AMFR 2015

First International Conference on All Material Fluxes in River Eco-Systems

January 15 - 18, 2015

Peking University, Beijing, China

Organized by

Peking University, China

Tsinghua University, China

Sponsored by

Shenzhen Academy of Environmental Sciences

National Natural Science Foundation of China

The Key Laboratory of Water and Sediment Sciences, Ministry of Education

State Key Laboratory of Hydroscience and Engineering, Tsinghua University

Contents

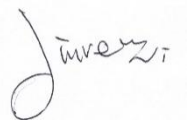
Welcome Message from Organizers

Healthy river eco-systems are essential for sustaining the natural environment and human society. Understanding of the material fluxes in river basins, including those fluxes that are related to water, sediment, nutrients, trace materials, living organisms, and greenhouse gases, could enable improved monitoring and restoration of river eco-systems. An overview of the current status of approaches and results necessary for accounting for all material fluxes in large rivers is thus of the utmost importance.

We are very glad to inform you that First International Conference on All Material Fluxes in River Eco-Systems (AMFR 2015) will be held at Peking University (PKU) in Beijing, China on Jan 15th-18th, 2015. The scientific program of AMFR 2015 will provide an opportunity for a wide-ranging discussion of key issues related to research on all material fluxes in river eco-systems, and to their effective and sustainable management. High-standard plenary and keynote lectures will be provided by outstanding invited scholars. It is a great opportunity to strengthen research networking and possible future collaboration of the participants.

With your great support and contribution, we believe that the AMFR 2015 will be definitely very productive and fruitful.

Sincerely yours,



Prof. Jinren Ni, Peking University, China

On behalf of the Organizers

Organizers

General Chairs	
	**Jinren Ni** Professor College of Environmental Sciences and Engineering Peking University, China E-mail: nijinren@iee.pku.edu.cn
	Professor Ni obtained his Master's degree and PhD in Department of Hydraulic Engineering at Tsinghua University. He has been a professor at Peking University since 1992. He was a winner of the National Special Fund for Distinguished Young Scientists in 1996. He is also the founder of the Institute of Environmental Engineering and Department of Environmental Engineering at Peking University, director of the Key Lab of Water and Sediment Sciences, Ministry of Education. Prof. Ni's research interests include river material fluxes, river geomorphology, river sustainability and river pollution control technology. He has published more than 200 papers in international journals and 5 books, awarded over 30 invention patents and two national-level prizes.
	**Guangqian Wang** Professor College of Environmental Sciences and Engineering Tsinghua University, China E-mail: dhhwgq@tsinghua.edu.cn
	Prof. Wang is an academician of CAS and director general of the Department of Engineering and Materials Science at the National Natural Science Foundation of China. He was a winner of the Special Fund for Distinguished Young Scientists in 1995 and the Changjiang Scholar Award in 2000. He is the chief scientist of the National Basic Research Program of China. Professor Wang's main research achievements include: (1) development of the digital watershed model system; (2) development of kinetic model for solid-liquid two-phase flows; (3) development of the granular flow model for debris flow; and (4) applications of the developed methodologies and models to many momentous projects, such as construction of the Three Gorges Project, operation of the Sanmenxia Reservoir and water resources regulation in the Yellow River Basin. He has published more than 240 Papers and 5 monographs, been awarded several national-level prizes for his achievements in science and engineering fields.

Co-Chairs

Alistair G.L. Borthwick
Professor
Applied Hydrodynamics
The University of Edinburgh, U.K.
E-mail: Alistair.Borthwick@ed.ac.uk

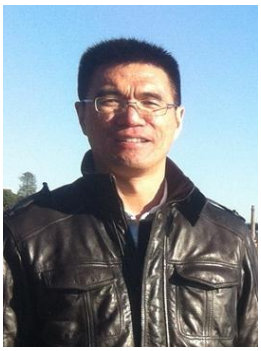
Prof. Alistair Borthwick is an academician of the Royal Academy of Engineering. He has more than 35 years' engineering experience. He is Professor of Applied Hydrodynamics at The University of Edinburgh, an Emeritus Fellow at St Edmund Hall, Oxford, and holds Adjunct Professorships at Peking University and NUI Galway. He was previously Professor of Engineering Science at the University of Oxford, where he worked for 21 years from 1990-2011. He was Head of Civil & Environmental Engineering at University College Cork from 2011-13, where he was the Founding Director of the SFI Centre for Marine Renewable Energy Ireland. Prof. Borthwick's research interests include environmental fluid mechanics, river hydraulics, flood risk management, coastal processes, offshore engineering, and marine renewable energy. He has co-authored more than 130 journal papers and supervised ~40 doctoral students to completion. Prof. Borthwick was awarded a DSc by the University of Oxford in 2007.

Gregory Korshin
Professor
Department of Civil and Environmental Engineering
University of Washington, United States
E-mail: korshin@uw.edu

Professor Gregory Korshin obtained his Master's degree in Physics from Kazan State University and his PhD in Physical Chemistry from Kazan State Technological University in Russia. He has been working at the Department of Civil and Environmental Engineering of the University of Washington since 1991. His research has been concerned with characterization of natural organic matter (NOM), halogenation and dehalogenation in environmental systems, formation of disinfection by-products (DBPs), occurrence of emerging contaminants, environmental chemistry of heavy metals and radionuclides, development of on-line methods to monitor processes affecting water quality, metal release in drinking water, advanced oxidation processes and on-line methods for quantitation of the degradation of pharmaceuticals and other

	contaminants in wastewater. Prof. Korshin has published over 100 refereed publications, a large fraction of them in *Water Research* and *Environmental Science & Technology*. He has contributed to research supported by Water Research Foundation, Water ReUse Foundation, National Science Foundation, U.S. Environmental Protection Agency and other organizations. Prof. Korshin is an editor and member of the editorial board of the journal *Water Research*. He has held invited positions in research centers and universities in Russia (Kazan National Research Technological University), Australia (Australian Water Quality Center, University of South Australia), China (Peking University), France (University of Paris Diderot) and Italy (University of Catania).
	**Xudong Fu** Professor Department of Hydraulic Engineering Tsinghua University, China E-mail: xdfu@tsinghua.edu.cn
	Prof. Xudong Fu obtained his PhD degree in Hydraulics and River Dynamics from Tsinghua University, China. He has been working at the Department of Hydraulic Engineering of Tsinghua University since 2001. His research has been concerned with dynamics of sediment transport across scales in fluvial system, modeling of sediment yield from watersheds, fluvial processes of braided rivers, and flash flooding in mountain streams. He has published forty-seven refereed publications in international journals. He has contributed to research supported by the Ministry of Science and Technology of China, the Ministry of Water Resources of China, the National Natural Science Foundation of China, and other agencies. He is a member of the editorial board of the International Journal of Sediment Research.

