M.S from Peking Union Medical University/Chinese Academy of Medical Sciences; MBA from Suffolk University; Post-Doc and Instructor of Medicine at Harvard Medical School (Brigham & Women’s Hospital); 12 years industry experience at Millennium Pharmaceutical, Biogen-Idec. Returning back to China on 2007 as VP of Biology at Shanghai ChemPartner. Founded Shanghai LIDE Biotech at the end of 2011.

Adjourn professor of Beijing Xiehe Hospital and School of Pharmacy of Fudan University; Editor of “Progress in Pharmaceutical Sciences”; Associate of Chinese anti-cancer Association (society of Liver, bile, Pancreatic); Vice Group Leader of CMBA Tissue Bank Society, PDX Group. 2013 Danyi was elected as “Shanghai Thousand Talent Expert”

聞丹憶，上海立迪生物技術股份有限公司董事長兼執行總裁。公司于2011年成立，側重于“個體化精準醫療”的服務，研究和產品開發。下設西安立迪生物和上海立聞醫學檢驗所兩家子公司。公司于2016年8月成功挂牌新三板。

第四軍醫大學本科，北京協和醫科大碩士，美國薩福克大學工商管理碩士，哈佛醫學院 Brigham & Women’s Hospital 3年博後，2年講師，美國千禧制藥（Millennium Pharmaceutical, Inc.）和美國 BIOGEN-IDEC 共12

年的藥廠新藥研發經驗。2007年回國，加入上海睿智化學，組建生物部并任副總裁，負責生物部的運營管理及對外合作，2011年底創立上海立迪生物。

回國後，聞丹憶應邀擔任北京協和醫院轉化醫學客座教授及復旦大學藥學院客座教授，第四軍醫大學講座教授。“藥學進展”編委；中國抗癌協會康復會肝膽胰分會副主任委員；中國醫藥生物技術協會生物樣本庫分會/PDX學組常務副組長。

2013年入選上海市千人。

## Topic: Recent status of Bio-metrology in the Government Laboratory

題目：香港政府化驗所生物計量學的近況

Ella Lai-Ming Wong 黃禮明

Chemist (Pharmaceutical Chemistry Sec), Government Laboratory, HKSAR 香港政府化驗所化驗師 (藥劑化驗組)

### Abstract

Metrology is a scientific discipline to ensure the reliability of analytical results on the basis of comparability, traceability and measurement uncertainty. It is particularly essential in establishing global mutual recognition of all kinds of measurement and facilitating a technical foundation for wider agreements related to international trade, commerce and regulatory issues. The Government Laboratory of HKSAR has been a Designated Institute (DI) in the field of metrology in chemistry for Hong Kong, China, under the Mutual Recognition Arrangement of the International Committee for Weights and Measures (CIPM MRA) since 2005. Being a DI, the Laboratory is actively to participate in various CCQM Key Comparison programmes, and to disseminate the metrology concepts to field laboratories aiming to improve their analytical capability in chemical measurement.

The rapid growth of biopharmaceuticals, especially bio-similars and copies of biopharmaceutical products, has accelerated the development of metrology in the field recently. Bio-metrology is a new subarea of study which focuses on the complicated measurement of proteins, DNA and related molecules. In this presentation, the development of bio-metrology in the Laboratory is presented, using genetically modified food and botulinum neurotoxin in pharmaceutical products as examples.

### Biography

Dr. Ella Lai-Ming Wong obtained her PhD degree in medicinal inorganic chemistry from The University of Hong Kong (HKU) in 2006 under the supervision of Prof. Chi Ming Che. She continued her academic career as a Post-doctoral Fellow (2007-2009) and a Lecturer (2009-2012) at the same university. Dr. Wong's research interest focused on in vivo and in vitro anti-viral and anti-cancer properties of inorganic medicines, and advance proteomic research using high resolution mass spectrometry.

Since 2012, Dr. Wong joined the Government Laboratory of Hong Kong SAR as a Chemist. Besides providing scientific services and expert advice relating to pharmaceutical field, Dr. Wong also acquires substantial experience in biologics characterization and peptide purification work. Her recent projects involved the detection of ultra-trace level of macromolecules such as botulinum neurotoxins using mass spectrometry techniques and the development of SI traceability for biologics.

## Topic: BIOTECHNOLOGY AS CULTURE: THE PUBLIC VOICES OF MEDICAL DATA AND IMAGES IN FASHION, ART AND DESIGN

Elaine Young 楊綺鈴

### Abstract

Biotechnology as Culture will be an overview of some of the ways biotechnology is portrayed in contemporary Western popular culture. Expressed through film, art, design, music and architecture, I believe that thinking about the private and public lives of technology and the life sciences is more so than ever, an important conversation to have within the public arena of popular culture because of its significance as a forum for the development of public consciousness about the future of well-being. I will share an overview of some key examples of biotechnology as culture, alongside how and why medical anthropology inspire my work as an Artist and Designer.

Some of my most recent projects are based on the historical and contemporary processes of gathering medical data that goes into the making of medical knowledge and furthering medical innovation – specifically, as it relates to experimentation involving human subjects. I transformed this research into visual essays printed on bomber jackets, where I translated geopolitical information, data visualizations, and scientific images into wearable statements and questions. The social, political, ideological and economics of how the idea of ‘health’ is governed in society through the management or mismanagement of the biological knowledge of the mechanics of animal and human life forms has long been a focal point of my research. Biopolitics and bioculture have played prominent roles in the development of my creative work as the LAByrinth PROJECT.

The LAByrinth PROJECT [LAByrinth] is a research-driven practice creating and curating designs inspired by science fiction and non-fiction aesthetics and narratives that question the future of humanness. LAByrinth’s original designs include:

< AMULA DNA Jewellery > a line of personalized and preselected 21st century lockets containing DNA of the person, plant or animal of the client’s choice suspended in a glass vial:

Jewellery has many functions and has been made of many things: precious metals/stones, bones/hair from people/animals – all believed to bring one closer to something or someone. The value of each piece arising from the reputation of it’s artist, mythology of it’s journey, lineage of owners – jewellery is a talisman, worn to declare one’s identity, belief, traded – but ultimately worn as a reminder or meditation of an idea or person. AMULA DNA Jewellery is based on these sentiments, but cast from the predictions and claims of DNA research and exploration.

and < HOST for your living things > a collection of original graphics and forms (bags, accessories, clothing) inspired by natural phenomena and advanced imaging technologies or methods that have enabled us to witness and conceive of worlds and concepts normally invisible to the naked-eye.

### Biography

Elaine Young is an artist, designer, medical anthropologist and founder of the LAByrinth PROJECT [www.LAB-yrinth.net](http://www.LAB-yrinth.net); a research-driven practice creating and curating designs inspired by science fiction and non-fiction aesthetics and narratives that question the future of humanness.

LAByrinth’s original designs include: jewellery containing the DNA of a plant, animal, or person of the client’s choice; graphics of imaginary hybrid life forms, patterns and landscapes created from microscopic

images; and bomber jackets featuring visual essays transforming geopolitical information, data visualizations, and scientific images into wearable statements and questions.

Fascinated by advanced imaging technologies and methods that have enabled humans to witness and conceive of worlds and concepts invisible to the naked-eye, Young sees her work as reminders to reconsider the wonder, beauty and significance of the things you can and cannot see; for reasons of scale, concentration, perspective, time or biological limitation.

LAByrinth has been exhibited and/or sold at: the MoMA Store [New York and Tokyo], Museum of Contemporary Art Chicago [\* Store – David Bowie Is...], Hong Kong Asia Society [\* Group Exhibition – Imminent Domain: Designing for the Life of Tomorrow], Confluence•20+ as one of Hong Kong’s leading designers, the Mori Art and Design Shop [\* Store – Medicine and Art: Imagining a Future for Life and Love] and the Shanghai Expo.

Young is a Member of the New Museum’s cultural incubator [www.NEWINC.org](http://www.NEWINC.org) and divides her time between New York and Hong Kong.

## Eric Chen 陳子翔

Founder & Chief Commercial Officer, Vitargent (International) Biotechnology Limited 水中銀 (國際) 生物有限公司創辦人及首席商務官

### Biography

Founder & Chief Commercial Officer

Mr. Eric Chen is the First Ever Forbes Asia “30 under 30” Winner (2016).

Upset by the 2008 melamine milk powder scandal on the mainland, Mr. Eric Chen established Vitargent on 2011, determined to build an innovative and efficient platform to test and certify the safety of food, drink and cosmetics. He successfully assembled an international management team, raised rounds of VCs funding and signed up with the world’s largest cosmetics groups, F&B conglomerates, leading testing labs and government departments.

A results-oriented person, Eric’s two main goals for Vitargent are to make its technology a standard for companies around the world, and to create a go-to source and portal for safe products.

Mr Chen is passionate about commercializing innovations. He invests and advises on a number of international tech companies and VC Funds including iNetwork Ltd (Israel-Focused VC fund), WI Harper (Silicon Valley VC fund), Pebbles Interface (an Israel VR company, acquired by Facebook in 2015), Taurx pharmaceuticals (Singapore), Aslan Sanguine Biosciences (Singapore) and Geneformics (Israel).

He graduated from the City University of Hong Kong with a first class degree in Engineering and minor in Marketing, and earned his Master of Economics at the University of Hong Kong. Mr. Chen is the First Ever Forbes Asia “30 under 30” Winner (2016), HSBC Young Entrepreneur Awards (Asia) winner (2011) and a Hong Kong Jockey Club Scholar (2007). Mr. Chen is an enthusiast in sports - he had played baseball for China and is now playing badminton for a leading club in China.

陳子翔先生是首屆富比世亞洲“30位30歲以下的商業領袖”的獲獎者。

2008年，陳先生受到三聚氰胺毒奶粉事件的刺激，於2010年創辦了水中銀(國際)生物有限公司，致力打造一個提供世界領先的檢測認證平臺，加強食品，化妝品與水體環境的安全。水中銀成功地組建了國際化的管理團隊，得到了多個國際知名資本的支持，服務的對象包括國內外領先的檢測中心，政府機構與國際大型的化妝品集團，食品集團。

水中銀的技術致力邁向發展成為國際標準的同時，陳先生亦想打造一個產品安全的入口與平臺。

陳先生熱衷並擅長商業化創新科技發明，是多個國際公司與風投基金的投資者與戰略顧問，包括 iNetwork Ltd (以色列風投基金)，美商中經合集團(美中臺跨境基金) 基石資本(中國風投基金)，Pebbles Interface (以色列 VR 公司，2015 年被 facebook 收購)，Taurx pharmaceuticals(新加坡老人癡呆癥藥物研發公司)，Aslan pharmaceuticals (新加坡癌癥研發公司)，Geneformics (以色列基因數據公司) 和 Sanguine Biosciences Inc (美國生物公司) 等等。

陳先生先後在香港城市大學獲得製造工程及工程管理一級榮譽學位與市場行銷學士副修學位，及在香港大學獲得經濟學碩士學位。陳先生獲得首屆富比世亞洲“30位30歲以下的商業領袖”(2016)，匯豐青年企業家獎(亞洲區2011)總冠軍與香港賽馬會 Scholar(2007)等榮譽。另外，陳先生亦十分愛好運動，曾服役中國少年棒球隊，現在也是一個全國頂尖羽毛球俱樂部的隊員。

## Topic: Hong Kong - The Biotechnology Innovation Hub in the Greater Bay Area

題目：香港 – 粵港澳大灣區的生物科技創新樞紐

Fanny Chiu–Fun Law Fan 羅範椒芬

HKSAR Deputy, National People’ s Congress of the People’ s Republic of China

現任香港特別行政區全國人大代表

Member, the HKSAR Executive Council 香港特別行政區行政會議成員

Chairperson, Hong Kong Science and Technology Parks Corporation 香港科技園公司董事會主席

Special Advisor, the China–US Exchange Foundation 中美交流基金會特別顧問

Former Administrative Officer, HKSAR 前香港政府政務官

### Abstract

The “Guangdong–Hong Kong–Macau Greater Bay Area” initiative defined by the Chinese government sets to link Hong Kong, Macau, and nine cities in Guangdong Province into an integrated economic zone. The aim is for the Greater Bay Area to lead the way in enhancing China’ s openness in economic development and be a global innovation hub. This presentation will underscore Hong Kong’ s distinctive strengths in biotechnology research and the vast potential for commercialization in the Greater Bay Area, outline the work–in–progress and highlight the key initiatives in the new Chief Executive’ s policy address in support of the vision.

### Biography

Fanny Law is currently the Chairperson of the Board of Hong Kong Science and Technology Parks Corporation, a HKSAR Deputy to the National People’ s Congress of People’ s Republic of China, a Member of the HKSAR Executive Council and Special Advisor of the China–US Exchange Foundation. Mrs Law had been an Administrative Officer of the government of Hong Kong for 30 years.

