

美南國建協進會
Association of Chinese American Professionals
二零一三年年會暨科學工程技術研討會

2013
Annual Conference and
Science, Engineering and Technology Seminars (SETS)

大會議程
Program

**Theme: Alternative Energy and Green Technologies,
Medicine, Business Management and Education**
會議主題：替代能源綠色科技、醫學、商務管理與教育

Saturday, June 15, 2013

**Sugar Land Marriott Hotel
16090 City Walk, Sugar Land, Texas**

For more information:
<http://www.acap-usa.org>



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廣告

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A Welcome Message from the President of ACAP

Billy Liu 劉耀華

Dear All,

Welcome to the 35th annual Science, Engineering and Technology Seminar (SETS, 科學工程技術研討會)! The Association of Chinese American Professionals (ACAP, 美南國建協進會) has hosted SETS every year since the organization's inception in 1978. We are celebrating our 35th anniversary this year and proud to continue our tradition today with another set of exciting programs that we are sure you will enjoy.



The theme of this year's SETS is "Alternative Energy and Green Technologies, Medicine, Business Management, and Education." Our keynote speaker is Dr. Dale Klein, Associate Vice Chancellor for Research, University of Texas System, who will discuss "Current and future role of nuclear energy for electrical generation". Today's programs include not only the traditional popular sessions in Nano and Composite Technology, Financial Management, Education, Health, Business, and Computer Technology but also five sessions devoted to the special Alternative Energy and Green Technologies Symposium.

On March 9, 2013, ACAP hosted a very successful Taiwanese Students and Young Professionals Network Luncheon at Culture Center, providing career consultation, professional development advices, and insight into life in America to college students and young professionals in Houston area. You should also notice the research posters displayed along the hallway when you walk in the conference center this morning. This is our 2nd Student Research Poster Contest held at SETS.

In addition to SETS, ACAP also organizes an annual diversity conference, the Diversity Summit (多元化高峰會議). It brings together people across all sectors in Houston to promote Diversity and Inclusion in the workplace. It helps create a more inclusive environment where we work as well as where we live. We hosted the 13th Diversity Summit May 3, 2013. The theme was "Prosperity through Inclusion". The Summit offers a full day of speakers, seminars and networking for employers and professionals seeking to maximize their effectiveness in diverse environments.

I am very proud and honored to serve as the 35th president of ACAP. That being said, none of the activities could have been successful without the hard work of volunteers and the generous support of sponsors and collaborating organizations. We are sincerely grateful to all for their ongoing commitment to ACAP and its growing community events.

We are confident that you will find today's programs informative, rewarding and exhilarating. We have been looking forward to the day with great anticipation, so let's get started. Enjoy the day!

PETE OLSON

22ND DISTRICT, TEXAS

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SUGAR LAND, TX 77478
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SUBCOMMITTEE ON COMMERCE,
MANUFACTURING AND TRADE

Congress of the United States
House of Representatives
Washington, DC 20515

June 15, 2013

The Association of Chinese American Professionals
35th Annual Science, Engineering and Technology Seminar (SETS)

Dear Friends,

On behalf of the residents of the Twenty-Second Congressional District of Texas, I would like to welcome the Association of Chinese American Professionals (ACAP) to your 35th Annual Science, Engineering and Technology Seminar. It is an honor to welcome you all to Sugar Land, Texas, and I hope you enjoy all our wonderful community has to offer.

A recent study done by Kinder Institute for Urban Research at Rice University and the Hobby Center for the Study of Texas found that the Houston metropolitan area is now the most ethnically diverse large metropolitan area in the country. This diversity is one of the many assets that make our community so great.

The Chinese American Professional Community is vital to this diversity and the continued success of the Houston area. Since 1978, ACAP has worked hard to bring together Chinese American Professionals to share experiences, information and ideas. As a resident of the energy capital of the world and a member of the Energy and Commerce Committee in the U.S. House of Representatives, I understand the importance of our critical energy sector in the Houston area and the importance that professionals like you provide in the continued success of our economy.

Again, thank you for giving me the opportunity to recognize your organization and its contribution to our community. It is an honor to serve you in the United States House of Representatives.

Very respectfully,

A handwritten signature in blue ink, appearing to read "Pete Olson".

Pete Olson
Member of Congress



HOUSE OF REPRESENTATIVES
WASHINGTON, D. C. 20515

AL GREEN
9TH CONGRESSIONAL DISTRICT
HOUSTON, TEXAS

June 15, 2013



Dear Friends:

I am pleased to extend greetings to the attendees of the Association of Chinese American Professionals (ACAP) 2013 Annual Conference and Science, Engineering and Technology Seminar (SETS). On behalf of the constituents of the Ninth Congressional District of Texas, I salute all participants for their dedication to making this a memorable event.

With great enthusiasm, I applaud the Association of Chinese American Professionals on their 35th Anniversary and dedication to fostering professional development as well as leadership. The invaluable role it performs in promoting science and engineering is admirable.

I look forward to working with the Association of Chinese American Professionals on future endeavors and continuing to serve you well as a Member of Congress. Best wishes to all for an exciting event.

Sincerely,

Al Green
Member of Congress



CITY OF HOUSTON

Annise D. Parker

Mayor

P.O. Box 1562
Houston, Texas 77251-1562

Telephone – Dial 311
www.houstontx.gov

June 15, 2013

Greetings,

As Mayor of Houston, I welcome all attending the **35th annual Science, Engineering and Technology Seminar (SETS)**, hosted by the Association of Chinese American Professionals (ACAP).

I commend ACAP for promoting professional development and fellowship among its members and providing forums for exchanging technology, such as SETS. The prestigious event provides a platform for bringing together many scientific, medical, business and educational communities. ACAP has worked with various peer organizations to offer informative sessions, including nano and composite technology, green technology, financial management and education.

I am confident ACAP will continue to make a significant impact in our community for years to come, and extend best wishes for a meaningful event.

Sincerely,

A handwritten signature in black ink that reads "Annise D. Parker".

Annise D. Parker
Mayor



二零一三年年會暨科學工程技術研討會
2013 Science, Engineering and Technology Seminars (SETS)

Sugar Land Marriott Hotel
 Saturday, June 15, 2013

**Program-at-a-Glance
 Morning Sessions**

7:30am 9:00am	Speakers and Chairs Breakfast (Ballroom)		Students and Young Professionals Breakfast (Magnolia I)
8:00am 9:00am	Registration (Ballroom Foyer)		
9:00am 11:50am	Nano Technology Session 【奈米科技講座】	Sugar Land II	<p style="text-align: center;">Nano & Composite Technology 奈米及複合技術</p> <p style="text-align: center;">Co-Chairs: Dr. Su-Seng Pang and Dr. Howard Paul 主持人：彭樹成博士, 浦浩德博士</p> <p>Speaker: Dr. Howard Paul, P.E. (浦浩德), ACAP Former President Topic: The Nanofactory - Science Fiction Becoming Reality? (奈米工廠 科幻成真?)</p> <p>Speaker: Dr. Guoqiang Li (李國強), Joint Professor, Southern University/Louisiana State University Topic: Biomimetic Self-healing Composites</p> <p>Speaker: Dr. Gefu Ji (姬戈夫), Research Associate, Louisiana State University Topic: Novel Sandwich Panel with Millitube Grid Stiffened Polymer Core</p> <p>Speaker: Dr. Harper Meng (孟庆浩), Research Associate, Southern University Topic: Recent Advances on Stimuli-responsive Memory Polymer Composites</p> <p>Speaker: Dr. Su-Seng Pang (彭樹成), Professor, Louisiana State University Topic: Effects of Surface Roughness on the Efficiency of Self-Healing Polymers</p>
9:00am 11:50am	CPA- Financial Management Session 【專業會計師 - 財務管理講座】	Cane I - III	<p style="text-align: center;">Tax Relief and Retirement Planning</p> <p style="text-align: center;">Co-Chairs: Andy Jan, CPA and Vera Lee, CPA 主持人: 詹煥彩會計師, 李尤梅會計師 休市華美會計師協會協辦</p> <p>Speaker: Andy H Jan, CPA, (詹煥彩會計師) Topic: The American Taxpayer Relief Act of 2012</p> <p>Speaker: Michelle Arend, CPA, RR Topic: Defined Benefit Plan for Retirement Planning</p>