Program Chairs



Yuefei Huang
Professor
College of Environmental Sciences and Engineering
Tsinghua University, China
E-mail: yuefeihuang@tsinghua.edu.cn

Dr. Yuefei Huang is a Professor of State Key Laboratory of Hydro-science and Engineering at the Tsinghua University. He obtained his PhD degree in Environmental System Engineering from the University of Regina, Canada in 2004. His research interests include: (1) Water Resources and River Basin Management, (2) groundwater modeling and bioremediation technology development, (3) distributed hydrological simulation, environmental impact assessment and risk analysis. He has completed over 30 projects related to water resources management and pollution control from National Science Foundation of China, Ministry of Science and Technology, industries, and international organizations. Dr. Huang produced about 40 peer-refereed SCI journal articles. He has won the Best Practice-Oriented Paper Award from American Society of Civil Engineers (ASCE) in 2004. He serves as reviewers of over 20 international journals and guest editor. He has also been invited as editorial board members for 2 international journals.

Tianhong Li
Associate Professor
College of Environmental Sciences and Engineering
Peking University, China
E-mail: litianhong@iee.pku.edu.cn

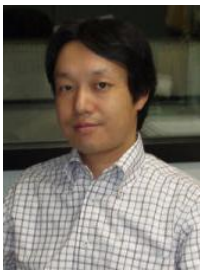
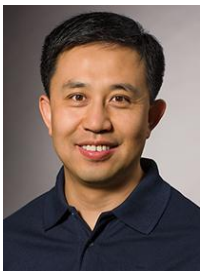
Dr. Tianhong Li is an Associate Professor in the College of Environmental Sciences and Engineering, Peking University. He is the Head of Department of Environmental Engineering. He obtained his BSc from the Department of Urban and Environmental Sciences, Peking University, both MS and PhD from the Institute of Remote Sensing and GIS, Peking University. Dr. Li's research interests include water-sediment environment and ecological rehabilitation of Basins, and LUCC and its eco-environmental effects. He has published more than 80 papers in peer reviewed journals, including 33 papers indexed by SCI or EI, and coauthored 5 books. He was awarded several prestigious awards from ministry level to national level.

Meiping Tong
Associate Professor (Tenure Track)
College of Environmental Sciences and Engineering
Peking University, China
E-mail: tongmeiping@pku.edu.cn

Dr. Tong is an Associate Professor (tenure track) at the college of Environmental Sciences and Engineering, Peking University. She obtained both her Bachelor and Master degree in Environmental Sciences from Zhejiang University, and her PhD in Environmental Engineering from University of Utah. Her research has mainly focused on understanding the mechanisms controlling the fate and transport of colloids including microbe, macromolecules, and nanoparticles in subsurface environments and the use of nanotechnology for water purification applications. She has published more than 40 refereed publications, a large fraction of were in *Environmental Science & Technology* and *Water Research*.

International Scientific Committee

	**Alistair Borthwick** University of Edinburgh, UK		**Yongsheng Chen** Georgia Institute of Technology, USA
	**Xudong Fu** Tsinghua University, China		**Chunhong Hu** China Institute of Water Resources and Hydropower Research, China
	**Ching-Hua Huang** Georgia Institute of Technology, USA		**Gordon Huang** University of Regina, Canada
	**William P. Johnson** University of Utah, USA		**Gregory Korshin** University of Washington, USA
	**Qingbin Li** Tsinghua University, China		**Wanhong Li** NSFC, China

	**Yifan Li** Environment Canada, Canada		**Yitian Li** Wuhan University, China
	**Zhanbin Li** Xi'an University of Technology, China		**Cheng Liu** International Research and Training Center on Erosion and Sedimentation, UNESCO
	**Jinren Ni** Peking University, China		**Guoyu Qiu** Peking University Shenzhen Graduate School., China
	**Kazama So** Tohoku University, Japan		**Chao Wang** Hohai University, China
	**Guangqian Wang** Tsinghua University, China		**Shaowen Wang** University of Illinois at Urbana-Champaign, USA
	**Silke Wieprecht** Universit ät Stuttgart, DE		**Weimin Wu** Stanford University, USA

	**Jun Yao** University of Science and Technology Beijing, China		**Zhifeng Yang** Beijing Normal University, China
	**Kuihao Yin** Shenzhen Academy of Environmental Sciences, China		**Guangming Zeng** Hunan University, China
	**Chunmiao Zheng** Peking University, China		

Conference Staff	
	**Feifei Zhang** E-mail: zhangfeifei@iee.pku.edu.cn Cell phone: 86-134-6660-4801
	**Linlin Liang** E-mail: lianglinlin@iee.pku.edu.cn Cell phone:86-134-2611-5096
	**Rong Huang** E-mail: huangrong@iee.pku.edu.cn Cell phone: 86-180-1012-1209
	**Yichu Wang** E-mail: wangyichu@iee.pku.edu.cn Cell phone: 86-152-1014-6519

Invited Speakers

Marc Benedetti
Professor
Dept. of Chemistry
Université Paris Diderot，France
E-mail: benedetti@ipgp.fr

Dr. Marc Benedetti is a Professor at the Department of Chemistry, University Paris Diderot, Paris, France. He has been the Head of the Aquatic Geochemistry Team IPGP-UMR 7154 since 2004. He was a Deputy Director for Sciences Affairs, University Paris Diderot from 2009-2013. Currently, he is a Deputy Director of the IPGP.

Professor Benedetti's research concerns the interactions between major and trace elements and major constituents of water and soil in biogeochemical cycles. Specifically, his research interests include: (1) Experimental study of processes at interfaces, understanding the mechanisms that control the speciation and transfer of elements in water and soil. He is studying the reactions of heterogeneous solid-liquid type. (2) Modelling of interactions between major and trace elements and various components of water-soil system. (3) Speciation of chemical elements in natural environments (water and soil).4) Study of the early weathering.