題目：溶瘤病毒療法將開啓癌癥治療新視野

Grace Guo–Ying Zhou 周國瑛

Director, Shenzhen International Institute of Biomedical Research, China

深圳羅茲曼國際轉化醫學研究院院長

Ph.D. Shanghai Institute of Biochemistry, Chinese Academy of Sciences

中國科學院上海生物化學研究所博士

CEO, ImmVira Co., Ltd., Shenzhen, China 深圳市亦諾微醫藥有限公司首席執行官

Director, Institute of Genome and Drug Quality, Beijing Institute of Biotechnology Industry

北京亦創生物技術產業研究院基因藥物質量研究所所長

Distinguished Professor, State Key Laboratory of Respiratory Diseases, Guangzhou Medical University

廣州醫科大學呼吸病國家重點實驗室特聘教授

Former Associate Professor, Department of Microbiology, University of Chicago, USA

前美國芝加哥大學微生物系副教授

## Abstract

一直以來，癌癥由于缺乏有效的治療手段，被人們稱爲“不治之癥”。雖然作爲傳統治療“三板斧”的手術、放療、化療能够在一定程度上控制癌癥，但却無法防止腫瘤的轉移和復發，還會給患者帶來身體上和精神上巨大的痛苦。而免疫治療是指通過免疫系統達到對抗癌癥目的的治療方式。過去幾年，癌癥免疫領域的快速發展產生了幾種治療癌癥的新方法，如溶瘤病毒、免疫細胞治療、免疫系統調節劑等。溶瘤病毒療法是一種創新的腫瘤靶向基因治療策略，指利用天然或經基因改造的病毒選擇性地感染和殺傷腫瘤細胞。溶瘤病毒集合了靶向藥物、免疫治療藥物和基因治療藥物的多重特點，極有可能成爲二十一世紀癌癥治療的新型“重磅炸彈”。那麼溶瘤病毒的來由是什麼？溶瘤病毒是如何與人體免疫系統“合作”對抗腫瘤？溶瘤病毒目前的發展是如何？未來潛力和應用前景又是怎樣的呢？10月22日南山博士論壇，腫瘤專家大咖坐鎮，爲您一一解答。

## Biography

周國瑛，教授，博導，中國科學院上海生物化學研究所博士，深圳羅茲曼國際轉化醫學研究院院長；深圳市亦諾微醫藥有限公司 CEO；北京亦創生物技術產業研究院基因藥物質量研究所所長；廣州醫科大學呼吸病國家重點實驗室特聘教授；前美國芝加哥大學微生物系副教授。深圳“孔雀計劃”海外高層次人才。在病毒感染與宿主免疫、病毒潛伏與激活研究以及利用疱疹病毒進行治療性腫瘤疫苗的轉化研究領域潛心研究達 19 年，研究成果得到國際同行廣泛關注和認可，相關研究成果以第一作者或通訊作者（并列）在國際高水平科技期刊（JCR 一區的 Proc Natl AcadSci U S A 上發表 11 篇；Mbio 和 JVI 發表 13 篇；他引總指數 964；申報及獲得美國、歐洲和亞洲等國際發明專利共 7 項，主持的溶瘤病毒免疫治療項目今年成功獲得國家科技部“十三五重大新藥創制”基因治療領域的資助。

Hailson Yu 餘梓山

Deputy Director, Technology Transfer Office, University of Hong Kong 香港大學技術轉移處的副處長

## Topic: GCP in Chinese Medicine Clinical Research

題目：提升中醫藥臨床試驗的質量：良好臨床研究規範（GCP）

Jessica Yuet-Ling Ching 程月玲

Chief Nursing Officer (Research), Department of Medicine and Therapeutics, CUHK

香港中文大學醫學院內科及藥物治療學系總護士長

Convener (R&D), Hong Kong Institute of Integrative Medicine, CUHK

香港中文大學香港中西醫結合醫學研究所，研究及發展組召集人

Clinical Research Manager, Institute of Digestive Disease, CUHK 香港中文大學消化疾病研究所臨床研究經理

### Abstract

Good research practice is the key to the success of the clinical research. It is for drug and Chinese Medicine registration, as well as some categories of medical devices required by both FDA and China FDA. More and more regulations and importance has been placed by the regulatory authorities over the world to good research practice. Good research practice mainly comprises of Declaration of Helsinki and Good Clinical Practice (GCP).

Good research practice aims to protect the rights, safety and well-being of the trial subjects; the credible and accurate research results. The general principles cover the risks, burdens and benefits of the tested products or interventions to the trial subjects, the ethics, privacy and confidentiality, informed consent, accurate and traceable documentations, etc.

Criteria of conducting a clinical research with good research practice must have the following characteristics: a structured Ethics Committee, research management office and pharmacy, qualified research personnel, excellent facilities, sufficient trial subject source, and a patient information system for both western and Chinese medicine notes, good study management with standard operation procedures.

Performing a good clinical research in Chinese Medicine and devices is not very costly, yet it can help to promote its acceptability and generalizability of the products.

### Biography

Qualifications

MPH, BSN, RN, CCRP\*

\* Certified Clinical Research Professional, Society of Clinical Research Organization, USA

Present

2015-present Chief Nursing Officer (Research), Department of Medicine and Therapeutics, CUHK

2015-present Vice - chairperson Chinese-Western Integrative Nursing Committee, Hong Kong College of Chinese Medicinal Nursing

2013-present Convener (R&D), Hong Kong Institute of Integrative Medicine, CUHK

2004 -present Clinical Research Manager, Institute of Digestive Disease, CUHK

Jessica is the Chief Nursing Officer of the Department of Medicine and Therapeutics, Faculty of Medicine, The Chinese University of Hong Kong (CUHK). She is also the Clinical Research Manager of the Institute of Digestive Disease, CUHK. She has more than 20 years of clinical research experience, is accountable for the management and performance of the studies. She has extensive experience in conducting phase II, III and IV clinical research trials (both sponsored and investigator-initiated) of Gastroenterology; epidemiology

Scientific Content

studies; database research and biobanking. She is the co-investigator in research projects and co-author in many high impact journals such as New England Journal of Medicine, Lancet and Gastroenterology. Jessica is the Convener (R&D) of Hong Kong Institute of Integrative Medicine. She is responsible for clinical trials management in TCM, integrative medicine and integrative nursing; China FDA clinical research application; networking with Government departments, industry and international collaborators of overseas universities. She is helping to develop integrative medical modals through clinical research.

General Information

Jessica is a Good Clinical Practice (GCP) trainer and the principal trainer in clinical research training in both institutes. She is the project manager in Asia Pacific Working Group, who coordinates multi-centered trials within the Asia Pacific group from 13 countries/cities in Asia Pacific region. She is also the internal auditor of the Clinical Research Management Office under Faculty of Medicine, CUHK.

#### 職業資格

公共衛生碩士，護理學士，美國註冊護士，臨床研究認證專家

美國臨床研究組織協會臨床研究認證專家

2015– 至今香港中文大學內科及藥物治療學系首席護理官（科研）

2015– 至今香港中醫護理學院中西醫綜合護理委員會 副主任

2013 – 香港中文大學香港中西醫結合研究所召集人（研發）

2004– 至今香港中文大學消化病研究所臨床研究經理

Programme

程月玲是香港中文大學醫學院內科及藥物治療學系首席護理官，香港中文大學消化病研究所臨床研究經理。她有着 20 年的臨床研究經驗，負責研究的管理和績效。她在腸胃病學 2 期、3 期和 4 期臨床研究實驗（包括倡議和研究主導）、流行病學、數據庫研究和生物銀行方面有着豐富的經驗。她是多項研究項目的共同研究者，并在新英格蘭醫學雜誌、柳葉刀和胃腸病學等高影響力的期刊上作為共同作者發表文章。

程月玲是香港中文大學香港中西醫結合研究所召集人（研發），負責中醫臨床試驗管理，綜合醫學和綜合護理，中國食藥監局臨床研究申請，與政府、產業和海外大學的國際合作者聯系，并協助通過臨床研究開發中西醫結合模式。

程月玲是優秀臨床實踐項目的教練，兩所研究院的臨床研究訓練的主教練。她還是亞太工作組的項目經理，該工作組主要負責協調來自亞太地區 13 個國家和城市的多中心臨床試驗。她還是香港中文大學醫學院臨床研究管理辦公室的內部審計員。

Keynote Speaker

郵箱：jessicaching@cuhk.edu.hk

## Topic: A New Era of Biopharma in China - New Opportunity and Challenges in MRCT

題目：中國生物制藥新時代 – MRCT 新機遇與挑戰

James Xue–Jun Cai 蔡學鈞

Director, Global Regulatory Affairs for JAPAC, Amgen Inc. 安進公司日本及亞太地區藥政事務總監

### 簡介

蔡學鈞博士安進公司日本及亞太地區藥政事務總監。早年曾在上海第二醫科大學以及紐約大學從事醫學研究工作，之後在輝瑞、默沙東以及阿斯利康等數個大型跨國制藥企業擔任一系列的關鍵職務，包括醫學總監、公共事務總監、艾滋病藥物營銷負責以及阿斯利康的研發副總裁。蔡學鈞主持了易瑞沙在中國的上市工作，以及中國研發戰略及實施工作，並推動了阿斯利康在華投資數億美元的各種研發項目，使其成為最早在中國從事早期研究和國外同步進行多中心臨床研究的大型跨國制藥企業之一。

2009 年與美國國家科學院院士 Paul Schimmel 在香港科技大學創立盤古生物技術公司（美國 aTyr 在香港的分公司）後加入羅氏和安進公司。

蔡學鈞博士熟悉中國及亞太國家和地區藥監審評法規、擅長生物藥開發、國際多中心臨床研究。

Jonathan Swee-Fu Chee 朱瑞富

Formerly Chief Investment Officer, Eagle Ride Investment 鷹力投資控股有限公司前投資總監

Scientific Content

General Information

Programme

Keynote Speaker

Speaker

## Topic: The Role of Mass Spectrometry in Standardisation and Quality Control of Biological Medicines

題目：質譜分析在生物醫藥標準化和質量控制中的作用

Jun Wheeler 徐鈞·惠勒

Principal Scientist, Head of Proteomics and Mass Spectrometry, National Institute for Biological Standard and Control (NIBSC) 英國國家生物制品檢定所 ( NIBSC ) 蛋白質組學和質譜首席科學家

### Abstract

Advances in sciences have led to a detailed understanding of the causes of diseases and allowed more personalised and targeted treatments. With improved bioengineering, materials and processes, together with the powerful impact of fully sequenced genomes, biological medicines are now a driving force in modern medicine. Biological medicines include hormones, enzymes, blood and blood products, antibodies, vaccines, both as preventatives and therapeutics, and tissue, cell and gene therapy products.

One thing in common is that biological medicines are all from a living biological system. But they are complex and diverse, sophisticated to produce, and prone to contamination. The long term adverse effects of the medicines are difficult to predict. More than ever, they present huge challenges for regulatory science to ensure the safety and efficacy of the medicines

To fulfil the mission of ensuring safe medicines, NIBSC has three work programmes consisting of Research in regulatory science, Standardisation by producing high quality reference materials, and Control by the means of batch release and CAP testing. Mass spectrometry (MS) is one of the analytical techniques which are fundamental in our laboratory based scientific work. Detailed MS analyses allow the understanding of mechanisms, functions and interactions of the drugs, help to make better biological standards and provide in-depth product characterisation.

In the province of viral and bacterial complex vaccines, quality control is generally achieved by measurement of known key antigens through activity based assays, e.g. ELISA or single radial diffusion tests; and physical and chemical tests, e.g. SDS-PAGE and protein assays. While bioassays are essential to determine the efficacy and potency of biological products, traditional protein estimation methods cannot explicitly determine the quantity of those key antigens, which should be a part of the required specification. In this talk, I will present our work to illustrate IDMS as a robust and accurate method for the simultaneous quantitation of key antigens in complex vaccine. Other examples and cases will be given to demonstrate the use of MS for establishment of quality control attributes to biological medicines and in the area of combating counterfeit/illegal medicines. MS is surely becoming an increasingly important tool for biological medicines in the regulatory environment.

### Biography

Jun X. Wheeler, BChinMed, MSc, PhD

Principal Scientist; Head of Mass Spectrometry and Proteomics

National Institute for Biological Standards and Control (NIBSC)

A Centre of the Medicine and Healthcare Products Regulatory Agency (MHRA), UK

With my first degree in Chinese Medicine, I was a registered hospital pharmacist in Shanghai, but it was during my postgraduate training in the School of Pharmacy in Sydney, that I developed my strong interest in analytical sciences. During my PhD in Australia, I was one of the pioneers in the research and technology developments underpinning the 'proteome' concept which was the start of my development into an

international expert in proteomics. After Sydney, I worked in two world leading proteomic groups (at Geneva Hospital and Imperial College London) to further my proteomics expertise and academic understanding and later became a leading scientist in developing a state-of-the-art proteomic platform in one of the top five bioscience companies in the UK.

Since joining NIBSC in 2003, my work has been directed towards the analysis of biological medicines. I have established a proteomics and mass spectrometry facility from ground zero to fulfill the aims and work programmes of the Institute. I use my in-depth knowledge and broad experience in analytical sciences to apply the use of appropriate technologies, to produce scientific advice and results for complex vaccines and biotherapeutics.

My career in academia, industry and institute has given me a deep understanding of biological medicines and the requirements for a multi-disciplinary approach to their characterisation and analysis. My research interests focus on the regulatory sciences of complex vaccine and biotherapeutics including identification, characterisation, quantitation and quality control attributes.

徐鈞·惠勒首席科學家畢業於中藥學系，曾是上海醫院的一名藥劑師。在悉尼藥學院做博士項目時，我發覺自己對分析科學非常感興趣。在博士學習期間，我是最早開始研究“蛋白質組”概念的人之一，這也是我成為蛋白質組學專家的開始。離開悉尼之後，我曾在兩家世界領先的蛋白質組學機構進行相關領域的研究和學術研究（日內瓦醫院和倫敦國王學院），此後在英國一家處於行業領先水平的生物科技公司做首席科學家，負責開發英國最先進的蛋白質組學平臺。

2003年加入英國國家生物制品檢定所，我的工作是進行生物藥品分析。我從零開始建立了蛋白質組學和質譜儀，完成既定目標和單位的工作日程。我用我在分析科學上的知識和經驗，應用合適的技術，對複雜的疫苗和生物治療方法給出科學的建議和結果。

我在學院、公司和科研機構的職業生涯讓我對生物醫藥和針對這些藥物的表徵和分析的多方論證方法有了深刻的理解。我的研究興趣主要集中在複雜的疫苗和生物治療上，包括鑒別、描述、定量和質量控制屬性。

## Topic: The Elements for Success in Molecular Diagnostic Platform Technology - A Personal Experience and Perspective

題目：分子診斷平臺技術的成功要素：個人經驗和觀點

Joseph Wing-On Tam 譚榮安

Chairman, DiagCor Bioscience 達雅高生物科技有限公司主席

The Elements for Success in Molecular Diagnostic Platform Technology: a Personal Experience and Perspective 分子診斷平臺技術的成功要素：個人經驗和觀點

Joseph W.O. Tam, Founder and Chairman of DiagCor Bioscience Incorporation Limited

譚榮安，達雅高生物科技有限公司創辦人及主席

### Abstract

DNA hybridization process has been used for over 40 years and is still the most frequently used technique to date for studying DNA. The Flow-through Hybridization process was invented and successfully developed into products here in Hong Kong for rapid, simple and affordable analyses of DNA sequence down to single nucleotide variation. This platform is now used by companies in China and Europe, as their major product in becoming a billion dollar companies, while we are facing severe competition. This author likes to share some of the success and failures in 18 years biotech industry experience in Hong Kong.

### Biography

Professor Joseph Wing-On Tam is the Founder and Chairman of the Board of DiagCor Bioscience Incorporation Limited. Professor Tam is a research pioneer with over 30 years of teaching and research experience in the biotechnology and diagnostics sector. Professor Tam is a Visiting Professor at UCSF, Baylor Medical College and Medical College of Georgia, Scientist of National Institute of Health, Associate Professor and Honorary Associate Professor of Medical Faculty of Hong Kong University. He is the Founder and President of the Hong Kong Biochemistry Association.

With the support of UNESCO, Professor Tam organized and trained the first group of scientists in China and Asia Pacific Regions on recombinant DNA research in 1983. During his years of teaching and research at HKU, Professor Tam invented and patented the “flow-through hybridization technology.