9:00am 11:50am	Education Session 【教育講座】	Sugar Land I	<p>Parenting Education: Children and Social Media Co-Chairs: Dr. Hsin-Hui Grace Lin and Dr. Mandy Wang 主持人：林欣慧博士, 王美智博士</p> <p>Speaker: Dr. Irene Linlin Chen (陳琳琳), Professor, University of Houston-Downtown Topic: Popular Social Media</p> <p>Speaker: Dr. Mandy Mei-Chih Wang (王美智), Assistant Professor, University of Louisiana at Lafayette Topic: Young Children and Social Media</p> <p>Speaker: Dr. Hsin-Hui Lin (林欣慧), Associate Professor, University of Houston at Victoria Topic: Teenagers and Social Media</p> <p>Speaker: Dr. Kwang-Lee Chu (朱光立), Research Scientist, Psychometric and Research Services Topic: Young Adult and Social Media</p>
9:00am 11:50am	Green Technology Symposium I 【綠色科技討論會1】	Magnolia II & III	<p>Green Technology Symposium – Session I Chair: Edward Chen 主持人：陳天生</p> <p>Speaker: Vance Nobe, CEO, Akari Energy Topic: Current Trend of Green Energy in United States 美國綠色能源的趨勢</p> <p>Speaker: Harold Barber, Vice President of Environmental Technology, Republic Services Topic: Landfill Gas Recovery 垃圾場氣體回收技術</p> <p>Speaker: Berine Beers, Manager, Waste Recycling Equipment, Texas Microbial Application, Inc Topic: In-vessel Food Waste Composter & Renewable Fuel Technology 筒式廚餘堆肥和再生燃料技術</p> <p>Speaker: Edward T. Chen, President, Chinese American Society of Environmental Protection & Safety Topic: An Overview of Waste Conversion Technologies (WCTs) in the United States</p>

9:00am 11:50am	Alternative Energy Symposium I 【替代能源討論會1】	Sugar Land IV	<p>Nuclear Power Safety and Renewable Energy Technologies Co-Chair: Dr. Chia-pei Chou and Dr. Bessy Fan 主持人：周家蓓博士, 范增璞博士 駐休士頓台北經濟文化辦事處科技組協辦</p> <p>Speaker: Dr. Robert Tsai (蔡維綱), Consultant, Exelon – Nuclear Fuels Topic: 能源和台灣 - 問題與挑戰; 福島的教訓和台灣的評估</p> <p>Speaker: Dr. John Pern (彭富章), Consultant, Former NREL in Golden, CO Topic: Recent Status and Future Prospects of Photovoltaic Solar Energy</p> <p>Speaker: Dr. Bessy Fan (范增璞), Discovery Analytical Consulting Topic: Introduction of Algae and Cellulosic-Based Biomass as Feedstock for Biofuel.</p> <p>Speaker: Mr. Dave Litzen, Consultant, Litzen Process Consulting Inc. Topic: Commercializing a Biochemical Cellulosic-Based Ethanol Plant - Novozymes NA</p>
9:00am 11:50am	Alternative Energy Symposium II 【替代能源討論會2】	Sugar Land III	<p>Unconventional Energy Technology Session I Co-Chairs: Dr. Chia-Hao Ko and Dr. Tai-chang Shih 主持人：葛家豪博士, 史大昌博士 美國華人石油協會協辦</p> <p>Speaker: Dr. Long Ma (馬龍), Shell Oil Topic: Geologic Aspect of Unconventional Plays – An Overview</p> <p>Speaker: Dr. Kuochen Tsai (蔡國楨), Shell Oil Topic: Proppants and Hydraulic Fracturing Efficiency</p> <p>Speaker: Dr. Tai-chang Shih (史大昌), Lead Exploration Consultant, Neumin Production Topic: Challengers, lessons learned, and opportunities for major oil companies (authored by Linhhua Guan, Statoil)</p> <p>Speaker: Dr. Eddy Lee (李怡德), Staff Geologist, Shell Oil Topic: Gas Hydrates, Once Considered as an Energy Source of the Future</p>
9:30am 11:50am	Student Research Poster Contest 【學生研究壁報比賽】	Ballroom Foyer	<p>Student Research Poster Presentation Chair: Dr. Shian-uei Hwu; Judge Panel: Dr. K. C. Wang 主持人：胡先蕓博士, Judge Panel：王國治博士 駐休士頓台北經濟文化辦事處教育組協辦</p>

二零一三年年會暨科學工程技術研討會
2013 Science, Engineering and Technology Seminars (SETS)
Program-at-a-Glance
Afternoon Sessions

