



# The 1<sup>st</sup> Bilateral Conference

## ZJU-Yale Collaborative Research Center

### for Environment-related Diseases

June 4-8, 2018  
Zijingang Campus  
Zhejiang University, Hangzhou

Chair: Xu, Zhengping  
Co-chair: Vasiliou, Vasilis

## Conference Program

### June 5th Tuesday

Introduction talks 3rd Floor, Qiushi Hall Moderator: Dr. Xu, Zhengping (ZJU)	
8:30 am - 8:40 am	Dr. Xu, Zhengping (ZJU) Welcome/ Introduction Comments
8:40 am - 8:50 am	Dr. Vasiliou, Vasilis (Yale) Introduction: Systems Approaches for Public Health
8:50 am - 8:55 am	University representative (ZJU) Opening speech
8:55 am - 9:15 am	Group photo

Academic Reports: Session I 3rd Floor, Qiushi Hall Moderator: Dr. Zhao, Lu (ZJU)	
9:15 am - 9:35 am	The role of angiogenin in IBD and colorectal cancer Dr. Xu, Zhengping (ZJU)
9:35 am - 9:55 am	Oxidative Stress: From environmentally-related disease to novel approaches to fight cancer. Dr. Vasiliou, Vasilis (Yale)
9:55 am - 10:15 am	Genomic Evolution of Animal Sex Chromosomes Dr. Zhou, Qi (ZJU)
10:15 am- 10:35 am	A molecular epidemiological perspective of circadian factors in human cancer Dr. Zhu, Yong (Yale)
10:35 am- 10:50 am	Coffee Break
Moderator: Dr. Zhu, Yong (Yale)	
10:50 am- 11:10 am	Light environment and visual health Dr. Shen, Ye (ZJU)
11:10 am- 11:30 am	Health-related quality of life of community thyroid cancer survivors in Hangzhou, China Dr. Wang, Hongmei (ZJU)
11:30 am- 11:50 am	Understanding the epidemic of thyroid cancer Dr. Zhang, Yawei (Yale)
11:50 am- 12:10 pm	Antibiotics resistance in One Health Dr. Hesketh, Therese (ZJU)
12:10 pm- 12:30 pm	Water Quality and Human Health Impacts of Unconventional Oil and Gas Development Dr. Deziel, Nicole (Yale)
Workshop of collaborative educational programs Rm205, Medical School Moderator: Dr. Chen, Guangdi (ZJU)	
2:00 pm - 2:30 pm	Undergraduate programs
2:30 pm - 3:15 pm	Q&A session
3:15 pm - 3:45 pm	Graduate programs
3:45 pm - 4:30 pm	Q&A session
4:30 pm - 5:30 pm	Joint Panel Meeting I: Discussion of center policies (Moderator: Dr. Zhao, Lu Rm701,Medical School)

### June 6th Wednesday

Academic Reports: Session II 3rd Floor, Qiushi Hall Moderator: Dr. Chen, Guangdi (ZJU)	
8:30 am - 8:50 am	The metabolic heterogeneity in subjects with obesity and normal weight Dr. Zhu, Yimin (ZJU)
8:50 am - 9:10 am	The impact of vitamin D and other environmental exposures on female fertility and early pregnancy Dr. Jukic, Anne Marie (Yale)
9:10 am - 9:30 am	Genetic polymorphisms and plasma miRNA changes in colorectal cancer Dr. Jin, Mingjuan (ZJU)
9:30 am - 9:50 am	Ambient air pollution and population health in Ningbo, China Dr. Wang, Jianbing (ZJU)
9:50 am - 10:10 am	Redox biology in alcohol related liver injury Dr. Chen, Ying (Yale)
10:10 am -10:30 am	Bioinformatics approaches for big omics data analysis Dr. Chen, Ming (ZJU)
10:30 am -10:45 am	Coffee Break
Moderator:Dr. Jukic, Anne Marie (Yale)	
10:45 am -11:05 am	Investigation of novel RNA epigenetic mechanisms: m6A RNA-mediated DNA damage response Dr. Hsu, Chih-Hung (ZJU)
11:05 am -11:25 am	Identifying the Molecular Basis of Endocrine Disrupting Chemicals Dr. Shannon Whirlledge (Yale)
11:25 am -11:45 am	Hangzhou Birth Cohort: A Pilot Study Dr. Chen, Guangdi (ZJU)
11:45 am -12:05 pm	HIV prevention intervention trial among Chinese men who have sex with men Dr. Qian, Han-zhu(Yale)
12:05 pm- 12:25 pm	Zinc and early vertebrate development Dr. Zhao, Lu (ZJU)