Following his passion for Molecular Diagnostics, Professor Tam established DiagCor in 2006. He strives to influence and inspire the talent of Hong Kong’s next generation in biotechnology.

譚榮安教授是達雅高生物科技有限公司的創辦人及董事會主席。譚教授在生物化學、分子生物學及遺傳學等範疇擁有超過三十年的教學及研究經驗，具有領先地位。譚教授曾任加州大學舊金山醫學院 (University of California, San Francisco, School of Medicine)，貝勒醫學院 (Baylor College of Medicine) 和奧古斯塔大學醫學院 (Medical College of Georgia) 客座教授，美國國家衛生研究所科學家，香港大學生物醫學學院榮譽副教授。譚教授亦是香港生物化學協會的始創人及會長。

譚教授在七十年來已在本港開展 DNA 研究工作，並在聯合國教科文組織的資助下，為中國及東亞地區訓練基因科技人才。譚教授所持的美國專利”基因導流雜交法”是目前世界上最快的 DNA 雜交法。雜交法在分子分析的領域上用途很廣，特別是在基因低密度芯片的發展應用更為理想。

譚教授於 2006 年成立了達雅高生物科技有限公司，專心致力於先進的分子醫學檢驗服務，以及診斷設備和耗材的研發和製造，培育本地生物科技人材，是香港分子診斷行業的領導者。

Jacqueline Lui 呂許昭棠

President, The Hong Kong Institute of Patent Practitioners Limited (HIPP) 香港專利代理人公會會長

President, Eagle IP 鷹翅知產有限公司總裁

Member, the Working Group under the Advisory Committee on Review of the Patent System in Hong Kong, Commerce and Economic Development, the Government of Hong Kong SAR

商務及經濟發展局轄下香港專利制度檢討諮詢委員會工作小組成員

Member, the Asian Practice Committee of the Intellectual Property Owners Association (IPO)

知識產權擁有人協會亞洲業務委員會成員

Former Member, the Steering Committee on Innovation and Technology of the Government of Hong Kong SAR 香港創新及科技督導委員會前成員

## Abstract

Intellectual property protection in life science

Life science often starts with basic academic research where publication is often more important than intellectual property (IP) protection. There have also been arguments that IP protection hinders scientific development by fostering fear among researchers of patent infringement. Is IP protection a hindrance towards advancement of treatments of diseases among a population? If IP protection is important, then what are the strategies and best practices in IP procurement and litigation? This panel will discuss how investors and drug developers view IP development from the perspective of legal professionals with experience in this field.

## Biography

Dr. Jacqueline Lui, President of Eagle IP Group, founded the firm in 2005 after several years in the management teams of two large firms. She is a patent agent registered to practice before the US patent office. Dr. Lui has been practicing in the patent field for 20 years, more than 15 of which in China. Beside her own life science specialization, Dr. Lui has considerable IP experience in the areas of medical devices, materials science, manufacturing, mechanical and chemical engineering. She specializes in cross-jurisdiction patent prosecution, and has been involved in advising clients on IP-related matters including strategic planning, patent drafting and prosecution, portfolio management, technology transfer, due diligence and enforcement worldwide.

From 2015 to 2017, Jackie was recognized as one of the World's Leading Patent Firms & Individuals by Intellectual Asset Management (IAM). She is also the President of The Hong Kong Institute of Patent Practitioners (HIPP). Dr. Lui has research experience in molecular and cell biology, bioelectronics and biochemical engineering and holds a Ph.D. in Biology from the University of Texas at Dallas and a B.Sc. (Bronze Tablet Scholar) from the University of Illinois, Urbana-Champaign.

Her working languages are English, Cantonese and Putonghua Chinese.

Appointments and Membership:

President of The Hong Kong Institute of Patent Practitioners Limited (HIPP)

Member of the Working Group under the Advisory Committee on Review of the Patent System in Hong Kong, Commerce and Economic Development, the Government of Hong Kong SAR

Member of the Asian Practice Committee of the Intellectual Property Owners Association (IPO)

Member of the Hong Kong Biotechnology Organization

Visiting Lecturer for the Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University (2013 – 2016)

Former Member of the Steering Committee on Innovation and Technology of the Government of HKSAR

Former Member of the Health and Medical Development Advisory Committee (2005 – 2011) of the Government of HKSAR

Former Member of the Board of Directors of the Applied Science and Technology Research Institute Company Limited (ASTRI) of the Commerce, Industry and Technology Bureau of the Government of HKSAR (2004 – 2010)

Former Member of the Board of Directors of the Nano and Advanced Materials Institute Ltd. (NAMI) (2006 – 2010)

Jonathan Swee-Fu Chee 朱瑞富

Formerly Chief Investment Officer, Eagle Ride Investment 鷹力投資控股有限公司前投資總監

## Topic: Granzyme B-Like Peptide, Liquid Biopsy, and Novel Anti-Cancer Therapy

題目：B 肽顆粒酶、液體活檢以及新的抗癌療法

Jennifer Wai-Chun Lo 盧惠珍

CEO and President, BioJENC LLC 行政總裁

### Abstract

In an immune response to tumor growth, Cytotoxic T lymphocytes (CTL) express Granzyme B along with perforin to target and kill tumor cells. It has been established that the enzymatic activity of endogenous Granzyme B is essential for the activation of caspases that leads to tumor cell death. A synthetic Granzyme B peptide with no enzymatic activity is not expected to induce cytotoxicity in tumor cells. The unexpected “Universal” cell binding property of a synthetic Granzyme B-like peptide and its potential antitumoral and antiviral activities, as reported in the following articles, have contributed significantly to the development of a new form of liquid biopsy for diagnostic purposes and a novel anti-cancer therapy against tumor growth with and without a viral cause:

1. Lo WC and Luther DG. (2016) Connecting effective immune response, fluorescent Granzyme B-like peptide, specific peptide binding patterns, patients with cancer and viral infection, in remission, clinical significance, and liquid biopsy. *J Fluoresc* 26:2047–2052 doi: 10.1007/s10895-016-1899-8.
2. Lo WC Luther DG (2014) Detection of binding of a synthetic granzyme B-like peptide fluorescent conjugate within platelet-like structures in cancer-related peripheral blood specimens and tissue sections. *J Fluoresc* 24:1473–1479.
3. Lo WC Luther DG (2014) Detection of cancer cell death mediated by a synthetic granzyme B-like peptide fluorescent conjugate

### Biography

Jennifer Lo is CEO & President of BioJENC, a biotech company in the USA (State of Louisiana) with a focus on developing novel cancer diagnostics and therapeutics. Before completing her Ph.D. Program, she was Director of Special Programs for LUMCON (Louisiana Universities Marine Consortium) under the Board of Regents administering federal grants and contracts. When she was a graduate student at the Louisiana State University, she was mentored by Dr. Fu-Kuen Lin who later was inventor of Amgen’s first medicine, Epogen, that became one of the most successful drugs of biotech history. Post graduation, she was Director of Research and Development at Anomeric, Inc., a biotech company also in Louisiana with a focus on development of new fungal diagnostic kits. At BioJENC, Dr. Lo had collaborations with Dr. Terrence Tumphey at the Influenza Division of the US Centers for Disease Control and Prevention on projects concerning avian, swine, and human influenza viruses. She also collaborated with Dr. Chyang Fang of the American Red Cross on a project concerning bacterial detection in platelet transfusion products using a rapid growth culture medium invented by Dr. Lo. After the company changed the research and development focus to developing anticancer therapy with the Granzyme B-like Peptides, she had collaborations with Dr. Alfred Lam at the Cancer Molecular Pathology of Griffith University in Australia and Professor Robert Hendricks in the Department of Ophthalmology of the University of Pittsburgh. Dr. Lo invented the Granzyme B-like peptides, useful to serve as a surrogate for Cytotoxic T Lymphocytes of the immune response, applicable for use in development of novel diagnostic tests and prevention/treatment against cancer and infection (may even be applicable to inflammatory diseases/autoimmune diseases/Alzheimer’s disease). She and Dr. Donald Luther have published three reports (2014, 2016) on peptide binding affinity with tumor cells, platelets, virally associated cells, and bacteria; and peptide cytotoxicity in tumor cells.

She has just finished a successful in vivo peptide toxicity and efficacy study (in HSV-1 infected mice) supported by the US NIH, NIAID contract to the University of Alabama at Birmingham. An official at the US National Cancer Institute (NCI) suggested that the Granzyme B-like peptide may be applicable for use in immunopreventative/chemopreventative intervention to help prevent premalignant tumors from progressing to malignant tumors (e.g. For use to effect prevention of cervical intraepithelial neoplasia (CIN) from malignancy progression in HPV- seropositive patients (may also include HIV+ patients). With the proof of concept provided by the NIH in vivo study, Dr. Lo is moving the peptide forward to developing a new form of liquid biopsy for use to help doctors assess the strength of the patient's immune response to disease progression including but not limited to cancer progression with and without a viral cause, and moving the peptide forward into clinical testing for efficacy against cancer with and without a viral cause. She is the co-inventor of 6 patents

盧惠珍女士是美國（路易斯安那州）BioJENC 生物技術公司總裁兼 CEO，該公司致力於開發新式癌癥診斷和治療方法。在博士學習期間，盧惠珍女士擔任在聯邦資金和合同評議委員會管理下的路易斯安那大學海洋集團特殊項目的負責人。在路易斯安那州立大學畢業，師從 Fu-Kuen Lin 博士，林博士是安進的第一種藥品 Epogen 的發明者。Epogen 是生物制藥史上最成功的藥物之一。畢業後，她在路易斯安那州 Anomeric 公司擔任研發部總監，這家公司主營新式真菌診斷試劑盒的研發。在 BioJENC，盧博士與美國疾病預防控制中心流感科的 Terrence Tumpey 博士合作，研制禽流感、豬流感和人流感病毒的疾病控制和預防。她還利用自己研發的快速生長培養基的血小板輸注細菌檢測方法與美國紅十字協會的 Chyang Fang 博士合作相關項目。公司隨後轉做顆粒酶 B 肽抗癌治療研發，盧博士與澳大利亞格林菲斯大學腫瘤分子病理學博士 Alfred LamAfter 以及匹茲堡大學眼科教授 Robert Hendricks 合作。盧博士發明了顆粒 B 肽，它可以有效作為免疫反應的細胞毒性 T 淋巴細胞的替代品，適用於癌癥和感染（甚至可能適用於炎癥性疾病/自身免疫性疾病/阿爾茨海默氏病）的新的診斷測試和預防/治療。她和 Donald Luther 博士就肽與腫瘤細胞、血小板、病毒相關的細胞、細菌和肽的腫瘤細胞毒性結合共同發表了三篇報告（2014,2016）。盧博士剛剛成功完成體內的肽的毒性和療效研究（HSV-1 感染的小鼠），這項研究由美國 NIH 支持，NIAID 與阿拉巴馬大學伯明翰分校簽訂合同。美國國家癌癥研究所建議稱顆粒 B 肽可能適用於幫助阻止癌前病變腫瘤發展成惡性腫瘤的免疫預防/化學預防幹預（如用於有效預防 HPV 陽性患者的宮頸上皮內瘤發展成惡性腫瘤，可能包含 HIV+ 患者）。在 NIH 體內研究上提出的證明顯示，盧博士在將肽移動到一種新的液體活檢形式，以幫助醫生評估病人對疾病發展的免疫反應程度，包括但不限於由病毒或者不由病毒引起的癌癥發展，並且將肽用於臨床檢測對抗由或者不由病毒引起的癌癥。盧博士是 6 項專利的共同發明人。

## Topic: Old and New Perspectives of Chinese Medicine in Brain Health

題目：古今中藥在腦健康中的應用

Karl Wah-Keung Tsim 詹華強

Chair Professor, Division of Life Science, The Hong Kong University of Science and Technology

香港科技大學生命科學部講座教授

Director, Center for Chinese Medicine R&D, The Hong Kong University of Science and Technology

香港科技大學中藥研發中心主任

Karl W.K. Tsim, Amy G.W. Gong, Huai Y Wang, Zhong-Yu Zhou, Ran Duan, Tina T.X. Dong

Division of Life Science and Center for Chinese Medicine, The Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong; HKUST Shenzhen Research Institute, Hi-Tech Park, Shenzhen 518000, China

### Abstract

Traditional Chinese medicine (TCM) has offered a possible therapy for the treatment of neurodegenerative diseases. The records of treating mental disorders could be found in ancient medicinal books. Today, a number of anti-Alzheimer drugs having anti-cholinesterase activity are deriving from plant sources, e.g. galantamine and huperzine. In addition, curcumin from *Curcuma longa* (turmeric) and catechin from *Camellia sinensis* (green tea) are being proposed to play role in neurodegenerative diseases. According to Chinese medicine theory, the brain is being controlled by “Fire”, one of the five elements in “Yin-Yang” holistic theory. To support this notion, a herbal decoction Kai-Xin-San (KXS, 開心散) is being used here for illustration. The first description of KXS is in *Beiji Qianjin Yaofang* <Thousand Prescriptions for Emergency> written by Sun Si-miao of the Tang Dynasty in 652 A.D. KXS has been used to treat mental depression and memory loss in China for over a thousand years, which composes of two paired-herbs: Ginseng Radix et Rhizoma-Polygalae Radix and *Acori Tatarinowii* Rhizoma-Poria. The compatibilities of paired-herbs are contributing to TCM formulae with diverse clinical efficiency. Here, we aim to study the optimization of compatibility of paired-herbs in KXS and probe the action mechanism of this regimen against depression. KXS possessed robust effects in promoting synaptogenesis of cultured cortical neurons and expression of neurotrophic factors in cultured astrocytes. In depressive animal models, KXS is able to: (i) restore depressive behavior and enhanced memory; (ii) increase the level of dopamine in striatum; and (iii) increase the expression of nerve growth factor (NGF), neurotrophin 4/5 (NT4/5), tropomyosin receptor kinase B (Trk B) and Trk C. Traditional KXS formulae do not have intellectual property, which hinders the development of anti-depressive regimen. Thus, we optimized the ratio of paired-herbs of KXS in anti-depressant functions, and a new patentable regimen (CN201410599160) for anti-depression treatment was proposed.

**Acknowledgments:** This study was supported by Hong Kong Research Grants Council Theme-based Research Scheme (T13-607/12R), General Research Funding (662713, M-HKUST604/13), TUYF15SC01, Shenzhen Science and Technology Committee Research Grant (JCYJ20160229205726699, JCYJ20160229205812004, JCYJ2016 0229210027564 and 20170326).