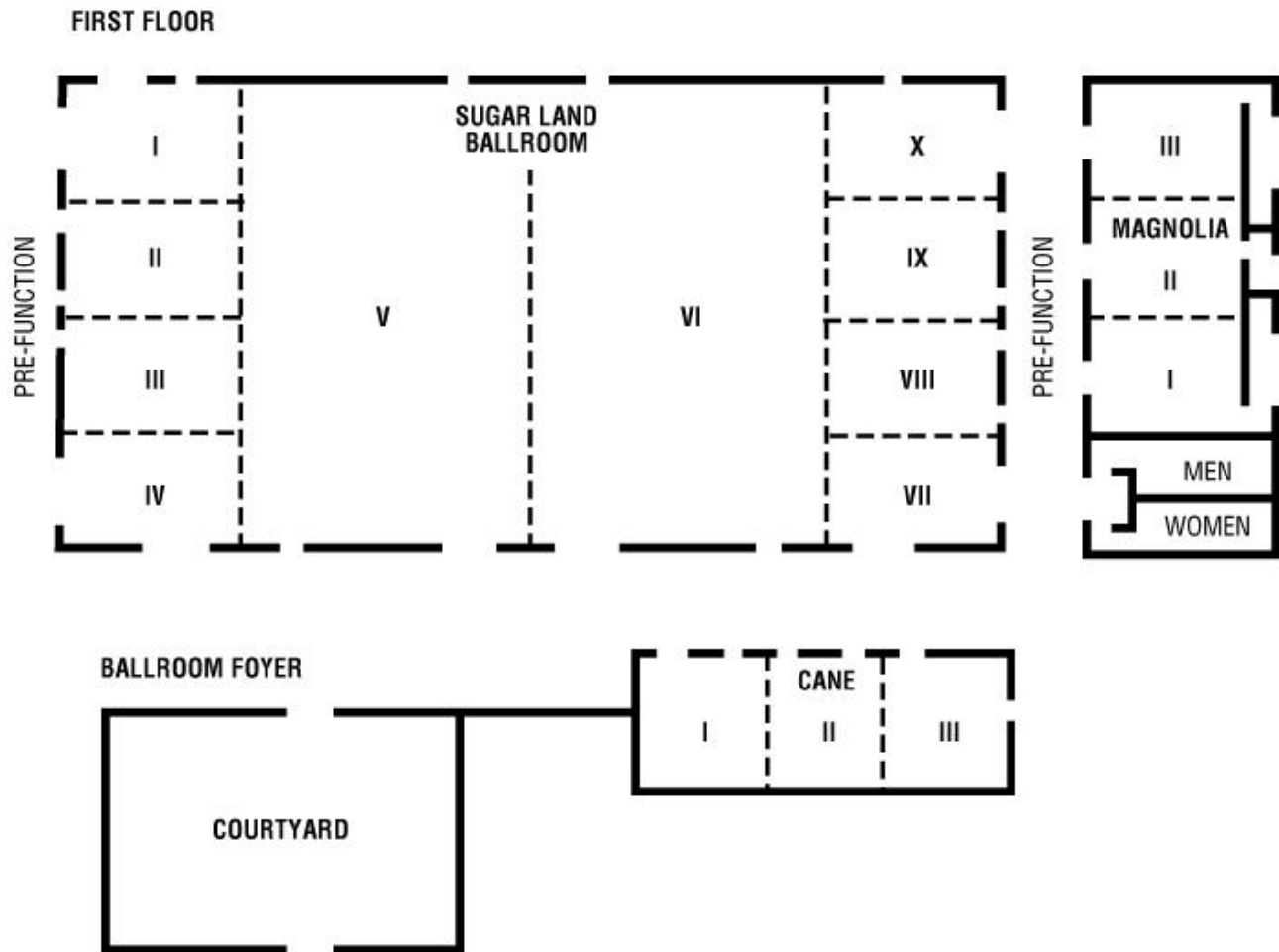
12:00pm 2:15pm	<p>Luncheon and Keynote Address (午餐及專題演講 – Sugarland Ballroom) Master of Ceremonies: Dr. C. C. Wang (王家驊), ACAP President-Elect</p> <ul style="list-style-type: none"> • Welcome: Dr. Billy Liu (劉耀華), ACAP President • Honorable Guest: Mr. Steve C. C. Hsia, Director General, Taipei Economic & Cultural Office in Houston 駐休士頓台北經濟文化辦事處 夏季昌處長 • Honorable Guest: Mr. Chang Tzi-Chin, Deputy Minister, Environmental Protection Administration, Taiwan, R.O.C. 中華民國行政院環境保護署 張子敬副署長 • Certificate Presentations: Honorable Houston Council Member Wanda Adams, Council District D Honorable Judge Theresa Chang • Proclamations Presentations: Alice Chen for US Congressman Al Green Theresa Chang for Harris County Judge Ed Emmett Kathlie Jeng-Bulloch for City of Houston Mayor Annise Parker • Lunch • Keynote Address Dr. Dale Klein, Associate Vice Chancellor for Research, University of Texas System Topic: “Current and Future Role of Nuclear Energy for Electrical Generation” • Award Presentations: Chair – Janet Chung Distinguished Achievement Award: Dr. Wei-Kan Chu Outstanding Service Award: Sheree Cheng • Leadership/Community Service Scholarship Presentation: Chair – Judy Wen Scholarship Recipients: Peter Feng, Andrew Lu • Student Research Poster Contest Winners Award Presentation: Chair - Dr. Shian-uei Hwu; Judge Panel: Dr. K. C. Wang
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2:30pm 5:30pm	Health Session 【健康講座】	Cane I - III	<p>Strategies for Healthy Living and Longevity 主題： 少病、長命、旅美華人健康須知 Co-Chairs： Karl K. Chen, M.D., Ph.D. and Grace Chen, Ph.D., R.N. 主持人： 陳康元醫師, 陳王琳博士</p> <p>Speaker: Jianwei Feng, M.D. Ph.D., FACC (豐建偉醫師), Chairman, Department of Cardiology at Memorial Hermann Hospital SW Topic: The Heart Truth Campaign: Serious Messages about Women and Heart Disease 不可忽視的健康問題： 婦女與心血管疾病</p> <p>Speaker: Zhengnan Yin, M.D. (殷正男醫師), Memorial Southwest Family Practice Topic: Understand Diabetes 認識糖尿病</p> <p>Speaker: Li-Hung Kuo, RPH (郭禮宏藥劑師), The Woman's Hospital of Texas Topic: Knowing & Choosing Over the Counter (OTC) Drugs 認識和選擇非處方用藥</p> <p>Speaker: Karl K. Chen, M.D., Ph.D. (陳康元醫師), Medical Director, Department of Radiation Oncology at Kathryn O'Connor Regional Cancer Center, Citizens Medical Center, Victoria Topic: Cancer, Genetics, Emotion, and Health 癌症、基因、情緒、與健康</p>
2:30pm 5:30pm	Green Technology Symposium II 【綠色科技討論會2】	Magnolia II & III	<p>Green Technology Symposium – Session II Chair: Edward Chen 主持人： 陳天生</p> <p>Speaker: Bessy Fan, Ph.D. (范增璞), Discovery Analytical Consulting Topic: Introduction of Algae and Cellulosic-Based Biomass as Feedstock for Biofuel.</p> <p>Speaker: Jeff Dunham, CEO, JACO Environmental Topic: Styrofoam green technology</p> <p>Speaker: Keith Koski, City of Houston, Dept. of Solid Waste Management, Reuse Warehouse Topic: A Worthwhile Diversion: Keeping Materials Out of Landfills to Build</p> <p>Speaker: Chi-Chung Chang, Ph.D. (張濟群), Principal Program Manager, URS Corp Topic: Case Studies for Low Impact Development (LID) and Leadership in Energy and Environmental Design (LEED)</p>

2:30pm 5:30pm	Alternative Energy Symposium III 【替代能源討論會3】	Sugar Land III	<p>Unconventional Energy Resources Co-Chairs: Dr. Michael Wen and Dr. Chia-Chung Wang 主持人：文又新博士, 王家驄博士</p> <p>Speaker: Dr. Michael Wen (文又新), ExxonMobil Upstream Senior Technologist Topic: Oil Sands Processing</p> <p>Speaker: Dr. Jonathan Kwan(關德沛), Reservoir Engineering Advisor, ConocoPhillips Topic: Less Publicized Unconventional Resources – Heavy Oil, Oil Shale & Hydrates</p> <p>Speaker: Mr. Hengky Mualim, Process Manager, Air Liquide (presented by Mr. Chung Fan) Topic: FutureGen 2.0: The World's First Commercial Scale Oxy-combustion Project</p> <p>Speaker: Dr. C. C. Wang (王家驄), Technology Manager, Air Liquide Topic: Clean Coal Applications</p>
2:30pm 5:30pm	Business Laws Session 【商業法律講座】	Sugar Land II	<p>Alternative investments vehicles What is Angel Investing? : Global Foreign Exchange Risk: The New Era in High-Tech Fraud. Co-Chairs: Ying Shi Lai and Ming Bur 主持人: 李迎霞; 陳明華 世界華人工商婦女企管協會美南分會協辦</p> <p>Speakers: Andrew Clark, Managing Director, Texas Halo Fund Ming Burdett, Senior Vice President, Cadence Bank Topic: How to look beyond stocks, bonds and Real Estate to find top-notch e investment vehicles that work together while staying true to our personal goals and values?</p> <p>Speaker: Ken Hogan, Senior Vice President, Cadence Bank Topic: Navigating Global FX Risk in a Multiple Black Swan Environment</p> <p>Speaker: Andrea Cruz Lawson, Cadence Bank Topic: Corporate Account Takeover: The New Era in High-Tech Fraud</p>
2:30pm 5:30pm	Computer Technology Session 【電腦科技講座】	Sugar Land IV	<p>Mobile Computing with Smartphone and Tablet Chair: Jessie Wang 主持人：汪乃强</p>

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2013 Science, Engineering and Technology Seminars (SETS)
Sugar Land Marriott Town Square
June 15, 2013

Conference Center Floor Plan



All activities are located on the first floor.

