

# **CESASC 2013 Annual Meeting Technical Symposium**

**Hilton San Gabriel**

**March 30, 2013; 10:30am – 5:30pm**

## **Speaker Bio and Presentation Abstract**

### ***Luncheon Keynote Speaker: Dr. Fuk Li, NASA Jet Propulsion Laboratory***

Dr. Fuk K. Li is Director for the Mars Exploration Directorate at NASA's Jet Propulsion Laboratory (JPL) since 2005. He received his bachelor's degree and doctorate in physics from the Massachusetts Institute of Technology. He joined JPL in 1979 and has been involved in radar remote sensing activities. He has developed a number of system analysis tools for space-borne synthetic aperture radar system design, and participated in the development of and applications for interferometric synthetic aperture radar.

From 1983 to 1988, he was the project engineer for the NASA Scatterometer. He was principal investigator for an airborne rain mapping radar, an airborne cloud mapping radar, an experiment using space-borne imaging radar to study rainfall effects on ocean roughness, and the development of an airborne active/passive microwave system for ocean salinity and soil moisture sensing. From 1997 to 2001, he managed the New Millennium Program, designed to flight-validate key technologies that bring significant benefits to future science missions.

He became deputy director of JPL's Solar System Exploration Program Directorate in 2001 and deputy director for the Mars Exploration Directorate in 2004. He is currently also the Mars Exploration Program Manager.

### ***CESASC 2013 Technical Session Chair: Dr. Yue Rong, California Environmental Protection Agency***

Dr. Yue Rong (a.k.a. "Y.R.") is currently the environmental program manager at the California Regional Water Quality Control Board, Los Angeles Region. He has more than 20 years' experience with the Agency in dealing with groundwater contamination problems in the Los Angeles area of California, U.S.A. He is an Associate Editor for the peer-reviewed *journal of Soil and Sediment Contamination* and an Associate Editor for the *Journal of Environmental Forensics*. Dr. Rong is the author or co-authors for about 30 peer-reviewed publications, and the editor of the book entitled "Practical Environmental Statistics and Data Analysis." He was the recipient of the California Regional Water Quality Control Board Outstanding Achievement Award and Supervisory Performance Award. He also received 2011 AEHS Foundation Achievement Award. Dr. Rong was elected in 2006 and re-elected in 2008 as the president on the board of directors for the Southern California Chinese American Environmental Protection Association (SCCAEPA), serving the local minority

community. He is also the Editor-in-Chief for the peer-reviewed SCCAEP Online Journal. Dr. Yue Rong has his Ph.D. in Environmental Health Sciences from the University of California at Los Angeles (UCLA), M.S. in Environmental Sciences from the University of Wisconsin, and B.S. in Earth Science from the Beijing Normal University.

## **Session 1: CESASC College Scholarship Recipient Poster Exhibition**

### ***Session Chair: Dr. Lisa Wang, California State Polytechnic University at Pomona***

Dr. Lisa Yunxia Wang is a professor in civil engineering at California Polytechnic University, Pomona. She received her Ph.D. in Structural and Earthquake Engineering from the University of California, Irvine, her M.S. in Geotechnical Engineering from China Academy of Railway Sciences, and her B.S. in Civil Engineering from Southwest Jiaotong University. Dr. Wang is a licensed civil engineer in California. She was a practicing structural engineer with Boyle Engineering in Newport Beach where she designed numerous structures including bridges, buildings, industrial facilities, hydraulic structures and pipeline systems.

Dr. Wang's research interests include liquid-structure interaction, earthquake-resistant design, base isolation, and systems with supplemental damping. She has served as a reviewer of the ASCE Journal of Structural Engineering, and on several ASCE/SEI technical committees, including Optimal Structural Design and Seismic Effects. Her latest grant is awarded by NSF Major Research Instrumentation program; the NSF grant is for her project "Acquisition of Seismic Simulating System for Integrated Research and Education in Structural Engineering."

## **Session 2: Aerospace and Exploration**

### ***Session Chair: Dr. Jonathan Jiang, NASA Jet Propulsion Laboratory***

Dr. Jonathan Jiang is a Research Scientist and a Principal Investigator for aerosol, cloud and water vapor studies at NASA Jet Propulsion Laboratory, California Institute of Technology. Dr. Jiang earned a B.Sc. of Astrophysics in 1985 from Beijing Normal University; a M.Sc. of Astrophysics in 1991 and a Ph.D. of Atmospheric Physics in 1996, both from York University in Canada. Prior to coming to JPL in 1999, he worked as a Postdoctoral Research Fellow at McGill University and a Research Associate at University of Quebec at Montreal. Dr. Jiang received a NASA Space Act Award in 2005 for developing the microwave cloud forward model for MLS project and the NASA Exceptional Achievement Medal in 2010 for pioneering a new approach to quantifying the impact of air pollution on clouds and climate through combining observations from multiple NASA satellites.