### Biography

Prof Karl Tsim graduated from The Chinese University of Hong Kong where he received his BSc and MPhil degrees. He pursued his research in molecular neurobiology at the University of Cambridge, UK, and obtained his PhD in 1987. After his post-doctoral training at the University of Cambridge, UK, and Stanford University, USA, he joined The Hong Kong University of Science and Technology (HKUST) in 1992. Currently, he is a Chair Professor of Division of Life Science, and the Director of Center for Chinese Medicine R & D at the university.

Prof Tsim's current research focus is on studying geographical authenticity of Chinese medicinal herbs and mechanisms of Chinese medicines compound formulae by molecular and genetic techniques. He has published over 350 scientific papers in various reputable national and international scientific journals and serves as editors for several international scientific journals. His works on Chinese herbal medicines have been awarded twice for Research Excellence in Natural Sciences from Ministry of Education of China. He also serves as an adviser/consultant/member to various organisations, both nationally and internationally, in the standardisation of Chinese medicines, including World Health Organization Collaborating Centre for Traditional Medicine, and various advisory bodies relating to testing and certification of Chinese medicines of the HKSAR Government. He is also an active entrepreneur and is founding directors of several companies.

詹華強教授畢業於香港中文大學生物化學系，並先后取得一級榮譽學位和碩士學位。他繼而到英國劍橋大學從事神經分子生物學研究，並於 1987 年獲得博士學位。他其后分別在英國劍橋大學及美國史丹福大學進行博士后研究工作。1992 年開始在香港科技大學生物系任教，現為香港科技大學生命科學部講座教授，同時擔任香港科技大學中藥研發中心主任。

詹教授目前致力於以分子和基因技術研究中藥材地道性和中藥複方的機理。他在國內和國際著名科學期刊發表 350 餘篇學術論文和擔任數份國際科學期刊的編輯。他的中草藥研究工作兩度獲國家教育部頒發高等學校科學研究優秀成果獎（自然科學獎），並就中藥材的標準化，為不同的國內及國際機構包括世界衛生組織傳統醫藥合作中心，以及香港特別行政區政府下與中藥檢測和認證相關的諮詢機構擔任顧問 / 委員。他亦是活躍的企業家，為數間公司的創始董事。

Kenneth Chan 陳煒國

President of eHealth Consortium (eHC) 電子健康聯盟主席

Kevin Ka–Yeung Orr 柯家洋

Managing Director, Winner Medical (Hong Kong) Limited 穩健醫療用品股份有限公司 總經理

## Topic: Neural Stem Cell Harvesting and Culturing Technology for Autologous Cell Therapies for Brain Diseases

題目：用于腦部疾病自體細胞療法的神經幹細胞采集和培養技術

Ken Kin-Lam Yung 翁建霖

Professor and Associate Head, Faculty of Science, Hong Kong Baptist University 香港浸會大學生物系教授

### Abstract

Neural Stem Cell Harvesting and Culturing Technology for autologous cell therapies for brain diseases

Department of Biology, Hong Kong Baptist University, Hong Kong

Target specific cell harvesting technology and novel cell processing are very important in development of cell replacement therapies in biomedical research and clinical applications. We have achieved a novel cell harvesting technology in order to harvesting neural stem cells from a live brain (US Patent US 9109203B2; Lui et al., Angew. Chem. Int. Ed., 52, 12298 –12302, 2013). We have successfully performed in live subjects for the neural stem cells harvest by applying specific designed magnetic iron oxide nanoparticles. We then subsequently created a growth factor-free cell-processing unit for cell differentiation and maturation of the neural stem cells into functional neurons (US Provisional Patent: US 62/340,500). We show that the differentiated neurons are fully functional and they are capable to survive and repair of the damaged brains. These all together indicate that the autologous neural stem cells can be processed into cell replacement treatments of neurodegenerative diseases including Alzheimer's and Parkinson's diseases. This autologous approach leads us to develop a new tailor-made personalized autologous cell replacement therapy for patients with neurodegeneration in the future. Advancements of neural stem cell technology is therefore having great potential in clinical applications for treatments of various incurable diseases.

### Biography

Professor Yung's expertise is in neuroscience, molecular biotechnology and nanomedicine. His current research is on neural stem cell and development of new treatments of brain neurodegenerative diseases. He has obtained over US\$ 3 million research funding from National Foundation of Science and Hong Kong sources and holding over 15 patents. His research work does not come to the academic end. Granted 'Technology Startup Support Scheme for Universities' funding, he commercializes his academic research work for clinical use through the establishment of OPER Technology Limited with his research partner, with an aim to provide more cost-efficient medical alternatives for neurodegenerative diseases.

翁教授的專業領域是神經科學、分子生物學、和納米藥物。目前他所研究的課題是神經幹細胞以及腦神經衰退類疾病的治療。他曾于國家科學基金會及其他香港資助來源獲得了三百萬美金的研究經費，同時翁教授還持有超過 15 個專利，可見他的科研成果不僅僅在學業界止步。在獲得了「大學科技初創企業資助計劃」資金後，他和他的同事們創立了 OPER 科技有限公司以將他的研究成果商業化並且給腦神經衰退疾病患者提供更合算的藥物選項。

**Topic: Intellectual Property Protection In Life Sciences**

Kam-Wah Law 羅金華

Partner, Squire Patton Boggs

## Topic: The Development of Lipid Nanoparticles for RNA Therapeutics

脂質納米粒在核酸藥物中應用進展

Lin-Xian Li 李林鮮

### Abstract

RNA therapeutics such as small interfering RNA (siRNA), messenger RNA (mRNA), and single guide RNA (sgRNA) provide potential gene therapies to treat most diseases by silencing pathological genes, expressing therapeutic proteins, or editing genome. However, in order to be used in clinic, safe and efficient delivery systems are required. Lipid nanoparticle (LNP) systems are currently the lead non-viral delivery systems for enabling the clinical potential of RNA therapeutics. I first introduce the LNP systems for small molecular drug. Subsequently, I review the research leading to the development of LNP siRNA systems capable of silencing target genes in hepatocytes following systemic administration and the molecular evolution of chemical structures of ionizable cationic lipids. The most advanced LNP-siRNA drug, Patisiran, will receive a decision of Food and Drug Administration (FDA) in 2018 for approval to treat transthyretin-induced amyloidosis. Finally, progress made to extend LNP technology to deliver mRNA is summarized. I introduce current limitations of LNP technology for mRNA delivery and propose a chemical approach that may overcome such limitations.

### Biography

Dr. Linxian Li obtained his PhD degree at Ruprecht-Karls-University of Heidelberg in Germany and completed a postdoctoral research with Prof. Robert S. Langer at Massachusetts Institute of Technology. He is currently an assistant professor at Karolinska Institutet. Committed to translate new materials for medical use, he focuses on developing biomaterials to deliver RNA therapeutics and engineering synthetic surfaces for cell therapy. His work has resulted in over 20 publications including papers, patents and patent applications. These patents have been licensed to chemical and biotechnology companies, and several products that have been commercialized.

李林鮮博士畢業于德國海德堡大學，隨後在麻省理工學院跟隨羅伯特·蘭格教授完成博士後研究。李林鮮博士現在是卡羅林斯卡醫學院的一名助理教授。致力於轉化新材料用于醫學應用，他的研究集中在開發生物材料用于核酸藥物的遞送和開發工程化合物表面用于細胞療法。他的工作已經有超過二十篇國際專利和論文發表。這些成果已經授權給生物和化學公司并有多個產品成功上市。

## Topic: Tips to Successfully Complete Your CFDA Applications

題目：國家食品藥品監督管理總局申請通關秘籍

Lan Zhang 張蘭

### Biography

Prof. Zhang Lan, Ph.D. in Pharmacology and MD. in Clinical Medicine, Master in Pharmaceutical Management. Prof. Zhang was Postdoctoral Fellow at Department of Ambulatory Care and Prevention, Harvard Medical School. Currently serving as Director of Drug Research at Xuanwu Hospital of Capital Medical University and Deputy Director of State Clinical Trail Center in Xuanwu Hospital.

Dr. Zhang was recipient to numerous awards, including: Beijing New Talent of Science and Technology, New Century Talent (Beijing), Academic Leader in Pharmacy of Health System “215” high-level health technology talent (Beijing), first prize in Beijing Science and Technology Award and second prize in China Progress Award in Science and Technology.

Previously, Dr. Zhang served as Vice President and Secretary-General of Beijing Pharmacological Society, executive member of Chinese Pharmacological Society, Director of Anti-Aging and Dementia Committee, executive member of Chinese Geriatric Health Medical Research Association, Vice-Chairman and Secretary-General of Rational Use of Drugs Sub-Committee, Member of the Chinese Pharmaceutical Association Geriatric Pharmacy Professional Committee, China Gerontology Society of Aging and Anti-aging Scientific Committee etc..

Dr. Zhang is expert in neuropharmacology and clinical pharmacology research, with main focus on the clinical research of early drug discovery, neuropharmacology and new drug discovery. She is Project Leader of 21 projects (four of which are national level, six provincial level), and Principal Investigator of more than 10 phase I clinical trials of drugs. She is the author to 10 drug-invention patents, nearly 200 local and international publications, and first or corresponding author to over 60 papers.

藥理學博士，醫院藥事管理碩士，醫學學士。美國哈佛醫學院門診醫療與預防系藥物政策研究組博士後。教授、研究員，博士生導師。首都醫科大學宣武醫院藥物研究室主任，國家藥物臨床試驗機構副主任。北京市科技新星，新世紀百千萬人才工程北京市級人選，北京市衛生系統“215”高層次衛生技術人才——學科帶頭人（藥學）。擔任北京藥理學會副理事長兼秘書長，中國藥理學會理事、抗衰老與老年痴呆專委會主任委員，中國老年保健醫學研究會理事、合理用藥分會副主任委員兼秘書長，中國藥學會老年藥學專業委員會委員，中國老年學學會衰老與抗衰老科學委員會理事等職。

長期從事神經藥理和臨床藥理學研究，主要研究方向為藥物早期臨床研究、神經系統藥物的藥理學研究及新藥研發。作為課題負責人承擔縱向課題 21 項，其中 4 項國家級課題，6 項省部級課題。作為 PI，承擔藥物 I 期臨床試驗 10 餘項。獲北京市科學技術一等獎 1 項，國家科學技術進步二等獎 1 項。獲新藥發明專利授權 10 項。已在國內外期刊上發表論著近 200 篇，第一作者及通訊作者論文 60 餘篇。

Lewis Wai-Hong Ho 何偉康

Partner, Loeb & Loeb 樂博律師事務所合伙人

## Biography

Lewis Ho leads the life sciences and intellectual property practices in Asia. He helps life sciences and technology companies and their financial sponsors to capture, manage, risk assess, evaluate and monetize their IP assets. His practice focuses on negotiating technology transfer transactions and enforcing IP rights.

Mr. Ho has extensive experience advising on both inbound and outbound IP-driven transactions, and has negotiated more than 60 M&A, collaboration, outsourcing, joint venture and licensing deals. He also assists Chinese companies acquiring IP assets and manufacturing facilities overseas.

Mr. Ho has been consistently recognized by Chambers Asia and Legal 500 as one of the leading life sciences and IP lawyers in China. Chambers Asia noted him for “approaching issues in a ‘down-to-earth’ manner” and clients described him as “one of the best lawyers I’ve worked with so far” owing to his sharpness of proactive approach and as producing “a high quality of work.” He has also been recognized by IAM Patent 1000 in China.

Prior to joining Loeb & Loeb LLP, Mr. Ho served as a resident partner in the Shanghai and Beijing offices of a major international law firm.

## Topic: TaiGen Biotechnology - A New Drug R&D Company

題目：太景生物科技 – 新崛起的藥物研發企業

Ming-Chu Hsu 許明珠

Founder, Chairman & CEO, TaiGen Biotechnology Co., Ltd. 太景生物科技創辦人、董事長暨執行長

### Abstract

TaiGen Biotechnology Co., Ltd is founded in 2001 with headquarters in Taiwan and subsidiary in Beijing, China. TaiGen is a pioneer in new molecule entities (NCEs) in the Greater China region. The company is backed by blue chip industrial conglomerates, top-tier VCs, government sovereign fund, and other investors from the financial and insurance sectors from Taiwan and overseas. Uniquely positioned to combine Western-trained management with regional R&D talent, TaiGen have utilized its in-house R&D and state-of-art facility to discover and develop first-class NCEs. All product-related intellectual property is 100% owned by the company and protected by patents, trademarks that are filed globally with over 370 patents in the company's current IP portfolio. TaiGen is publicly listed on the Taipei Exchange under ticker 4157.TWO since January 2014.

TaiGen's pipeline includes novel treatment for bacterial infections, hepatitis C, hematology and oncology. The novel antibiotic, Taigexyn®, is the company's first market approved product and the first locally developed NCE approved by both the Taiwan FDA and China FDA. The approval of Taigexyn® is based on multinational, multicenter clinical trials in the US, China, Taiwan, and South Africa conducted by TaiGen's clinical development team. With the launch of Taigexyn®, TaiGen have successfully demonstrated that it can translate research from the laboratory to the marketplace. In addition to Taiwan and China, Taigexyn® is partnered in 30 additional countries worldwide. Taigexyn® is major milestone in TaiGen's history and added commercialization to its core capabilities. Burixafor, the next generation stem cell mobilize in hematology, have completed two Ph 2 clinical studies in the US with proof-of-concept achieved with the potential to revolutionize the current standard-of-care in hematopoietic stem cell transplantation. Furaprevir from TaiGen's hepatitis C program is partnered in a joint venture with HEC Pharma in China. The joint venture is developing an effective and affordable cocktail treatment for hepatitis C infection in Greater China based on drug candidates discovered by TaiGen and HEC. The transaction is potentially value at over US\$100 million, of which US\$20 million was already received by TaiGen for the sale of 9% equity of the joint venture to HEC.

TaiGen is driven by innovation and discovery. The company aims to produce an NCE every 3-4 years to build up a sustainable product pipeline and to advance them from research to commercialization.

### Biography

Dr. Hsu founded TaiGen in 2001, after successfully building the Biotechnology and Pharmaceutical Research Division at the National Health Research Institutes in Taiwan. She was the first Program Leader of the National Biotechnology/Pharmaceutical Research Program under the National Science Council, bringing together 62 academic laboratories to conduct mission-oriented research. Before her return to Taiwan in 1998, Dr. Hsu held the position of Research Director, Oncology and Virology at Hoffmann-La Roche, USA for over 10 years. Prior to that, Dr. Hsu was an assistant professor at Rockefeller University, New York, and a Research Fellow at the California Institute of Technology and at Stanford University. Dr. Hsu obtained her Ph.D. degree in biochemistry from the University of Illinois. Dr. Hsu has extensive experience in establishing world-class drug discovery teams and clinical development programs. At TaiGen she has led the R&D team to successfully discover and develop 3 new drugs, for bacterial resistant infection, HCV chronic infection and stem cell mobilization for cancer treatment and for ischemic tissue repair.

