

Three APO Research Projects Launched in April

With a signed contract between the World Health Organization (WHO) Regional Office for South-East Asia and Duke Kunshan University approving the budget and proposed activities, work on three research projects will commence. Duke Kunshan University was selected as one of three Health Policy and System Research Hubs by the WHO Asia Pacific Observatory (APO) on Health Systems and Policies in 2014. The research hub, led by Prof. Shenglan Tang, director of the Global Health Research Center, focuses on comparative country studies on health systems development.

The three projects aim to address key challenges facing health systems in the Asia Pacific region. The project led by

Prof. Abu Abdullah investigates the strategies, approaches and practices to engage community health workers (CHW) in combating non-communicable chronic diseases (NCD) in Asia. His project will review the operation of CHW-led programs and explore the advantages and disadvantages of building NCD care and control within these types of models. Prof. Lijing L. Yan is leading a project assessing an evidence-based, simplified cardiovascular management program for primary healthcare (PHC) in low-resource settings and on exploring the feasibility of promoting similar PHC services in other resource-limited settings in Asia. The third project, co-led by Prof. Xiaoyun Liu from Peking University and Prof. Shenglan Tang

synthesizes the experiences and lessons in attracting and retaining rural PHC workers in Asia-Pacific countries, and will develop policy recommendations for strengthening healthcare human resources in rural areas.

The three research projects were launched in April, and will last for 18-30 months. The ongoing research projects focus on major southeast Asian countries like India, Vietnam, Laos, Bangladesh and Cambodia, in addition to China. These research projects will contribute to the development of evidence-based health policies and strengthen national and regional capacities in health systems and policy research.

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New Grant to Study Emerging Adenoviruses Among Elderly Patients



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RECOVER Study Entered into New Phase



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Presentation at the International Meeting of the Society for Applied Anthropology



The **Emerging Infectious Diseases research program** headed by Prof. Gregory C. Gray involves epidemiological and microbiology studies of emerging diseases that impact humans and animals. The research and training activities will use the One Health approach that engages human health, animal health and environmental health professionals.

Research Update: New Research Grant Won to Study Emerging Adenoviruses



▲ Dr. Yuntao Liu (left) and Prof. Gray (middle)

Dr. Yuntao Liu from the Guangdong Provincial Hospital of Chinese Medicine and Prof. Greg Gray from Duke Kunshan recently won a grant to conduct surveillance for emerging adenoviruses among elderly patients in Guangdong. Adenoviruses have caused a number of recent outbreaks in China and some patients have suffered severe disease and Prof. Gray has previously conducted national surveillance for adenoviruses in the USA under a NIH R01 grant. His laboratory teams at Duke and Duke-NUS have developed new algorithms to detect novel viruses. This new technology will be used in this project to better understand adenovirus infections with a goal to develop future interventions (possibly with Chinese traditional medicines) to reduce their morbidity.

Emerging Infectious Diseases Laboratory Planned

On April 14 2016, Duke Kunshan post-doctoral fellow Dr. Qianli Wang gave a seminar on her One Health research study on avian influenza in China's live bird markets and potentially expanding this work to Duke Kunshan. She and Prof. Gray hope to outfit an One Health Laboratory at Duke Kunshan later this fall. Although both are new to Duke Kunshan, they already have three funded projects and a number of pilot projects in progress. They are working with leading Chinese researchers at the Beijing Institute of Microbiology and Epidemiology, Chinese Academy of Science, Nanjing Agriculture University, Guangdong Provincial Hospital of Chinese Medicine, multiple Chinese Provincial CDCs, Duke-NUS Singapore, and Duke University. This One Health laboratory would afford Duke Kunshan students the opportunity to learn modern molecular techniques to detect and characterize viruses. Following Dr. Wang's seminar, eight Duke Kunshan students expressed a strong desire to learn such molecular techniques.

Personnel Update: Emerging Infectious Diseases Program Welcomes a New Post Doctor

Dr. Qianli Wang will join Duke Kunshan as a full time postdoctoral fellow of Global Health Research Center in July 2016. After receiving several months of training at Duke-NUS in Singapore, she will begin working at Duke Kunshan in November. Dr. Wang earned her PhD in epidemiology from Fudan University in 2014 and has

been working with Prof. George Gao from the Institute of Microbiology, Chinese Academy of Science in Beijing for two years as a post-doctoral fellow. Dr. Wang has won a Natural Science Foundation of China grant to study avian influenza at live bird markets in six provinces in China.