### ***Dr. Robert Nelson, Planetary Science Institute***

Dr. Robert Nelson is a Senior Scientist at Planetary Science Institute (PSI). Before joining PSI in 2012, Dr. Nelson had been working at NASA's Jet Propulsion Laboratory

for 34 years. He was the Lead Scientist NASA's New Millennium Program. He had been actively involved in many space flight missions, such as International Ultraviolet Explorer, Galilean Satellites, Voyager Spacecraft, Cassini Saturn Orbiter. Dr. Nelson is the recipient of NASA Exceptional Service Medal and JPL NOVA Award.

***Dr. Fengchuan Liu, NASA Jet Propulsion Laboratory***

Dr. Fengchuan Liu joined NASA's Jet Propulsion Laboratory in 1995 as a Research Scientist working on experiments on the Space Shuttle and the International Space Station. Since 2004, Dr. Liu has been the Flight System Manager and later the Project Manager for the NASA WISE mission, responsible for the spacecraft and the telescope development.

***Dr. Yingdi Liu, NASA Jet Propulsion Laboratory***

Dr. Yingdi Liu began her work at JPL as a Caltech Postdoctoral Scholar in October 2011. Her research focuses on photochemistry and reaction kinetics studies of important molecules and intermediates in earth's atmosphere. She received her BS from China's Fudan University and a Ph.D. in Chemistry as well as MS in both Chemistry and environmental engineering from UC-Riverside.

### **Session 3: Information Technology**

***Session Chair: Joseph Chen, Chinese-American Computer Association (CCA)***

Joseph is an IT professional with over thirty years' experience in all phases (SDLC) of business application including requirement analysis, design, development, QA, implementation, support for the private and public sectors. He has served as senior consultant, senior system analyst, senior programmer/analyst and developer throughout his career. He has worked in health care, logistics, payroll, sales, benefits, finance, accounting, and insurance systems. He has managed and coordinated IT projects, and provided Business Intelligence (BI) service to Corporate Executives, HR, project managers, and other business operation staffs. His recent work is IT consultant for Kaiser Permanente. Joseph received his Master degree in Computer Science from University of Texas A&M and business management from National Cheng Kung University from Tainan, Taiwan.

***Chun-I Philip Chen, Ph.D. Adjunct Professor, California State University, Fullerton***

Dr. Philip Chen has over 30 years of IT experience. Previously, he held various IT management and technical support positions in the fortune 500 companies. Currently, Dr. Chen is teaching at California State University, Fullerton and University of Maryland University College as an Adjunct Professor. His research interests include databases, knowledge discovery, data mining, software engineering, information security, and IT management.

Abstract: In 2013 and beyond, "Big Data" is the most important IT Emerging Technologies among the current underlying IT technologies which including Cloud Computing, Mobile Devices, Social Network / Media and Enhanced Analytics Software /

Tools. In this presentation, Dr. Chen will discuss what the “Big Data” are. Why is it important? How will it change the concepts the way we do business today? In addition, other emerging technologies trends will be also discussed.

***Brandon Clark Parks, Los Angeles Police Department***

Mr. Brandon Parks is a former Counterintelligence Special Agent for the U.S. Army, and served in Iraq, Kuwait, and Germany. He currently serves as a police officer with the Los Angeles Police Department, where he investigates a variety of crimes, including computer and cyber related offenses. Parks holds a BA in Psychology from UCLA, and is currently pursuing a Master’s Degree in Cybersecurity at the University of Maryland University College.

Abstract: Cybersecurity Concepts and Practices

Modern business is increasingly dependent on information technology to connect with customers, other businesses, and to streamline operations. As our reliance on these technologies grows, so too does the criminal element seeking to profit through exploitation of this new frontier. Parks will discuss the current state of cybersecurity technologies, the methodologies of cybercriminals, recent developments in legislation and government cyber policy, and cybersecurity solutions for business moving forward.

***Peter Zhang, Ph.D. ZHTECH Corporation***

Dr. Zhang is a tech-savvy professional with over eighteen years’ experiences and demonstrated success in IT Industry. He has served as senior consultant, project manager, principle software engineer, senior web architect and developer throughout his career. He has designed, implemented, and maintained numerous web-based systems, managed and coordinated IT projects, and provided Business Intelligence (BI) service to corporate executives, HR, accountants, project managers, and other business operation staffs. His recent work and research focus on Cloud computing, BI, and SharePoint portal development. Dr. Zhang received his master degree in Environmental Engineering from University of Minnesota and Ph.D. in Business and Information Technology from Capella University.

Abstract: This presentation starts with the concept, current status, and growing trend of cloud computing technology. The presentation then focuses on the topic of Microsoft cloud computing efforts, services, and products, including its datacenters, virtualization software (Windows 2012 and System Center 2012), PaaS (Azure), and SaaS (Office 365).