許明珠博士為國伊利諾大學生物化學博士，歷任加州理工學院、史丹佛大學、洛克斐勒大學教學研究工作，並進入羅氏藥廠工作，成為世界首批研究愛滋病新藥的先驅之一。許博士在 1998 年從美國回臺，擔任國家衛生研究院藥物研究組主任，建立綜合性新藥研發設施；同時也是製藥與生技國家型計畫主持人，於國家科學委員會擔任癌癥治療與抗病毒研究計畫的首位計畫負責人，匯集 62 個學術實驗單位進行國家任務導向的研究。2001 年她創立了太景生物科技，為臺灣最早成立的新藥研發公司之一，建立世界一流的藥物研發團隊成功開發出 3 個新藥，針對耐藥性細菌感染、慢性丙型肝炎病毒感染、並使用幹細胞驅動劑治療腫瘤及缺血性組織的修復。

## Topic: Association of CNTNAP2 Gene Polymorphism with the Bangladeshi Autism Spectrum Disorder Children

題目：CNTNAP2 基因多態性與孟加拉自閉癥兒童的關係

Mohammad Safiqul Islam 穆罕默德·薩菲庫爾·伊斯蘭

Professor and Chairman, Department of Pharmacy, Noakhali Science and Technology University

諾克哈裏科技大學藥學系教授及主任

### Abstract

Autism spectrum disorder (ASD) characterized by impaired communication and social interaction incorporates a group of developmental disabilities and accompanied by stereotyped and repetitive behaviors and restricted interests. Language impairments are a characteristic feature of autism and related to autism spectrum disorders (ASDs). The percentage of ASD is increasing day by day in the world. In Bangladesh, nearly 10.5 lakh children may have autism. Autism is a prominent heritable disease and the most promising candidate gene implicated in its pathogenesis is contactin-associated protein-like 2 (CNTNAP2). A variant in CNTNAP2 (rs2710102) was found to be associated with language deficits and language delays in ASD. Very few studies were conducted on this gene in the ASD patients in some populations. No such type of study has been yet conducted in the Bangladeshi population. Therefore, we designed this study to find out the association rs2710102 with ASD children of Bangladesh. We collected blood from the 54 children with ASD and 60 healthy children. DNA was extracted using commercial kits according to the prescribed protocols of the manufactures. Genotyping was performed by the polymerase chain reaction and restriction fragment length polymorphism (PCR-RFLP) method. The RFLP method for this SNP was developed for the first time by our research group and fresh primers were also designed by ourselves.

48.15% of the ASD children and 60% of controls carried the CC genotype whereas these values were 44.44 % and 35% in case of CT genotype and 7.41% and 5% in case of TT genotype. Children carrying CT genotype of CNTNAP2 (rs2710102) had 1.58 times more risk for the development of ASD whereas Children carrying TT genotype had 1.88 times more risk for the development of ASD in compared with controls carrying CC genotype. Combined model i.e. children carrying CT+TT genotype had 1.62 times more risk for the development of ASD in compared with controls carrying CC genotype. In all cases, the p-value is greater than the level of significant ( $p > 0.05$ ).

Among the ASD children, 36 (66.67%) had language impairment. The distribution of CC, CT, TT, CT+TT genotypes were 36.11, 55.56, 8.33, 63.89% and 72.22, 22.22, 5.56, 27.78% in the ASD children with language impairment and ASD children without language impairment groups respectively. ASD children carrying CT genotype had 2.51 times more risk for the development language impairment that is statistically significant ( $p = 0.042$ ) whereas ASD children carrying TT genotype had 2.77 times more risk for the development language impairment that is not statistically significant ( $p = 0.246$ ). ASD children carrying CT+TT genotype had 2.65 times more risk for the development language impairment that is statistically significant ( $p = 0.025$ ).

In conclusion, we can say that rs2710102 SNP of CNTNAP2 gene is associated with language impairments in the Bangladeshi ASD children. This finding will definitely play an important role in selecting the personalized medicines or treatments for the ASD children and improving the life of ASD children by decreasing ASD related symptoms.

### Biography

Dr. Mohammad Safiqul Islam is currently working as a Professor and Chairman of the Department of

Pharmacy, Noakhali Science and Technology University, Bangladesh and is the principal investigator of pharmacogenomics lab. After completing his B.Pharm and M.Pharm from the University of Dhaka, he joined as an industrial pharmacist in the Novartis (BD) Ltd for 2 years and later worked as a community pharmacist in abroad. His inclination always lies toward academia and after gaining substantial experiences in pharmaceutical fields, he joined in the University of Asia Pacific in 2005 and finally in the current institution in 2006 as a lecturer. In 2010, he joined the research group of late professor Dr. Abul Hasnat, Department of Pharmacology and Clinical Pharmacy, University of Dhaka who was the pioneer of pharmacogenomics research in Bangladesh and completed his PhD on the “Lung cancer risk in relation to nicotinic acetylcholine receptor, CYP2A6 and CYP1A1 genotype in Bangladeshi population” . Professor Dr. Ann K Daly, Newcastle University, UK was also involved with his PhD research work and relevant publication and one of his publications obtained the University Grants Commission (UGC) Bangladesh award, 2013.

Professor Islam then worked on the several research works on the pharmacogenomics of Bangladeshi lung, breast, colorectal and prostate cancers and is now actively collaborating with some local and international research institutes. A research article entitled “Loss of asparagine synthetase causes congenital microcephaly and a progressive form of encephalopathy” was published from the collaboration with a Canadian research group in the Neuron.

He received a grant from the Ministry of Science and Technology, Bangladesh in 2013. Mr. Islam was awarded JSPS postdoctoral fellowship (standard, 2 years) and joined the laboratory of Professor Kazushige Yokota, Shimane University on the April 2014. Currently, he is doing research on the Pharmacogenomics of autism spectrum disorder, schizophrenia and cervical cancer of Bangladeshi population. He has more than 64 peer-reviewed publications and submitted few more in the related peer-reviewed journals.

穆罕默德·薩菲庫爾·伊斯蘭博士目前在孟加拉國諾克哈裏科技大學藥學系擔任教授和主任、藥物基因組學實驗室 PI。畢業于達卡大學藥學系，獲得學士和碩士學位，隨後進入 Novartis (BD) 公司做工業藥劑師，兩年後去國外做社區藥劑師。他一直對學術研究非常感興趣，獲得了豐富的藥學領域經驗。2005 年他加入亞洲太平洋大學，後于 2006 年進入諾克哈裏大學做授課講師。2010 年，加入達卡大學藥理學與臨床藥學系 Abul Hasnat 教授研究組完成了博士期間的學習（Lung cancer risk in relation to nicotinic acetylcholine receptor, CYP2A6 and CYP1A1 genotype in Bangladeshi population），Abul Hasnat 教授是孟加拉國藥物基因組學研究的先驅，學習期間還得到了英國紐卡斯爾大學 Ann K Daly 教授的幫助和指導。2013 年獲得大學教育資助委員會孟加拉國獎（University Grants Commission (UGC) Bangladesh award）。

伊斯蘭教授隨後參與了幾項關於孟加拉國國民肺、乳腺癌、結直腸癌和前列腺癌癥基因組學的研究課題，目前與多家當地及國際機構合作，一篇名為 “Loss of asparagine synthetase causes congenital microcephaly and a progressive form of encephalopathy” 的文章就是與加拿大的一個研究組合作，就神經元的研究成果發表的。

2013 年伊斯蘭博士獲得孟加拉國科技部的研究基金。在進行了兩年的 JSPS 博士後研究之後，2014 年 4 月加入日本島根大學 Kazushige Yokota 教授實驗室。目前，他在進行將就孟加拉國國民的自閉癥譜系失調、精神分裂和宮頸癌的藥物基因組學研究。已在相關期刊雜誌發表 64 篇文章。

## Topic: Study Cancer Cell Heterogeneity and Metastasis on a Chip

題目：芯片上研究癌細胞的異質性和轉移

Michael Meng-Su Yang 楊夢甦

Head of Department of Biomedical Sciences; Chair Professor of Chemistry and Biomedical Sciences, City University of Hong Kong 香港城市大學生物醫學系主任及講座教授

### Abstract

Cancer metastasis is a dynamic and complex process which involves the interactions between cancer cells and components within the microenvironment, such as noncancerous cells, chemokines and growth factors, extracellular matrices (ECM), and other physical/mechanical surroundings. The study of the intricate interactions within the microenvironment will provide critical information towards the eventual understanding and control of cancer metastases. We are developing a suite of microfluidics tools to investigate physical and molecular mechanisms that govern cellular adhesion, motility, and invasion, focusing on understanding how chemical and physical forces in the tumor

microenvironment enable and enhance cell migration and transition during metastasis. We aim to create tumor-mimicking microenvironments with controllable signaling and mechanical gradients to study cell migration, transition, invasion and interactions in real time, and our single-cell analysis to investigate intrinsic heterogeneities of cancerous and noncancerous cells and their contributions to tumor cell transition, aggressiveness and metastasis.

### Biography

Prof. Yang obtained his Ph.D. from University of Toronto, Canada and received postdoctoral training in the Scripps Research Institute in USA. He is currently the Head of Department of Biomedical Sciences, and Yeung Kin-Man Chair Professor of Biomedical Sciences in City University of Hong Kong. The research interest of Yang's group focuses on the development of biochip technology and nanotechnology for molecular diagnostics and therapeutic applications. Prof. Yang has published over 280 peer-reviewed papers and 23 USA/China patents. He has trained 28 Ph.D. graduates and numerous postdoctoral fellows in his laboratory. He has been awarded the Chunhui Scholar Award by the Ministry of Education in China in 2003, the K. C. Wong Foundation Award in 2004, the Shenzhen Science and Technology Innovation Award in 2006, the Hong Kong Technological Achievement Grand Award in 2007, the Natural Science Award by the Ministry of Education in 2015, and the Wuxi PharmaTech Life Science and Chemistry Award in 2016. He is a co-founder of biotech companies Genetel (Shenzhen), Prenetics (Hong Kong), and Helitec (Shenzhen).

## Topic: New Developments in Magnetic Resonance Elastography (MRE)

題目：磁共振彈性成像技術的新發展

Neil Roberts 尼爾·羅伯茲

Chair of Medical Physics and Imaging Science, Edinburgh Imaging facility, The Queen's Medical Research Institute (QMRI), University of Edinburgh

英國愛丁堡大學女王醫學研究所 愛丁堡成像設施 醫學物理與影像科學系主任

### Abstract

The mechanical properties of biological tissue provide information related to the strength and integrity of cellular microstructure and may be measured non-invasively using Magnetic Resonance Elastography (MRE), a particularly sensitive new medical imaging technique that may increase the potential for early diagnosis, study of physiology and detailed monitoring of response to treatment.

The various methods used for acquisition and analysis of MRE data will be described and illustrated in applications in the study of brain, muscle, liver, kidney and uterus. Predictions will be made regarding the trends for future research and applications of MRE.

### Biography

After graduating with a degree in Physics with Geophysics from the University of Liverpool, Neil was awarded a Personal Fellowship from the Natural Environment Research Council (NERC) and obtained a post of Research Associate at the University of California in Santa Barbara (UCSB) to study the phenomenon of geomagnetic field reversals.

Subsequently, Neil qualified as a Medical Physicist and was appointed as Shell Research Fellow to setup a new Image Analysis Laboratory at the Magnetic Resonance and Image Analysis Research Centre (MARIARC) of the University of Liverpool, which had been built to house the first purchase in the UK of a commercial Magnetic Resonance Imaging (MRI) system. Subsequently, as Director of MARIARC, and co-PI on two Medical Research Council (MRC) Programme Grants, Neil established and led a research programme in "MR Studies of the Neural Bases of Cognition: Theoretical and Clinical Interactions". This work was underpinned by setting up of a Tertiary Referral Service for pre-surgical evaluation of patients with Temporal Lobe Epilepsy (TLE), in collaboration with the nearby Walton Centre for Neurology and Neurosurgery (WCNN), a joint research programme in functional neuroimaging with the Cognitive Neuroscience Centre in the School of Psychology, University of Bangor and a research programme in the application of functional neuroimaging in Consumer Science with Unilever Research, plc.

Today Neil is Chair of Medical Physics and Imaging Science at the University of Edinburgh, based at Edinburgh Imaging Facility QMRI and a member of the Centre for Inflammation Research (CIR). In this role, Neil has been leading the development of new programmes of research using a 3 T Magnetic Resonance Imaging (MRI) system. Most prominent among these is a research programme in Magnetic Resonance Elastography (MRE) that allows non-invasive measurement of tissue mechanical properties and which is supported by collaborations with Charité – Universitätsmedizin Berlin, Germany, Mayo Clinic, Minnesota, USA and The Mentholatum Company, East Kilbride. Neil's group have pioneered new approaches to MRE data analysis and which are being applied in clinical studies of brain, muscle, kidney and uterus with colleagues in the College of Medicine and Veterinary Medicine (CMVM). These studies are complemented by a new collaboration with the Shenzhen Institutes of Advanced Technology (SIAT) regarding the development of robust non-invasive methods for measuring tissue temperature.

In Edinburgh Neil has also developed collaborations with the Centre for Cognitive Ageing and Cognitive Epidemiology (CCACE) in the School of Psychology, Institute for Music in Human and Social Development (IMHD), and Department of Psychiatry, concerning the application of structural Magnetic Resonance Imaging (sMRI), functional Magnetic Resonance Imaging (fMRI) and Diffusion Tensor Imaging (DTI) in studies of brain structure, function and connectivity. These activities are supported by a longstanding interest in developing new mathematical methods for studying brain morphology, including with the School of Informatics and the University of Santander, Spain for measuring brain surface area and gyrification, and with the University of Oxford, West China Medical School in Chengdu, China, University of Rennes, France and University of Ghent, Belgium for measuring brain asymmetry.

## Topic: Biomarker and Companion Diagnostics in Precision Medicine

題目：精準醫療中的生物標志物和伴隨診斷

Nick Ya-Fei Zhang 張亞飛

Chairman and CEO, QIAGEN (Suzhou) Translational Medicine Co. Ltd.

凱杰（蘇州）轉化醫學研究有限公司董事長及總裁

### Biography

With over 25 years of drug R&D experience and years of experience in translational and diagnostics, Nick is now the board chairman and CEO for QIAGEN (Suzhou) Translational Medicine Co. Ltd. that provides an integrated technology platform for biomarker, companion diagnostics development and clinical testing for precision medicine.