### June 7th Thursday

8:30 am - 11:30 am	Visit Hangzhou Center for Disease Control and Prevention
1:30 pm	Visit Jiangcun Community Health Center, Xihu District



## ZJU-Yale Collaborative Research Center First Bilateral Meeting (2018)

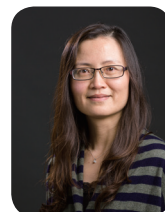
Date: June 4th-8th, 2018

Location: School of Medicine, Zhejiang University, Hangzhou

### Brief Introduction of Yale University representatives:



**Vasilis Vasiliou**, is the Susan Dwight Bliss Professor of Epidemiology and Chair of the Department of Environmental Health Sciences in the School of Public Health at Yale University. He received his BSc in Chemistry (1983) and PhD in Biochemical Pharmacology (1988) from the University of Ioannina, Greece. He then trained in gene-environment interactions, molecular toxicology and pharmacogenetics at the Department of Environmental Health in the College of Medicine at the University of Cincinnati (1991-1995). In 1996, he joined the faculty of the University of Colorado School of Pharmacy where he rose through the ranks to become Professor and Director of the Toxicology Graduate Program. In 2008, he became a Professor of Ophthalmology in the University of Colorado School of Medicine. In July 2014, he joined the faculty of Yale University in his new position. Dr. Vasiliou has established an internationally-recognized research program that has been continuously funded by the National Eye Institute (NEI/NIH) and National Institute for Alcohol Abuse and Alcoholism (NIAAA/NIH) since 1997. His research interests include mechanisms of cellular responses to environmental stress, gene-environment interactions, environmentally-induced disease, and pharmacogenetics. His research focuses on the role of drug metabolism (aldehyde dehydrogenases and cytochrome P-450s) and antioxidants (such as glutathione and catalase) in diseases, including cancer, obesity, diabetes, gout and microphthalmia. Dr. Vasiliou has established an impressive mass spectrometry facility at Yale University that has untargeted, targeted and tissue imaging metabolomics. He has published over 180 papers and edited two books on Alcohol and Cancer. He has trained over twenty doctoral and post-doctoral students and mentored more than ten junior faculty. Dr. Vasiliou is the editor of Human Genomics and serves on the editorial boards of several toxicology, environmental and visual sciences journals. As Chair of the Department of Environmental Health Sciences, he has contributed to the development of the Yale Climate Change and Health Initiative, initiated a Yale Research and Training Program for water contaminants, and currently is working on establishing a Center for Environmental Cardiology. He has expanded the department through important faculty recruitments with expertise in the areas of developmental origins of health and disease, environmental epidemiology, toxicology, and metabolomics.



**Yawei Zhang**, MD, PhD, MPH, Section Chief and Associate Professor Tenure; Chief, Section of Surgical Outcomes and Epidemiology, Department of Surgery. Dr. Zhang's research focuses on cancer prevention and prognosis, early life exposures, and surgical outcomes. In particular, she has been pioneering the causes of increasing trends of thyroid cancer observed worldwide. As thyroid cancer is the fifth most common cancer among women in the United States, and factors that are responsible for this increasing trend are largely unknown. She is currently leading research activities in these areas as the PI of a population-based case-control study of thyroid cancer in Connecticut and a large nested case-control study of thyroid cancer in the Department of Defense Serum Repository (DoDSR) cohort. Dr. Zhang has been studying a wide array of environmental exposures, lifestyle factors and gene-environment interaction in the etiology and prognosis of non-Hodgkin lymphoma. She plays a major role in the International Lymphoma Epidemiology Consortium (InterLymph), and her research on hair dye use served as key evidence for IARC Monograph. She has also been studying environment factors and gene-environment interactions for multiple myeloma and cancers of the testes, pancreas, lung, liver, breast, and bladder. Currently, she is leading a large project developing novel approaches of monitoring and controlling major cancer risk factors in China. Dr. Zhang became interested in adverse pregnancy outcomes because the fetal origin hypothesis suggests that growth and developmental delays in utero may influence not only childhood mortality and morbidity but also the risk of diseases in adulthood including diabetes, cardiovascular diseases and cancer. Dr. Zhang's birth cohort studies in Lanzhou and Taiyuan, China focus on investigating a wide range of environmental and lifestyle factors, genetic and epigenetic changes, gene-gene and gene-environment interactions, and risk of adverse birth outcomes and maternal complications. Dr. Zhang is bringing in her expertise to surgical outcome research in the Department of Surgery to develop a world-class frontier surgical outcome research program through cutting-edge evidence-based surgical outcome research projects, surgical outcome educational program, and international collaborations.