***Thomas T. Chan, Esq. Fox Rothschild LLP***

Mr. Thomas Chan is a partner at Fox Rothschild LLP resident in its Los Angeles office. A highly acclaimed and internationally known lawyer and mediator, he has a strong background in the areas of intellectual property, mergers and acquisitions and transactional litigation. For more than 30 years, Thomas has assisted clients with multimillion dollar patent, trademark, copyright, trade secret, corporate and contract disputes; registering hundreds of trademarks, patents and copyrights; and closing multimillion dollar licensing, public company merger and acquisition and strategic transactions; as well as acting as outside general counsel for small to medium size firms

from incubation to exit. He has represented entrepreneurs and multi-nationals in industries such as computer, software, aerospace, energy, communication, e-commerce, healthcare, entertainment and education. Fluent in Chinese, he is an early pioneer in China trade, and has assisted numerous Chinese companies successfully expand into the U.S. market. In addition, Thomas was trained as a mediator at the California Academy of Mediation Professionals and was selected to serve on the Panel of Neutrals of the International Trademark Association (INTA) and the Panel of Mediators and Arbitrators of the Los Angeles County Superior Courts.

A highly sought after lecturer and commentator, Thomas has been widely quoted in the Washington Post, Reuters, Los Angeles Times, The New York Times, Wall Street Journal and other national newspapers and magazines and has made frequent guest appearances on television and radio broadcasts. He has received numerous awards over the years, including being named one of the Top 50 Intellectual Property Litigators in California by the Daily Journal. Thomas was also appointed by the U.S. Secretary of Commerce and the U.S. Trade Representative to serve on the Industry Sector Advisory Committee, where he advised the United States on trade policies during the Reagan and senior Bush administrations.

For Thomas' complete profile, please visit -

<http://www.foxrothschild.com/attorneys/thomas-chan.html>

## **Session 4: Humanity and Social Sciences**

### ***Session Chair: Dr. Zuoyue Wang, California State Polytechnic University at Pomona***

Dr. Zuoyue Wang is a professor of history at the California State Polytechnic University at Pomona, specializing in the history of modern science and technology. Born in China and originally trained in physics, he received his Ph.D. in history from UC Santa Barbara in 1994 and is the author of *In Sputnik's Shadow: The President's Science Advisory Committee and Cold War America* in 2008. He is currently conducting research on a transnational history of Chinese American scientists and engineers with partial support from the National Science Foundation (NSF). He shared the History of Science Society's Price/Webster Prize in 2003 and currently serves on the society's council (2012-2014). He has taught at UC Berkeley, the Chinese Academy of Sciences in Beijing, and Harvey Mudd College as its Hixon-Riggs visiting professor in science, technology, and society in 2008-2009.

### ***Ms. Elizabeth Yang, Esq. and Mr. Tommy Wang, Esq., Yang & Wang, P.C***

Ms. Elizabeth Yang is a founding partner of Yang & Wang, P.C. She specializes in Intellectual Property Law litigation, including Patents, Copyrights, Trademarks and Licensing, at the Federal District and before the United States Patent and Trademark Office (USPTO). Ms. Yang also has experience practicing law in a variety of technologies, including electronics, hardware, software, variable data printers, fingerprinting sensors, data packet processing, network security systems, microprocessors, and automated telephonic systems. Prior to practicing law, Ms. Yang worked for Raytheon Company as an electrical engineer designing radar systems for the B2 Bomber.

She has also worked for NASA's Jet Propulsion Lab as a team member on the main control unit of the Mars Exploration Rover. Ms. Yang attended UC Berkeley and received her degree in Electrical Engineering and Computer Science. She then attended University of La Verne College to receive both her JD and MBA degrees. Ms. Yang is fluent in Mandarin Chinese and an active member in the Chinese community.

Mr. Tommy Wang is a founding partner of Yang & Wang, P.C. Specializing in Intellectual Property Law, Mr. Wang is a Registered Patent Attorney who is licensed to practice law in both the federal and state courts of California and before the U.S. Patent and Trademark Office. Mr. Wang specializes in representing and advising Taiwanese and Chinese clients regarding their legal affairs in the U.S. Using his ability to read, write and speak fluent Mandarin Chinese and Taiwanese, he serves as outside general counsel for clients to provide a wide range of management and counseling services. As a trained Biochemist, he devotes a large portion of his practice to the preparation and prosecution of patent applications in the medical device, biochemical sciences and chemical sciences areas. Prior to practicing law, Mr. Wang worked as a clinical research coordinator at the Hospital of University of Pennsylvania Department of Orthopaedic Surgery and as a patent search professional at Cardinal Intellectual Property.

