

Greetings from the President



As we are heading into the last a few weeks of the semester, I am pleased to introduce another issue of our newsletter that updates you on the current initiatives and recent developments of CAPEES. Since the summer, we have continued our efforts in strengthening the interactions among our members, developing

an identity of CAPEES, and building linkages with other professional associations.

Our newsletters and gatherings at various professional conferences or events have brought together our members and other colleagues. In this newsletter, you will learn about new research projects and recent professional activities of our members; read stories from our colleagues in Ireland, Singapore, Hong Kong, and Beijing about their career and life, and from Prof. Wang about his year-long sabbatical leave in China; find out who recently joined our association; and see upcoming conferences for possible gatherings and funding opportunities for potential collaboration. I encourage you to invite your eligible colleagues to join CAPEES when appropriate opportunities arise.

For the mission and the characteristics of our association, CAPEES can play a unique role in facilitating academic communication and fostering research collaboration between North America and the Chinese speaking regions in Asia. The theme of this newsletter, *International*, reflects this consideration. The report by Prof. Ching-Hua Huang described the findings from the recent dialogue between CAPEES and AEESP. Since then, we have nominated one of our most prominent members for *AEESP Distinguished Lecturer*. Currently, CAPEES is pursuing a significant role in a 2012 Beijing conference and plans for active participation in the

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2013 AEESP biennial conference. I hope you will enjoy this newsletter and thank Prof. Zhiyong Ren for his great work in putting it together.

As I conclude my last *Greetings from the President*, I want to thank each of you, especially the officers, committee members, and the Board, for the opportunity that allows me to serve our association and for your supports to me. I would like to take this opportunity to wish you and your family a very pleasant holiday season, and look forward to continued growth and successes of our association in the years to come.

Jianpeng Zhou/周健鹏, 2011 President
Southern Illinois University Edwardsville

CAPEES Collaborates with AEESP

Dear CAPEES Members:

Here is some information that I'd like to share regarding my meeting with the AEESP Board in this past summer. Thanks to the invitation by Steve Dentel (AEESP's Secretary), I participated in the AEESP Board meeting, as CAPEES's AEESP Liaison and Board of Directors Chair, at the AEESP Conference in Tampa in this past July. The CAPEES agenda took about 40 min and the discussions were productive. I first gave an introduction/overview about CAPEES and subsequently the possibilities of collaboration between CAPEES and AEESP were discussed. Overall, the AEESP Board is very interested in working with CAPEES and strongly agrees that such collaboration will be mutually beneficial. Several important suggestions were made during this meeting:

1. Invitation to organize a CAPEES-sponsored activity at the 2013 AEESP Conference

AEESP Board suggested CAPEES to host an event at the 2013 AEESP Conference. The timeline for proposing such an activity to AEESP Conference Committee is by January, 2012. A CAPEES poster or booth at the AEESP Conference is also welcome. This will be a great opportunity to increase the recognition of CAPEES by AEESP member base,

and will further encourage AEESP members to utilize CAPEES in developments with Asian countries.

2. Linking AEESP distinguished lecture series with Asia

AEESP is interested in expanding the AEESP distinguished lecture series to Asia, and is also interested in hosting a reverse way of distinguished lecture series if suitable. Based on our connections with universities and researchers in Asia, CAPEES can play a crucial role in facilitating such development.

3. CAPEES members can get involved in the AEESP's career/job workshop

It was suggested that many current graduate students are interested in the China market for employment after graduation. CAPEES members can offer assistance on this aspect in AEESP's popular career/mentoring workshops.

The above suggestions can be excellent opportunities to increase CAPEES members' interactions with colleagues in our field in the U.S., as well as facilitate developing opportunities in China or other countries. To pursue these efforts, we need more ideas and input. Please do not hesitate to offer your thoughts and suggestions.