▲ Dr. Wang is delivering a seminar

The **Non-Communicable Chronic Diseases** (NCDs) research program headed by Prof. Lijing L. Yan focuses on heart disease, stroke, hypertension and diabetes and common risk factors for these conditions including tobacco use, unhealthy diet, inadequate physical activity, overweight/obesity and mental illness.

Project Update: RECOVER Study Launches and Begins Recruiting Patients in Dianjiang, Chongqing



The RECOVER study, funded by Amsterdam Health and Technology Institute (AHTI) under the Living Laboratory project, was launched in October 2015 in Dianjiang, Chongqing. The study is a two-year randomized trial on rehabilitation through caregiver-delivered nurse-organized service programs for disabled stroke (RECOVER) patients in rural China.

Since its launch, two trainings have been conducted among nurses: rehabilitation skills training among intervention nurses in October 2015 and protocol training on study

implementation procedures among intervention and evaluation nurses in December 2015. With the aim of recruiting 60 patients, the six-month patient recruitment started in January 2016 and 33 patients have been recruited by mid-April. Additionally, the research team conducted its first process evaluation this past March. The follow-up period of this study will last for six months and will be completed by the end of 2016. In addition to Dianjiang, the RECOVER study is also being implemented in Liaoning Province and Ningxia Hui Autonomous Region.

Personnel Update: Dr. Chaoyun Li and Xiaolin Xu Taking on New Roles, NCD Welcomes New Interns

Chaoyun Li, a post-doctoral research fellow in the NCD group, now has a new role as the Associate Manager of Health Economics and Outcome Research (HEOR) at Sanofi-Aventis. During his time at the Global Health Research Center, he assisted Prof. Lijing L. Yan in drafting multiple proposals and played an important role in the longitudinal study of aging and health. Xiaolin Xu, a research assistant in NCD group, is pursuing his PhD at the School of Public Health at the University of Queensland with a full scholarship sponsored by the Australian government. He participated in two projects: Surveillance for Use of Healthcare Services among Residents in Jiangsu Province and Major Infectious Diseases Prevention and Control study at the GHRC. We wish them the best in their new endeavors.

The NCD group welcomes two interns: Yechu Hua (senior student at Shanghai

Jiao Tong University majoring in Economics) and Liwei Tan (senior student at Nanjing Medical University majoring in preventative medicine). They are assisting in several research projects in the NCD group during their four-month internship.



▲ Chaoyun Li (second from left), Liwei Tan (forth from right), Xiaolin Xu (third from right), Yechu Hua (first from right)

The **Environmental Health** research program led by Prof. Jim Zhang examines environmental health hazards, their relationship with other issues affecting human health, and proposes approaches to reduce or eliminate these hazards.

Project Update: Beijing's Polluted Air Could Increase the Risk of Obesity and Metabolic Syndrome

Prof. Zhang recently published a paper titled "Chronic exposure to air pollution particles increases the risk of obesity and metabolic syndrome: findings from a natural experiment in Beijing" in the Federation of American Societies for Experimental Biology (FASEB) journal. Epidemiologic evidence suggests that air pollution is a risk factor for

childhood obesity. However, so far there is no direct support for the link between air pollution and non-diet-induced weight gain. To provide the evidence, a rodent study was conducted. Beijing air was collected and rats were exposed to the unfiltered and filtered air for 14 days. Results suggest that TLR2/4-dependent

inflammatory activation and lipid oxidation in the lungs can spill over systemically, leading to metabolic dysfunction and weight gain. The study findings were widely reported in media outlets including the Los Angeles Times, Medical Daily, Daily Mail and German NPR.

Dissemination and Advocacy: Changsha Indoor Air Intervention Study Results Presented at the NC BREATHE Conference

On April 7-8, Prof. Zhang participated in the NC BREATHE Annual Conference by presenting a poster on results from the

Changsha study. Experts in the field of environmental science and air pollution came together from several academic

institutions to discuss air quality changes, air pollution, human health, and the economic value of clean air.