Abstract: The presentation is to highlight the importance of protecting one's intellectual property as well as to formulate a general understanding of the formal and informal options available for those who seek intellectual property protection. The legal presentation will encompass aspects of intellectual property law involving patents, trademarks, and copyrights. The presentation will provide a general overview on the formal requirements and processes involved in acquiring intellectual property protection set by the United States Patent and Trademark Office. New developments in patent law, such as the America Invents Act, will also be discussed. Additionally, the presentation will introduce other forms of intellectual property protection, such as trade secrets and licensing agreements that may prove useful in technical industries.

***Mr. Jeffrey Lu, CPA, Lu & Associates***

Mr. Jeffrey Lu has more than 28 years of financial, real estate, tax and audit experience. His career started from KPMG (known as Peat Marwick Mitchell) in 1983. Mr. Lu developed strong negotiation skills while practicing public accounting representing entrepreneurs featured in Inc. and Money for merger and acquisition and venture-backed and knowledge-based businesses in the high-tech, healthcare and real estate industries. He has been featured in 1997 Money magazine by American Institute of Certified Public Accountant as Personal Financial Specialist. Mr. Lu is a broker consultant, realtor® with Coldwell Banker Previews International and Coldwell Banker Commercial at Newport Beach, CA. He specializes in dealing with Irvine Company and property owners in Irvine Spectrum representing entrepreneurs-tenant and investors in finding and negotiating real estate transactions that meet their business objectives. Mr. Lu holds professional designation of Certified Public Accountant, Personal Financial Specialist, Realtor, Broker and Certified Negotiation Expert of Real Estate Negotiating Institute. He taught accounting and financial statement analysis at University of Missouri at Columbia Missouri and Coastline Community College in Orange County, California. He graduated

with honor from University of Missouri, Columbia with Master of Accountancy, and received M.S. - Taxation from Golden Gate University while completing management training program of KPMG international practice group in Los Angeles. Mr. Lu is the founder of LU & ASSOCIATES in Irvine, California, representing entrepreneurs in finance, tax, litigation support and real estate transactions. Mr. Lu is member and in association with various venture capital organizations in Southern California and Silicon Valley/San Francisco Bay. A life-time member of CESASC, he has served as a member the board of directors of Organization of Chinese-American Entrepreneurs Advisory Network (OCEAN), Assistant Scout Master of Boy Scout of America Troop 606 in its three tours to Camp Chawanakee, advisor to board of director of various the non-profit philanthropic organizations in education, culture and religious entities.

***Mr. Charles C. H. Wu, Esq., MSEE, Law Offices of Charles C.H. Wu & Associates***

Mr. Charles C.H. Wu is an attorney that advocates clients' rights and solves clients' problems. Prior to becoming an attorney, Mr. Wu received his BS and MS EE degrees from USC and worked as an electrical engineer for IBM. In his 20+ years of law practice, Mr. Wu litigated over 350 cases, mostly involving intellectual property and business issues. During the same time period, Mr. Wu successfully prosecuted over 200 U.S. patent and trademark applications. Mr. Wu holds the last U.S. Supreme Court case on trademark law, entitled KP vs. Lasting Impression, 543 U.S. 111. The KP U.S. Supreme Court case clarifies and sets once-and-for-all the Trademark Fair Use doctrine for the United States. Mr. Wu is a founding member of the Orange County Asian American Bar Association and had served as its president. In a similar role, Mr. Wu had served as the president of the Taiwanese American Lawyers Association and the president of the Monte Jade Science and Technology Association, Southern California chapter.

Abstract: Tech giants Apple and Samsung battled it out in San Jose U.S. Court last year in the tech trial of the mobile revolution. A federal jury found Samsung slavishly copied Apples' design and interface elements under the legal doctrine called Trade Dress. Post trial, Apple remained to be the apple of the jury's eye but for how long? Do you agree with Apple's opening statement – Samsung is on trial because it made a deliberate decision to copy Apple's iPhone and iPad? Was Samsung correct in its opening statement – in this lawsuit, Apple seeks to stifle legitimate competition and limit consumer choice to maintain its historically exorbitant profits. One thing is for certain, there will be no shortage of smart phone intellectual property wars in the foreseeable future. We are at the tip of the iceberg.

## **Session 5: Environmental-transportation-geotechnical**

***Session Chair: Guangyu Wang, Ph.D, Santa Monica Bay Restoration Commission***

Dr. Guangyu Wang is currently the Deputy Director of the Santa Monica Bay Restoration Commission (SMBRC), a locally-based state entity under the California State Environmental Protection Agency (Cal-EPA) and Natural Resources Agency. He has more than twenty years of experiences in environmental planning and management. Over the years, he has overseen the design and execution of a wide variety of involving

health risk assessment, watershed modeling, pollutant loading and transport, contaminated sediment remediation, storm water pollution control, wetland and stream restoration, socioeconomic valuation, and regional monitoring, etc. He also has extensive experience in facilitating stakeholder process and serves on many state and local advisory panels. Dr. Wang received his B.S. in Biology from Beijing Normal University, China, and Ph.D. in Biology from the University of California, Los Angeles (UCLA).