Sincerely,

Ching-Hua Huang, Board of Directors Chair

Member News

Please visit www.capees.org for more details

Dr. Jianmin Wang's Group Finds Ways to Reduce Arsenic in Rice

Dr. Jianmin Wang, Associate Professor at Missouri S&T and CAPEES President-Elect, is funded by the U.S. Department of Agriculture to investigate the correlations between the arsenic concentration in the grain and the arsenic availability and mobility in the soil. The research findings were recently featured by the University as a story entitled "Where rice may

not be so nice". Details can be found at <http://discover.mst.edu/2011/10/where-rice-may-not-be-so-nice.html>



Dr. Qilin Li Was Promoted to Associate Professor and Received NSF grant

Dr. Qilin Li, was promoted to Associate Professor with tenure in the Department of Civil and Environmental Engineering at Rice University, effective July 1, 2011. Dr. Li joined Rice University in January, 2006. She was also recently awarded an NSF GOALI grant to develop a novel approach to biofouling control in water treatment membrane filtration systems. The project will start on January 1, 2012.

Dr. Baoxia Mi Joined University of Maryland and Received NSF grant

Dr. Baoxia Mi moved to the University of Maryland in August 2011 as an assistant professor. She currently has a postdoc position available in her research lab. People with research background in environmental engineering, material science, or chemical engineering are encouraged to apply. Details are <http://mi.umd.edu/openings.html>. Recently, her research project titled "Elucidating the Mechanisms for Inhibition of Biofouling on Polymeric Membranes Modified with Polyelectrolyte Multilayers and Antimicrobial Nanoparticles" was funded by NSF. It is a three-year collaborative research project with Prof. Kai Loon Chen of Johns Hopkins University as the major collaborator.

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Dr. Ming Xu Received NSF grant

Dr. Ming Xu, assistant professor in the School of Natural Resources and Environment at the University of Michigan, was recently awarded a grant from NSF. This three-year grant is aimed to develop a spatially-explicit agent-based life cycle analysis framework for improving the environmental sustainability of bioenergy systems. The work aims to provide a roadmap for the nation and selected states to achieve bioenergy development goals while meeting market demand and minimizing environmental impact. Details are at <http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=1132581>

Dr. Huichun (Judy) Zhang Received NSF Grant

Dr. Judy Zhang, assistant professor in the Department of Civil and Environmental Engineering at Temple University in Philadelphia, PA, recently received a grant from NSF to support her research titled "BRIDGE: Redox Noninnocent Ligands – Application in the Reductive Transformation of Veterinary Pharmaceuticals Containing Carbon-Nitrogen Double Bonds". Detailed are at http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=1125713&WT.z_pims_id=503160. Dr. Zhang's group is seeking a motivated Ph.D student to conduct the exciting research. Please contact Dr. Zhang at hjzhang@temple.edu for application details.

Dr. Zhen He Received 2011 BARD Grant

Dr. Zhen He, Assistant Professor in the Department of Civil Engineering and Mechanics, the University of Wisconsin - Milwaukee, received a grant of \$300,000 from Binational Agricultural Research & Development Fund (BARD). As the PI of the project, Dr. He will work with two Co-PIs from Israel Technion. This three-year project is to develop a bioelectrochemical system to desalinate brackish water for agricultural application.

Dr. Yinjie Tang and Dr. Zhiyong (Jason) Ren Received GCE Grant

Dr. Yinjie Tang, Francis Ahmann Career Development Assistant Professor at Washington University in St. Louis, and Dr. Zhiyong (Jason) Ren, assistant professor at University of Colorado Denver, both received grants from the Bill & Melinda Gates

Foundation Grand Challenges Exploration (GCE) program. Dr. Tang aims to develop a genetically engineered fungal species that can convert fecal sludge into butanol, a biofuel similar to gasoline. Dr. Ren plans to develop low-cost and easy-to-operate bioelectrochemical systems and provide a self-sustainable solution for communities in need of both sanitary waste disposal and energy supply. They were among the 110 grantees who were selected from over 2,500 proposals and approximately 100 countries.