CONTRIBUTING TO HEALTH CARE REFORM

The **Health Policy and Systems** (HPS) research program led by Prof. Chee-Ruey Hsieh focuses on monitoring and evaluating the progress of the health reforms being enacted, with the goal of informing policy decisions.

Project Update: China-Gates Project Phase II Completed



▲ Expert workshop for the final evaluation of Gates TB project phase II, March, 2016

The second phase of the China-Gates TB project was completed this April, and the final evaluation report has been submitted to the Gates Foundation and the China National Health and Family Planning Commission (NHFPC). Leaders and experts from NHFPC, China CDC, the Gates Foundation and the United Program for Appropriate Technology in

Health (PATH), Duke University, Sussex University, Nanjing Medical University, Huazhong University of Science and Technology and Xi'an Jiaotong University gathered in Beijing in March to discuss the final report, focusing on experiences and lessons learned from the project.

In the evaluation report, experts strongly endorsed the achievements of this project in improving TB patient detection and treatment quality, mobilizing financial resources to increase patients' medical and social security level, and strengthening the overall TB prevention and control system. Challenges concerning the future development and

implementation of the case-based payment and further reduction of patients' financial burden in healthcare seeking were also identified and addressed. In the end, five major policy recommendations on system strengthening, healthcare financing, promoting new diagnostic tools and improving information systems were proposed, which will have potentially significant impacts on TB policy making and implementation in China.

Phase III of the TB control project in China funded by the Gates Foundation is currently underway, applying learnings from Phase II, it is expected to be launched this summer. The GHRC at Duke Kunshan will continue to play an important role by collaborating with health policy-makers and practitioners in China.

Dissemination and Advocacy: Intersections of Medical Anthropology in China and Southeast Asia: Projects from Duke Kunshan University at the International Meeting of the Society for Applied Anthropology

Professors Alba Amaya-Burns (Duke Kunshan and DGHI), and Allan Burns (Duke Kunshan), along with MSc Global Health graduate student Anna Zhu, and undergraduate medical anthropology students Nick Peoples, Vianna Quach, Wannu Tan, and Sarah Paschal represented Duke Kunshan University Global Health in Vancouver, Canada during March 28 and April 1.

Their scientific papers were the result of a research carried out during the academic year and through summer internships in China and Thailand, working with Prof. Lijing L. Yan, and Drs. Alba Amaya-Burns and Allan Burns.

Students had the opportunity to share their research, network with other global health professionals and learn about applied research in health, education, and development. A highlight of the conference was meeting Dr. Paul Farmer, Director of Global Health and Social Medicine at Harvard University, member of the DGHI Board of Advisors, and Duke alumnus, who received the prestigious Malinowski Award at the conference.

As graduate student Anna Zhu said about the meeting, "Attending this international conference was a milestone in my graduate education. I realized that the applied research you do may make a difference in others' lives."



▲ Duke Kunshan Global Health students presenting their research at the SFAA conference, Vancouver, Canada

Exchange and Visiting:

The project "A Study of Policies on Management of Live Poultry Markets and Prevention and Control of Avian Flu in Jiangsu Province," is about to enter the implementation phase. This project is a collaboration between Prof.

Chee-Ruey Hsieh, Prof. Keith Dear and Prof. Greg Gray from Duke Kunshan University and the Jiangsu Provincial Center for Disease Control and Prevention (CDC). It will be conducted in Gusu District, Xiangcheng District in

Suzhou City and Qinhuai District, Gaochun County in Nanjing City. Research assistant Zhan Wang, Niying Li and intern Mengsi Jiang have trained investigators on survey procedures in Suzhou CDC and Nanjing CDC.