Honorable Guest



Steve C. C. Hsia, Director-General

Taipei Economic and Cultural Office in Houston

夏季昌處長

駐休士頓台北經濟文化辦事處

March 2013 – Present	Director-General, Taipei Economic and Cultural Office in Houston
September 2012 – March 2013	Director-General, Public Diplomacy Coordination Council, MOFA; Spokesperson, MOFA
June 2012 – September 2012	Director-General, Department of Information and Cultural Affairs, MOFA
October 2010 – June 2012	Deputy Director-General, Department of Information and Cultural Affairs, MOFA
September 2010 – October 2010	Assistant Director-General, Department of Information and Cultural Affairs, MOFA
October 2009 – September 2010	Assistant Director-General, Department of East Asian and Pacific Affairs, MOFA
January 2008 – January 2009	Senior Secretary, Department of East Asian and Pacific Affairs, MOFA
January 2003 – January 2008	Secretary, Taipei Representative Office in the Netherlands
November 2000 – January 2003	Section Chief, Department of Information and Cultural Affairs, MOFA
May 1994 – July 2000	Secretary, Taipei Economic and Cultural Representative Office in the United States
July 1990 – May 1994	Officer, Department of Information and Cultural Affairs, Ministry of Foreign Affairs (MOFA)

BA, Department of Diplomacy, National Chengchi University

MA, Graduate Institute of International Law and Diplomacy, National Chengchi University

Civil Service Special Examination for Diplomatic and Consular Personnel, 1988

Class 23, Institute of Diplomacy and International Affairs

Honorable Guest

中華民國行政院環境保護署 張子敬常務副署長

Deputy Minister- Mr. Chang, Tzi-chin

壹、學歷：

國立成功大學環境工程學系學士

國立交通大學環境工程研究所碩士

考試：69 年全國性公務人員高等考試環境工程類科及格

貳、個人簡歷：

臺北縣政府副縣長（94 年 3 月至 95 年 1 月）

臺北縣政府環境保護局局長（89 年 10 月至 94 年 3 月）

臺灣省政府秘書處參議（88 年 7 月至 89 年 10 月）

臺灣省政府環境保護處北區環境保護中心主任

（86 年 12 月至 88 年 7 月）

臺灣省政府環境保護處科長（85 年 12 月至 86 年 12 月）

行政院環境保護署技正、科長（76 年 10 月至 85 年 12 月）

臺北市政府環境保護局技士、股長（71 年 8 月至 76 年 10 月）



Academic Background:

- M.S., Institute of Environmental Engineering, National Chiao Tung University
- B.S., Department of Environmental Engineering, National Cheng Kung University

Qualification:

- Senior Professional and Technical Examinations for the category of civil engineering in 1980
- Senior Examination for Civil Service Personnel in the category of Environmental Engineering in 1980

Personal Profile:

2005 ~ 2006: Deputy Commissioner, Taipei County Government

2000 ~ 2005: Director-General, Environmental Protection Bureau, Taipei County Government

1999 ~ 2000: Executive Officer, Secretariat, Taiwan Provincial Government

1997 ~ 1999: Director, Northern Region Environmental Protection Center, Environmental Protection Department, Taiwan Provincial Government

1996 ~ 1997: Section Chief, Environmental Protection Department, Taiwan Provincial Government

1987 ~ 1996: Section Chief, Environmental Protection Administration, Executive Yuan

1982 ~ 1987: Associate Technical Specialist, Department of Environmental Protection, Taipei City Government

Keynote Speaker

Dr. Dale Klein, P.E.
Associate Vice Chancellor for Research
University of Texas System



Dr. Dale E. Klein rejoined The University of Texas System in January of 2011 as Associate Vice Chancellor for Research in the Office of Academic Affairs. In April of 2010, after serving 8 ½ years as a Presidential Appointee, Dr. Klein returned to Texas from Washington, D.C., working at The University of Texas at Austin as the Associate Director of The Energy Institute, Associate Vice President for Research, and a Professor of Mechanical Engineering (Nuclear Program).

Dr. Klein was sworn into the U.S. Nuclear Regulatory Commission in 2006, and was appointed Chairman by President George W. Bush, serving in that role from July 2006 to May 2009. As Chairman, Dr. Klein was the principal executive officer and official spokesman for the NRC, responsible for conducting the administrative, organizational, long-range planning, budgetary, and certain personnel functions of the agency. Additionally, he had the ultimate authority for all NRC functions pertaining to an emergency involving an NRC licensee. The remainder of this term was as Commissioner of the NRC from May 2009 to March 2010.

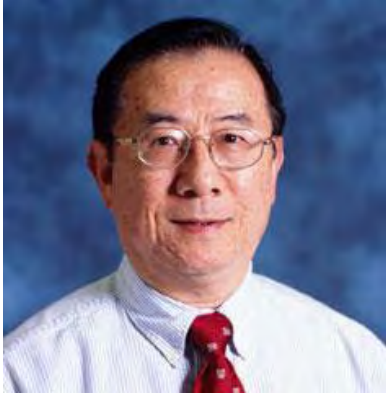
Before joining the NRC, Dr. Klein served as the Assistant to the Secretary of Defense for Nuclear, Chemical and Biological Defense Programs. He was appointed to this position by President George W. Bush and confirmed by the Senate in 2001. In this position, he served as the principal staff assistant and advisor to the Secretary of Defense, Deputy Secretary of Defense, and the Under Secretary of Defense for Acquisition, Technology and Logistics for all policy and planning matters related to nuclear weapons and nuclear, chemical, and biological defense programs.

Previously, Dr. Klein served as the Vice-Chancellor for Special Engineering Programs at The University of Texas System and as a professor in the Department of Mechanical Engineering (Nuclear Program) at The University of Texas at Austin. During his tenure at the university, Dr. Klein was Director of the Nuclear Engineering Teaching Laboratory, Deputy Director of the Center for Energy Studies, and Associate Dean for Research and Administration in the College of Engineering.

Honors and awards Dr. Klein has received include the Henry DeWolf Smyth Nuclear Statesman award in 2011, Fellow of the American Society of Mechanical Engineers and the American Nuclear Society, Engineer of the Year for the State of Texas, the University of Missouri Faculty-Alumni Award, and the University of Missouri Honor Award for Distinguished Service in Engineering.

A native of Missouri, Dr. Klein holds a doctorate in nuclear engineering from the University of Missouri-Columbia. He has published more than 100 technical papers and reports, and co-edited one book. He has made more than 400 presentations on energy and has written numerous technical editorials on energy issues that have been published in major newspapers throughout the United States.

Distinguished Achievement Award



Dr. Wei-Kan Chu
Cullen University Professor
Physics Department
University of Houston

Wei-Kan Chu, is a Cullen University Professor in the Physics Department of University of Houston. He received his B.S. from National Cheng Kung University in 1962, Ph.D from Baylor University in 1969, and post Doctorial Fellow at CALTECH. He was a Senior Engineer at IBM, before starting his academic carrier at University of North Carolina at Chapel Hill. In 1989, he moved to Houston and became Deputy Director, and later Research Director of Texas Center for Superconductivity at University of Houston.

Dr. Chu is a fellow of the American Physical Society, author of one book (Backscattering Spectrometry) and editor of four books, and has over 400 journal publications, 180 invited talks, and 25 US-patents. 26 students obtained their Ph.D. in Physics under his instruction so far. His earlier research on ion-solid interaction on mean ionization energy calculation for all elements have great impact on Ion Beam Characterization of Materials and Ion Beam Modification of Materials with applications such as high energy proton cancer therapy, and ion implantation in semiconductors for microchips. He is also an expert on High Temperature Superconductor applications in the area of HTS-magnetic Bearing and Levitation Flywheels.

Outstanding Service Award



Sheree Cheng
ACAP Treasurer

Sheree Cheng graduated from Howard Payne College with accounting degree. She worked in the accounting field for over 30 years in the positions of Senior Accountant, Financial Analyst and General Ledger Manager. Sheree retired from G.C. Services a little over a year ago and has found retirement very relaxing.

Sheree has been a member of ACAP for 27 years and has served as a Treasurer for ACAP for 13 years. The biggest gain from her membership has been the many nice people Sheree has met and the great friendships that She has formed.

In her leisure time, Sheree likes to travel, shop, and play computer games. She is happily married to her wonderful husband of 39 years. They have two sons and three grandsons and are excitedly awaiting the arrival of a new grand-baby in October. Of course, nothing has been more enjoyable than playing with three adorable grandchildren!

