PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Science
Supervisors	Principal supervisor: Professor/Dr Jia Meng (XJTLU) Co-supervisor: Professor/Dr Xinghong Luo (JITRI) Co-supervisor: Professor/Dr Chris Sanderson (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Development of a multi-gene detection model for Chinese Luminal-type early breast cancer and its clinical translational study on the predictive value of breast cancer recurrence risk 华人 Luminal 型早期乳腺癌多基因检测模型开发及对乳腺癌复发风险预测价值的临床转化研究
Contact	Please email jia.meng@xjtlu.edu.cn (XJTLU principal supervisor's email address) or luoxinghong@simcere.com with a subject line of the PhD project title

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification) in relevant discipline, such as, bioinformatics, biology, applied mathematics, computer science, data science, etc.

Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above, if the first language is not English. This position is open to all qualified candidates irrespective of nationality.

Degree:

The student will be awarded a PhD degree from the University of Liverpool (UK) upon successful completion of the program.

Funding:

This PhD project is a collaborative research project between XJTLU (http://www.xjtlu.edu.cn) in Suzhou and JITRI (Jiangsu Industrial Technology Research Institute) Institute of Translational Medicine and Innovative Drug Technology in Nanjing. The student will be registered as an XJLTU PhD student but

is expected to carry out the major part of his or her research at the Institute in Nanjing.

The PhD studentship is available for three years subject to satisfactory progress by the student. The award covers tuition fees for three years (currently equivalent to RMB 80,000 per annum). In addition, during the period of undertaking main research at institute in Nanjing, the PhD candidate will be provided with monthly living allowance at a standard RMB 5000 by Institute of Translational Medicine and Innovative Drug Technology.

Project Description:

Breast cancer is the most common malignant tumor in women, and it is also one of the important reasons that threaten the health of the whole country. Optimizing the decision-making of adjuvant treatment after early breast cancer surgery is one of the important parts of tumor precision medicine, which can avoid unnecessary chemotherapy for patients with low-risk breast cancer, and reduce the physical and mental pressure of patients and the socio-economic burden. At present, Western countries have multi-gene testing products used to predict the risk of distant metastasis in breast cancer patients; low-risk patients can be exempted from adjuvant chemotherapy and only require endocrine therapy. However, statistics found that there are significant ethnic differences in breast cancer disease manifestations. In terms of stage I breast cancer, the risk of death among Asians is 0.6 times that of whites. There is uncertainty about whether polygenic predictions derived from the West are applicable. my country is currently in an environment where medical resources are sinking, serious illnesses do not come out of counties and cities, policy-oriented, and medical institutions have uneven diagnosis and treatment levels. Routine adjuvant treatment of early breast cancer is often completed in countylevel and city-level hospitals, over-treatment or under-treatment. Coexist, and our country has a large population base. Therefore, the social and economic benefits of clinical research that optimizes the decision-making for postoperative adjuvant treatment of early breast cancer in my country should not be underestimated. This project aims to develop a genomic model for breast cancer postoperative adjuvant treatment decision-making based on Chinese data, and analyze the impact of the model on the prediction of postoperative recurrence risk of early (I-II) Luminal breast cancer population in mainland China, aiming to further optimize The decision-making of postoperative adjuvant treatment for early-stage Luminal-type female breast cancer patients in China, avoiding over-treatment or under-treatment, not only promotes cross-strait scientific and technological exchanges and cooperation, but is also expected to break the market monopoly of Western countries in this field (Oncotype DX 21-Gene Testing must be sent to the United States for testing) to benefit the people of the country.

乳腺癌是女性最常见的恶性肿瘤，也是威胁国家全民健康的重要原因之一。优化早 期

乳腺癌术后辅助治疗决策作为肿瘤精准医疗的重要部分之一，能够免除低危乳腺癌患者接受不必要的化学治疗、减轻患者身心压力和社会经济负担。目前，西方国家已有多 基因检测产品用于预测乳腺癌患者的远处转移风险；低危患者可免除辅助化疗，仅需内 分泌治疗。但统计发现，乳腺癌疾病表现存在显著的人种差异。以 I 期乳腺癌来看，亚洲 人种死亡风险为白种人的 0.6 倍。源于西方的多基因预测是否适用，存在不确定性。我 国目前处于医疗资源下沉、大病不出县市的政策导向和医疗机构诊疗水平残差不齐的大 环境下，早期乳腺癌常规辅助治疗常常在基层县市级医院完成，过度治疗或治疗不足并 存，而且我国人口基数大。因此，开展优化我国早期乳腺癌术后辅助治疗决策的临床研 究所产生的社会、经济效益不可低估。本项目通过旨在开发基于华人数据的乳腺癌术后 辅助治疗决策基因组模型，并分析模型对我国大陆早期（I-II 期）Luminal 型乳腺癌人群 2 术后复发风险预测的影响，旨在进一步优化我国早期 Luminal 型女性乳腺癌患者的术后 辅助治疗决策，避免过度治疗或治疗不足的现状，不仅促进了两岸科技交流合作，也有 望打破西方国家对该领域技术的市场垄断（Oncotype DX 21-基因检测必须送美国检 测），造福国人。