▲ Changjun Bao (fourth from the right), Xiang Huo from Jiangsu CDC (third from the right), Bulai Lu from Suzhou CDC (fifth from the right), together with Prof. Chee-Ruey Hsieh (fourth from the left) and GHRC researchers

The Global Health Seminar Series features presentations on global health research, policy, and practice and is organized by the GHRC for students and faculty members of Duke Kunshan University and the general public. There are 2-3 seminars per month and each seminar is 60-90 minutes long. Recent lecturers include:



Prof. Peilong Liu

Jan 28th, Peking University, *Priorities on global health agenda and China's engagement in global health*



Prof. Biao Xu

Feb 2nd, Fudan University, *Epidemiology and control of multidrug-resistant tuberculosis (MDR-TB) – China case*



Prof. Jianwei Xuan

Feb 18th, Sun Yat-sen University, *Medical big data analysis to support evidence based medicine and precision medicine*



Dr. Qian Yang

Feb 22nd, Zhejiang University, *Existential Psychological Explanation on Chinese Violence on Physicians*



Prof. Ka He

Mar 8th, Indiana University, *The mysterious art of research idea generation*



Dr. Vanessa Harris

Mar 15th Global Network of Living Labs, *The bacterial intestinal microbiota and oral vaccine immunogenicity in resource-poor settings*



Prof. Jeff More

Mar 17th, Duke University, *UN High Commission on Access to Medicines: Incentives, Agreements and Stockpiling to Accelerate the Response to Infectious Disease Outbreaks*



Prof. Qingyue Meng

Apr 12th, Peking University, *The Impact of payment reforms on quality and efficiency in China*

Selected Publications

(Feb - Apr 2016)

Zhao, J., Booth, H., **Dear, K.**, & Tu, E. J. C. (2016). Cardiovascular mortality sex differentials in selected East Asian and Western populations. *Journal of Epidemiology and Community Health*, jech-2015.

Vardoulakis, S., **Dear, K.**, & Wilkinson, P. (2016). Challenges and Opportunities for Urban Environmental Health and Sustainability: the HEALTHY-POLIS initiative. *Environmental Health*, 15(1), 1.

Ma, M. J., Chen, S. H., Wang, G. L., Zhao, T., Qian, Y. H., Wu, M. N., ... **Gray, C.G** & Cao, W. C. (2016). Novel Highly Pathogenic Avian H5 Influenza A Viruses in Live Poultry Markets, Wuxi City, China, 2013 - 2014. In *Open Forum Infectious Diseases* (p. ofw054). Oxford University Press.

Qin, X., Wang, S., & **Hsieh, C. R.** (2016). The prevalence of depression and depressive symptoms among adults in China: Estimation based on a National Household Survey. *China Economic Review*.

Zhang, H., Ehiri, J., Yang, H., **Tang, S.**, & Li, Y. (2016). Impact of Community-Based DOT on Tuberculosis Treatment Outcomes: A Systematic Review and Meta-Analysis. *PLoS one*, 11(2), e0147744.

Jiang, H., Qian, X., Chen, L., Li, J., Escobar, E., Story, M., & **Tang, S.** (2016) Towards universal access to skilled birth attendance: the

process of transforming the role of traditional birth attendants in Rural China. *BMC Pregnancy & Childbirth*. 21;16(1):58.

Yan, LL., Li, C., Chen, J., Miranda, J. J., Luo, R., Bettger, J., ... & Wu, Y. (2016). Prevention, management, and rehabilitation of stroke in low-and middle-income countries. *eNeurologicalSci*, 2, 21-30.

Carrillo-Larco, R. M., Miranda, J. J., Li, X., Cui, C., Xu, X., Ali, M., ... & **Yan LL (Co-corresponding author)**. (2016). Prevalence of Pragmatically Defined High CV Risk and its Correlates in LMIC: A Report From 10 LMIC Areas in Africa, Asia, and South America. *Global Heart*, 11(1), 27-36.

Wei, Y., **Zhang, J. J.**, Li, Z., Gow, A., Chung, K. F., Hu, M., ... & Li, X. (2016). Chronic exposure to air pollution particles increases the risk of obesity and metabolic syndrome: findings from a natural experiment in Beijing. *The FASEB Journal*, fj-201500142.

Botelho, D. J., Leo, B. F., Massa, C. B., Sarkar, S., Tetley, T. D., Chung, K. F., **Zhang, J.J.**, ... & Schwander, S. K. (2015). Low-dose AgNPs reduce lung mechanical function and innate immune defense in the absence of cellular toxicity. *Nanotoxicology*, 1-10.