Leadership/Community Service Scholarship Recipient



Peter Feng
Dulles High School
Sugar Land, Texas

Peter shaking hands with his principal Mr. Foust

Peter is a graduating senior from Dulles high school where he worked extremely hard to be an exemplary student. Like many others, he maintained a 4.0 GPA and dedicated himself to many extra-curricular endeavors. Eventually, he earned the privilege to serve as the student body president and orchestra president. Furthermore, he got a taste of starting organizations with the initiation of the Chinese Culture club and Dulles Red Cross. He looks back on his experiences fondly from all that he's learned. Today, he has committed to attend UT business honors program and is excited to pursue his interests. From a very young age he has held a deep passion for the arts of business and entrepreneurship, and one day hopes to start his own influential company. He spends his spare time working out, mastering Spanish, and reading business books. He believes that everyone should dedicate themselves to a noble purpose in life and prefers idealism over the limiting scope of realism. Everything else about Peter is yet to be written as he embarks on his long adventure through adulthood.

Leadership/Community Service Scholarship Recipient



Andrew Lu
E. Elkins High School
Missouri City, Texas

Andrew Lu is a high school graduate who will be attending the University of California, Berkeley this coming fall of 2013. He received his high school diploma from Lawrence E. Elkins High School in Missouri City, Texas. In high school, he was President of the Computer Science Club, Invisible Children Organization, and held several honorary positions in Honor Societies, including Math, Science, English, and Social Studies. Growing up in Tainan, Taiwan, Andrew's first language is Mandarin Chinese, learning Taiwanese, too, in the following years. At the age of three, Andrew moved to Toronto, Canada, where he received his first English education. At the age of six, he moved back to Tainan. Six years later, upon finishing elementary school, he moved to Missouri City, Texas, where he attended First Colony Middle School. In addition to school, Andrew has spent a considerable amount of time volunteering in the community, spending hundreds of hours at the Sugar Land Senior Center and helping out with the Parks and Recreation department. On the other hand, he has also held an internship position at Physicians at Sugar Creek, an affiliate of Memorial Hermann. In the future, Andrew plans on graduating from Berkeley with two bachelor's degrees in L&S Computer Science and Biology (Biochemistry and Cell/Molecular Biology, Genetics, Immunology). Afterwards, he will either attend medical school to become a physician or graduate school for further research opportunities. He is currently looking for research in the field of Biology and plans to begin research at the Lawrence Berkeley National Laboratory in the coming fall.

9:00 am - Alternative Energy Technology Symposium Session I (替代能源討論會 I)

11:50 am 駐休士頓台北經濟文化辦事處科技組協辦

**Co-chairs: Dr. Chia-pei Chou (周家蓓), Director of Science and Technology
Division, Taipei Economic & Cultural Office in Houston
Dr. Bessy Fan (范增璞), Discovery Analytical Consulting**

Theme: Nuclear Power Safety and Renewable Energy Technologies

Speaker: Dr. Robert Tsai (蔡維綱), Consultant, Exelon – Nuclear Fuels

Topic: 能源和台灣 - 問題與挑戰

Speaker: Dr. Robert Tsai (蔡維綱), Consultant, Exelon – Nuclear Fuels

Topic: 福島的教訓和台灣的評估

Speaker: Dr. John Pern (彭富章), Consultant, Former NREL in Golden, CO

Topic: Recent Status and Future Prospects of Photovoltaic Solar Energy

Dr. Pern is the founder of Sunshine Sci-Tech, LLC, aimed to provide direct or consulting services on EVA encapsulant manufacturing, encapsulation materials marketing, and PV reliability-related activities. He received his Ph.D. degree in chemistry from the University of Illinois at Urban-Champaign in 1984 and started working at the Solar Energy Research Institute (now NREL) under the Department of Energy. Before leaving recently with a service of ~28.5 years, he was a Senior Scientist (V – Multidiscipline) in the Thin-Film CIGS/CZTS Group in the National Center for Photovoltaics (NCPV) at the National Renewable Energy Laboratory (NREL). Over the years, he has conducted R&D in various fields that spanned from photo-/electrochemical generation of H₂ and O₂ from water to electrodeposition of thin film CuInSe₂ solar cells and precursors of high-temperature superconductors, development of non-yellowing EVA and non-EVA encapsulants, performance reliability of PV encapsulation, encapsulants, TCOs and CIGS solar cells, development of (non-Nafion) composite proton-exchange fuel cell membranes, diamond-like carbon coating, CBD ZnS for CIGS solar cells, and a little into nanowire ZnO/ZnSe core/shell PV. He has a number of technical publications and numerous (invited) presentations.

He has been serving as a referee for a number of PV-related journals and proposal reviewer for various sources. He has been serving in the program committee for the SPIE PV Reliability Conferences for several years. He just finished a 3-year service as a member of the Advanced Research Advisory Committee (ARAC) to the Industrial Technology Research Institute (ITRI), HsinChu, Taiwan. He was bestowed an Honorary Advisory Professorship at the Solar Energy Institute of the Shanghai Jiao-Tung University, China. He is a long-time member of the American Chemical Society, American Electrochemical Society, Materials Research Society, Rocky Mountain Chinese Society of Science and Engineering (RMCSSE), and National Geographic Society.

This presentation will provide a general overview of the recent status and future prospects of photovoltaic (PV) solar energy. In light of rapidly increasing global demands and pricing but quickly dwindling supply of fossil oil, seeking and securing reliable alternative and renewable energy supplies to sustain the present forms of civilization and industrialization has become a vital issue in the past two decades. Solar energy is a clean, free and unlimited fuel: an hour of sunlight on the earth essentially is equal to the entire annual global energy consumption by human activities. Solar cells, typically based on the photovoltaic (light-voltage, PV) effect, absorb and convert the sun light

directly into electricity. While there are a large variety of solar cell types, presently only the wafer-based and thin-film Si, CdTe and CIGS (CuInGaSe_2) are commercially significant for large-scale terrestrial and residential applications. Extensive PV applications are known to create jobs (est. ~28/MWp direct and 1.8~2.8 indirect), reduce CO_2 emission, and grow economics (est. \$120B in 2012).

The PV solar industry has become significant only after the year of 2004, when the global production exceeded 1000 MW (mega-watt), followed by a 35~42% annual growth to ~2011 due to highly increased demands that spread from German to Spain and Italy in Europe and now into US, China, Japan and many other countries. Export-oriented, China and Taiwan have a combined >60% market share as top-10 PV module production countries in less than 10 years. Because of the “high” profit margins realized throughout the entire PV value chain before 2008, large capital investments were followed globally, but especially in China, to rapidly expand the manufacturing capacities from the top-end raw materials polysilicon to the bottom-end module productions, resulting in great overcapacities and oversupplies and causing rapidly depressed pricing due to fierce market competitions.

The present “crushing wave” is unfortunately coupled with global financial/economic crisis and consequent large cut-back of government subsidies and market scale-back, particularly in Europe. While most players in the PV value chain continue to suffer substantial losses and endure big “shake-out,” the positive side is that total PV installations did not dwindle much due to more than 200% decrease in PV module prices in 2~3 years! The US solar industry enjoyed a 3.31 GW installation that worth \$11.5B with more than 119,000 jobs in 2012, which was a 13.2% employment rate increase over 2011.

The outlook for recovery from current “crushing wave” to a higher “next wave” is good and expected to occur in 2014~2015. Although at the moment, the percentage of PV solar energy production is still relatively small and the power generation cost still moderately high, realization of grid parity is expected to occur in a few years during the “next wave.” The mid-term to long-term future prospects for PV solar energy are projected to be as bright as the sunlight always is. To reach these sunny goals, continuous large investments in multitude RD&D by the concerned governments as well as private sectors are critically required.

Speaker: Dr. Bessy Fan (范增璞), Discovery Analytical Consulting

Topic: Introduction of Algae and Cellulosic-Based Biomass as Feedstock for Biofuel.

Dr. Fan received her B.S degree from National Taiwan University and Ph.D. Degree in Chemistry from University of Houston. She worked at Shell Oil Company in Houston for 25 years, providing technical support to refineries; chemical plants in material and product analysis, trouble shoot process problems, as well as assisting new process research and development. As a specialist in mass spectrometry, her work function also includes new technology implementation, lab management, project planning and coordination. When Shell started a global Biofuel division in 2007, Dr. Fan lead the US analytical team supported and provided guidance in the R&D program. Dr. Fan retired as the Senior Scientist from Shell in 2010, and founded Discovery Analytical Consulting, continuing to conduct consulting work in the energy industry.