Dr. Ching-Hua Huang Gave Invited Conference Presentations in China

Dr. Ching-Hua Huang gave invited presentations at two international conferences in China: the 6th National Conference on Environmental Chemistry in Shanghai, China, September 21-24, 2011 (<http://www.environmentchem.org/>) and the International Conference on Drinking Water Safety, Security and Sustainability in Hangzhou, China, October 9-11, 2011 (<http://drinkingwater.zju.edu.cn/>). Dr. Huang enjoyed the well organized conferences and the chances to interact with many environmental researchers in China and from abroad.

Dr. Xingmao (Samuel) Ma Visited the Helmholtz Center for Environmental Research (UFZ), Germany

Dr. Ma visited Helmholtz Center for Environmental Research (UFZ) in Leipzig, Germany as a guest scientist for seven weeks last fall. During his stay in Leipzig, he worked with Professor Kopinke in the environmental engineering program to investigate the potential applications of an iron-activated carbon nanostructure in groundwater remediation. In spare time, Dr. Ma visited surrounding towns and enjoyed tremendously the history, food and architecture of Leipzig.



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Funding Opportunities and Proposal Deadlines

NSF CBET program next submission window is January 15 - February 17, 2012

As the only NSF program that changed the annual proposal window from two to ONE, the next Chemical, Bioengineering, Environmental, and Transport Systems (CBET) program regular proposal submission window is now January 15 - February 17, 2012, about one month earlier than the past years. Please check www.nsf.gov/div/index.jsp?div=CBET for details. CBET program specializes in four major areas: energy for sustainability, environmental engineering, environmental health and safety of nanotechnology and environmental sustainability.

FY 2013 SERDP Solicitation Topic Released

The Department of Defense's (DoD) Strategic Environmental Research and Development Program (SERDP) is seeking to fund environmental research and development proposals for FY 2013. The Statements of Need (SON) include Environmental Restoration Munitions Response, Resource Conservation and Climate Change, and Weapons Systems and Platforms. Please check www.serdp-estcp.org/Funding for details. Core Solicitation pre-

proposals from the Federal and non-Federal sectors are due Thursday, January 5, 2012.

Upcoming Conferences

ACS 2012 Spring National Meeting

The 2012 Spring American Chemical Society (ACS) meeting will be held in San Diego, CA, March 25-29, 2012. The conference theme is "Chemistry for Life". Abstract submission deadlines range from October 17–November 14, 2011. Please see www.acs.org for conference details. In addition to the national meetings, ACS holds many regional meetings and technical divisional meetings which could be interesting to CAEESP members.

ASM 2012 112th National Meeting

The 112th American Society for Microbiology (ASM) General Meeting will be held in San Francisco, CA from June 16-19, 2012. The abstract submission site will open on November 17, 2011. Please see <http://gm.asm.org/> for more details.

International Conference in Beijing, China

CAPEES plans to get actively involved in the 8th International Conference on Sustainable Water Environment that will be held in Beijing, China in 2012. Conference details are to follow when become available.

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Feature Story of the Issue

My Sabbatical Year at Tongji University

Jianmin Wang, Ph.D., P.E.

Associate Professor

Missouri University Science and Technology
President-Elect, CAPEES

I was granted for a one-year sabbatical leave at Missouri S&T, from Fall 2010 and Spring 2011. Because I originally came from Tongji University (I worked at Tongji from Spring 1989 to Fall 1993), my first choice was to visit my colleagues there, and collaborate with them in research and teaching.

I felt like coming back home – mentally and physically. My living expenses were covered from a contract with State Key Laboratory of Pollution Control and Resource Reuse located at Tongji University. State key labs normally have some flexible funding to support international collaborations. In order to get this funding, one must submit a proposal, and apply for an open project grant. At the end of the project one must commit to publish several journal papers as a product of the support. My proposal was to investigate the co-toxicity of nanoparticles and arsenic, and generate two papers in this subject during the visiting period. Finally I had 1 published and 1 accepted before finishing the visit.

