Director’s Message

Welcome to the fifteenth issue of the Australia-China Centre for Tissue Engineering and Regenerative Medicine’s newsletter. The purpose of this newsletter is to keep you informed of news and events happening within ACCTERM, including staff update, member achievements, Short-term Mobility Program, QUT MPhil Program, the forthcoming TERMIS-AP+ABMC7 2019 Congress, ACCTERM Forum, collaborative grant applications and latest news.

I would like to take this opportunity to bid farewell to Dr Ying Yang and wish her all the best. She left QUT in September 2019 to join the University of Michigan as a postdoctoral research fellow. Her contribution to ACCTERM is much appreciated. Dr Lan Xiao and Ms Lillian Ioane are currently working part-time as ACCTERM Coordinators assisting with ACCTERM business including website management, newsletter distribution, coordination of centre daily activities and joint grant applications. A full-time position for ACCTERM Coordinator will be open soon.

The upcoming Tissue Engineering & Regenerative Medicine International Society–Asia Pacific Chapter and the 7th Asian Biomaterials Congress will be held on 14–17 October 2019 at the Brisbane Convention and Exhibition Centre. This year’s ACCTERM Research Forum will be held on 22-24 November 2019 at Shanghai, China. On behalf of the Local Organising Committee, I am pleased to invite you to attend these two exciting events!

Yours Sincerely,
ACCTERM Director
Professor Yin Xiao
Establishment of JRC: Queensland-China Joint Research Centre for the Development of Functional Biomaterials in Advanced Manufacturing of Human Tissues and Organs

The Joint Research Centre (JRC) for the Development of Functional Biomaterials in Advanced Manufacturing of Human Tissues and Organs was announced on the 24th of September 2019. The signing ceremony was held in the 30th anniversary celebrations of the Queensland-Shanghai Sister State, in the presence of QUT Vice-Chancellor Prof Margaret Sheil, Queensland Deputy Premier Jackie Trad, SICCAS Executive Director Prof Lixin Song, ECUST Vice-Chancellor Zhong Xin, and ACCTERM Director Prof Yin Xiao.

The JRC will be based at QUT and is supported by the Palaszczuk Government funding of $300,000. According to Deputy Premier Jackie Trad, the JRC will help to address the common challenges faced by both countries’ ageing populations, thereby improving the quality of life for elder people, and reducing the burden of the health care systems.

Professor Margaret Sheil stated that the establishment of the JRC was largely the result of six years of successful collaboration between QUT and Shanghai researchers. The aim of the JRC is to develop, manufacture and validate the next generation of functional biomaterials and bio-inks (the biomaterial precursors used in bioprinters), and in doing so, build research capacity, enhance 3D printed and bioprinted article production rate and quality, and provide new opportunities for commercialisation within this rapidly growing sector. The JRC will play key roles in supporting clinical translation of novel tissue engineered medical devices, and growing the burgeoning biofabrication market, with many potential significant benefits for the bilateral economy.
The JRC is a collaboration between researchers at the Queensland University of Technology (QUT), the University of Queensland (UQ), Shanghai-based research partners including East China University of Science and Technology (ECUST) and Shanghai Institute of Ceramics-Chinese Academy of Sciences (SICCAS), as well as high-tech end-used companies in both Australia and China. The proposed research programs within the JRC included: 1) biomaterials; 2) biofunctionality and 3) biofabrication that focus on the development of functional biomaterials for bone/cartilage/skin/blood vessel regeneration. These research programs will pave the way for laboratory-based work seeking to translate towards manufacturing-based tissue engineering and generate mature products for industry and end-user partners. The JRC will consist of six outstanding research organisations and four high-tech end-user companies in both Australia and China:

Queensland Partners:
1. QUT: Prof Yin Xiao, Prof Dietmar Hutmacher, and Prof Mia Woodruff
2. UQ: Prof Justin Cooper-White and Prof Saso Ivanovski

Chinese Partners:
1. ECUST: Prof Changsheng Liu
2. SICCAS: Prof Chengtie Wu and Prof Jiang Chang
3. Asia Biomaterials (Wuhan) Ltd. Chinese biotechnology company

Member Achievements

According to new data published in The Australian’s 2019 -Research magazine (https://t.co/WLOC5jeEPy), Prof Yin Xiao and Prof Dietmar Hutmacher have been recently recognised as leading researchers in the field of Biotechnology, Engineering and Computer Science. The top researcher and research institution (in each field) is selected based on the number of citations for papers published in the top 20 journals in each field over the past five years (with Google Scholar as the source of the citation data).
After Prof Helen Klaebe’s visit to East China University of Science and Engineering (ECUST) in May 2018 (including meeting with Vice President of ECUST), the Agreement Regarding Collaboration on Master of Philosophy (Materiobiology) Program between ECUST and QUT was signed during Prof Margaret Sheil’s visit in November 2018. ECUST and QUT will collaborate on a QUT Master of Philosophy (Materiobiology) Program (MPhil, IF80) whereby highly competent students from ECUST (in the fourth year of a Bachelor degree) will be selected by ECUST academics to apply for enrolment in QUT’s MPhil Program. If successful, these students will complete the course at QUT for up to twenty-four (24) months. The students enrolled in the MPhil Program in Materiobiology will be co-supervised by academics from QUT and ECUST. Based on the common research interest, QUT supervisors (principal) and ECUST supervisors (associate) are tentatively paired, although the matching of supervisors between QUT and ECUST may subject to change according to the projects. The ACCTERM Team gathered potential QUT supervisors’ information and project outline in July 2019. The research topics have been shared with the ECUST supervisors to form a joint research team. ACCTERM has developed a course structure for the cohort students including the campus tour, lab induction, course milestones, and report guidelines. ACCTERM will assist with student enrolment, and organise student-supervisor meetings.