Nick was China GM and Corporate SVP for Frontage Lab, a CRO for CMC, Clinical and Bioanalytical services. Before that, Nick was a founding director and executive for Novartis China R&D center and responsible for building up CPP/TRD division in China. He also served on the cFDA Working Committee and as a reviewer for China Thousand Talents Program. Prior to Novartis, Nick was a director at US OSI Pharmaceuticals.

Nick started his drug industry career at Pfizer global R&D center after he got his Ph.D degree from University of Cincinnati. During his ten years at Pfizer, he led teams at both Early and Full Development in Pharmaceutical Science, filed 5 INDs/IMPd and 1 NDA/MAA for various dosage forms. Nick represented Pfizer serving on the PRQI working committee (formed among FDA, industry and academia). Before going to US, Nick worked and studied at Chinese Academy of Sciences.

Nick is now a member of Bayhelix, a global association of Chinese Life Science Business Executives; a council member of Jiangsu Life Science and Technology Association; and a director of Biomedical Committee (SEBMC), Sino-EU Chemical/Manufacturer Association.

He is also one of the 2015 Suzhou SIP Leading Talents and one of 2016 Jiangsu Province Leading talent. He is one of 5 founders for China Companion Diagnostics Consortium (in Prep)..

張亞飛博士在藥物研發行業擁有 25 年的經驗。現任凱杰（蘇州）轉化醫學研究有限公司董事長及首席執行官，凱杰（蘇州）是一個提供生物標志物驗證，伴隨診斷開發及臨床檢測服務的精準醫療完整解決方案的技術創新公司。

張博士在凱杰之前曾擔任方達醫藥中國區總經理和集團資深副總裁，監管方達（中國）所有業務（包括 CMC，臨床和生物分析）。張博士于 2007 年作為諾華中國研發中心的創建人之一回國。是諾華中國研發中心部門總監和領導，負責輔助當地和全球項目發展，對於該研發中心的規劃和籌建作出了重大貢獻。在此期間張博士在百華協會服務於中國食品藥品監督局 CMC 工作委員會，同時在由中組部等聯合組織的中國千人計劃項目中擔任評審員。

在回國前張博士曾擔任美國 OSI 醫藥集團公司 CMC 運營部的總監。張博士在美國取得他的博士學位後加入到輝瑞全球研發中心開始他的藥物工業界研究生涯。在輝瑞十年多的時間內，張博士致力於 5 個 IND/IMPd 和 1 個 NDA/MAA 的研發及申報，涵蓋了多種固體和液體的劑量配方。曾代表輝瑞服務於美國藥監局產品質量和研究工作委員會（PQRI）。

張博士在中國科學院應化所工作和學習了 4 年，而後于 1995 年畢業於美國辛辛那提大學取得藥物分析博士學位。張博士是全球生命科學和醫療健康產業領域華人精英組織百華協會 (Bayhelix) 的一員。也是江蘇省生物技術協會理事，中歐化工生產協會生物技術委員會主任委員及中國生物工程伴隨診斷行業協會發起者。張博士也獲得蘇州 2015 年園區創業創新領軍人才及江蘇省雙創人才稱號。

## Topic: Genome-mining Based Drug Lead Discovery

題目：基于基因组的药物先导开发

### Pei-Yuan Qian 錢培元

David von Hanseemann Professor of Science, Division of Life Science;  
Chair Professor, Division of Life Science, The Hong Kong University of Science and Technology

香港科技大學戴維馮漢澤曼科學教授及生命科學部講座教授

### Abstract

Colibactin is an as-yet-uncharacterized genotoxic secondary metabolite produced by human gut bacterium *Escherichia coli*. Because of the widespread distribution of its biosynthetic gene cluster in pathogenic and probiotic human enterobacteria, colibactin has been suggested to play evil and devil roles in human health. Traditional compound discovery efforts to directly isolate colibactin from *E. coli* have been unsuccessful, genome-mining based bioactive compound discovery coupled with biosynthesis pathways manipulation has allowed us to isolate and elucidate the chemical structure of several precolibactins of *E. coli*, including the largest and most complete precolibactin-886 of colibactin family isolated and characterized to date. The individual gene inactivation study indicated that the introduction of the aminomalonate unit to precolibactin-886 is catalyzed by the modular polyketide synthase ClbKpks and a divergent colibactin biosynthesis pathway generates diverse colibactins. This work provides new insights into the biosynthetic logic and diverse roles of this colorectal cancer-linked microbial chemical.

### Biography

Pei-Yuan Qian is currently David von Hanseemann Professor of Science and a Chair Professor in Division of Life Science and in Hong Kong University of Science and Technology. He is one of the world leaders in larval biology and biofouling/antifouling research; serves as editor or the editorial board member of many national and international journals; holds adjunct professorship in many top Chinese marine institutions; served as the founding President of the Pacific Institutes of Marine Sciences and the founding director of Marine laboratory of Hong Kong University of Science and Technology, the founding director of Environmental Science Programs.

He was trained as marine biology and marine ecology, received his BSc degree from Ocean University of China, MSc degree from Xiamen University and PhD degree from University of Alberta. He was the Killam Postdoctoral Fellow at University of British Columbia when he was appointed as assistant professor in 1993 by Hong Kong University of Science and Technology. Since he joined his current university, he has been working on larval biology of marine invertebrates with specific emphasis on molecular mechanisms and chemicals for larval attachment and metamorphosis. He published over 400 SCI papers and delivered over 60 plenary/keynote talks and over 280 oral presentations in international conferences. His group has also discovered many non-toxic antifouling compounds and holds many USA and China Patents. He planned and chaired the first Gordon Research Conference on Marine Molecular Ecology in 2013. He received the prestigious Natural Science Award of China in 2016.

錢培元現任戴維馮漢澤曼科學教授、香港科技大學生命科學部教授，是目前世界上研究幼蟲生態學和防污生物研究的先驅者；擔任多家國內外期刊的主編及編委；是多所中國海事研究機構的兼職教授；他還是太平洋海洋科學研究所的創始人、香港科技大學海洋實驗室及環境科學計劃的第一任主任。他主修海洋生物學和海洋生態學，曾獲得中國海洋大學的理學學士學位，廈門大學的理學碩士學位和艾伯塔大學的博士學位。1993年在英國大學做 Killam 博士後研究員時，被任命為香港科技大學助理教授。自從加入香港科技大學以來，他一直致力於海洋無脊椎動物的幼蟲生物學研究，特別強調幼蟲附着和變態的分子機制和化學物質。他發表了 400 多篇 SCI 論文，並在國際會議上發表了 60 多次大會發言及主題演講，超過 280 多次口頭報告。他的小組還發現了許多無毒防污化合物，並擁有多項美國和中國的專利。在 2013 年他計劃並主持了戈登海洋分子生態學研究會議。在 2016 獲得中國著名的自然科學獎。

## Topic: Toll-like Receptor 2 Co-stimulation Potentiates the Antitumor Efficacy of CAR-T Cells

題目：類鐸受體 2 共同刺激下可增強嵌合抗原受體 T 細胞的抗癌作用

Peng Li 李鵬

Principal Investigator, Guangzhou Institute of Biomedicine and Health, Chinese Academy of Sciences  
中國科學院廣州生物醫藥與健康研究院首席研究員

Yunxin Lai<sup>1†</sup>, Jianyu Weng<sup>2†</sup>, Xin Du<sup>2\*</sup>, Peng Li<sup>1\*</sup>

<sup>1</sup>Key Laboratory of Regenerative Biology, South China Institute for Stem Cell Biology and Regenerative Medicine, Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences, Guangzhou, 510530, China;

<sup>2</sup>Department of Hematology, Guangdong General Hospital/Guangdong Academy of Medical Sciences, Guangzhou 510080, Guangdong, China;

### Abstract

Chimeric antigen receptor (CAR) T cell immunotherapies have shown unprecedented success in treating leukemia but limited clinical efficacy in solid tumors. Here, we generated 1928zT2 and m28zT2, targeting CD19 and mesothelin, respectively, by introducing the Toll/interleukin-1 receptor (TIR) domain of Toll-like receptor 2 (TLR2) to 1928z and m28z. T cells expressing 1928zT2 or m28zT2 showed improved expansion, persistency and effector function against CD19<sup>+</sup> leukemia or mesothelin<sup>+</sup> solid tumors respectively in vitro and in vivo. In a patient with relapsed B cell acute lymphoblastic leukemia, a single dose of  $5 \times 10^4$ /kg 1928zT2 T cells resulted in robust expansion and leukemia eradication and led to complete remission. Hence, our results demonstrate that TLR2 signaling can contribute to the efficacy of CAR T cells. Further clinical trials are warranted to establish the safety and efficacy of this approach.

### Biography

Dr. Peng Li received his B. Sc. in Biology from Tsinghua University in 2006 and obtained his Ph.D from University of Cambridge in 2010. During his study in Cambridge, he found that T-cells at all developmental stages reprogram to natural killer-like cells upon Bcl11b deletion and named the NK-like cells as Induced-T-to-NK (ITNK) cells. It has been demonstrated that ITNKs has potential application in cancer immunotherapy. In 2011, Dr. Peng Li joined Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences as a principal investigator. His lab mainly focuses on the study of cancer cellular immunotherapy and humanized mouse models.

## Topic: Screening and Identification of Early Cancers - Is It Achievable?

題目：早期癌癥的篩查與確診 – 可實現嗎？

Rossa Wai-Kwun Chiu 趙慧君

Choh-Ming Li Professor, Chemical Pathology 卓敏化學病理學教授

Assistant Dean (Research), Faculty of Medicine, The Chinese University of Hong Kong

香港中文大學醫學院研究 – 助理院長

Li Ka Shing Institute of Health Sciences and Department of Chemical Pathology, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR

### Abstract

At present, there are very few ways to screen for cancer, e.g. mammography for breast cancer, serum PSA testing for prostate cancer.

Cancer screening aims to detect the disease earlier than it would otherwise manifest itself. Researchers are working on the hypothesis that if one could develop tests that could detect cancer when the tumor growth is still small, there is a greater chance of cure even with current treatment modalities. We now know that when a cancer develops, some of the cancer cells would release its DNA content into the blood circulation. The analysis of cancer-derived DNA within bodily fluid samples in place of tumour biopsies for prognostication, selection of therapeutic targets or disease monitoring of cancer patients has been referred to as the liquid biopsy approach. However, the grand challenge in cancer diagnostics is whether early cancer detection is possible. In other words, could one apply circulating tumour DNA analysis not merely as a surrogate of a tumour biopsy, but instead for cancer screening among asymptomatic individuals? But to detect such signatures at very early stages of cancer is a huge technical challenge, equivalent to trying to detect a needle in a hay stack. Despite such challenges, we have achieved promising results for the early detection of nasopharyngeal cancer among volunteers without any symptoms. These exciting new research results will be discussed during the talk. There will also be a discussion on how we could extend the results learned from one cancer to the early detection of other cancers. We have further developed multiple approaches to pinpoint the anatomical location of malignancy, naming to determine a tissue map non-invasively. (Supported by the Research Grants Council of the Hong Kong SAR Government under the Theme-based research scheme (T12-401/16-W)).

### Biography

Rossa Chiu is the Choh-Ming Li Professor of Chemical Pathology and Assistant Dean (Research) at the Faculty of Medicine, The Chinese University of Hong Kong. She is an Honorary Consultant Chemical Pathologist at the New Territories East Cluster of Hospitals, Hong Kong. Prof Chiu's research focuses on the development of novel molecular diagnostic approaches. She has developed non-invasive methods based on maternal blood analysis for the prenatal assessment of Down syndrome which has led to a worldwide change in clinical practice. Recently, she has been investigating the detection of cancer-derived DNA in human plasma with an aim to develop non-invasive blood tests for the early detection of cancer. To date, Prof Chiu has published over 140 peer-reviewed research articles and has over 170 granted patents or patent applications. Prof Chiu has received a number of awards for her research, including the 2012 China Women in Science Fellowship, the 2013 American Association of Clinical Chemistry Outstanding Scientific Contributions for a Young Investigator and the 2016 Croucher Senior Medical Research Fellowship. She is currently a member of the Board of Directors of the International Society of Prenatal Diagnosis.

From BJ Team

趙慧君女士是香港中文大學醫學院化學病理學系教授。她是香港新界東醫院聯網化學病理學家兼榮譽顧問。趙教授的研究重點是開發新的分子診斷方法。她開發了基于母體血液分析的唐氏綜合徵產前診斷的非侵入性方法，這種方法開創了世界範圍內臨床實踐的先河。最近，她一直在進行人類血漿中癌源性 DNA 的檢測，目的是開發出用于癌癥早期發現的非侵入性血液檢查。迄今為止，趙教授已發表了 140 多篇同行評議的研究論文，并獲得了 170 多項專利或專利申請。她的研究成果獲得了多個獎項，包括 2012 中國青年女科學家獎，2013 美國青年科學家臨床化學杰出科學貢獻、2016 裘槎基金會高級醫學研究獎。她目前是國際產前診斷學會的董事會成員。

## Topic: Tips to Successfully Complete Your CFDA Applications

題目：CFDA 申請通關秘籍

Ru-Yi He 何如意

MD Chief Scientist, Center for Drug Evaluation, China Food and Drug Administration

中國食品藥品監督管理總局審評中心 首席科學家

### Abstract

The Chinese government recently published Opinions on Deepening the Reform of the Evaluation and Approval System and Encouraging the Innovation of Drugs and Medical Devices ( "Opinions" ). A series of reforms are underway for the implementation of the Opinions by the Center for Drug Evaluation at the Chinese Food and Drug Administration (CFDA). During this workshop, tips on how to successfully complete your CFDA application, including the requirement of the information to be submitted for drug review and evaluation and the procedures for managing clinical trials and as well as drug review and evaluation process will be introduced. Key points and requirements for Drug Review at the Expert Consultation Meeting organized by Center for Drug Evaluation at CFDA will also be mentioned.

近日，中國政府發布了《關於深化審評審批制度改革鼓勵藥品醫療器械創新的意見》。中國國家藥品審評中心為落實政府的《深改意見》進行了系列改革。這一講座將就關於如何準備藥品審批資料，要做哪些工作能更精確地通過審批為大家作一個介紹，包括如何與國家藥審中心的專業審評團隊進行溝通交流，溝通交流的要點與要求等等。

### Biography

Dr. Ru-Yi He received his medical degree from China Medical University. He completed his intern and residency training in Internal Medicine at Howard University Hospital in Washington, DC. He received his clinical and research training at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), the National Institutes of Health (NIH) of Bethesda, Maryland. He has published more than 20 research papers and abstracts in the field of Internal Medicine and Drug Regulatory Science. He is a licensed, board-certified physician in Internal Medicine.