Most people I knew are retired. Others are in very senior positions, and normally control significant amounts of funding – at least 10–20 M Yuan per person. One of the big problems for them was how to spend money – a problem we will never have here. If I am correct, the funding received in 2010 by the College of Environmental Science and Engineering (CESE) alone exceeded 200,000,000 Yuan (yes, lots of zeros). Because of the high funding level, lab facility is significantly improved compared to a few years back. The key lab and individual research groups host a suite of most advanced lab equipment one can imagine, including LC/MS/MS, ICP-MS, etc.

The CESE at Tongji has three undergraduate programs: Municipal Engineering, Environmental Engineering, and Environmental Science. There are

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approximately 150 faculty members within the school. Office and lab spaces are very limited because the major infrastructure was not changed since I left Tongji in 1994. Junior faculty members normally work with a senior faculty member and share the same lab space. I have heard that Tongji just received a significant endowment from a private industry, which will be used to build a modern environmental lab building on campus.

Professors there worked extremely hard. One full professor normally has more than 10 graduate students. This is very helpful for generating publications and managing projects. The research quality is improved significantly in recent years – thanks to the more advanced analytical instruments that are able to detect lower levels of contaminants. Also, their teaching loads were very low. Sometimes several professors only share one course. This will allow professors to spend more time in research (and consulting, too). I am sure, in the very near future, the publication record from professors in China will be more impressive than what we have in US.

I have co-taught several courses in both undergraduate and graduate levels. My goal was to introduce the teaching style I used here back to Tongji. These include teaching courses using clickers, and problem-based learning approach. Clicker is a tool to force students to pay more attention during the lecture, and to initiate class discussions. For the several courses I taught using clickers, all students loved it, and provide very positive feedbacks. Unfortunately the university administration did not put much effort to promote it. However, I heard that one of the courses I co-taught was selected as a demonstration course in Shanghai, and I will probably be back to Tongji every May to teach about 25% of the content.

Overall, my sabbatical year at Tongji was very fruitful. I interacted not only with colleagues for research, but also with graduate and undergraduate students regarding the research and learning activities. During the sabbatical year I was able to focusing on papers, therefore it is a great opportunity for me to catch up with publications.

Featured Member of the Issue

Dr. Xinmin Zhan/占新民

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1. My career path

I hold B.Eng. degree in Environmental Engineering and BA in Economics from Tsinghua University, Beijing, China. I was awarded PhD degree in Environmental Engineering from Tsinghua in 2000. After my Ph.D. I pursued a UNESCO research fellowship for one year in Tokyo institute of Technology, Japan, where I acquired techniques for novel adsorbent materials synthesis and their environmental applications. I then worked in Gifu University, Japan for two months (I had a good time if without considering the terrible hay fever). Between 2001 and June 2002, I worked as a lecturer in the Department of Environmental Science and Engineering at Tsinghua University. In July 2002, I came to work in the National University of Ireland, Galway on developing and commercializing a novel wastewater treatment technology. I have been a permanent lecturer (above the bar) in Civil Engineering, NUI Galway since 2004.

2. My current interests and projects

I have been actively involved in research in environmental engineering in the key research areas including: (1) development of sustainable technologies for nutrient removal from domestic and industrial wastewaters; (2) biofuel production from biomass and solid waste; (3) mitigation of nitrous oxide gas emissions from the water industry; and (4) synthesis of novel adsorbent materials for water and wastewater treatment. I have been awarded over € 2.0 M research funding between 2005 and 2011. A substantial part of this funding is secured from the EU FP6 and FP7 programme. I have also secured funding from a State Key Laboratory on Aquatic Environment, China to carry out collaborative research work with key research institutions in China. My group has constructed four pilot-scale systems: sequencing batch reactors, membrane reactors, anaerobic digester

and woodchips biofilters (see the picture), for demonstrating these technologies.

3. Courses I normally teach

I always (this is very good to a lecturer!) lecture: Introduction to computing (1st year), Wastewater treatment (4th year) and solid waste treatment system design (4th year). I like the 1st year computing because the students do not like it (too much mathematics!). I am very strict to students, a traditional Chinese way.

