UK-CGCM 2018-2019 Report

Chair:

Professor Ian Sutherland, Brunel University London

Co-chair:

Dr. Tai-Ping Fan, University of Cambridge

UK-CGCM

- **1)** Bradford University
- **2) Brunel University London**
- **3) Cambridge University**
- **4) King's College London**
- 5) Liverpool John Moores University
- 6) Nottingham University
- **7) Oxford University**
- 8) Royal Botanic Gardens, Kew
- **9) UCL School of Pharmacy**
- 10) University of Westminster

Mission & Goals of UK-CGCM

- To advance the field of Chinese herbal medicine to benefit human kind through joint efforts of the academic institutions, industries and regulatory agencies throughout the UK.
- To develop platform technologies required for advancing Chinese herbal medicine by joint efforts.
- To facilitate the interaction and collaboration among different institutes in advancing Chinese herbal medicine by sharing information.
- To promote a high quality evidence-based research and develop Chinese herbal medicine internationally.
- To assist industry with the development of new products and their regulatory acceptance

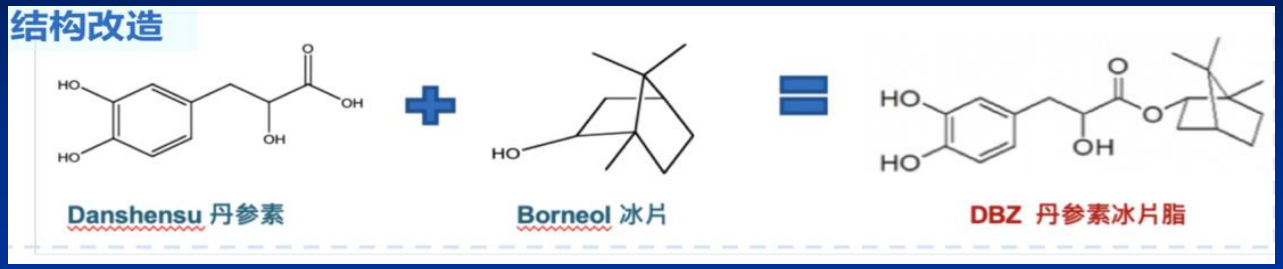
Brunel University London Report

Professor Ian Sutherland:
"We are what we share"

- Brunel's Advanced Bioprocessing Centre is the lead global centre on the extraction and scale-up of active compounds from natural products and Chinese Herbal Medicines (CHMs)
- Professor Ian Sutherland, Guest Professor at Sichuan University's State/National Key Laboratory of Biotherapy (SKLB)
- 2018-2019 was mostly dedicated to setting up our Chemical Engineering department with new teaching courses attached.
- working closely with Brazilian teams at the moment, particularly with natural products groups from UNICAMP (The University of Campinas, São Paulo, Brazil) and doing training courses for them and hosting their PhD students in our Advanced Bioprocessing Centre.

UNIVERSITY OF CAMBRIDGE

Dr Tai-Ping Fan 樊台平



- Tanshinol borneol ester（DBZ）, a novel synthetic small molecule angiogenesis stimulator inspired by botanical formulations for angina pectoris. 丹参素冰片酯：一个基于传统中医药配伍理论设计合成的新型小分子血管新生促进剂 **Abstract No. 47 (p. 61)**

  Br J Pharmacol 2019 May 22. doi: 10.1111/bph.14714.
- Biosynthesis of D-danshensu from L-DOPA using engineered *Escherichia coli* whole cells. 利用工程大肠杆菌全细胞从左旋多巴合成D-丹参素 *Appl Microbiol Biotechnol* 2019 Aug;103(15):6097-6105. doi: 10.1007/s00253-019-09947-0.
- One-pot, three-step cascade synthesis of D-danshensu using engineered *Escherichia coli* whole cells. 利用工程大肠杆菌全细胞一锅三步级联合成D-丹参素 *J Biotechnol.* 2019 July 20; 300:48-54. doi: 10.1016/j.jbiotec.2019.05.008.
- Danshensu and danshemsu isopropyl ester IDHP (optical purity ~ 100%) can be synthesized in 100 kg batches, and their pharmacological effects are identical with that of natural products. 单批次可生物合成光学纯达100%的丹参素100公斤，进一步合成了光学纯达100%的丹参素异丙酯 IDHP；并证明期药理药效与天然产物完全一致
- To establish Cambridge Phytopharmaceutical Research Centre in 2020

King's College London Report

The University and the GP-TCM Community mourned the death of Professor Peter Hylands

- Former Head, Institute of Pharmaceutical Science, KCL
- Former Head, Pharmacy Department, KCL
- Co-Director, King's Centre for Integrative Chinese Medicine, KCL
- Treasurer, ExC and BoD Member, The GP-TCM RA

A Memorial will be held in London on 9th October to celebrate Peter's contributions to academic and non-academic contributions to the world.