Jianbo Chang
Professor
Institute of hydroecology, MWR &CAS
E-mail: jbchang@mail.ihe.ac.cn

Dr. Jianbo Chang is a Professor and Director of the Institute of Hydroecology, Ministry of Water Resources and Chinese Academy of Sciences. He also serves as Director of Key Laboratory of Ecological Impacts of Hydraulic-projects and Restoration of Aquatic Ecosystem of Ministry of Water Resources. Prof. Chang is the Editor in Chief of *Journal of Hydroecology* and Chairperson of Hydroecological Committee of China Society of Water Resources. He is also a member of the Executive Committee of Board of Directors of China Society of Fisheries.

Prof. Chang is interested in multidisciplinary studies on freshwater fishes including their life history, population dynamics, molecular ecology, and habitats availability assessment related subjects that permit a better understanding

	of the ecological performance of the species in the Yangtze River. His research specializations include: Conservation biology of endemic and endangered fishes in the Yangtze River; Molecular ecology; Larval fishes in the Yangtze River; Population dynamics and fisheries of floodplain fishes; Ecohydrology; Ecosystem Ecology; Ecological indicators for water quality of freshwater. He has published around 100 peer-refereed journal articles.
	**Dionysios D. Dionysiou** Professor Environmental Engineering and Science Program University of Cincinnati, USA E-mail: dionysios.d.dionysiou@uc.edu
	Dr. Dionysios (Dion) D. Dionysiou is currently a Professor of Environmental Engineering and Science Program at the University of Cincinnati. He teaches courses and performs research in the areas of drinking water quality and treatment, advanced unit operations for water treatment, advanced oxidation technologies and nanotechnologies, and physical-chemical processes for water quality control. Prof. Dionysiou is currently one of the editors of *Chemical Engineering Journal*, Editor of the *Journal of Advanced Oxidation Technologies*, and Special Issue Editor of the *Journal of Environmental Engineering* (ASCE). He is a member of the Editorial Boards of several other journals. Dr. Dionysiou is the author or co-author of over 200 refereed journal publications, over 90 conference proceedings, 17 book chapter publications, 17 editorials, and more than 450 presentations. He is currently co-editing three books on water reuse, harmful algal blooms, and photocatalysis. His work received over 7,000 citations with an H factor of 48.
	**Xiaodi Hao** Professor Beijing University of Civil Engineering and Architecture, China E-mail : xdhao@hotmail.com
	Dr. Xiaodi Hao is now a Full Professor in Beijing University of Civil Engineering and Architecture, China. He is also an editor of *Water Research* (an IWA Journal), starting from July 2010. Prof. Hao acquired a BSc degree in Taiyuan University of

	Technology (China), an MSc degree in Harbin Institute of Technology (China), and a PhD degree in Delft University of Technology (TU Delft, the Netherlands). He worked in Europe, HK and US (TU Delft and TNO in the Netherlands; CEMAGREF in France; Auburn University in US; Poly-U and UST in HK) for longer than 7 years. Prof. Hao's research interests focus on sustainable biological nutrient and energy recovery. Now he has published over 40 international and 100 domestic papers. He have also published four books: 1) Water Infrastructure for Sustainable Communities: China and the World (in English; IWA Publishing, London); 2) Sustainable treatment Technologies of Wastewater – Wastes (in Chinese); 3) Overview of Phosphorus Crisis and Technologies of its Recovery (in Chinese); 4) Technologies of Wastewater Treatment towards Carbon Neutral (in Chinese).
	**Ching-Hua Huang** Professor School of Civil and Environmental Engineering Georgia Institute of Technology, USA E-mail: ching-hua.huang@ce.gatech.edu.cn
	Dr. Ching-Hua Huang is a Full Professor in the School of Civil and Environmental Engineering at Georgia Institute of Technology. Dr. Huang received her PhD and MS degrees in environmental engineering from Johns Hopkins University, and BS degree in chemistry from National Taiwan University. Dr. Huang has extensive research and teaching experience, and her expertise areas include environmental chemistry, advanced analytical chemistry, contaminant transformation kinetics and mechanisms, innovative water/wastewater treatment technology, sustainable water reuse, waste remediation and resource recovery. Dr. Huang has published more than eighty peer-reviewed journal papers, book chapters and conference proceeding papers on the topics of emerging contaminants and is a frequent invited speaker at many international conferences and universities. Dr. Huang is the 2014 SETAC (Society of Environmental Toxicology and Chemistry) North American Chemist, and has received various honors from organizations such as the American Chemical Society and Gordon Research Conferences for her research with her students.

Gordon Huang
Professor
Institute for Environment, Energy and Sustainable Communities, University of Regina, Canada
E-mail:gordon.huang@uregina.ca

Dr. Guohe Huang is the president of the International Society for Environmental Information Sciences. Dr. Huang holds BSC from Peking University (China), MSc from Simon Fraser University (Canada) and PhD from McMaster University (Canada). Since the 1990s, Prof. Huang has led or been involved in over 100 environment-related research projects, produced over 600 peer-refereed international journal papers, and supervised over 100 Master/PhD students.
Prof Huang also acts (or acted) as editor-in-chief or editorial board member for over 10 international journals, and was conference chair or keynote speaker at over 20 international conferences. The integrated simulation, optimization and risk assessment techniques which he proposed have been used by peers in studying water resources and environmental systems in a number of countries.