4. My professional activities

The only international society I join is the International Water Association (IWA). Actually, I forgot to pay the fees for two years since I was on sabbatical in 2010. Not sure if they have kicked me out. I will continue to pay next year.... Nevertheless, I always keep eyes on the IWA events.

5. My hobbies and the major attractions and cultural environment of my area and/or community

I live in Galway, the western coast of Ireland. My university is the most western third level (i.e. university) education centre in Europe (the map says!). Ireland is definitely a place you should visit. Irish are very good at music, dancing...and drink. If you like the River Dance show, then do not hesitate to visit Ireland. I liked James Joyce so I moved to Ireland 9 years ago. However, I do not like the weather- too much rain.

6. My thoughts on key factors that lead to my career today and suggestions to our young members

Ireland is not a place as diverse as the USA, so I cannot offer many suggestions. It is very important to keep a balance between work and life, especially when children are small. Sometimes, I find it is very difficult to give more time to my children. I like reading (no love stories but detective ones - so I am very familiar with lots of smart detectives and novel forensic techniques!), cycling, DIY (do-it-yourself) work and gardening. However, the weather does not allow gardening and cycling too much.



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Featured Member of the Issue

Dr. Jiangyong Hu/胡江泳

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1. My career path

I obtained my B.Eng. degree from the Department of Environmental Science and Engineering, Tsinghua University, China in 1991. I continued on with my graduate studies in the same Department of Tsinghua University and obtained my Ph.D. in 1996. My Ph.D. supervisor is Prof. Wang, Zhansheng, who is a well known expert in drinking water treatment field in China, and I benefit a lot from his kind advice. I received a NSTB postdoc fellowship in 1996 by National Science and Technology Board (NSTB) in Singapore and came to the National University of Singapore (NUS). In 1998, I was recruited as an assistant professor in the Department of Civil Engineering and became a faculty member of NUS. In 2004, I was promoted to Associate Professor with tenure.

2. My current interests and projects

My research covers areas such as emerging contaminants detection and removal in water and wastewater treatment processes, disinfection technology and biofilm control, and water reclamation. I currently work on five to six research projects, such as AOP process for disinfection and emerging contaminants removal, biofilm development in pipeline receiving desalted water, and fate and behaviour of emerging contaminants in water environment. My research has been funded by NUS, Public Utilities Board (PUB), Environmental and Water Initiative (EWI) and industrial collaborators.

3. Courses I normally teach

The courses I teach include water and wastewater engineering, water treatment process, advanced wastewater treatment and wastewater treatment

system design. I teach both undergraduate and postgraduate courses.

4. My professional activities

I have been very active in a few professional associations. Currently, I am the President of Environmental Engineering Society of Singapore (EESS). EESS has more than 30 years history in Singapore and has been very active both locally and internationally. I am also actively involved in International Water Association specialist management groups for water reclamation and reuse (as management committee secretary) and assessment and control of hazardous materials (as management committee member). I was just elected as IWA fellow in this year. I am also ASPIRE council member. ASPIRE is a sub unit of IWA which is active in Asian-Pacific region for any water related issues. In this Oct., ASPIRE will have its biannual conference to be held in Tokyo to discuss all aspects of water management problems and solutions. The next event is to be held two years later in Korea.

5. The major attractions and cultural environment of my area and/or community

Singapore is a beautiful city state (see the picture) and very international. Many international conferences are held here every year such as the annual Singapore International Water Week in July. NUS aims to position as at a global university centered in Asia. Our graduate students come from many countries. They have brought a unique learning environment to NUS. In addition, the local Chinese society provides a comfortable living environment.



6. My thoughts on key factors that lead to my career today and suggestions to our young members

Passion and persistence are the most important factors for any success. I realize that work and life are equally important, and try to spend more time with family nowadays.