***Ms. Lan Saadatnejadi, Los Angeles Metropolitan Transportation Authority***

In June 2011, Lan Saadatnejadi joined LA Metro as the Executive Officer of Highway program. In her role, she oversees the delivery of \$10B Highway Projects in Los Angeles County. She is spearheading the development of Measure R Highway Program Management Policy; collaborating with State and local agencies to explore alternative delivery avenues, including P3, to build projects cheaper and earlier; and developing a comprehensive plan to improve highway system operations in the Los Angeles County.

Previously, Lan had worked in the private sector as a business practice builder as well as a program / project manager. She also served as a senior manager in Caltrans responsible for the delivery of major highway programs. The breath of her projects includes major corridor widening, interchange improvement, operation improvement, safety improvement, sound wall, ITS, HOV, and HOT projects.

She received her Civil Engineering degree from UCLA and MBA degree from Cal State Long Beach.

***Endi Zhai, Ph.D., P.E., G.E., Kleinfelder West, Inc.***

Dr. Zhai is a Vice President at Kleinfelder, Inc. responsible for business development in Transportation Market, managing large client accounts and relationships, managing contracts. He has 26 years of professional experience in the United States and worldwide. He obtained his B.Sci. and M.Sci. degrees in 1985 and 1989, respectively, from Nanjing University, China. He got his PhD from Kanazawa University, Japan in 1997. He received post-doctoral fellowships at the University of British Columbia and Natural Science and Engineering Council of Canada. He is a registered civil engineer and a licensed geotechnical engineer in the State of California, a registered professional engineer in British Columbia, Canada and registered APEC Engineer in Asian-Pacific Economic Cooperation (APEC). He has published approximately 50 technical papers in geotechnical and earthquake engineering, and was featured by ENR Magazine on July 18, 2011.

Outlines of the presentation:

- Faulting style and earthquake mechanism
- Wave propagation from epicenter to ground surface
- Type and earthquake hazards for buildings and infrastructure
- Where to find these earthquake hazards information for your home

***Wenjian Lao, Ph.D. Southern California Coastal Water Research Project (SCCWRP)***

Dr. Lao is currently working on analytical method development and environmental fate



assessment of contaminants of emerging concern (CECs) in Southern California Coastal Water Research Project (SCCWRP). Dr. Lao specializes in trace analysis, enantioseparation of toxic contaminants. He received his B.S. degree in Chemistry from Xi'an Petroleum University, in 1990, and his M.S. and Ph.D. degrees in Analytic Chemistry from Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, in 1996 and 2000 respectively. He was a postdoc in The Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences from 2001 to 2003. Then he came to USA as a postdoc in Vanderbilt University, and continued to be a postdoc in Mississippi State University, and University of California, Riverside, until 2006 when he started to work in SCCWRP. Dr. Lao's current research focuses on passive sampling (solid phase microextraction and polyethylene) method development and application, analysis of legacy pollutants (e.g., toxaphene) and contaminants of emerging concern (CECs) in the environment.

## **Session 6: Bio-Sciences/Medical Technology**

***Session Chair: Sheng-He Huang, Ph.D., Associate Professor at the University of Southern California***

Dr. Sheng-He Huang received the undergraduate degree at the Southern Medical University, Guangzhou, and graduate degree at the Chinese Academy of Medical Sciences, Beijing, China.

Dr. Huang's current research focus is on theoretical and applied issues of microbial infections. In 2002 Dr. Huang has coined the concept of infectomics, which is the holistic and integrative study of the interplay between microbial pathogens and their hosts, and the application of system biology and omic approaches in the field of infectious diseases. Dr. Huang recently proposed a new theory that microbial infection is a two-way paradigm not one-way road (J. Biomed. Biotechnol., 2008:856314, 2011:926407; Anti-Infective Agents, Vol.11, No.2., 2013). The most fundamental issue in infectomics is the relationship between Sym and Pat (two-way paradigm) in microbial infection. Dissecting of the dynamic Sym-Pat duality is essential for understanding of microbial infection using system biology and omic approaches. More recently, Dr. Huang has devoted himself to the research on single cell infectomics of various pathogenic insults-caused blood-brain barrier disorders by integration of single cell profiling technologies and infectomic approaches.