**Yong Zhu**, PhD, is an Associate Professor at Yale University School of Public Health and Assistant Director of Yale Cancer Center for Global Cancer Epidemiology. Dr. Zhu's research interests are oriented towards the use of the molecular epidemiological approach in the study of genetic susceptibility biomarkers and their interactions with environmental exposures in human disease development. Dr. Zhu has been developing and validating novel phenotypic and genotypic assays and biomarkers for several cancer types, including non-Hodgkin's Lymphoma, breast, bladder, lung and prostate cancer. By utilizing various techniques in genetics, epigenetics, cytogenetics, cell biology, and computational biology, his studies have identified biomarkers that can characterize inherited predisposition and cellular response to environmental factors. Current research focuses on studying the role of two transcriptional factors, circadian genes and small noncoding RNAs, in tumorigenesis.





**Nicole Deziel**, PhD, MHS, Assistant Professor of Epidemiology (Environmental Health Sciences). Dr. Deziel's has expertise in exposure science and interdisciplinary training in epidemiology, biostatistics, and industrial hygiene. Her research involves applying existing and advanced statistical models, biomonitoring techniques, and environmental measurements to provide comprehensive and quantitative assessments of exposure to combinations of traditional and emerging environmental contaminants. Her exposure assessment strategies aim to reduce exposure misclassification for epidemiologic studies, advancing understanding of relationships between of exposure to environmental chemicals and risk of cancer and other adverse health outcomes. Dr. Deziel serves as Principal Investigator (PI) of a study funded by the American Cancer Society investigating co-exposures to multiple flame retardants, pesticides, and other persistent pollutants and thyroid cancer risk. She is also PI of an inter-disciplinary team of investigators on a project entitled “Drinking water vulnerability and neonatal health outcomes in relation to oil and gas production in the Appalachian Basin.” This study is evaluating whether exposure to water contaminants from the process of hydraulic fracturing (“fracking”) is associated with adverse human developmental and teratogenic effects. She is also an Investigator in Yale’s Air, Climate, and Energy Center at Yale, where she will be producing estimates of associations between air pollutants and hospital admissions under different climate change scenarios. In addition, she studies how environmental and social stressors jointly contribute to exposure and health disparities in different populations.



**Shannon D. Whirlledge**, PhD, MSHc, Assistant Professor of Obstetrics, Gynecology, and Reproductive Sciences, Assistant Professor of Environmental Health Sciences. Dr. Whirlledge received her B.S. in Biology and B.A. in Political Science in 2003 from Winthrop University and was awarded her Ph.D. in Molecular and Cellular Biology in 2009 from Baylor College of Medicine. She continued her studies as an NIH Intramural fellow at the NIEHS. During her postdoctoral fellowship, Dr. Whirlledge received her Master’s of Health Science in Clinical Research from Duke University. In 2016, she joined the faculty of the Department of Obstetrics, Gynecology, and Reproductive Sciences at Yale School of Medicine. Dr. Whirlledge is an active member of the Endocrine Society, Women in Endocrinology, and the Society for Reproductive Investigation. Dr. Whirlledge is an editorial board member for Endocrinology and serves as an ad hoc reviewer for other journals within the fields of Cell Biology and Reproductive Sciences. Dr. Whirlledge’s research interests are focused in the field of reproductive endocrinology. Her current research investigates the molecular mechanisms by which nuclear receptor signaling regulates uterine biology and fertility. Dr. Whirlledge is also interested in identifying endocrine disrupting chemicals that cause infertility or result in poor pregnancy outcomes.