- **GP-TCM RA BoD Member & Newsletter Editor**
- ***WJTCM* Associate Editor-in-chief**
- **King's CICM's research:**
  - TCM for kidney care
  - TCM-inspired studies of renal health, disease & intervention.
- **CICM's first PhD student passed viva**
- **Publications:**
  - Xu Q, et al. Taming the fire of nephrotoxic botanicals. *WJTCM* 2019 online published. Discussed at GP-TCM RA Annual Meeting 2019 and highlighted in 2 press releases by KCL and Kidney Research UK

Dr Qihe Xu
Director, King's Centre for Integrative Chinese Medicine

- Xu Q. The renal collecting duct rises to the defence. *Nephron* 2019, in press.
  - A theoretical innovation inspired by *Huang Di Nei Jing*
  - A "Special Article" due to be published in the original nephrology journal.
  - "Special session" organiser and talk well received at UK Kidney Week 2019.

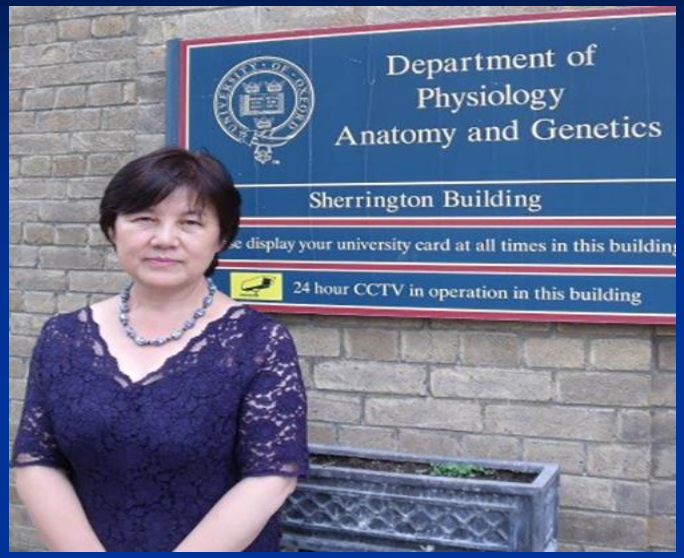
Dr Mark Dockrell:

"Real lateral thinking and a unique approach to a common problem."

Kidney Research UK Director:

"Interesting thought provoking talk"

Oxford University



- Dr Yu-Ling Ma 马玉玲, Department of Physiology, Anatomy and Genetics, University of Oxford, in collaboration with Tianjin State Key Laboratory of Modern Chinese Medicine, Tianjin University of Traditional Chinese Medicine, China
- Ion Channel Targeted Mechanisms of Anti-arrhythmic Chinese Herbal Medicine *Xin Su Ning* *Front. Pharmacol.,* 6 February 2019 https://doi.org/10.3389/fphar.2019.00070

Pharmacognosy and Phytotherapy
UCL School of Pharmacy, Univ. London
Contact Michael Heinrich

- Access and Benefit Sharing has become a core area and we are now looking at the current state of the art as well as at future needs and opportunities in this regard
- Numerous contacts with colleagues in China continued. MH participated in meetings organised by the Society for Medicinal Plant and Natural Product Research in Shanghai, the Shanghai Institute of Materia Medica, Chinese Academy of Sciences and a symposium at the Chinese Academy of Science (Kunming Institute of Botany). He also gave invited talks including at HK Baptist University
- A project on a complex hera-herbal TCM preparation continues. The focus is now on formulation and absorption of individual compoenents with the Aim to then develop a novel formulation
- Collaborations with IMPLAD focusing on goji continue (R. Y. Yao and Prof P.G. Xiao)
- Our research on value chains continues with an ongoing focus on *Salvia miltiorrhhiza* as well as new initiatives exploring the use of blockchain systems as a tool
- We continue to have strong links with the U. Westminster (Dr. A Booker) 'next door' as well as the Royal Botanic Gardens, Kew, London

Thank you and welcome to Cambridge !!