William P. Johnson
Professor
Department of Geology and Geophysics
University of Utah, USA
E-mail: william.johnson@utah.edu

Dr. William P. Johnson received his B.A. in Geology from Whitman College, his M.S. in Geology from Dartmouth College, and his Ph.D. in Civil Engineering from the University of Colorado. Dr. Johnson joined the faculty of the Department of Geology & Geophysics at the University of Utah in 1995. He now holds the rank of Full Professor in the Department of Geology & Geophysics, and adjunct in Civil & Environmental Engineering. Dr. Johnson's research focuses on the physics and chemistry of natural water treatment by filtration in granular aquifers (groundwater). His research also examines the fate and transport of trace elements, and the partitioning behavior of organic compounds, in aquatic systems. He has been principal investigator on more than ten federally funded research grants, and has led five state-funded projects examining the fate and transport of selenium and mercury in the Great Salt Lake and surrounding wetlands. Dr. Johnson has produced more than 90 peer reviewed

	publications in top-tier journals, with over 2100 citations of this work to date. Dr. Johnson serves as reviewer for more than eighteen environmental science journals, and serves on the Advisory Board for Environmental Science & Technology Letters. He serves on multiple National Science Foundation panels, and the State of Utah Mercury Workgroup.
	**Sam Li** Professor Department of Chemistry National University of Singapore, Singapore E-mail: chmlifys@nus.edu.sg
	Professor Sam Li is a full Professor at the Department of Chemistry, NUS, and also the Program Director of Singapore-Peking-Oxford Research Enterprise for Water Eco-efficiency. He received his BSc, PhD and DSc degrees from Imperial College, UK. Prof. Li's research interests include environmental science and technology, biosensors, metabolomics and nanotechnology. He received the DuPont Accomplishment Award in 1993 for his research work on atomic force microscopy, the University Outstanding Researcher Award from NUS in 1999 for his work on biosensors, and the Outstanding Science Entrepreneur Award in 2007. He has authored/co-authored 325 publications in international peer review journals, more than 100 conference presentations and 10 US patents. He serves/served on editorial advisory boards of several international scientific journals, including Electrophoresis (Germany), Journal of Chromatographic Science (USA), LC-GC (Asia Pacific), and Biomedical Chromatography (UK). He served as a member of the Technical Committee of the Singapore Accreditation Council and the Singapore Chemical Standards Committee. He is also an Executive Committee Member of the NUS Environmental Research Institute (NERI).
	**Yifan Li** Professor Environment Canada, Canada E-mail: dr_li_yifan@yahoo.com
	Professor Yifan Li received his BSc and Master degrees of Physics from Harbin Institute of Technology and Ph.D degree from Waterloo University, Canada. Dr, Li has been an adjunct Professor at the School of Municipal and Civil Engineering, Harbin Institute of Technology, China and the Chief Scientist, State Key Laboratory for Urban Water Resources and

	Environment, Harbin Institute of Technology, China. Before 2013 he had worked in Environment Canada as a Senior Research Scientist for more than 20 years. Prof. Li has been the Chief Scientist and Executive Deputy Director, International Joint Research Institute for Persistent Toxic Substances (IJRC-PTS) for almost 10 years. Prof. Li's research interests include environmental modeling and monitoring. He received the Four Season Award in 2010-2012 for his research work on sources, occurrence and pathways of persistent organic pollutants to Arctic. He has authored/co-authored more than 140 publications in international peer review journals and 5 Canadian National Reports. Dr. Li serves/served on editorial advisory boards of several international scientific journal of Ecotoxicology and Environmental Safety. He served as a Member of the expert group to revise the "Climate Change and Persistent Organic Pollutants (POPs)", Stockholm Convention on POPs (2011-present), Director of Database for Population and Cropland, Global Emissions Inventory Activities (GEIA) (1998-2005), and the Committee member, Persistent Organic Pollutants (POPs) and Heavy Metals Program, GEIA (1998-2005).
	**Yitian Li** Professor School of water resources and hydropower engineering Wuhan University, China E-mail: Ytli@whu.edu.cn
	Professor Li obtained his PhD in Wuhan University in 1987. His main research interests include hydrodynamic and sediment transport modeling, water and sediment related disasters and river engineering control and management. Professor Li is the deputy director of professional committee of sediment research, China Hydraulic Engineering Society; director of professional committee of sediment research in Hubei Province. He is the chief scientist of the national "973" project. He has completed dozens of national and provincial projects. He has won two national-level prizes, the title of "Outstanding Contributors of Chinese PhD" by the State Education Commission and the State Council Degree Committee, Special Allowance from the State Council, Young and Middle-aged Expert with Outstanding Contribution in Hubei Province, Special-class Model Worker by State Power Company and the National May 1st Labor Medal.

Gary Parker
Professor
Department of Geology
University of Illinois, USA
E-mail:parkerg@illinois.edu

Gary Parker is W.H. Johnson Professor of Geology in University of Illinois at Urbana-Champaign. He received a B.S. from the Department of Mechanics and Materials Science of Johns Hopkins University and a Ph.D. from the Department of Civil Engineering of the University of Minnesota. Before coming to the University of Illinois, he was an Institute of Technology Distinguished Professor in the Department of Civil Engineering at the University of Minnesota. During the period 1995-1999, he also served as Director of the St. Anthony Falls Laboratory. Prof. Parker was elected a Fellow of the American Geophysical Union in 2003, and received the G.K. Warren Award in Fluviatile Geomorphology in 2002. He has received the Schoemaker Award twice and the Ippen Award from the International Association of Hydraulic Research, and the Einstein Award, Hilgard Prize and Stevens Award from the American Society of Civil Engineers. In addition to numerous journal articles, he has written an e-book, "1D Sediment Transport Morphodynamics with Applications to Rivers and Turbidity Currents."

Professor Parker's major research interests are the mechanics of sediment-laden flow in rivers and turbidity currents, and resulting flow-boundary morphodynamic interactions. His current efforts focus on delta evolution, bedrock bedrock-alluvial transitions, bedrock meandering, drainage network formation, advection-dispersion of tracer pebbles, formation of continental shelves, muddy tidal morphodynamics, role of washload in rivers, long-runout turbidity currents and natural dam formation in meteogenic travertine systems.

