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Recruitment- A PhD position in epidemiology, mathematical modelling and health economic evaluation of vaccine-preventable diseases

The research group of Prof Hongjie Yu in the School of Public Health, Fudan University, China, seeks to recruit a PhD student to work on epidemiology, mathematical modelling and health economic evaluation of vaccine-preventable diseases. This position will be funded by a prestigious Global Health Research award from the United Kingdom's National Institute for Health Research (NIHR), as well as Prof Yu's grants at Fudan University. This position is co-supervised by Prof Hongjie Yu at Fudan University, and Profs Mark Jit, Marc Baguelin and other key academics at the London School of Hygiene & Tropical Medicine (LSHTM). The PhD student will be registered at LSHTM, and will be mostly based in LSHTM, but will need to spend part of their time at Fudan University (with travel expenses provided). The student will have a unique opportunity to interact with academics and public health professionals in both China and the United Kingdom.

Institutional summary

The research group of Prof Hongjie Yu in the School of Public Health, Fudan University, Shanghai, China

Professor Hongjie Yu is a doctoral supervisor in the School of Public Health of Fudan University. He received the National Science Fund for Distinguished Young Scholars in 2015. He was also elected as one of Changjiang Scholars, Ministry of Education of the People's Republic of China. He is a member of The WHO Advisory Group of the Global Action Plan (GAP AG) for Influenza Vaccines, member of the WHO Strategic Advisory Group of Experts on Immunization (SAGE) Working Group on influenza vaccines and immunization.

Prof Yu has decades of experiences in multidisciplinary researches in infectious diseases, including the transmission dynamics, epidemiological parameters, disease burden, evaluation of interventions, as well as vaccine efficacy, effectiveness, safety, and cost effectiveness for emerging and re-emerging infectious diseases with public health importance, e.g. Ebola, novel animal influenza virus infections, Hand, Foot, and Mouth Disease, Dengue, Rabies, seasonal influenza, pneumococcal, and Hib diseases. He has published over 135 articles in international peer-review journals, including 5 papers published in The Lancet, 2 in BMJ, 4 in PLoS Medicine, 4 in Lancet Infectious Disease,

and 1 in Nature Communications as the first author or senior corresponding author.

The research team led by Prof Yu is an interdisciplinary group tied closely to infectious diseases with great public health importance, and focuses on four research areas: spatial epidemiology; dynamics, evolution and control of emerging/re-emerging infectious diseases; clinical epidemiology; and vaccines. In the field of vaccines, the research team aims to undertake targeted, policy-focused research including estimates of disease burden, test of vaccines for safety, immunogenicity, efficacy, and effectiveness, evaluation of cost effectiveness, demand forecasting, and budget impact analysis to accelerate new vaccine introduction into Chinese National Immunization Program and to inform evidence-based vaccine policy making.

For more information on Prof Hongjie Yu, please see <http://sph.fudan.edu.cn/t/174>

London School of Hygiene & Tropical Medicine, London, UK

The London School of Hygiene & Tropical Medicine (LSHTM) is a world-leading centre for research and postgraduate education in public and global health. The School's multidisciplinary expertise includes clinicians, epidemiologists, statisticians, social scientists, molecular biologists and immunologists, and work with partners worldwide to support the development of teaching and research capacity.

The School's education programmes have grown to more than 1,000 London-based Master's and Research students, 2,900 studying Master's by distance learning and 1,000 on short courses and continuous professional development. The School has also launched a series of free online courses, and more than 15,000 people registered on the first of these, Ebola in context. Staff, students and alumni work in more than 150 countries in government, academia, international agencies and health services.

The School is highly ranked in various university league tables. It was named the world's leading research-focused graduate school in the Times Higher Education World Rankings in 2013, and was the Times Higher Education University of the Year in 2016. In 2014, it was ranked in the top 10 universities in the world for citation rate by the new EU-supported U-Multirank database, fourth in the world for impact in medical sciences by the Leiden Ranking and third in the world for social science and public health in the US News Best Global Universities Ranking. According to the results of the UK government's Research Excellence Framework, published in December 2014, the School was ranked second overall (after the Institute for Cancer Research) on the key measure of impact.

For more information on LSHTM, please see <http://www.lshtm.ac.uk/>.

Position overview

- ***Evaluating the health and economic impact of seasonal influenza vaccination in China***

Brief description of project: Unlike many middle and high-income countries, China does not provide nationwide free seasonal influenza vaccination in despite of large health and economic burden caused by influenza infection annually.

Although free vaccinations are provided via government finance or medical insurance in a few regions, vaccination coverage is extremely low in China (around 2% in general population). Key questions include: Is there a need for a national vaccination programme in China? What effect might this have on the health of the population and on the Chinese economy? And what evidence might we need to help make a decision to implement such a programme?

The PhD will apply complex transmission dynamic models to 1) model transmission and potential impact of the seasonal influenza vaccine, 2) estimate the budget impact and cost-effectiveness of proposed national vaccination strategies, and 3) conduct extended cost-effectiveness analyses to examine the impact of public funding of vaccines on household expenditures and catastrophic payments in different socioeconomic groups and regions.

Period

3-4 years

Prior educational requirements for a student undertaking this project

- Postgraduate degree from a good university with a strong quantitative component, such as applied mathematics, computer science, biostatistics, epidemiology or engineering science. Experience in applying quantitative skills to infectious diseases modelling is advantageous. Or,
- Undergraduate degree from a good university with a strong quantitative component, such as applied mathematics, computer science, biostatistics, epidemiology or engineering science, and experience/interest in applying quantitative skills to infectious diseases modelling. The students only have bachelors' degree should go through 2-3 years master training and then further apply for PhD training.

English language requirements

Candidates are expected to have a strong command of both spoken and written English. This is essential in order to obtain a visa to study in the UK, and to be accepted into LSHTM's PhD programme.

The formal English language requirements for entry to LSHTM are available here:

https://www.lshtm.ac.uk/sites/default/files/2017-02/english_language_requirements.pdf

In addition, the language proficiency of the students will be assessed through telephone interviews, which will be conducted in English.

Skills we expect a student to develop/acquire whilst pursuing this project

- Mathematical modelling
- Model fitting
- Vaccinology
- Infectious diseases epidemiology

- Health economic evaluation

Applicants who are highly motivated, ambitious, enthusiastic and have particular interest in modelling infectious diseases are especially preferred. Additionally, the applicants' native language should be Chinese, or the applicants should be able to speak, read and write Chinese to the level of a native speaker.

The PhD is jointly funded by Global Health Research initiative of the United Kingdom's National Institute for Health Research, and by Fudan University. The student is required to commit to returning China at the end of his/her study to work with Prof Yu's research team.

How to apply

Review of applications will be on a rolling basis and continue until the position is filled. Submit the following, with the subject line of "Influenza modelling PhD application" to qianmengcen@fudan.edu.cn and yangjuan@fudan.edu.cn.

- Curriculum vitae
- A one-page cover letter explaining why you are interested in this position and what you expect to get out of it

The deadline for applications is Nov. 6, 2017. Shortlisted candidates will be invited for interview in mid November 2017.