***Xiaowei Fu MD, PhD, FACMG, DABMG, SC (ASCP), University of Southern California***

Director of Biochemical Genetics and Special Chemistry, Department of Pathology and Lab Medicine; Assistant Professor, Department of Pathology, Keck School of Medicine, University of Southern California

MD. China Medical University

Ph.D. Shimane Medical University

2001-2004 ABMG (American Board of Medical Genetics) clinical biochemical genetic fellow: University of California San Francisco / University of Stanford

2007 Board certified Clinical Biochemical Geneticist by ABMG  
2012 Board certified Specialist in Chemistry by ASCP (American Society of Clinical Pathology)

***Dr. Shang Wu, University of California, Riverside***

Dr. Shang Wu is a visiting scholar at University of California, Riverside. Her research interest is on gene regulation in developmental processes. Her PhD dissertation is focused on understanding the mechanisms that control inflorescence patterning events and cell fate decisions in the shoot meristem of Arabidopsis. Her research showed that signaling between the boundary and the cells of the shoot meristem was essential for regulating internode patterning and flower meristem formation and identity. The meristem-boundary signaling event was also crucial for maintaining stem cell homeostasis. Dr. Wu utilized multidisciplinary approaches, including genetics, gene expression analyses, protein-protein interaction studies and chromatin immunoprecipitation to address her dissertation. Shang intends to continue her research in regenerative medicine and cancer research.

Dr. Wu is the publication chair of Leadership, Excellence, Aspiration and Platform (LEAP) career development forum. She is also a member of CESASC and involved in yearbook editing.

Dr. Wu holds a B.S. in molecular biology and biochemistry from China Agriculture University, where she was enrolled in Life Sciences Honor Program and completed within 3 years. Recently, she completed her Ph.D. training in Genetics and Developmental Biology in Department of Botany and Plant Sciences at University of California, Riverside.

***Dr. Shiuan Chen, Department of Cancer Biology at City of Hope***

Shiuan Chen, Ph.D. has studied breast cancer for 25 years. He is one of the three investigators who originally determined the gene structure of aromatase. Aromatase is an enzyme that converts androgen to estrogen. It has been found that abnormal expression of aromatase in breast cancer cells and/or surrounding adipose stromal cells has a significant influence on tumor development and growth. Dr. Chen is the Chair of the Department of Cancer Biology at City of Hope. Several translational research projects are being carried out in his laboratory. Cell culture and animal models have been developed to identify the most effective ways to use aromatase inhibitors (AIs), and to evaluate new strategies in combination of AIs and other types of drugs that will improve efficacy and reduce side effects associated with the treatment. Extensive research has been carried out to study why some patients fail in the treatment of AIs, and collaborations with clinical colleagues at City of Hope have been established to develop mechanism-based clinical trials with preclinical data generated in Dr. Chen's laboratory. Results from major clinical trials on AIs indicate that the use of AIs can prevent recurrence. Dr. Chen's laboratory has found that grape seed extract, mushrooms, and pomegranate contain anti-aromatase phytochemicals. Clinical trials designed based Dr. Chen's findings are being carried out at City of Hope. Furthermore, Dr. Chen has found that blueberry has the potential to slow down cancer metastasis. This line of research will

help us find effective ways to reduce the incidence of breast cancer through dietary intervention and has received recognition nation-wide. It is Dr. Chen's goal that he will be able to characterize a group of superfood with defined protective effects. He feels strongly that such knowledge is critically needed for the development of novel prevention strategies against cancer, such as breast cancer and prostate cancer. Furthermore, Dr. Chen's laboratory has developed a high throughput screening assay for identifying and testing environmental chemicals that can target aromatase and estrogen receptor, including certain industrial pollutants, pesticides, and detergents that can mimic hormones and stimulate breast cancer growth.

Dr. Chen has shared his expertise in numerous study sections for the National Institutes of Health, U.S. Army Breast Cancer Research Program, Susan G. Komen for the Cure and the Environmental Protection Agency. In addition, he has served as the Chair of a 2007 Gordon Research Conference on Hormone Action in Development & Cancer, the Chair of the Ninth International Aromatase (2008) conference, and a member of the National Breast Cancer Coalitions' Summit on Primary Prevention of Breast Cancer 2011. Dr. Chen has published 221 papers and has mentored 10 graduate students, 25 research and surgical fellows, and several junior faculty members.

***Ling Wang, Ph.D., University of California, Irvine***

Dr. Ling Wang received her Ph.D. in Environmental Engineering at University of California, Irvine (UCI). She has completed a bachelor degree in China, and holds a master degree from University of Idaho in Environmental Engineering. During her academic career, Dr. Wang acquired two years of research experience in Idaho and several years of hands-on system training at UCI. Additionally internship experience applied academia to real-world situations – broadening her perspective as an engineer. She has published five academic journal papers during the Ph.D. studies. Her Ph.D. research focused on removal emerging contaminants in water using advanced treatments.

## **Session 7: Energy and Alternatives**

***Session Chair: Mengzhao Hu, Parsons Brinckerhoff, Inc***

Senior Transportation Planner, Parsons Brinckerhoff, Inc. [humen@pbworld.com](mailto:humen@pbworld.com)  
President, International Chinese Transportation Professionals Association – Southern California Chapter

She has been actively involved in the organization since she was in graduate school. During the last 10 years, she helped to organize several major ICTPA events including the 2011 ICTPA International Conference, 2007 ICTPA International Conference, and at least ten workshops and seminars featuring speakers from leading transportation agencies in Southern California.