Manfred Spreafico
Professor
Institute of Geography
University of Berne, Switzerland
E-mail: manfred.spreafico@googlemail.com

Manfred Spreafico has made his studies at the Department of Civil Engineering of the Federal Technical University at Zurich, Switzerland. He received his doctor title for studies in the field of optimal regulation of natural and artificial lakes. He worked then in the Swiss National Hydrological Survey

	and was 1997 elected as professor at the Institute of Geography of the University of Berne. Since 2008 he works as consultant for Integrated Water Resources Management, specialized in hydrometeorology, flood and sediment management. Manfred Spreafico is acting chairperson of the International Sediment Initiative of UNESCO and was for 20 years president of the International Commission for the Hydrology of the Rhine Basin. He has worked as chairman or member of committees and working groups in the fields of hydrology incl. erosion and sediments as well as in IWRM in national and international organizations and institutions. As lecturer, trainer, project manager and project member he has worked in more than 60 countries.
	**Zhaoyin Wang** Professor Dept. of Hydraulic Engineering Tsing University, China E-mail: zywang@tsinghua.edu.cn
	Dr. Zhaoyin Wang is Professor of the Department of Hydraulic Engineering of Tsinghua University and the Chairman of the Advisory Council of the International Research and Training Center on Erosion and Sedimentation (UNESCO). Dr. Wang has been the chief editor of the "International Journal of Sediment Research" since 1996. He was one of the initiators of the IAHR journal "International Journal of River Basin Management" and is associate editor. He is associate editor of "Journal of Environmental Informatics". He is a member of the steering committee of UNESCO International Sedimentation Initiative. His research interests include sediment transportation, river ecology and integrated river management. He has published 170 papers in international journals and international conferences. His scientific achievements include the theory of hyperconcentrated flows, non-Newtonian flows, debris flows and control strategies, turbulence structure, physical models, deltaic and coastal processes, vegetation-erosion dynamics, stream ecology, eco-sedimentation, step-pool system, energy dissipation for mitigation of flash flood hazards, integrated river management, grain erosion and control strategies, debris flow control with energy dissipation structures, landslide dams and management strategies, control strategies of exotic species (golden mussel), principle of equivalency of bed load motion and bed structures.

Paul Westerhoff
Professor
School of Sustainable Engineering & Built Env
Arizona State University, USA
E-mail: p.westerhoff@asu.edu

Dr. Paul Westerhoff is a Professor in School of Sustainable Engineering and The Built Environment, and member of the Civil, Environmental and Sustainable Engineering faculty, at Arizona State University (ASU). He obtained a Ph.D. from the University of Colorado at Boulder, a MS from University of Massachusetts and BS from Lehigh University. Westerhoff joined ASU in August 1995 and was promoted to full professor as a University Exemplar in 2007. He served as Department Chair in Civil and Environmental Engineering, was the founding Director for the School of Sustainable Engineering and the Built Environment, Associate Dean for Research for the Ira A Fulton Schools of Engineering, and is currently the Vice Provost for Academic Research Programming at ASU. Prof. Westerhoff has a strong publication and research record, has garnered wide recognition for his work related to treatment and occurrence of emerging contaminants in water, and has been active in multidisciplinary research. He has lead research funded by AWWARF, USEPA, NSF, DOD and local organizations investigating the fate of nanomaterials in water, use of nanomaterial-based technologies for water and reuse treatment, reactions and fate of oxo-anions (bromate, nitrate, arsenate) during water treatment, characterization, treatment and oxidation of natural organic matter in watersheds, formation of disinfection by-products, removal of taste and odor micropollutants. He has over 165 peer reviewed journal article publications and an H-index above 45. He belongs to ASCE, AWWA, AEESP, ACS, IOA, IWA, AWPCA, and IHSS and serves on numerous voluntary committees for these organizations. He currently is a member of the USEPA Science Advisory Board – environmental engineering committee, Vice Chair of the WateReuse Foundation Research Advisory Board, external advisory board member of the EPA-NSF Center for Environmental Impacts of Nanotechnology. Westerhoff has received several research awards including the 2013 AEESP/Arcadis Frontier in Research Award, 2005 ASCE Walter L. Huber Research Award and the 2006 WEF Paul L. Busch Award.

Bofu Yu
Professor
Griffith School of Engineering
Griffith University, Australia
E-mail: b.yu@griffith.edu.au

Dr Bofu Yu received his higher education from Peking University and Tsinghua University before he went to the United States to complete his PhD in the Johns Hopkins University in 1986. He was a Research Fellow at the Australian National University in Canberra for 4 years and joined Griffith University in Brisbane as a junior faculty member in 1992. He has been a full Professor at Griffith University since 2007.

Since 2004, Prof Bofu Yu has been playing an important academic leadership role in Engineering Education in the university. He has served as Head of School, Griffith School of Engineering for the period 2008-2013. He has taught courses in hydrology, and hydrologic modelling over the past 20 years.

Applied surface hydrologic and soil erosion modelling has been his main area of research. In particular, he is interested in integration of hydrologic and erosion processes across different temporal and spatial scales, and using numerical models to realise this integration in a parsimonious way. Prof Bofu Yu has published more than 100 research publications, with more than 70 as internationally refereed journal papers with a Scopus *h*-index of 21. He has so far received research grants in excess of AU$2 million.

Tong Zhang
Associate Professor
Department of Civil Engineering
The University of Hong Kong, China
E-mail: zhangt@hku.hk

Dr. Zhang is an Associate Professor in the Environmental Biotechnology Laboratory, Taught Postgraduate Student (MSc) Programme Director in the Department of Civil Engineering, The University of Hong Kong. He obtained his Bachelor and Master degrees in Environmental Science and Engineering from Nanjing University, China, and got his Ph.D. degree from the University of Hong Kong.

Dr. Zhang's researches include applications of molecular techniques (metagenomics, metatranscriptomics, etc.) in the biological wastewater treatment (N removal and P recovery), bioenergy from wastes/wastewater (cellulosic biomass, sludge,

	kitchen waste, and wastewater), biodegradation of emerging pollutants (antibiotics, PPCP and EDCs), antibiotic and heavy metal resistance genes, and environmental toxicology of nanoparticles and heavy metals to microorganisms. According to ResearcherID (Thomson Reuters), he has an H Index of 30 with over 140 SCI journal publications and 3100 citations. He is an editor of *AMB Express*, also serves as Advisor for BGI (Beijing Genomics Institute) on *Environmental Microbiology and Biotechnology* (2011-2014), and ASM (American Society of Microbiology) Country Liaison to China (Hong Kong) (2012-2014). He is top 1% researcher (based on ISI's Essential Science Indicators) from 2009 to 2013.
	**Chunmiao Zheng** Professor College of Engineering Peking university, China Department of Geological Sciences, University of Alabama, USA E-mail: czheng@coe.pku.edu.cn
	Prof. Chunmiao Zheng currently holds the position of Chair Professor and Director of the Institute of Water Sciences at Peking University. He has also been the George Lindahl III Endowed Professor of Hydrogeology at the University of Alabama. Prof. Zheng received a BS in geology from Chengdu University of Technology and a Ph.D. in hydrogeology from the University of Wisconsin-Madison. Prof. Zheng is developer of the widely used MT3DMS contaminant transport model, and author or co-author of over 150 papers and 5 books, including *Applied Contaminant Transport Modeling* published by Wiley in 1995 and 2002 and translated into Chinese in 2009. Zheng is recipient of the 1998 John Hem Excellence in Science and Engineering Award from the National Ground Water Association (USA) and a fellow of the Geological Society of America. In 2009 he received the Birdsall-Dreiss Distinguished Lecturer award from the Geological Society of America that took him to 70 universities and research institutions worldwide. For his outstanding contributions to the fields of hydrogeology and groundwater science, he was awarded the O.E. Meinzer award by the Geological Society of America and the M. King Hubbert award by the National Ground Water Association, both in 2013. Prof. Zheng has served as associate editor for leading water resources journals including *Water Resources Research, Ground Water*, *Journal of Hydrology*, *Hydrogeology Journal*.