Master of Science in Global Health at DKU

First Graduate Students from Global Health Program

On May 4, 2016, Duke Kunshan University held a commencement ceremony for its first ever class graduating from the MSc in Global Health. The event was hosted by Vice Chancellor for Academic Affairs Professor Haiyan Gao. The commencement address was given by Professor James Dobbins, Duke University's Associate Vice Provost and Director of the Office of Duke Kunshan University. Duke Kunshan Chancellor Liu Jingnan and Executive Vice Chancellor Denis Simon were also present, and briefly addressed the graduates.

Four Global Health students graduated.

Gu Wanbing was present to receive her hood and diploma in person. Loh Hweemin, Ginny DeLaCruz and Kennedy Opondo were all overseas pursuing the next step in their careers, and graduated in absentia. The ceremony took place, in perfect weather, in the Water Pavilion, a spectacular setting in the center of Duke Kunshan's ornamental lake. A reception

followed for the new graduates and their families and guests.



▲ Global Health student: Wanbing Gu (second from left)

Varied, Innovative Teaching Methods



▲ Prof. Jeff Moe showing on the screen to address students

During spring semester, the Global Health program included three courses that were delivered by distance learning, using three different models. This was made possible by the high-tech teaching facilities of the Duke and Duke Kunshan campuses, which permit full class participation at both

locations, including discussion and student presentations as well as lecture delivery.

The core course, "Health Systems in Developing Countries," was delivered by Prof. Jeffrey Moe through live video lectures, from Duke University in Durham, USA. Because the two campuses had mid-semester breaks at different time, Prof. Moe was able to come to Kunshan during the Duke break

for one week of daily face-to-face teaching. This was a Duke Kunshan-only course.

The other two courses were given to combined classes of Duke and Duke Kunshan students. Professor Shenglan

Tang's course "Implementation Science" was scheduled in the evening, Duke time which is the early morning in Kunshan, allowing students on both campuses to attend class "together" across 12 time zones. The third distance course "Infectious Disease Epidemiology" was given by a team of three professors in three countries, to a joint class in two other countries. Duke Global Health professors Matthew Rubach (in Tanzania), Gayani Tillekeratne (in Sri Lanka) and Wendy O'Meara (in Kenya) taught a combined class of students from Duke and Duke Kunshan. The technology supported a combination of recorded lectures and guest lectures, online office hours, and an interactive discussion session each week including student presentations.

For more details about the Master of Science in Global Health program, please contact Chris Wen, chris.wen@duke.edu or visit www.dukekunshan.edu.cn/globalhealth



CCUGH Delegation Presented at the 7th Annual Global Health Conference

Led by the chair institution, Duke Kunshan University, the Chinese Consortium of Universities for Global Health (CCUGH) was invited to hold a 90-minute concurrent session on the 7th Annual Global Health Conference hosted by the Consortium of Universities for Global Health (CUGH) on April 10th in San Francisco. The conference attracted more than 1650 delegates from 50 countries, among which 17 participants from 6 Chinese universities attended the conference.

The CCUGH session was titled as "Advancing Global Health in China and Beyond (by Working Together): Opportunities and Challenges".

Moderated by Prof. Shenglan Tang, Chair of the CCUGH and Director of the Global Health Research Center at Duke Kunshan, the session briefly introduced the development of the CCUGH in recent years and offered three presentations. The session attracted an interested audience who actively interacted with the panel during the Q&A part.

In addition to the session, CCUGH leadership also met with CUGH leadership and CARTA (Consortium for Advanced Research & Training in Africa) leadership to foster future collaborations in global health education and research.

Two research assistants from the Global

Health Research Center, Duke Kunshan University also presented at the conference. Ms. Enying Gong gave an oral presentation titled, "Are medical students confident about preventive counselling to prevent non-communicable diseases? A cross-sectional survey of medical students in China, the USA, and Australia". The abstract was published in the Lancet Global Health journal. Ms. Shu Chen did a poster presentation based on the TAKEmeds pilot study discussing the development of the mobile phone-based intervention to improve adherence to secondary prevention of coronary heart disease.



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