**Anne Marie Jukic**, PhD, MSPH, Assistant Professor of Epidemiology (Chronic Diseases). Dr. Jukic is a perinatal epidemiologist whose research spans the perinatal period, from pre-conception, to pregnancy, to pregnancy outcomes and child health. She is interested in early pregnancy, particularly implantation and early placental development, and the relevance of these events for pregnancy health or child health. Her current research focuses on the role of vitamin D in reproduction, and she has published the first papers describing a link between vitamin D and menstrual cycle function in community-based samples of women. Her other work includes investigating environmental exposures (such as phthalates and phenols), other nutritional exposures, and physical activity. After completing a Bachelor's degree at the University of Notre Dame she joined the Peace Corps where she developed an interest in public health. During her graduate work at Emory University she trained at the Centers for Disease Control in the Safe Motherhood Branch. She continued her graduate studies at the University of North Carolina at Chapel Hill where she completed her doctoral dissertation examining physical activity during pregnancy and pregnancy outcomes. She completed a post-doctoral fellowship at the National Institute for Environmental Health Sciences (NIEHS).



**Ying Chen**, MD, PhD is a research scientist in Epidemiology (Environmental Health Sciences) and has a broad background in environmental genetics and molecular toxicology, with specific training and expertise in redox biology, oxidative stress related disease and transgenic animal models of glutathione (GSH) deficiency. Her research in the past over ten years has focused on understanding the mechanistic roles of GSH redox homeostasis in human disease conditions related to environmental (including dietary) exposures. Other ongoing research projects in the Vasiliou lab include studies of: (i) the mechanistic roles of ALDH1B1 in alcohol-associated colon cancer, and (ii) the functional roles of ALDH1A1/3A1 in corneal pathophysiology.



**Han-Zhu Qian**, MD, PhD is an infectious disease epidemiologist. Prior to joining the Yale School of Public Health faculty in 2017, he was a health scientist at U.S. Center for Diseases Control and Prevention (2016-2017), where he provided technical supports for the HIV treatment programs among key populations in Asian countries. He also served as a faculty member in Vanderbilt University (2007-2016) and University of Alabama at Birmingham (UAB) (2005-2007). He conducts epidemiological studies and prevention intervention clinical trials on HIV, HCV, HPV and other blood-borne and sexually transmitted infections among key and vulnerable populations in U.S. and global settings.



## ZJU-Yale Collaborative Research Center First Bilateral Meeting ( 2018 )

Date: June 4th-8th, 2018

Location School of Medicine, Zhejiang University, Hangzhou

### Brief Introduction for ZJU representatives:



**Zhengping Xu**, Professor of Environmental Health, Professor of Molecular and cellular biology, Dean of Zhejiang University School of Public Health, Executive Director of Zhejiang University Medical Center. The main interest of Xu group is focusing on the novel mechanism and function of angiogenin (ANG) as well as its translational studies in diseases. Xu group have made a significant contributions to characterize the molecular mechanism underlying ANG mediated rRNA transcription and tiRNA production in tumorigenesis and neurodegeneration (Nucleic Acids Res. Aug 2014; Int J Cancer. Aug 2015; Mol Neurobiol. Jan 2017; J Cell Physiol. Apr 2014). Recently, they are studying the ANG's physio-pathological role in regulating inflammation and host defense of the gastrointestinal system through transgenic mice, and exploring therapeutic opportunities of ANG in inflammatory diseases such as colitis and colitis associated tumorigenesis.



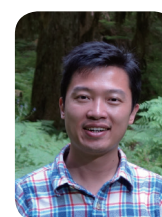
**Guangdi Chen**, Vice Dean, Professor of the Department of Environmental Health, Zhejiang University School of Public Health. His research interests include the cellular DNA damage response to environmental EMF exposure; the role of the tumor suppressor Tip60 in gastric cancer metastasis; evaluation and assessment of occupant risk factors.