Junliang Zhou
Professor
Plymouth Marine Laboratory
Plymouth University, England
E-mail : jlzhou@sklec.ecnu.edu.cn

Professor Junliang Zhou is an environmental chemist and engineer. He obtained MSc and PhD degrees in environmental technology at the University of Manchester, UK in 1988 and 1991 respectively. He has worked at the Plymouth University, Plymouth Marine Laboratory, University of Wales, University of Sussex for 20 years. In 2010 he was appointed a Yangtze Scholar professor at the State Key Lab of Estuarine and Coastal Research, East China Normal University, to lead fundamental research in marine environmental protection. He is an expert assessor for the EU, UK (EPSRC, NERC, Defra, Royal Society), Luxembourg (National Research Fund), USA (NSF, Sea Grant Committee, US-Israel Binational Agricultural Research and Development Fund), China (NNSFC, 973 High-Tech Programme, 1000 Plan), Italy (Fondazione Cariplo), Romania (National Council for Development and Innovation) etc. He has published about 100 SCI papers and a number of book chapters, with an H-index of 35 (web of science). He is recipient of K.C. Wong science research prize, Royal Society of Chemistry J.W.T. Jones travelling fellowship, Royal Society research grant, and Yangtze Scholar.

AMFR 2015

Conference Information

Venue

The AMFR 2015 conference will be held in Zhong Guan Xin Yuan (北京大学中关新园) at Peking University (Tel: 010-5166 8255).

- **Registration**

  Building 1, Zhong Guan Xin Yuan, PKU

- **Main Conference Room**

  Room Jixian (11th floor) of Building 1, Zhong Guan Xin Yuan, PKU

- **Parallel Section Conference Room**

  Room Guanhu A/D (2th floor) of Building 1, Zhong Guan Xin Yuan, PKU

- **Dining Location**

Dinner, 15th Jan.	Chen Guang Cafe	Building 6
Lunch, 16th Jan.	Guan Hu Hall	Building 1
Dinner, 16th Jan.	Shi Guang Western Restaurant	Building 1
Lunch,17th Jan.	Chen Guang Cafe	Building 6
Dinner, 17th Jan.	Chen Guang Cafe	Building 6
Lunch, 18th Jan.	Chen Guang Cafe	Building 6

- **Breakfast：**

  Attendees stay in Building 9： Chen Guang Cafe, Building 6

  Attendees stay in Building 1： Shi Guang Western Restaurant, Building 1

Transportation

- **Airport：**

Coming from the airport, we recommend our attendees to take a taxi, airport shuttle, or airport express (subway) to the Venue or their hotel at PKU.

A: Taxi: from airport to Venue: ~120 RMB.

B: Airport Shuttle: from airport to Zhong Guan Cun, and then take Bus no. 498/696 to Zhong Guan Yuan station: ~30 RMB.

C: Beijing Airport Express, then take Subway Line 10 and change to Subway Line 4, get off at East gate of PKU, Exit C: ~30 RMB.

- **West Peking Train Station**

Take Subway Line 9 and change to Subway Line 4, get off at East gate of PKU, Exit C: ~4 RMB.

- **Peking Train Station**

Take Subway Line 2 and then change to Subway Line 4, get off at East gate of PKU, Exit C: ~6 RMB.

- **South Peking Train station**

Take Subway Line 4, get off at East gate of PKU, Exit C: ~6 RMB.

Contact Person

Feifei Zhang	13466604801	Linlin Liang	13426115096
Yichu Wang	15210146519	Rong Huang	18010121209
Chao Shan	18801114588	Yujiao Long	18513089690



Maps of Venue

Daily Conference Program

Thursday, 15th January 2015 (Day 1)		
14:00-18:00	Registration (Building 1, Zhong Guan Xin Yuan, PKU)	
18:00-20:00	**Dinner**	
Friday, 16th January 2015, Building 1, Room JiXian (Day 2)		
8:30-8:50	Welcome Speech	Prof. Gregory Korshin
8:50-9:20	An Introduction of AMFR // Prof. Jinren Ni, Peking University, China	
9:20-10:00	Material fluxes in River Eco-Systems as Basic Information for Integrated Water Resources Management // Prof. Manfred Spreafico, University of Berne, Switzerland	
10:00-10:15	**Photo**	
10:15-10:40	**Coffee Break**	
10:40-11:10	Modeling the Effect of Diversions for Land Building on the Lower Mississippi River //Prof. Gary Parker, University of Illinois at Urbana-Champaign, USA	Prof. Gregory Korshin
11:10-11:40	Modeling Occurrence and Assessing Public Perceptions of De Facto Wastewater Reuse across the USA //Prof. Paul Westerhoff, Arizona State University, USA	
11:40-12:10	Sediment Flux into the Great Barrier Reef Lagoon in Australia – the Controlling Factors //Prof. Bofu Yu, Griffith University, Australia	
12:10-13:30	**Lunch**	
13:30-14:00	Impacts of Major Hydraulic Projects on Flow, Sediment and Geomorphology Processes in the Yangtze Estuary //Prof. Yitian Li, Wuhan University, China	Prof. Xudong Fu
14:00-14:30	Organic Matter Dynamics in the Amazon Basin //Prof. Marc Benedetti, Universit éParis Diderot, France	
14:30-15:00	An Integrated Study of River-Groundwater Interactions under the Influence of Climate Change and Human Activities // Prof. Chunmiao Zheng, Peking University, China	
15:00-15:30	Hydrological Fluxes in the Xiangxi River //Prof. Gordon Huang, University of Regina, Canada	
15:30-16:00	**Coffee Break**	