Mengzhao Hu started her career as a transportation planner at Parsons Brinckerhoff's Orange County office in 2005. She has been working on several major transit projects in Los Angeles including Metro Purple Line Westside Extension, Crenshaw LRT/BRT

Corridor Study, Regional Connector Study, Metro Long Range Plan, Gold Line Foothill Extension, Metrolink Perris Valley Line Extension, etc. Her specialization is travel forecasting model for large scale transit projects targeting for Federal Transit Agency (FTA) funding.

Originally from Shanghai, China, Mengzhao holds a bachelor's degree in Urban Planning from Tongji University and a master degree of Planning from the University of Southern California.

***Mr. Henry Hogo, Assistant Deputy Executive Officer/Science & Technology Advancement, Southern Coast Air Quality Management District (AQMD), [hhogo@aqmd.gov](mailto:hhogo@aqmd.gov)***

Mr. Henry Hogo is the Assistant Deputy Executive Officer for the Mobile Source Division in the Office of Science and Technology Advancement at the South Coast Air Quality Management District (SCAQMD). Mr. Hogo received a Bachelor of Science degree in Chemistry from the University of California, Berkeley and has been working in the air pollution field for over 35 years. As Assistant Deputy Executive Officer in the Mobile Source Division, Mr. Hogo is responsible for the implementation of the District's Clean Fleet Vehicle Rules, development of the mobile source strategies for the SCAQMD's air quality management plans, analysis of mobile source emissions impacts on air quality, and providing input on state and federal mobile source regulations.

Presentation Title: SCAQMD Perspective on Hydraulic Fracturing in the South Coast Air Basin

***Emily Vavricka, Project Scientist, Environmental Engineering & Contracting, Inc. [evavricka@eecworld.com](mailto:evavricka@eecworld.com)***

Emily Vavricka is a Project Scientist with Environmental Engineering and Contracting, Inc. (EEC), an environmental consulting company located in Northern and Southern California and the Mid Atlantic. Ms. Vavricka has over 10 years of experience in environmental consulting and litigation support. She specializes in the use of environmental forensic techniques in order to determine the source, age, fate and transport of contaminants in soil and groundwater. She has conducted work involving the assessment of methane and hydraulic fracturing chemicals in the environment, including forensic evaluations of the fate and transport of methane and chemicals from hydraulic fracturing processes in soil, surface water, and groundwater. She is co-author in one book chapter and several peer reviewed scientific publications on the topics of environmental forensics and perchlorate. She holds a B.S. in Environmental Science from the University of California, Riverside and an M.S. in Environmental Science, with an emphasis in Hydrogeology, from California State University, Fullerton. Ms. Vavricka currently serves as a Director on the Groundwater Resources Association of California's (GRA) Board of Directors and is the current GRA Southern California Branch Secretary and past President.

Abstract: Hydraulic fracturing has been used to stimulate production of oil and gas since the late 1940's throughout the U.S., including California. In the late 1980's to early 1990's advances in horizontal drilling processes and fracturing techniques resulted in a significant increase in this enhanced production technique. Hydraulic fracturing techniques typically involve the injection of large quantities of water, chemical additives, and proppant. The volume of fluid used in the hydraulic fracturing process can range from 2 to 8 million gallons, in horizontal gas wells. In California, where conventional drilling predominates, volumes reportedly range between 200,000 and 1.5 million gallons, although there has not been a comprehensive study conducted. Depending on the nature of formations being exploited, and the type of media being recovered, between 30- 70% of the injected fracturing fluid may not be recovered.

Fracturing fluid chemistry is often complex, consisting of hundreds of chemicals designed to serve a variety of purposes, including corrosion and scale inhibitors, biocides, thickening agents, friction reducers, pH adjustment, and borehole and well cleaning. These chemicals can include diesel fuel, BTEX, 1,4-dioxane, ethylene glycol, and naphthalene. According to some reports, little is known about the effects to the environment of as many as 43% of these chemicals. Currently, reporting of the chemicals used in the hydraulic fracturing process is conducted on a voluntary basis.

Groundwater, soil, and soil vapor can become impacted by hydraulic fracturing activities by a number of processes including faulty well construction, improperly abandoned wells, fault zones, releases from surface impoundments, leaks and spills, stormwater runoff, chemical storage, and underground injection of flowback water.

Because of the large variety of chemicals potentially contained in the hydraulic fracturing fluid and flowback water, a comprehensive groundwater and surface water sampling plan should be designed and implemented. Included with this plan should be a comprehensive baseline analysis of existing conditions to document any deleterious conditions that may exist prior to development.