Dr. Ru-Yi He joined the Center for Drug Evaluation and Research (CDER), US FDA in 1999 as a Medical Officer in the Division of Gastrointestinal and Coagulation Drug Products. He became a Medical Team Leader in 2003 and served as the Acting Deputy Director for 2 years. He was detailed to the Office of Medical Policy in 2010 and the Office of Generic Products in CDER/FDA in 2015. He chaired several working groups tasked with drafting and finalizing guidances for industry including FDA guidance development in multiple therapeutic areas. He was responsible for approving numerous applications for investigational new drugs (INDs) and new drug applications (NDAs) including applications for Chinese herbal medicines. Dr. Ru-Yi He has received many awards since he joined the FDA, including the FDA Excellence in Review Science Award, CDER Leadership Excellence Award, CDER excellence in mentoring Award, FDA Award of Merit, and the Department of Health and Human Services Secretary's Award for Distinguished Service.

Dr. He Ru-Yi actively participated in organizing activities to promote Sino-US friendship and cultural exchange. He was elected as Overseas Director at the 5th Council of the China Overseas Exchange Association of the State Council and as Overseas Member at the 9th Committee of China Federation of Returned Overseas Chinese. He was Invited Overseas Representative as well as Convener of Overseas Delegation at the 12th CPPCC National Committee meetings. Dr. He Ru-Yi served as Distinguished Professor of Peking University since 2006.

Dr. Ru-Yi He is the Chief Scientist at the Center for Drug Evaluation at the Chinese Food and Drug

Administration (CFDA). Dr. He joined CFDA in July 2016, after having worked at the US Food and Drug Administration (FDA) for more than 17 years.

何如意博士畢業于中國醫科大學并獲得醫學學士和內科血液學碩士學位。于 1988 年 3 月赴美國國家衛生研究院 (NIH) 從事臨床研究。在美國 Howard 大學醫學院獲得醫學博士學位，完成了內科住院醫師的工作。1997 年獲得美國內科執業醫師證書。

何如意博士于 1999 年加入美國食品藥品管理局 (FDA), 藥品審批中心 (CDER) 擔任臨床審批官職位，并在美國 FDA 擔任過高級臨床醫藥審批官，主管臨床醫藥審批官及消化系統胃腸道類藥物及罕見病藥物審批部門代理副主任等職務。主寫了多個 FDA 政策技術工作指南。在 FDA 獲得了許多獎勵，其中包括 FDA 的杰出領導才能獎，杰出指導獎，杰出貢獻獎和美國衛生部部長親自頒發的部長杰出貢獻獎。

何如意博士于 2016 年 7 月加入中國食品藥品監督管理總局藥品審評中心擔任首席科學家。參與指導中國藥品審評審批制度的改革，技術標準建設及體制建設等。何如意博士還擔任北京大學特聘教授，清華大學醫學院兼職教授。

## Topic: Enabling Chairside Caries Prediction and Prevention – Novel Diagnostic and Treatment Developed by Bioengineers

題目：實現牙醫椅旁的齲齒預測和預防 – 由生物工程師研發的新興診斷與治療

Ricky Yin–To Chiu 招彥燾

CEO, Phase Scientific International I Ltd. 相達生物科技國際有限公司 行政總裁

### Abstract

Extensive research over the past few decades has demonstrated the active involvement of *Streptococcus mutans* (SM) in the initiation and progression of dental caries. With the advent of specifically targeted anti-microbial peptides, it is possible to modulate the oral microbial ecology by specifically targeting SM residing in the oral cavity, in turn reducing both the prevalence and severity of tooth decay.

Up until recently chairside rapid diagnostic testing kits for SM have been hampered by either unsatisfactory sensitivity or their complexity or the time it would take to result. The true breakthrough came when our patented, proprietary 3PS platform technology was applied to enable rapid detection of SM using monoclonal antibodies technology.

This cutting-edge technology leverages the conventional lateral-flow immunoassay (LFA), which is similar to the pregnancy test, and enhances its accuracy by selectively pre-concentrating the target pathogenic bacteria prior to detection using aqueous two phase systems (ATPS). The seamless integration of an ATPS system and LFA within a three-dimensional paper-based device to simultaneously concentrate and detect biomarkers. The technology is graphically explained in Figure 1.

Figure 1 – Integration of ATPS and LFA within a 3D paper based system.

Further studies have been carried out to explain the scientific breakthrough. When the ATPS were added to a paper strip, the two phases separated rapidly. The 3-D paper architectures further enhance this phenomenon and enable use of an ATPS with a 10-fold concentrating effect (Figure 2). While the phase separation occurs in a matter of seconds, macroscopic phase separation in a test tube would have taken hours to complete. 3-D architecture is thought to improve the phase separation process by increasing the cross-sectional area normal to the direction of flow. This allows more volume of sample to wick through the paper at the same time, allowing more of the domains of one phase to be retained by interactions with the paper while the domains of the other phase coalesce more easily.

Figure 2 - Traditional LFA (upper panel) is compared to combined ATPS and LFA paper-based system (lower panel).

With 10-fold improvements in detection limit, the new device has the potential to rapidly identify pathogens or target analytes at concentrations that were previously too low to be detectable with conventional LFA. This robust and portable device requires no electricity or sophisticated laboratory equipment and is ideal for point-of-care applications, especially in resource-poor settings or where rapid diagnosis is key to containment of infectious diseases.

### Biography

Dr. Ricky Chiu is the CEO, co-founder and lead inventor of Phase Diagnostics' underlying technology. Prior to Phase Diagnostics, he was a former project manager at BMC (now Alere Inc.), where he took several rapid point-of-care diagnostics from concept to market; amongst his most successful products is OratectXP,

the first FDA approved drug-of-abuse diagnostic that utilized oral fluid. Dr. Chiu co-founded the U.S. company, Phase Diagnostics Inc, after receiving his PhD in Bioengineering at the University of California, Los Angeles. Since then he has secured millions of dollars in grant funding and has closed another million dollars Seed round of private equity financing. Phase Diagnostics has now grown to 18 employees and is expecting to continue rapid expansion in 2018. In addition, Dr. Chiu is establishing a foothold in the Asia Pacific by launching a Biotech research, manufacturing and distribution company, Phase Scientific International Limited, in Hong Kong and three other offices in mainland China. Within a year, Dr. Chiu has taken his platform diagnostic technology from proof-of-concept to working prototype and is targeting a first product launch of their lead product in Hong Kong and the United States next year.

招彥燾博士，Phase Diagnostics 的行政總裁、聯合創始人兼技術研發領導人。他曾擔任 BMC ( 現為 Alere Inc. ) 的技術專案經理，參與即時檢測產品的研發設計及市場推廣，成功推出數個產品。他參與研發的 OratectXP 更是首個經美國 FDA 認證的利用唾液來檢測藥物濫用情況的即時檢測產品。

招博士畢業於加州大學洛杉磯分校生物工程學系。他畢業後在美國創立了 Phase Diagnostics Inc.，之後成功獲得數百萬美元的無償政府基金資助並融得百多萬美元的私募種子投資。現在 Phase Diagnostics 已有 18 位員工，期望 2018 年會繼續迅速擴展。此外，招博士更選擇在香港和內地創立公司 Phase Scientific International Limited，公司定位集研發、生產和銷售於一身，希望以此為據點進軍亞太市場。在短短一年時間內，招博士已經將技術概念轉化為實際產品，並將於明年在香港和美國推出首個產品。

## Topic: Greater Bay Area and its business implication to Hong Kong technology industry including biomedicines

題目：大灣區及其對香港科技業包括生物醫藥的商業影響

Simon Man-Lung Tsang 曾文龍

Head of Innovation & Technology, InvestHK, Hong Kong SAR 投資推廣署創新及科技行業主管

### Abstract

Biotechnology has potential to diversify the economy of Hong Kong, improve our medical and healthcare system. Initiatives under Belt and Road and Greater Bay Area will bring new opportunities

### Biography

Simon Tsang was born and educated in Hong Kong. He engaged in electronic industry right after graduation. After working for several multi-national corporations for over 10 years, responsible for software development, IC engineering as well as marketing and promotion, Simon joined the HKSAR government and involved in investment promotion ever since.

曾文龍先生在香港出生和受教育。畢業後便投入電子業，在多間跨國企業工作了十多年，負責軟件開發、半導體產品工程和市場推廣。加入香港特區政府後，便一直從事投資推廣工作至今。

**Topic: Translating Fructus Aplinia Oxyphylla into New Drugs and Food Supplements for Aging Associated Diseases**

題目：把益智仁轉化成老退化疾病的新藥和食品補充劑

Simon Ming-Yuen Lee 李銘源

Professor, Institute of Chinese Medicine Sciences, University of Macau, Macau

澳門大學中華醫藥研究院教授

Samson Wai-Ho Tam 譚偉豪

Chairman, Group Sense Limited 權智有限公司主席

Tony Chen 陳業裕

Business Development Director, Hong Kong X-Tech Startup Platform 業務發展總監, 香港 X 科技創業平臺

Scientific Content

General Information

Programme

Keynote Speaker

Speaker

**Topic: The Biotech Incubation in Universities**

題目：大學之生物科技培育

Thomas Cheung 張俊勇

## Topic: Abnormal cellular energetics at the heart of diseases: new concept and new tools to improve diagnosis

題目：疾病的核心在于細胞能量異常：改進診斷的新概念和新工具

Vincent Petit 文森特·佩蒂特

CEO, METAFORA biosystems 麥塔弗亞生物系統公司 行政總裁

### Abstract

METAFORA has designed a revolutionary diagnostic platform able to simply evaluate how cells feed on key nutrients for their energetic metabolism, based on proprietary metabolic probes. It reveals a useful approach for the early detection of a broad range of conditions, from neurological disorders to cancers and inflammatory diseases.

The technology enables the development of In Vitro Diagnostics (IVD) tests as well as whole body imaging to improve human health.

Our first IVD test called METAgut1 has been developed for the early diagnosis of the GLUT1 deficiency syndrome, a neurometabolic, but treatable disorder in children caused by an impaired expression of the glucose transporter GLUT1 at the cell surface. As a consequence, it limits brain glucose availability and lead to cerebral energy deficiency. GLUT1-DS manifests with a wide range of neurological symptoms including cognitive impairment, epilepsy and permanent and/or paroxysmal motor disorders that usually start in early childhood.

Early detection of GLUT1-DS is critical as the disease is treatable with ketogenic diets. Any neuropediatrician or neurologist can encounter patients with GLUT1-DS. Its diagnosis is however challenging due to the great heterogeneity of symptoms and ages at onset.

Our novel simple and rapid blood test allows to highlight reduced GLUT1 expression on red blood cells. It opens perspectives for the screening of GLUT1-DS in children and adults with cognitive impairment, movement disorder or epilepsy.

METAgut1 is CE marked and in the early market access phase in Europe.

Several new developments are ongoing on key medical unmet needs, especially on cancer and immunometabolism. METAFORA has gathered a unique team of seasoned entrepreneurs, scientists and big data experts who believe that Metabolism is the new Genetics.

### Biography

Vincent Petit holds a DVM Degree (Doctor of Veterinary Medicine) from the National Veterinary School of Alfort (France). In addition, he holds a PhD in cell biology and microbiology from the Pasteur Institute (Paris, France), with specialization in virology.

Since the beginning of his professional career his focus has been set on translational research, working as research scientist at the Centre National de la Recherche Scientifique (France). His work in this institution has led to several peer-reviewed scientific publications and to 5 patents, related to cell metabolism.

Dr. Petit co-founded METAFORA biosystems in 2011 as a CNRS spin-off.

文森特·佩蒂特畢業于法國阿爾夫爾國立獸醫學校并獲得獸醫學士，他同時為法國巴斯德研究所細胞生物學與微生物學的博士生，專注于病毒學。佩蒂特初期專注于轉譯研究，于法國國家科學研究院擔任研究科學家。他在法國國家科學研究院工作期間已取得多個與細胞代謝有關的同行評審科學報導及 5 個專利。

## Topic: 3D Stem Cell Expansion using Polystyrene Scaffolds and Perfusion Bioreactor for Stem Cell Therapy

題目：由聚苯乙烯支架和灌注生物反應器造的三維幹細胞擴展法用于幹細胞治療

Wing Keung Lau 劉永強

Co-founder and CEO, 3D Biotek 聯合創辦人，首席執行官

### Abstract

Stem cells are the main source for cell therapy and regenerative medicine. Clinical application requires millions to billions of stem cells grown in GMP level facilities. To provide sufficient number of cells for clinical applications, a large scale process using a bioreactor is necessary. Using its proprietary 3D (3-dimensional) Micro-Fabrication Technology, 3D Biotek is engaged in fabrication of 3D scaffolds made of biodegradable and non-biodegradable polymers for 3D cell culture applications. Combining its polystyrene (PS) scaffolds and the perfusion bioreactor, a new product called 3D Cell Expansion System (3D-CES) has been developed. Scientists in 3D Biotek are able to culture and expand Adipose-derived stem cells (ASCs) in serum-free media from 20 million up to 500 million in 8 - 10 days.

For ASCs expansion, cells were seeded on the PS scaffolds and kept at 37 C with 5% CO<sub>2</sub> for a period of 48 hours to allow complete cell attachment. The scaffolds were then transferred into a chamber and placed inside the bioreactor for dynamic perfusion of the media for growth and expansion.

Retrieval of stem cells and cell counts was achieved by detachment of the cells from the scaffold using a combination of multiple enzymes. To monitor and confirm maintenance of stem cell identity after expansion, flow cytometry was performed looking at series of markers. Antibodies against CD44, CD73, CD90, and CD105 were used as positive and CD11b, CD19, CD34, CD45 and HLA-DR as negative stem cell markers. Other parameters such as pH, glucose and lactate were also measured to monitor the culture condition and cell metabolic activities. Comparison of stem cell markers before and after stem cell expansion demonstrated that the ASCs maintained their “stemness” after expansion. Furthermore, ASCs maintained their ability to differentiate into osteocytes, adipocytes and chondrocytes after expansion. During the bioreactor run the pH level of the media was maintained at approximately 7.2. The change of lactate and glucose levels were measured which demonstrated proper trend as expected. The karyotyping results, performed by independent laboratory, displayed a normal karyotype with 22 pairs of autosome and one XX chromosomes.

In conclusion, 3D-CES can be used to greatly increase the ability to expand various cell types and can play an important role in the emerging fields of stem cell therapy and bio-banking.