Biofuel are gaining public and scientific attention driven by high oil prices and the need for alternative energy resource, as well as global warming concern. Both algae and cellulose are renewable energy sources for biodiesel and bioethanol respectively. This talk provides a general introduction to the pros and cons of algae and cellulose as biofuel feedstock, their composition, how to produce biofuel from these material, processing technology, challenges and research directions.

Speaker: Mr. Dave Litzen, Consultant, Litzen Process Consulting Inc.

Topic: Commercializing a Biochemical Cellulosic-Based Ethanol Plant - Novozymes NA

Dave Litzen, President of Litzen Process Consulting, Inc., has 32 years of process engineering experience in the biofuels and petrochemical industries. Mr. Litzen's experience includes:

- *Co-founder, KL Energy Corporation, a biofuels technology company (Rapid City, SD)*
- *Chief Technical Officer, providing technical leadership in engineering and technology development*
- *First generation (corn) ethanol plant designs, retrofits, expansions, and restarts*
- *Second generation ethanol technology, process design, and business model development*
- *Multiple manufacturing support and corporate engineering positions with Shell Oil Company (Houston, TX) in the following areas: Epoxy resins, Chlorinated hydrocarbons, Oxygenated and hydrocarbon solvents*

Dave continues to apply his technical and business development experience through Litzen Process Consulting, Inc., established in 2010, with particular focus on process modeling using AspenTech Engineering Suite products.

For nearly a decade, the US Department of Energy has been incentivizing cellulosic ethanol technology development. Yet, the industry has not widely succeeded in commercializing any form of conversion technology. Some of this delay is due to the recent domestic and global recession. Even so, we must consider other factors to explain this protracted commercial implementation. These factors include:

- Dealing with expensive chemical inputs (enzymes and genetically modified conversion organisms)
- Integrating technologies
- Balancing feedstock delivery cost with plant size
- Developing value-added co-products
- Recognizing that government incentives can have both positive and negative impacts

Each topic justifies a thorough debate. This presentation will focus only on biochemical conversion (biomass hydrolysis and fermentation) versus thermochemical conversion (pyrolysis and gasification) and will merely introduce the topics above with hopes of generating continued discussion, and ultimately, widespread cellulosic ethanol commercialization - we're overdue!

9:00 am - Alternative Energy Technology Symposium Session II (替代能源討論會 II)

11:50 am 美國華人石油協會協辦, Chinese American Petroleum Association

Co-chairs: Chia-Hao Ko (葛家豪), ExxonMobil

Tai-chang Shih (史大昌), Neumin Production

Theme: Shale Gas and Gas Hydrates Development

Speaker: Dr. Long Ma (馬龍), Shell Oil

Topic: Geologic Aspect of Unconventional Plays – An Overview

Dr. Ma Long (馬龍) Geologist with Shell Oil Company's Upstream Americas, at the Department of New Venture/Business Development. His current focus areas include onshore US exploration new venture/acquisition opportunity evaluation; particularly in the resource plays in Northeast US Appalachian Basin region. He has also been heavily involved in resource plays screening for basins from onshore Gulf Coast of US to China. He held the position of Geohazards Assessment Specialist/Seismic Interpreter for two years, on pre-drill geohazards evaluations of various prospects from deepwater Gulf of Mexico to Northwest Shelf of Australia. He holds a PhD in Geology from the University of Houston (2006), and a Master's degree from Research Institute of Petroleum Exploration and Development (RIPEd) of PetroChina in Beijing. He worked for Sinopec in Sichuan for one year after receiving his Bachelor's degree in Petroleum Geology from Chengdu University of Technology. In his spare time he is happily tied up with his two lovely daughters. He manages to find time to play basketball with friends at a non-embarrassing level. He has enjoyed serving on CAPA's EC from 2005 to 2012.

The North American “Shale Gale” has revolutionized the oil and gas industry for the past decade and the rest of the world is experiencing its ripple effect, thanks to advances in engineering technology such as horizontal drilling and multi-stage hydraulic fracturing (a.k.a. fracking), which have enabled commercially viable extraction of hydrocarbons from “tight” rock formations, such as source rocks. However, equally important to technology capability are the fundamental geological understandings to a play – you want to be in the right area to start with. This presentation provides an overview on some geological aspects of US unconventional plays, with an emphasis on some key elements of successful shale gas plays, to address some of the frequently questions when considering certain play entry opportunities. While every shale play is unique, there is some common thread of geological importance, such as thickness, total organic carbon (TOC), kerogen types, thermal maturity, porosity, gas in place, and mineralogy etc. When put these parameters together, one can quickly identify and delineate play fairways and focus on certain play area where better well deliverability is more likely than others.

Speaker: Dr. Kuochen Tsai (蔡國楨), Shell Oil

Topic: Proppants and Hydraulic Fracturing Efficiency

Dr. Kuochen Tsai has a Ph.D. in mechanical engineering and has been working in the area of fluid dynamics modeling for the past 20 years. His work spans from fundamental research of turbulent reacting flows to applications of CFD models to industrial problems of polymeric flows, crystallization, burner design, sand transport, hydraulic fracturing and oil reservoir flows. He is a pioneer in applying Monte-Carlo PDF methods to polymer reactor design and the use of

Lagrangian model for dense slurry flows. His recent works involve the improvement of computational model to predict proppant transport for hydraulic fracturing applications and the design of passive cooler for subsea oil productions. He has authored more than 40 research papers for scientific journals and conferences. He started his career as a software developer for combustion applications at Cornell University, then a senior specialist at Dow Chemical Company and is currently a senior staff research member at Shell International E&P.

Proppants play a key role in the production of shale gas and oil due to their ability to maintain sufficient permeability in hydraulically fractured shale reservoirs. Although the use of proppants in the past 2 or 3 decades has accumulated much experience, the physical mechanism regarding proppant efficiency and placement remains largely unclear. Through large amount of field data, many theories have been formulated to account for the observed phenomena and many guidelines proposed for best practice in operation. However, in reality, many unknowns still exist and may remain so for the foreseeable future due to the sheer complexity of the whole operation.

In this presentation, some key factors, especially the placement of proppants and their effects on the efficiency of hydraulic fracturing, are discussed. Those factors include carrier fluid properties, pumping rate, proppant density, concentration and type, perforation density, and the chemical and mechanical properties of the propped fractures, just to name a few. It is unlikely that all aspects can be satisfactorily understood, but significant improvements can be made by tuning of some of the crucial components. The interplay between those factors is also discussed and hopefully to stimulate further brain storming in this exciting and challenging business.

Speaker: Dr. Tai-chang Shih (史大昌), Lead Exploration Consultant, Neumin Production

Topic: Challengers, lessons learned, and opportunities for major oil companies (authored by Linhhua Guan, Statoil)

Mr. Linhhua Guan is Strategy Manager in Statoil Global Strategy and Business Development area and he has been working for Statoil since 2006. Previously, he worked for Chevron and CNPC. He received a BE degree in petrophysics and an MS degree in petroleum geology from China Petroleum University, an MS degree in petroleum engineering from Texas A&M University, and an MBA degree from Rice University.

Dr. Tai-chang Shih, currently lead E&P consultant for Neumin Production Company's Sugar Land office, was born in China, grew up in Hong Kong, and attended National Taiwan University, where he received a B.S. in geology. He began graduate training at Columbia University, and moved with his advisor to the University of Texas at Austin, where he received a PH.D. (marine geology and geophysics). Tai's 24-year career at Texaco involved conducting seismic interpretation research, technical services, exploration and development projects worldwide, and technical and business skills training. He led Texaco's seismic and sequence stratigraphy teams, China on-shore new-ventures, Tarim Basin exploration, as well as QHD-32-6, NB-35-2 development, and Bozhong exploration project's G&G efforts. Tai was a member of Texaco's FED Senior Team, Houston and Corporate Diversity Councils; as well as a trained facilitator, qualified reserve estimator, and college recruiter. Before joining up at Neumin, he conducted consulting on projects in Hungary, Namibia, onshore and offshore Taiwan, Australia, as well as onshore GOM. He is a member of AAPG since 1972, and the 2013 CAPA Vice President.