Prof Yin Xiao and Dr Yinghong Zhou visited ECUST in September 2019. They met with the MPhil supervisors from ECUST on the morning of 23 September, to further discuss the research interests of QUT and ECUST, and the joint research projects. In the afternoon, Prof Xiao and Dr Zhou interviewed 8 ECUST students who were interested in the MPhil program to introduce the program structure, completion requirements, supervisor teams and potential research projects. The students will prepare for the IELTS exam in due course. Dr Yinghong Zhou will liaise with the students and supervisor teams to coordinate the selections of supervisors and research projects.
The 7th ACCTERM Forum will be held on 22-24 November, 2019 at Shanghai Institute of Ceramics, Chinese Academy of Sciences (SICCAS). This Forum will be hosted by SICCAS and Queensland University of Technology (QUT), and co-hosted by East China University of Science and Technology (ECUST) and Shanghai Jiao Tong University (SJTU). The Forum will focus on innovative technologies and commercialisation in the field of tissue engineering and regenerative medicine. It will provide opportunities for scientists to share their latest research findings, and build valuable collaboration. Prof Lyn Griffiths, Prof Cameron Brown, Prof Prasadam Yarlagadda, Prof Yin Xiao, Prof Yuantong Gu, Assoaitae Professor Larisa Haupt, Associate Professor Michael Doran, Associate Professor Travis Klein, and Dr Yinhong Zhou from QUT will attend this meeting.

CHAIRMEN

Honorary Chairmen: Prof Changsheng Liu (ECUST) and Prof Jiang Chang (SICCAS)
Chairmen: Prof Chengtie Wu (SICCAS), Prof Yin Xiao (QUT) and Prof Xinquan Jiang (SJTU)

VENUE

Level 4, Building 4, Shanghai Institute of Ceramics, Chinese Academy of Sciences
1295 Dingxi Road, Shanghai, China
The forthcoming Tissue Engineering & Regenerative Medicine International Society – Asia Pacific Chapter and the 7th Asian Biomaterials Congress will be held in Brisbane, Australia on 14-17 October 2019 at the Brisbane Convention and Exhibition Centre. It has attracted approximately 800 registrations, including more than 200 domestic registrations and over 500 from all over the world. This combined Congress will be attended by researchers, clinicians and industry partners to discuss and share the latest research findings on the development and application of biomaterials, tissue engineering, and regenerative medicine, with the aim of research translation to achieve therapeutic benefits for our ageing society.

**CHAIRMEN**

Prof Yin Xiao (QUT)
Prof Justin Cooper-White (UQ)

**VENUE**

Brisbane Convention & Exhibition Centre (BCEC)
Glenelg St
South Brisbane
QLD 4101

Website: [https://www.termis.org/ap2019](https://www.termis.org/ap2019)
**Recent Joint Grant Applications**

**Scheme:** IHBI Inter-Theme Collaborative Scheme  
**Title:** Investigating the relationship between iron overload disorders and osteoarthritis  
**Researchers:** Gautam Rishi (QUT), Indira Prasadam (QUT), Nathan Subramaniam (QUT), Ross Crawford (QUT)  
**Funding Requested:** $11,000  
**Status:** Successful

**Scheme:** National Health and Medical Research Council Investigator Grant (2020-2025)  
**Title:** Discovering novel metabolic targets for treating osteoarthritis  
**Researchers:** Indira Prasadam (QUT)  
**Funding Granted:** $561,800  
**Status:** Successful

**Scheme:** National Health and Medical Research Council Ideas Grant (2020-2023)  
**Title:** Can macrophages be exploited therapeutically to accelerate bone defect healing in diabetes?  
**Researchers:** Yinhong Zhou (QUT), Yin Xiao (QUT), Jian Q. Feng (Texas A&M University College of Dentistry)  
**Funding Requested:** $552,100  
**Status:** Outcome pending

**Scheme:** National Health and Medical Research Council Ideas Grant (2020-2023)  
**Title:** Multifunctional coatings for endoprosthetic implants preventing infection and stimulating tissue regrowth  
**Researchers:** Krasimir Vasilev (University of South Australia), Yin Xiao (QUT), Kostya (Ken) Ostrikov (QUT)  
**Funding Requested:** $787,420  
**Status:** Outcome pending

**Scheme:** Diabetes Australia Research Program General Grant (2020-2021)  
**Title:** Nanomaterial-mediated macrophage immunomodulation improve bone repair in type 2 diabetes mellitus  
**Researchers:** Yin Xiao (QUT), Lan Xiao (QUT)  
**Funding Requested:** $60,054  
**Status:** Outcome pending

**Scheme:** National Natural Science Foundation of China (2020-2023)  
**Title:** The roles of APT-NPs-dependent artificial blood clot induction in osteoimmunomodulation and bone regeneration  
**Researchers:** Yin Xiao (QUT), Lan Yang (Guangzhou Medical University), Liping Wang, Zhengmao Li, Qing Zhang, Shuang Yang, Ting Yu, Bingpeng Lin, Jun Zha, Kunke Xie  
**Funding Requested:** RMB ¥ 643,000  
**Status:** Successful
Recent Joint Publications

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