16:00-16:30	Effects of Habitat Connectivity on Biodiversity of Benthic Invertebrates //Prof. Zhaoyin Wang, Tsinghua University, China	Prof. Manfred Spreafico
16:30-17:00	Exploring Bacterial Diversity, Identifying Pathogens and Detecting Antibiotic Resistance Genes Using Next Generation Sequencing //Prof. Tong Zhang, The University of Hong Kong, China	
17:00-17:30	Mechanistic Quantitative Prediction of Nano- and Micro-Particle Retention in Porous Media: Contaminant Removal during Hyporheic Exchange, Riverbank Filtration, and Other Contexts //Prof. William P. Johnson, University of Utah, USA	
17:30-18:00	The Impact of Different Aquatic Colloids on the Behavior and Fate of Pharmaceutical Contaminants in the Yangtze Estuary //Prof. Junliang Zhou, East China Normal University, China	
18:00-20:30	**Gala Dinner**	
20:30-22:00	Advisory Committee Meeting	
Saturday, 17th January 2015, Building 1, Room JiXian (Day3)		
8:30-9:00	Analytical Monitoring of Emerging Contaminants and Assessment of Their Environmental Transformation //Prof. Ching-hua Huang, Georgia Institute of Technology, USA	Prof. Marc Benedetti
9:00-9:30	Looking beyond struvite for P-recovery //Prof. Xiaodi Hao, Beijing University of Civil Engineering and Architecture, China	
9:30-10:00	Sediment Flux and Its Environmental Implications //Prof. Alistair Borthwick, University of Edinburgh, U.K	
10:00-10:30	**Coffee Break**	
10:30-11:00	Prediction of Budget and Fate of Persistent Toxic Pollutants in Water Bodies //Prof. Yifan Li, Harbin Institute of Technology, China	Prof. Paul Westerhoff
11:00-11:30	Harmful Algal Blooms in Lakes and Rivers and their Impact in Drinking Water Quality: The Need for Effective Treatment of Cyanotoxins //Prof. Dionysios D. Dionysiou, University of Cincinnati, USA	
11:30-12:00	Structure of Riverine Ecological Flux: Concept, Measurement, and Operation Objectives //Prof. Jianbo Chang, Institute of Hydroecology, Ministry of Water Resources and Chinese Academy of Sciences, China	
12:00-13:30	**Lunch**	

Parallel Section in the Afternoon, Building 1, Conference Room A		
13:30-13:45	Metal and Metalloid in Water and Sediments of the Yangtze River //Prof. Weiling Sun, Peking University, China	Prof. William P. Johnson & Prof. Tong Zhang
13:45-14:00	Effects of Three Gorge Project on evaporation and transpiration in Poyang Lake //Ms. Rong Huang and Mr. Ma Tao, Peking University	
14:00-14:15	Phosphorus Forms and Distribution in Water and Sediment of Yangtze River, China //Prof. Min Li, Beijing Forestry University, China	
14:15-14:30	Occurrence and Distribution of Micro-organic Pollutants in Water and Sediment of Yangtze River //Prof. Nan Xu, Peking University Shenzhen Graduate School, China	
14:30-14:45	Spatial and Seasonal Distribution Characteristics of Microbial Communities in the Mainstream of the Yangtze River //Dr. Qian Chen and Mr. Tang Liu, Peking University, China	
14:45-15:00	The Anammox Bacteria Existence under High DO Concentration and Low Temperature Conditions in the Yangtze River //Ms. Xuan Wu, Peking University, China	
15:00-15:15	Analysis on Chemical Speciation of Metals in Natural Water Environment //Mr. Xiangrui Wang, Beihang University, China	
15:15-15:30	Direct Identification of Bacteria in Wastewater by Matrix-assisted Laser Desorption/Ionization (MALDI-TOF) Mass Spectrometry //Ms. Lijuan Zhang, National University of Singapore, Singapore	
15:30-16:00	**Coffee Break**	
16:00-16:15	A Hydrologic Index Based Method for Determining Ecologically Acceptable Water-Level Range: A Case Study in Dongting Lake //Prof. Dr. Jie Liang, Hunan University, China	Prof. Dionysios Dionysiou & Prof. Xiaodi Hao
16:15-16:30	Metal Speciation and Dissolved Organic Matter Composition in Solutions //Dr. Zongling Ren, Univ. Paris Diderot, France	
16:30-16:45	Effect of Three Gorges Reservoir on Sediment and Particulate Phosphorus Flux in the Middle and Lower Reaches of Yangtze River //Dr. Huiqun Cao, Changjiang River Scientific Research Institute, China	
16:45-17:00	Biogeochemical Cycling and Export of Emerging Contaminants under Complex Hydrodynamics in the Yangtze Estuary //Dr. Heng Zhao, East China Normal University, China	
17:00-17:15	Macroinvertebrates in the Yangtze Basin: Assemblage Characteristics and Response Patterns Along the Environmental Gradients //Mr. Baozhu Pan, Changjiang River Scientific Research Institute, China	
17:15-17:30	Applications of Aquatic Microorganisms for Control and Recycling of Anthropogenic Waste //Prof. Maurycy Daroch, Peking University-Shenzhen Graduate School	
17:30-17:45	Eco-toxicity Determination of Bottom Ash Leachates using Daphnia magna and MS-based Metabolomics Approach //Ms. S. N. Lee, National University of Singapore, Singapore	