**Ye Shen**, M.D., Ph.D., Professor of Ophthalmology, vice president of the First affiliated hospital of ZJU, executive Director of ZJU first department of clinical medicine, vice director of ZJU research institute of ophthalmology. Dr. Shen has more than 30-year experience in cataract surgery. His research interests majorly focuses on mechanism of myopia, rare eye disease, efficacy and safety of Phakic refractive surgery, and the evaluation of visual quality. Dr. Shen also serves as the committee member of post graduated medical education committee of China, the vice chairman of Rare disease society, the vice chairman of Society of ophthalmology and visual science of Chinese research hospital association, the executive committee of Ophthalmology committee of Chinese geriatrics society, the chairman of laser medicine society of Zhejiang provincial medical association, as well as the subeditor of Ophthalmology published for residence trainee.



**Ming Chen**, Professor of the Department of Bioinformatics, College of Life Sciences. Dr. Chen got his Ph.D. degree in Bioinformatics from Bielefeld University, Germany, in 2004. Currently his group research work ranges from computational and functional analysis of transcriptomics, especially non-coding RNAs, systems biology, to applied bioinformatics. Dr. Chen is serving as the academic leader in Bioinformatics at Zhejiang University. He is the president of the Bioinformatics Society of Zhejiang Province, China. He serves as a committee member of Chinese societies for "Computational Systems Biology", "Functional Genomics & Systems Biology" and "Biomedical Information Technology". He has published over 100 journal papers with H-index 30. Dr. Chen teaches courses such as Bioinformatics, Systems Biology, and acts as the instructor to the ZJU-China iGEM team who once obtained Reginal Winner and the 2nd Runner Up in iGEM Jamboree 2011. Dr. Chen's Lab homepage: <http://www.cls.zju.edu.cn/binfo/>



**Qi Zhou**, Evolutionary Genomicist, Professor at Life Science Institute of Zhejiang University, Awardee of 1000-Talent Program of 2014. Dr. Zhou received his PhD degree from Professor Wen Wang at Chinese Academy of Sciences in 2008. Then he proceeded to work with Prof. Doris Bachtrog as a postdoctoral scholar at University of California, Berkeley. He has been working on evolution of sex chromosomes throughout his career, using models of muntjac deer, Drosophila species and recently birds to gain general answers to this central evolution question. He has so far published 31 peer-reviewed papers, with 16 first-author or correspondence author papers on journals including Science, PloS Biology, Genome Research, Annual Review Ecol Evol Sys etc. He has started his lab and tenure-track position at Life Science Institute of Zhejiang University in July, 2015.



**Yimin Zhu**, Professor, vice director of the Department of Epidemiology & Biostatistics, Zhejiang University School of Public Health. His major research interests include molecular epidemiology, genetic susceptibility, epigenetics and metabonomics in obesity, metabolic syndrome and colorectal cancer. His team has screened multiple biomarkers of these diseases using multi-omics technologies such GWAS, RNA-seq, Medip-seq and metabonomic, and also systematically investigate the metabolic heterogeneity in obesity and its mid and long-term adverse effect. The ongoing projects include natural population cohort in Zhejiang Province (a sub-cohort of East-China Cohort), the metabonomics in metabolic syndrome, the abnormal metabolic status and its long-term effect in subjects with normal weight, DNA methylation and biomarker screening in colorectal cancer.





**Hongmei Wang**, Professor of the Department of Social Medicine, Zhejiang University School of Public Health. Dr. Wang earned her Bachelor Degree in Preventive Medicine from Zhejiang Medical University (1994) and her Master Degree (2000) and PhD (2004) in Social Medicine and Health Service Administration from Zhejiang University. She was a visiting scholar in the Institute for General Practice at Christian-Albrechts-University of Kiel, Germany from Jan. 2002 to Jan. 2003 and a visiting scientist in the Department of Health Services at the University of Washington School of Public Health, the U.S. from Jan. 2010 to June 2012. She is a professor at the Department of Social Medicine, Zhejiang University School of Public Health. Dr. Wang's research interests include quality of life instrument development, adaptation, and application; youth quality of life; chronic disease management in general practice; worksite intervention from weight gain; and health technology assessment for use in primary care. She is primary developer of a Chinese version of the SF-36, Chinese versions of YQOL-R and YQOL-W in cooperation with the Seattle Quality of Life Group (SeaQoL). Current projects include "development of a disease specific instrument for Chinese hepatitis B patients", and "health behavior change for preventing weight gain in worksites".