### Biography

Mr. Wing K. Lau, MS in Mechanical Engineering & MS in Computer Science, has extensive industrial experience in CAD/CAM/CAE and engineering software development. He is a co-founder and currently served as CEO in 3D Biotek. With more than 15 years of experience in the field of tissue engineering, he is responsible for the development of the company's Precision Micro-Fabrication Technology which is the core technology for fabrication of scaffolds with biodegradable and non-biodegradable polymers for 3D cell culture and stem cell expansion applications.

## Topic: Wnt Signaling - A New Target for Treating Neuropathic and Cancer Pain

題目：Wnt 信號通路 – 治療神經病理性疼痛和癌癥疼痛的新靶點

Xue-Jun Song 宋學軍

Professor, Neurobiology, Anesthesiology, and Oncology 南方科技大學教授

Director, SUSTech Center for Pain Medicine, Southern University of Science and Technology (SUSTech), Shenzhen 南方科技大學疼痛醫學中心主任

### Abstract

Treatment of neuropathic pain is a major clinical challenge, and the underlying mechanisms of neuropathic pain remain elusive. We have recently hypothesized and demonstrated that neuropathic pain – inducing nerve injury may elicit neuronal alterations that recapitulate events that occur during development. Signaling of the representative activated molecule Wnt, which is important in the regulation of cellular processes during the development of nervous systems and is not involved in pain processes in physiological conditions, becomes a trigger for the development of neuropathic pain and is a potential therapeutic target. Wnt signaling may stimulate production of the proinflammatory cytokines and regulates NR2B glutamate receptor and Ca<sup>2+</sup>-dependent signals through the canonical b-catenin-dependent pathway in the spinal cord, while in DRG, Wnt signaling regulates neural activity through the non-catenin-independent, Ryk-mediated pathway. The core of the canonical Wnt pathway is the regulation of b-catenin by a cytoplasmic destruction complex. We have further demonstrated that the transcriptional regulators YAP and TAZ, which orchestrate Wnt response via incorporation in the b-catenin destruction complex, are key in the pathogenesis of neuropathic pain and may serve as an “ON - OFF” switch for neuropathic pain status in rats. Further, we discovered a new small molecule, which targets YAP/TAZ/b-catenin and can greatly suppress chronic pain and the associated neurochemical alterations after peripheral nerve injury and bone cancer, respectively. These studies reveal that Wnt signaling and the transcriptional factors YAP/TAZ are core mechanisms underlying the pathogenesis of neuropathic

pain and potential therapeutic targets for neuropathic and cancer pain.

### Biography

Xue-Jun Song, MD, PhD, is currently Professor of Neurobiology, Anesthesiology, and Oncology, Director of SUSTech Center for Pain Medicine, Southern University of Science and Technology (SUSTech), Shenzhen, and Executive Director of Center for Pain Medicine, Peking University Health Science Center, Beijing, China. Dr. Song received his MD from Xuzhou Medical University and PhD from the Institute of Neuroscience, Chinese Academy of Sciences. Dr. Song did his Postdoc at Yale University Medical School and then served as an assistant, associate and full professor and director in Parker University Research Institute, Dallas, Texas, for eighteen years. Dr. Song's research has been focusing on understanding the neural mechanisms of chronic pain after nerve injury, bone cancer, diabetes, and exploring molecular targets for treatment of neuropathic, cancer and diabetic pain. His research has resulted in several dozens of publications in the prestigious journals including Anesthesiology, Brain, Cancer Research, FASEB J, JCI, J Neurosci, Nat Neurosci, Pain, etc. patents for chronic pain treatment. Dr. Song also serves as president of CASP / China Chapter of IASP, vice chair of Chinese Physiological Society Pain Translational Research Subcommittee, standing member of committee of Chinese Pharmacological-Anesthetics Society, International Chinese Academy of Anesthesiology, etc. and board member/associate editor of PAIN Reports and chief editor for English of Chinese J Pain Medicine.

宋學軍，中國科學院博士，耶魯大學博士後。現任南方科技大學教授、博士生導師，南科大疼痛醫學中心主任。曾長期任職德克薩斯州帕克大學教授兼帕克研究所高級研究員、副所長和基礎研究部主任；北京大學神經科學研究所教授、博導，北京大學醫學部疼痛醫學中心常務副主任，腫瘤醫院麻醉科副主任等。長期從事神經科學、

麻醉學和疼痛醫學研究兼部分臨床工作，專注于感覺神經元興奮性和突觸可塑性的受體、離子通道、細胞內信號轉導機制以及神經病理性和癌性疼痛治療的特異性藥物幹預靶點等。得到美國、澳大利亞和中國國家自然科學基金等資助，系列研究論文發表在 *Anesthesiology*, *Brain*, *Cancer Research*, *FASEB J*, *JCI*, *J Neurosci*, *Nat Neurosci*, *Pain* 等核心學術期刊，并獲得多項研究發明專利。獲得國際神經正骨聯盟最高研究獎 Scott Haldeman Award 和 The Louis Sportelli NCMIC Award、國家杰青（海外類）和江蘇省特聘醫學專家等學術獎勵和榮譽。兼任中國疼痛研究會 / 國際疼痛學會（IASP）中國分會主席，IASP 會員委員會、學術委員會、世界疼痛大會科學委員會執行委員，中國生理學會疼痛轉化研究委員會副主任委員，中國藥理學會麻醉藥理學分會常委兼副秘書長，國際華人麻醉學院常務理事以及《PAIN Reports》常務編委、《中國疼痛醫學雜誌》常務編委兼英文總編等。

## Topic: Next Generation Animal Cell Culture Bioreactor for Scalable Recombinant Protein Expression

題目：用于可擴展重組蛋白表達的下一代動物細胞培養生物反應器

Xiao Shen 沈瀟

Founder, Chairman, Cantonbio Ltd, Guangzhou 廣州漢騰生物科技有限公司創始人董事長

Member, European Animal Cell Engineering Association and the Asian Animal Cell Engineering Association 歐洲動物細胞工程協會及亞洲動物細胞工程協會會員

中國僑聯創業聯盟理事

廣州市開發區創業英才”

“廣東省珠江人才計劃引進創新團隊帶頭人”

### Biography

Ph.D of Swiss federal Institute of Technology in Lausanne. In the previous work Dr. Shen has developed a number of recombinant drug production technologies including insect cells transient and stable expression, the development of animal cell culture solution and large-scale production of cell culture feed. The laboratory of Dr. Shen has also maintained a world record in transient expression of protein. His technologies ensure that Cantonbio can develop bio-medicine and biological products independently without any other external technologies.

沈瀟博士，中山大學生物技術專業學士，德國海德堡大學細胞生物學及藥理學碩士，瑞士聯邦理工生物技術與工程專業博士。

沈瀟博士曾任職德國腫瘤中心，瑞士聯邦理工，ExcellGene 等公司，有着多年研發管理經驗。為歐洲動物細胞工程協會及亞洲動物細胞工程協會會員，中國僑聯創業聯盟理事。

2015 年回國創立廣州漢騰生物科技有限公司，現任公司董事長。2016 年獲得“廣州市開發區創業英才”稱號，2017 年獲得“廣東省珠江人才計劃引進創新團隊帶頭人”稱號。

## Topic: Anti-diabetic mechanism of resistant starch revealed by metabonomics and intestinal microbiota analysis

題目：基于代謝組學及腸道菌群分析的抗性澱粉 RS 抗糖尿病作用機制研究

Xue-Yong Wang 王學勇

Professor, PhD Supervisor, Beijing University of Chinese Medicine 北京中醫藥大學教授，博士研究生導師

### Abstract

Type 2 diabetes mellitus (T2DM), a metabolic disorder characterized by continuous hyperglycemia associated with insulin resistance and /or reduced insulin secretion, have reached epidemic proportions worldwide, and dietary interventions for their prevention are therefore important. Resistant starches (RS) has been reported to improve insulin sensitivity and reduce blood glucose in clinical trials, but the mechanisms underlying this health benefit remain poorly understood. In this study, using untargeted serum metabolomics and 16S rRNA-tagged sequencing, we compared untargeted serum metabolome and the gut microbiota composition in each group.

The experimental results showed that RS like metformin, could partially recover the metabolism disorders of diabetic rats and exerted good antidiabetic effects in lipid metabolism and amino acid metabolism. Meanwhile, we demonstrated that RS and metformin similarly shifted the overall structure of the gut microbiota in rats. Consistent with gut microbiota result, analysis of short-chain fatty acids by GC-MS showed that both the RS and metformin significantly increased the fecal SCFA level.

Taken together, we speculated that RS had the similar effects with metformin in raising the number of SCFA-producing bacteria in diabetic rats, which contributed to recover the metabolism disorders by regulating the level of short-chain fatty acids. It may be the potential mechanism of RS anti-diabetic mechanism.

### Biography

王學勇，男，醫學博士，中國中醫科學院中藥研究所博士畢業，現任北京中醫藥大學教授，博士研究生導師；主要從事分子生藥學研究與民族藥新藥開發。學術任職：現任中華中醫藥學會中藥鑒定分會秘書長，中國中西醫結合學會中藥分會青年委員，中國民族醫藥學會民族藥資源分會常務理事，中國民族醫藥學會苗醫分會常務理事；被聘為國家自然科學基金、北京市自然科學基金等科研項目評審專家；擔任 SCI 論文《Phytotherapy Research》、國家級核心期刊《藥學學報》、《中國中藥雜誌》、《中醫雜誌》和《實驗方劑學雜誌》審稿專家。科研成果：已主持國家級、省部級等科研項目 10 餘項；發表國家級核心期刊以上（含 SCI）學術論文 60 餘篇；編寫 Molecular Pharmacognosy 等學術著作 10 餘部；申請國家發明專利 6 項；榮獲中國藥學會科學技術一等獎、中華中醫藥學會科學技術二等獎，北京中醫藥大學自然科學一等獎各 1 項。

## Topic: Overview of viral vectors used for gene therapy

題目：用于基因治療的病毒載體概述

Xiao-Yan Dong 董小岩

Founder, Beijing FivePlus Molecular Medicine Institute Co. Ltd.(5+MMI)

北京五加和分子醫學研究所有限公司創始人

Director, Department of Molecular Medicine, Beijing Institute of Biotechnology Industry

北京亦創生物技術產業研究院分子醫學研究所所長

Zhongguancun Park Leading Talent ” 中關村領軍人才”

Beijing E-Town Talents, Innovative and Entrepreneur Talents Project “新創工程·亦麒麟領軍人才”

### Biography

第一軍醫大學臨床醫學專業學士，第一軍醫大學免疫專業碩士，復旦大學遺傳學專業博士。大學畢業後曾從事臨床醫療工作 7 年，後因產生“研發新藥及產業化”的理想而離開臨床醫療崗位。從 1995 年上碩士研究生開始，為此理想矢志不移，創造各種條件實現理想，並到今天一直在踐行自己的目標，創造新藥技術研究開發的平臺，一直致力於病毒載體及基因治療的研發和產業化，打造基因治療新藥研發平臺，并使 rAAV2/hFIX 治療 B 型血友病基因治療項目獲得了 SFDA 批准進入一期臨床試驗，經過 10 年潛心努力和經營，帶領團隊開發出 2 個新產品，銷售形勢很好。同時新申報發明專利 12 項，形成新的核心技術專利群，發表多篇有影響力的論文。一心致力於推動基因治療產業化發展。

## Topic: Cancer Immunotherapy - Challenges and Solutions of Companion Diagnostics

題目：癌症免疫治療 – 伴隨式診斷的挑戰和解決方案

Yi-Jing He 賀毅憬

Associate Professor, Moffitt Cancer Center, USA 美國墨菲特癌症中心副教授

Chairman, Shenzhen INDA Biotechnology Co. Ltd. 深圳因答生物科技有限公司 董事長

### Biography

賀毅憬，男，博士，美國莫菲特癌症中心副教授。2003年畢業與中南大學湘雅醫學院，獲醫學學士學位。2008年由中南大學 – 德國烏爾姆大學聯合培養，獲臨床藥理學博士學位，師從周宏灝院士。2009–2012年，供職於美國北卡羅萊納大學藥學院個體化藥物治療及藥物基因組學研究所、美國 Gentriss 生物醫藥公司。2013年回國，任中南大學教育部藥物基因組學工程研究中心副主任。發表 SCI 論文五十餘篇，最大影響因子 >10，引用超過 200 次。主持國家自然科學基金面上項目，湖南省高校創新平臺開放基金項目，湖南省湖湘青年計劃，長沙市 3635 人才計劃，中南大學“升華獵英”計劃等科研項目 10 餘項。2015年於美國創立 Interpares Biomedical Co.,Ltd. 任亞洲事務部主任，2016年創立深圳因答生物科技有限公司（Shenzhen INDA Biomedical Co.,Ltd.）任董事長，首席科學家，針對腫瘤免疫治療臨床伴隨診斷產品展開研發與市場推廣工作。

## Topic: Development of a Health Product from Chinese Medicine Gou-Teng for Cognitive Impairment from Gou-Teng

題目：一種用于認知障礙的保健品；源于中藥鈎藤的產品開發

Zhi-Xiu Lin 林志秀

Associate Professor, School of Chinese Medicine, The Chinese University of Hong Kong

香港中文大学中医学院副教授

Director, Hong Kong Institute of Integrative Medicine, The Chinese University of Hong Kong

香港中西医结合医学研究所主任

Member, The Chinese Medicines Industry Subcommittee, Hong Kong Chinese Medicine Development Committee 香港中医药发展委员会中药业小组委员

### Biography

Professor Lin graduated from Guangzhou University of Chinese Medicine in 1987 with a BSc degree in Chinese Medicine. After graduation, he worked as a Chinese medicine doctor at the Affiliated Hospital of Guangdong Provincial Research Institute of Chinese Medicine. In 1991 he moved to England to study English language, which was followed by a PhD degree study at the Department of Pharmacy, King' s College, University of London. He obtained his PhD degree in Pharmacognosy in 1999. From 1998 to 2002, he was employed as a Senior Lecturer on the Chinese Medicine Programme, Middlesex University in London where he was involved with basic and clinical teachings of Chinese medicine. Professor Lin joined The Chinese University of Hong Kong in 2003, and is currently an Associate Professor at the School of Chinese Medicine. He is now engaged in the teaching of Chinese medicine as well as supervising postgraduate students' research projects. His main research interests are in the areas of (1) R & D on Chinese medicines for pancreatic cancer, psoriasis, eczema, Alzheimer' s disease and Parkinson' s disease; (2) clinical trials on topical treatment for psoriasis, acupuncture for post-stroke dysphagia and overactive bladder in elderly; and (3) systematic reviews on efficacy and safety of acupuncture and Chinese herbal medicine.