For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU): Please visit

http://www.xjtlu.edu.cn/en/study-with-us/admissions/entry-requirements

http://www.xjtlu.edu.cn/en/admissions/phd/feesscholarships.html

Supervisor Profile:

Principal Supervisor:

Jia Meng received his bachelor degree in Electrical Engineering from Northwestern Polytechnic University in 2006, and earned his PhD in Electrical Engineering from University of Texas at San Antonio in 2011. He joined Massachusetts Institute of Technology in Feb 2012 as a Bioinformatician and the Supervisor of Bioinformatics Core Facility at Picower Institute for Learning and Memory. Between 2012 and 2014, he served as an Associate Scientist at Broad Institute of MIT and Harvard. He is now an Associate Professor at Department of Biological Sciences, Xi'an Jiaotong-Liverpool University, and has an honorary appointment from Institute of Integrative Biology, University of Liverpool. Jia Meng has previously worked on a wide variety of computational biology projects that aim at a system level understanding of gene regulation and the integration of multiple high-throughput data types and databases with advanced multivariate techniques, such as, Bayesian generative modelling, sparse representation, factorization, nonparametric approaches, etc. He has authored or co-authored more than 100 peer-reviewed publications and is now focusing primarily on epitranscriptome bioinformatics.

JITRI co-supervisor:

Dr. Luo Xinghong, Doctor of Chinese Medicine, Chief Chinese Pharmacist, Adjunct Professor of Hainan Medical College, Distinguished Professor of Nanjing University of Traditional Chinese Medicine, and Adjunct Professor of Chengdu University of Traditional Chinese Medicine. From 1998 to 2000, he was engaged in new drug research at Sichuan Institute of Traditional Chinese Medicine. In 2000, he joined Simcere Pharmaceutical Co., Ltd. and successively served as production manager, quality management manager, new product development manager, company deputy general manager, and president office. Director, General Manager of the Policy Affairs Department and other positions. Since 2018, he has served as the Deputy Director of the Institute of Translational Medicine and Innovative Drug Technology. He has presided over or participated in the research and development of more than ten new drugs including Class I and Class II new drugs, and obtained 7 authorized invention patents. Won 2 first prizes of Provincial Science and Technology Progress, 1 second prize of National Science and Technology Progress, 1 China Patent Excellence Award, published more than 40 academic papers, edited and published more than 30 academic monographs. Currently responsible for the policy affairs related work of Simcere Pharmaceuticals. The main social part-time jobs are: expert in the international exchange expert database of the Ministry of Science and Technology, member of the Pharmaceutical Intellectual Property Research Committee of the Chinese Pharmaceutical Association, member of the National Traditional Chinese Medicine Committee of the People's Medical Publishing House, member of the National Food and Drug Professional Educational Textbook Construction Steering Committee, and National Higher Vocational Education Member of the "Thirteenth Five-Year Plan" Teaching Material Construction Steering Committee for Pharmacy, Food and Drug Majors in Colleges and Universities, Vice Chairman of the New Drug Research and Development Professional Committee of Jiangsu Chinese Medicine Society, Member of the Continuing Education Professional Committee of the Chinese Pharmaceutical Association, Hainan Institute of Health Industry Chief Food Therapy and Health Care Expert of Academic Committee, Deputy Chairman of Expert Committee of Medicinal Alcohol Professional Committee of China Association of Chinese Materia Medica, Vice Chairman of Nanjing Quality Improvement Alliance, Member of Pharmaceutical Engineering Teaching Guidance Subcommittee of Higher Schools Pharmaceutical Teaching Guidance Committee of Ministry of Education.

How to Apply:
Interested applicants are advised to email jia.meng@xjtlu.edu.cn (XJTLU principal supervisor's email address) or luoxinghong@simcere.com the following documents for initial review and assessment (please put the project title in the subject line).

- CV
- Two reference letters with company/university letterhead
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of 6.5 or above)
- Verified school transcripts in both Chinese and English (for international

students, only the English version is required)

- Verified certificates of education qualifications in both Chinese and English (for international students, only the English version is required)
- PDF copy of Master Degree dissertation (or an equivalent writing sample) and examiners reports available