**Chih-Hung Hsu**, Professor of the Department of Environmental Health, Zhejiang University School of Public Health. Dr. Hsu joined Zhejiang university school of public health as a Hundred-Talent-Program research fellow in 2018. Hs has been interested in Epigenetic Regulation by DNA methylation and histone modifications and also Epitranscriptomics (RNA Epigenetics). In the past years, his researches include 1. Viral proteins suppressed histone modifiers to regulate transcriptional activity and protein stability of important host factors (EMBO 2004, Oncogene 2012); 2. DNA demethylation enzyme, TET1, is a potential tumor suppressor via activating tissue inhibitors of matrix metalloproteinases (Best 5 Article in Cell Reports 2012, commented in Nature Reviews Cancer, highlighted by Cell and Cell Reports websites); 3. A novel function of RNA methylation (m6A) in promoting cellular resistance to UV damage (highlighted in Nature Reviews Molecular Cell Biology, Cancer Discovery, Science Signaling, and F1000).



**Therese Hesketh**, Professor of the Department of Social Medicine, Director of the Center of Global Health, Zhejiang University School of Public Health. Dr. Hesketh received her medical degree from University of Bristol in 1982 and trained in the UK in paediatrics. She spent the next eight years working in Asia as a paediatrician and manager for the NGOs, Project Hope, Health Unlimited and for WHO and UNICEF. While based mainly in China, she also worked in Tanzania, Indonesia, the Philippines, Cambodia, Laos and Myanmar. She returned to the UK in 1993 and trained in public health. She went to work at the Institute of Child Health at University College London as a research fellow for the DfID-funded work programme on diseases in childhood. In 2000, She became a Fellow of the Faculty of Public Health and was awarded a Wellcome Trust Clinical Fellowship to explore the epidemiology of HIV, HBV and HCV in China using blood spots. She was awarded her PhD in 2001 from University College London. Dr. Hesketh is currently Professor of Global Health at University College London and Professor of the Centre for Global Health at Zhejiang University School of Medicine. In recent years, Dr. Hesketh's research focus has been on China, where she has specialised in conducting large epidemiological studies, and interventions across a range of population health topics. She is especially interested in the use of new technologies for research and behaviour change. Her ongoing research in China includes: psychological impacts of population change (including the child policy and high sex ratios), violence against health workers, interventions to improve psychosocial outcomes for left behind children, and behavioural interventions to reduce antibiotic use and antimicrobial resistance.



**Mingjuan Jin**, Associate Professor of the Department of Epidemiology & Biostatistics, Zhejiang University School of Public Health. Dr. Jin's research focuses on cancer etiology and cancer screening. She has been carrying a series of studies on genetic susceptibility, epigenetic changes, and their interactions with environmental exposures in colorectal cancer and its precancerous lesions, using molecular epidemiological approaches, with the combination of population-based and hospital-based case-control studies, to clarify their etiology, identify proper biomarkers, and develop efficient risk assessment model. Dr. Jin also has been studying the risk prediction of hepatocellular carcinoma developing from chronic HCV and HBV patients with cohort study design and the current challenges of hepatocellular carcinoma screening among high-risk population during her visiting study at Stanford University. Dr. Jin also has been leading a series of studies on the relationships of alcohol drinking with cancer deaths with evidence-based assessments and systematic reviews.





**Lu Zhao**, Associate Professor of the Department of Nutrition and Food Safety, Zhejiang University School of Public Health. Dr. Zhao has received her Master degree in Clinical Medicine from Zhejiang University and her Ph.D. degree in Genetics from Yale University. Her current research interests focus on the biological function of trace minerals (e.g. Zinc, Iron) in embryo development and human diseases, using animal models such as zebrafish and mice. Current research topics include the molecular mechanism of zinc transporter Slc39 family in hematopoiesis and angiogenesis. Dr. Zhao has been awarded Qiushi Young Scholar, ZJU (2014), Outstanding English Lecturing Teacher Awards, School of Medicine, ZJU(2014), and National MBBS Program English Lecturing Competition, Top Award (2016).