The oil and gas industry has changed and it is becoming increasingly complex - access to and competition for resources are becoming more challenging and the pace of change will continue to increase in the future. In the past two decades, majors have experienced increased competition for resources from independents, as well as Asian NOCs which have become more aggressive.

The reserve and production growth challenges for majors have led to a substantial move into unconventional and complex offshore themes even though they failed to realize the importance of shale gas revolution much later than nimble independents. At the same time, majors have also rationalized and optimized their portfolios to strengthen balance sheets and re-position for growth.

This presentation will discuss the changing environment for oil & gas industry, lessons learned from majors' shale gas rush and their performances, strategy shifts and outlooks. Moreover, we will also cover the upstream industry trends we observed since 2000 as well as challenges and opportunities for majors - ExxonMobil, Chevron, Shell, BP, Total, ConocoPhillips, ENI and Statoil.

Speaker: Dr. Eddy Lee (李怡德), Staff Geologist, Shell Oil

Topic: Gas Hydrates, Once Considered as an Energy Source of the Future

Dr. Eddy Lee (李怡德) Staff Geophysicist at Shell. He earned his M.S. (1995) and Ph.D. (2000) in Oceanography (geological/geophysical section) from Texas A&M University. In 1999, he joined C&C Technologies, Inc., where he started his career in geohazards assessment and was involved in the development of the first commercial autonomous underwater vehicle used for collecting high-resolution seafloor imagery and seismic data. He also managed the geosciences department responsible for geohazards assessment on prospect development and well site evaluation. He continued his career with Shell in 2006 as a seismic interpreter maturing near field exploration opportunities offshore Brazil with a proven track record of oil discoveries. He is currently working at French Guiana, Columbia and Guyana team accessing prospect opportunities and looking after well operations. His recent award is the AAPG 2011 Jules Braunstein Memorial Award for the best presentation.

9:00 am - Green Technology Symposium - Session I (綠色科技討論會 I)

11:50 am Chair: Edward Chen (陳天生), ACAP Former President

Speaker: Vance Nobe, CEO, Akari Energy

Topic: Current Trend of Green Energy in United States

美國綠色能源的趨勢

Vance Nobe drives sales and engineering for photovoltaic solar, wind, and other renewable energy systems for Akari Energy. His excellent technical knowledge is supported by an Electrical Engineering/Power background and a NABCEP Solar PV certification. He has a proven initiative at developing new market sources and creating excellent long-term accounts. Also, he has extensive experience, in a wide spectrum of industries including photovoltaics, solar thermal, wind energy, biofuels, and power production/distribution and other energy technologies. He also manages and trains new engineers and drives process/product development.

Vance assesses the financial viability of potential projects through cost analysis, site specific data, and Return on Investment/Internal Rate of Return (ROI/IRR) impact calculations. He developed highly effective investor presentations, with technology descriptions and financial analysis, resulting in raised capital internationally for project development and construction. In addition, he has developed process flow management, construction handling, and procurement programs and databases. Vance also leads high level engineering consulting for green energy projects. He is also highly versed in renewable energy Tax Credits, Rebates, and Tariff structures throughout the US and internationally.

Speaker: Harold Barber, Vice President of Environmental Technology, Republic Services

Topic: Landfill Gas Recovery

垃圾場氣回收技術

Harold Barber is the Director of Engineering and Environmental Management for the West Region of Republic Services, Inc., a fortune 500 solid waste management company focused in all areas of the Solid Waste Management Industry. Harold received his B.S. (Ocean Engineering) and his M.B.A from Texas A&M University in College Station, Texas. After graduation, Harold joined Fugro-McClelland Marine Geosciences, Inc. in 1989 as a geotechnical engineer with responsibilities in logistics, engineering analyses and project reporting.

From 1991 to 1999, he held a variety of engineering and operations positions for Waste Management, Inc. and his responsibilities were focused at the Corporate Office and in the Houston Area. Harold rejoined Fugro-McClelland Marine Geosciences from 2000 to 2003 as a Senior Engineer supervising numerous domestic and international projects located in Texas, Louisiana, Russia, Western Africa, Trinidad and Tobago, and Mexico.

From 2003 through 2009, he assumed the position of Vice-President for Tolunay-Wong Engineers, Inc., headquartered in Houston, Texas, managing numerous geotechnical, geo-environmental, and environmental projects in the domestic and international markets (primarily Saudi Arabia and Russia). From 2009 to present, Harold has served as an Area Environmental Manager and Regional Director of Engineering and Environmental Management for Republic Services, Inc., overseeing the Houston, Louisiana, former South Region, and currently, the West Region markets. Harold is a registered professional Engineer in Texas and Louisiana, and a member in good standing of the American Society of Civil Engineers.

The Solid Waste Industry, as most of you know, has evolved significantly over the last 20 to 25 years. The business model was basic and included retrieving the waste at point A and transferring it to point B, usually a landfill, for disposal purposes. However, beginning in the late 1980's and 1990's, the industry began to evolve, consolidate, and become more sophisticated thanks to environmental legislation passed by the U.S. Congress and in the subsequent environmental regulations promulgated by USEPA and adopted at the state level.

As the regulations were adopted and implemented and the technology evolved, so did business opportunity for environmental consultants, developers, equipment manufacturers and suppliers, and others. These challenges include our current age of automation; Greenhouse Gas monitoring and reporting and other air compliance regulations; the operation and maintenance costs associated with older and more problematic systems; and, natural gas commodity prices for planning and development purposes. With the challenges related to permitting new facilities, Greenfield sites, the trend in the industry has changed in a direction where we see owners and operators expanding existing facilities both laterally and vertically. This has presented a significant challenge to not only the owners but also consultants and energy developers.

So, what does the future hold and where are we going? What is durable and sustainable for the industry and its participants? What will future environmental regulations look like and how will they impact our industry? To loosely quote Dr. Craig Benson from his presentation at the Global Waste Management Symposium this past October: The Solid Waste Industry is moving from a platform of disposal to materials recovery and energy management. Thus, our future is both durable and sustainable on both the collection and post-collection sides of our business.

Speaker: Berine Beers, Manager, Waste Recycling Equipment, Texas Microbial Application, Inc

Topic: In-vessel Food Waste Composter & Renewable Fuel Technology
筒式廚餘堆肥和再生燃料技術

*Around 1990 **Bernie Beers** and John Willis formed BW Organics (BWO) for the purpose of designing and manufacturing rotary drum vessels to use for composting. Today there are over 250 of these units throughout the world processing a wide range of materials. In recent years TMA has experienced a strong surge in use of its vessels for composting food waste at prisons, colleges, industrial cafeterias, and food stores. Clients include: Manufacturing Kentucky, Inc., Washington Prison System, Clemson University, Lockheed Martin, Toyota Motor, ... etc.*

Technology for on-site, in-vessel composting and stabilization of agricultural and food waste has applications for several types of waste and offers the following advantages:

- The waste product is immediately isolated from the environment
- Moisture, porosity, temperature and oxygen can be controlled
- The decomposition process is rapid and uniform
- High quality, value-added products can be developed

It is Mother Nature at work in an enclosed, totally controlled environment. Given a balanced nutrient, moderate moisture, and plenty of fresh air, Mother Nature furnishes all the aerobic micro-organisms necessary to decompose and stabilize the waste stream. It makes great compost!

Speaker: Edward T. Chen, President, Chinese American Society of Environmental Protection & Safety

Topic: An Overview of Waste Conversion Technologies (WCTs) in the United States

Edward T. Chen has more than thirty-five (35) years of experience in environmental pollution control with an emphasis on municipal solid waste collections, recycling, waste minimization/prevention, waste to energy, landfill disposal, household hazardous waste, end-user markets, recycled products procurement, waste audit, material recovery facility (M.R.F.), biomass and CO2 reduction. He developed an award-winning public-private recycling partnership that saved the City of Houston millions of dollars. The partnership was used to implement a comprehensive recycling program.