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Featured Member of the Issue

Dr. Xiangru Zhang/张相如

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1. My career path

I received my B.S. and M.S. in Environmental Chemistry from Nankai University, and Ph.D. in Civil Engineering (Environmental) from University of Illinois at Urbana-Champaign. Then I worked as postdoctoral and senior research associate at the University of Notre Dame. I joined the Hong Kong University of Science and Technology (HKUST) as Assistant Professor in 2006, and became Associate (tenured) Professor in 2011.

2. My current interests and projects

My research interests include (1) innovative water and wastewater treatment processes, (2) emerging contaminant detection, toxicity and control, and (3) drinking water security. I and my research group are currently working on several Competitive Earmarked Research Grants funded by the Hong Kong Research Grant Council. These grants are about the detection, identification, formation, control, and marine ecotoxicity of brominated/iodinated disinfection byproducts in chlorinated saline wastewater effluents. It is expected that the research outcomes may answer whether we should promote the use of seawater for toilet flushing.

3. Courses I normally teach

I have been teaching Environmental Engineering and Management, Water and Wastewater Engineering, Environmental Impact Assessment, Aquatic Chemistry, Landfill Engineering and Design, and Industrial Wastewater Treatment.

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4. My professional activities

I am a member of American Water Works Association (AWWA), American Chemical Society, and AWWA Organic Contaminants Control Committee.

5. The major attractions and cultural environment of my area and/or community

Hong Kong is full of fabulous attractions, such as the Victoria Peak, the Ocean Park, the Giant Buddha, and Wong Tai Sin Temple. HKUST is a young and vigorous international research university. There are no words to express her wondrous beauty (see the picture). I wish that our CAPEES members could visit Hong Kong at your convenience and stop by HKUST to give a seminar about your wonderful research. I would be happy to host your seminar and guide you to the major attractions in Hong Kong.



6. My thoughts on key factors that lead to my career today and suggestions to our young members

I'd better not 王婆卖瓜... because every CAPEES member is a crouching tiger or a hidden dragon.

Featured Member of the Issue

Dr. Jingkun Jiang/蒋靖坤

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1. My career path

I hold a B.S. (2002) and a M.S. (2004) in Environmental Engineering from Tsinghua University (advisor: Prof. Jiming Hao). My M.S. study was on the development of atmospheric mercury emission inventory in China. I got my Ph.D. degree (2008) in Energy, Environmental and Chemical Engineering from Washington University in St. Louis (advisor: Prof. Pratim Biswas). My PhD research was on nanoparticle synthesis and charging in the gas phase. Their applications in environmental nanotechnology and nanotoxicology were also explored. I did my postdoctoral research (2008-2010) in mechanical engineering at University of Minnesota (advisor: Prof. Peter McMurry). We developed new aerosol instruments to measure sub-2 nm particles. These instruments were deployed in field campaigns and in laboratory chambers to investigate the processes leading to atmospheric new particle formation and growth. In October 2010, I joined Tsinghua University as an associate professor.

2. My current interests and projects

I am interested in those tiny particles suspended in the gas phase. They play an important role both in environmental issues (e.g., air quality, visibility, human health, and climate change), but also in many other fields such as nanomaterial synthesis and nanoscale analytical chemistry. My current research includes aerosol instrumentation, atmospheric aerosols, air pollution characterization and control, and environmental nanotechnology. These studies are funded by NSF China, Ministry of

Environmental Protection, and Ministry of Science and Technology.

3. Courses I normally teach

I am teaching Aerosol Mechanics for graduate students.

4. My professional activities

I am a member of several professional associations including American Association for Aerosol Research, Air & Waste Management Association (A&WMA), and American Association for the Advancement of Science (AAAS).

5. My hobbies and major attractions and cultural environment of my area and/or community

My hobbies include playing basketball and badminton, swimming, and watching movies. I learned wind surfing in the U.S. and enjoyed it a lot, but I have not been able to surf since I moved back to China. Beijing is a city with rich culture, art, and other attractions. It is a great place to raise a family. The beautiful campus of Tsinghua is also a big attraction to me. The picture shows Ginkgo trees on Tsinghua campus.

6. My thoughts on key factors that lead to my career today.

I enjoy the work I am doing.



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