Dependent upon site specific conditions and the nature of the anticipated fracturing program, analysis of water for the following constituents and/or parameters should be considered.

- VOC's
- Semi VOC's
- Metals
- Methane and Associated Gases
- Surfactants
- General Minerals
- Radionuclides
- pH
- Carbon and Hydrogen Isotope Ratios

***Shaw Zhang, Ph.D. LEED AP, KPFF Consulting Engineers  
Overseas Chinese Civil and Structural Engineering Association (OCCSEA)  
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Dr. Shaw Zhang is a structural engineer at KPFF Consulting Engineers in Los Angeles. He had an extensive experience of structural design for hospitals, airports, educational and commercial buildings and involved in all stages of projects, including cost estimate, writing proposals, scheduling the work and control the budget, analyzing building structural integrity, coordinating with clients and preparing structural drawings/reports. Shaw specializes in linear/non-linear, static/dynamic analyses of new and existing buildings, design of energy-dissipated structures with added damping, structural inspection, damage assessments, high rise building design based on US and China building codes, and performance based design for a site specific seismic hazard. In a post-earthquake investigation for the Haiti earthquake in 2010, Dr. Zhang conducted building damage evaluations and provided seismic design trainings in local civil engineering communities.

Besides industrial practices, Dr. Zhang also performs scientific research in the structural engineering field for contents beyond the code and with over twenty technical papers published in professional journals and proceedings of national/international conferences. Shaw is an active participant at national and international conferences and also serves on panels for reviewing journal paper manuscript in structural control.

Dr. Zhang is a registered civil engineer (C70612) and structural engineer (S 5863) in California and holds LEED AP and ATC-20 (#68258) certificates. He is a national and regional member of American Institute of Steel Construction (AISC) and American Society of Civil Engineers (ASCE), and the Secretary-General of Overseas Chinese Civil and Structural Engineering Association (OCCSEA). Dr. Zhang obtained his doctoral degree from the Department of Civil Engineering, University of Missouri-Rolla.

Abstract: Earthquakes are one of the biggest natural disasters which could cause huge loss to human life and fortune. The process of building a seismic resilient society is always an important topic in civil reengineering practice and research. The recent major earthquakes around the Pacific plate arouse an alarm to people in the United States, especially on the west coast. This presentation reviews the seismic hazards in the United States and the building code regulation and its evolution on the aspect of earthquake resistance design. The current governing code in the United States is the International Building Code (IBC), which is to be updated every three years. Its predecessor is the United Building Code (UBC). The current IBC will be compared to the past UBC in this presentation as well as a future code development direction. A comparison between IBC and the Chinese building code will be given and several differences highlighted. The hospitals exist as a critical key in an earthquake catastrophe, therefore its safety and continuous functioning is emphasized in the code regulation, which will be briefed in the presentation.

## **Special Session: STEM Essay Contest Winner Presentation**

### ***Session Co-Chairs: Dr. Dankai Liu, NASA Jet Propulsion Laboratory***

Dr. Dankai Liu is the Chief Engineer and Project System Engineer for the Orbiting Carbon Observatory re-fly mission (OCO-2). Before OCO appointment, Dr. Dankai Liu was the JPL Aquarius Mission Lead for NASA's Aquarius Mission and served as Chief Engineer for SAC-D/Aquarius project which was launched on June 10, 2011 for the first global Ocean salinity measurements.

Dankai has served numerous critical positions for JPL Flight Projects including that of Deputy Flight System Manager and Deputy Chief engineer for NASA's Mars Science Laboratory (MSL), Flight System Manager for Mars Telecom Orbiter, Assistant Division Manager for Flight Projects of the Avionic Systems and Technology Division, Flight System Manager for the GALEX Project, Avionics Manager for Deep Space One Mission, and Attitude Control System Lead for the Mars Pathfinder Mission. Among the numerous distinguished recognitions and awards presented to Dankai are the NASA Exceptional Achievement Medals, JPL Leadership Excellence award, and Technical Excellence award, Distinguished Alumni Awards from Tatung University and Texas Tech University.

### ***Session Co-Chairs: Mr. Yiu Man So, CESASC***

Yiu Man So (MSEE), Sr. Principle Engineer/Project Chief Engineer, Raytheon Company. Mr. So joined Hughes Aircraft Company in 1982. He is the co-author of several journal articles and conference papers, and holds two U.S. patents. Mr. So is active in the community and served as the President of CESASC in 2009-2010, Chair of CESASC Scholarship Committee 2007-2009, Chair of CESASC Student Essay Competition Project 2013, Chair of National Association of Asian American Professionals (NAAAP) Scholarship Committee 2008, mentor to students for the FIRST Robotic competition, and Judge for the California State Science Fair and Grand Judge for the Intel International Science and Engineering Fair (ISEF).