Building 1, Conference Room D		
13:30-13:45	Land Damages due to Sand Shattered Under High Flood: A Case Study of Chenab River Marala to Qadirabad Reach // Dr. Ghulam Nabi, University of Engineering and Technology, Pakistan	Prof. Guangyi Wang & Prof. Yitian Li
13:45-14:00	Analysis of the Fluvial Process of the Jingjiang River after Operation of the Three Gorges Project // Mr.Yonghui Zhu, Changjiang River Scientific Research Institute	
14:00-14:15	Study on the Characteristics and Influence Factors of Aquatic Organisms Fluxes Temporal and Spatial Variation in Mainstream of Yellow River //Mr. Jinxu Han, Yellow river institute of Hydraulic research, China	
14:15-14:30	Discussion about the Concept of River Flux //Mr. Lingyun Li, Changjiang River Scientific Research Institute, China	
14:30-14:45	River Pollutant Flux Simulation and Control //Prof. Huatang Ren, Minzu University of China, China	
14:45-15:00	Response of Bay and Estuarine Tide Flux to High-Intensity Development of Mudflats-Case Study in Bohai Bay //Dr. Qingzhi Hou, Nanjing Hydraulic Research Institute, China	
15:00-15:15	Water-Sediment Flux into Three Gorges Reservoir and Erosion-Deposition Changing Pattern //Mr. Zhongwu Jin, Changjiang River Scientific Research Institute, China	
15:15-15:30	Quantitative Detection of Trace Lead Ions in River Water using DNAzyme with an Anionic Intercalator //Mr. Yaoyu Zhou, Prof. Lin Tang, Hunan University, China	
15:30-16:00	**Coffee Break**	
16:00-16:15	The Response of River Regime Evolution to Flow-Sediment Flux Changes in the Curved and Bifurcated Reach in Lower Jingjiang River—Case Study of Yaojian Reach //Dr. Liqin Zuo, Nanjing Hydraulic Research Institute, China	Prof. Yuefei Huang & Prof. Guiling Zhang
16:15-16:30	Analysis on Riverbed Evolution of Zhoutianou Reach of Yangtze River after the Operation of the Three Gorges Reservoir //Mr.Geng Qu, Changjiang River Scientific Research Institute, China	
16:30-16:45	A Mike-based Flood Risk Assessment on the Pajing Detention Area of Beijiang Basin, China //Dr. Fengqing Guo, Hui Zeng, Shanxi Agricultural University, Peking University Shenzhen Graduate School, China	
16:45-17:00	Study on the Correlation of River Sediment and Hydrochemical Material Flux under Erosion Conditions //Mr. Jiasheng Wang, Changjiang River Scientific Research Institute	
17:00-17:15	Why Toxic and Non-toxic Microcystis sp. Coexist in Singapore Reservoirs? Biological Insights through NMR and MS-based Metabolomics //Ms. W.L. Zhang, National University of Singapore	
17:15-17:30	2009-2013 Observation of Sediments Transport in Three Gorges Reservoir during Middle and Small Flood Operation //Mr.Yinjun Zhou, Changjiang River Scientific Research Institute, China	
18:00-20:00	**Dinner**	

Sunday, 18th January 2015, Building 1 (Day4)		
Conference Room A		
8:30-8:50	Impacts of Planktonic Fungi on Primary Production in Aquatic Ecosystems //Prof. Guangyi Wang, Tianjin University, China	Prof. Chinghua Huang
8:50-9:10	Development and Demonstration of a Cu(II)-imprinted Poly(vinyl alcohol)/Poly(acrylic acid) Membrane for Greater Enhancement in Sequestration of Copper Ion in The Presence of Competitive Heavy Metal Ions //Prof. J. Paul Chen, National University of Singapore, Singapore	
9:10-9:30	Effect of Water-Sediment Regulation of the Xiaolangdi Reservoir on the Concentrations, Bioavailability, and Fluxes of PAHs in the Middle and Lower Reaches of the Yellow River //Prof. Xinghui Xia, Beijing Normal University, China	
9:30-9:50	Dissolved Methane Distribution in the Yangtze River: Implications for Sources and Emissions //Prof. Guiling Zhang, Ocean University of China	
9:50-10:10	Novel Approaches to Characterize the Reactivity of Dissolved Organic Matter in Water via Interpretation of Its Absorbance Spectra //Prof. Mingquan Yan, Peking University, China	
10:10-10:40	**Coffee Break**	
10:40-11:00	Biogeochemical Exchange between Water Column and Benthic Sediment Layer Numerical Studying about Three Gorges Reservoir //Prof. Jian Li, Changjiang River Scientific Research Institute, China	Prof. Paul Chen
11:00-11:20	Investigation of Pharmaceutical and Personal Care Products (PPCPs) in Environmental Water Samples by Liquid Chromatography –Tandem Mass Spectrometry (LC-MS/MS) //Dr. Feng Liu, National University of Singapore, Singapore	
11:20-11:40	Water and Energy Nexus in Big River System in China //Prof. Guoyu Qiu, Peking University, China	
Conference Room D		
8:30-8:50	Variation of Water and Sediment Flux in Middle and Lower Yangtze River after Impoundment of Three Gorges Reservoir //Prof. Jinyou Lu, Yangtze River Scientific Research Institute, China	Prof. Sam Li
8:50-9:10	Selenium in the Great Salt Lake, the Dynamics of the Real versus the Regulatory Worlds //Prof. William P. Johnson, University of Utah, USA	

9:10-9:30	Analytical and Numerical Exploration for the Multi-Dimensional Distribution of Trace Material in Shear Flow //Dr. Zi Wu, Tsinghua University, China	Prof. Sam Li
9:30-9:50	Monitoring of Intact Endotoxins in Water and Analysis of Their O-antigen Polysaccharide Moiety //Dr. Huatao Feng, National University of Singapore, Singapore	
9:50-10:10	Soil Erosion and Sediment Yield Characteristics of the Hilly-Gully System in the Loess Region //Prof. Wenyi Yao, Yellow River Institute of Hydraulic Research, China	
10:10-10:40	**Coffee**	
10:40-11:00	Response of Land Accretion in the Yellow River Delta to Changes in Water and Sediment Supply during 1976-2013 //Dr. Yuanyuan Zhou and Prof. Heqing Huang, Chinese Academy of Sciences, China	Prof. Xinghui Xia
11:00-11:20	Study on Characteristics of the Recent Fluvial Processes of Wuhan Reach in the Middle Reach of Yangtze River //Mrs. Hongyan Yue, Changjiang River Scientific Research Institute, China	
11:20-11:40	Erosion-induced CO_2 Flux in Small Watersheds //Dr. Yao Yue, Wuhan University, China	
11:40-12:10	**Conference Closing at Conference Room A**	Prof. Alistair Borthwick
12:10-13:30	**Lunch**	