1975: Northwestern Oklahoma State University, B.S. in Biology and Chemistry

1977: University of Arkansas, M.S. in Environmental Health

In United States solid waste agencies continually get unsolicited offers by individuals offering the latest and greatest system as an alternative to land filling. Most include plasma, arc gasification, pyrolysis, gasification, hydrolysis/fermentation (waste to ethanol), anaerobic digestion, autoclave/mechanical processing, etc., through technically feasible, but may not be a practical solution. What are these new technologies? What phase of development –theory, bench scale, pilot, or full operation? This overview would give agencies with limited resources the ability to differentiate those technologies that are feasible and practical (operationally and economically) from those needing more development.

There are a number of important reasons that U. S. solid waste authorities will benefit by being knowledgeable and current with respect to the progress of waste conversion technologies (W.C.T.) demonstration projects in North America.

1. WCTs convert post – recycled municipal solid waste (MSW) to such alternative fuels as syngas or ethanol rather than directly incinerating MSW.
2. WCTs offer the potential of generating significant more revenues than traditional waste-to-energy (WTE) technologies.
3. The U.S. government has provided almost \$500 million in grants and loan guarantees to WCT demonstration projects in the U.S.
4. WCT project or technology developers have proliferated in recent years and have been actively targeting local elected officials who, in turn, rely on their local solid waste managers to provide them professional opinions regarding the proposed projects.

9:00 am - Nano Technology Session [奈米科技講座]

11:50 am Co-Chairs: Dr. Su-Seng Pang, P.E. (彭樹成), Louisiana State University
Dr. Howard Paul, P.E. (浦浩德), ACAP Former President

Theme: Nano and Composite Technology
主題：奈米及複合科技

Speaker: Dr. Howard Paul, P.E. (浦浩德), ACAP Former President

Topic: The Nanofactory - Science Fiction Becoming Reality? (奈米工廠 科幻成真?)

Dr. Howard Paul is a deputy process manager working for SK E&C USA located at Houston, Texas. He received his M.S. and Ph.D. in Chemical Engineering from West Virginia University at Morgantown, West Virginia, USA in 1988. Howard has been a registered professional engineer (P. E.) at Texas since 1991. He had served as the ACAP President from 1998 to 1999. E-mail: HP8FBCAA@Yahoo.com

In his presentation, Howard will share the information for recent Global Impacts of Emerging NANO Technology especially on the Nanofactory.

Speaker: Dr. Guoqiang Li (李國強), Joint Professor, Southern University/Louisiana State University

Topic: Biomimetic Self-healing Composites

Dr. Guoqiang Li received his Ph.D. degree in Civil Engineering at Southeast University, China in 1997. He is currently the John W. Rhea, Jr. Professor of Mechanical Engineering at Louisiana State University and Contractors Educational Trust Fund Endowed Professor of Mechanical Engineering at Southern University (NSF Joint Faculty Appointment Program). His research focuses on shape memory polymer based smart materials and solid mechanics. He has coauthored 147 refereed journal papers, 4 book chapters, and 1 book. He has received over 20 awards for his research, mentoring, and service. E-mail: guoli@me.lsu.edu

In this presentation, two bio-inspired self-healing schemes will be reported. One is based on constrained expansion of shape memory polymer matrix, and the other is based on constrained shrinkage of shape memory polymer fiber. Several case studies will be presented to demonstrate the ability for repeatedly healing wide-opened cracks. Possible ways towards true biomimetic self-healing will be discussed.

Speaker: Dr. Gefu Ji (姬戈夫), Research Associate, Louisiana State University

Topic: Novel Sandwich Panel with Millitube Grid Stiffened Polymer Core

Dr. Gefu Ji received his bachelor degree of engineering in the specialty of mechanical and electrical engineering from Agricultural University in Wuhan, P. R. China in June 2001. After receiving his undergraduate degree, Mr. Ji entered the Southern University A & M College in fall 2004 as a graduate assistant. He received his Master of Engineering degree in August 2006. And then, he entered the Louisiana State University in fall 2006. He received his Master of Science degree in mechanical engineering in December 2008 and his PH.D degree in Engineering Science in December 2010. Dr. Ji's research included Advanced Grid Stiffened Composites; Composite

Joints; Infrastructure Composites; Impact; Repair of Composite Structures; Shape Memory Polymer; Smart Self-Healing Composites. E-mail: gji1@tigers.lsu.edu

Sandwich construction has been extensively used in various fields. However, sandwich panels have not been fully exploited in critical structural applications due to damage tolerance and safety concern. In order to improve the debonding resistance and energy absorption of sandwich panel under impact loadings, a new sandwich core is proposed which is a hybrid core consisting of hollow shape memory alloy millitubes reinforced Shape Memory Polymer matrix. The objective of this study was to characterize its dynamic performances and self-healing performances. The core consisted of programmed shape memory polymer resin and shape memory alloy millitubes. Axial compression test, three point bending test, SEM, DMA, DSC, Low velocity (4m/s) impact tests and shape recovery test were conducted. The test results demonstrated that new core panel may be considered a promising option for critical structural applications featured by debonding and multiple impact tolerance.

Speaker: Dr. Harper Meng (孟庆浩), Research Associate, Southern University

Topic: Recent Advances on Stimuli-responsive Memory Polymer Composites

Dr. Harper Meng received his Ph.D. degree in Chemical Engineering and Materials from The Hong Kong Polytechnic University. He is working with Professor Guoqiang Li at both Southern University and A&M College and Louisiana State University as a postdoctoral research associate. His research interests are in stimuli-responsive materials and light-weight composites. E-mail: harpermeng@gmail.com

The past decade has witnessed remarkable advances in stimuli-responsive memory polymers with potential applications in biomedical devices, aerospace, textiles, civil engineering, bionics engineering, energy, electronic engineering, civil engineering, and household products. Researchers have put great efforts to improve the versatility of the memory effect of memory polymers to meet needs of advanced applications. Stimuli-responsive memory polymer composites have further enhanced and broadened the applications of memory polymers. In addition to reinforcement, stimuli-responsive memory polymer composites can enable or enhance athermal stimuli-active effects, novel shape memory effect, and new functions. Many athermal stimuli-responsive effects have been achieved such as electroactive effect, magnetic-active effect, water-active effect, and photoactive effect. The typical examples of novel shape memory effects are multiple-shape memory effect, spatially controlled shape memory effect, and two-way shape memory effect. In addition, new functions of stimuli-responsive memory polymer composites have been observed and systemically studied such as stimuli-memory effect and self-healing. This presentation will review these versatile composites. The various methods to fabricate these composites and their performances will be summarized. The potential directions for future advancement in this field will be discussed.

Speaker: Dr. Su-Seng Pang (彭樹成), Professor, Louisiana State University

Topic: Effects of Surface Roughness on the Efficiency of Self-Healing Polymers (Co-authored by Ifeanyi J. Okoro and Su-Seng Pang)

Dr. Su-Seng Pang received his B.S. degree in Mechanical Engineering from National Taiwan University, M.S. degree in Aerospace Engineering & Mechanics from University of Minnesota, and Ph.D. degree in Mechanical Engineering from U.C. Berkeley. Currently, he is the

Associate Vice Chancellor for Strategic Initiatives (since 2001) and Jack Holmes Distinguished Professor of Mechanical Engineering at Louisiana State University (LSU). Dr. Pang is a Fellow of three professional societies: American Society of Mechanical Engineers (ASME), Society of Plastics Engineers (SPE), and American Association for the Advancement of Science (AAAS). He is a recognized expert in the field of composite materials research. Dr. Pang has published over 200 journal papers/conference proceedings in the areas of composite materials and structures, pressure vessel and piping, and various joining technologies. He has been the Principal Investigator (PI)/Co-PI of 120 projects funded by NSF, NASA, Navy, Army, Air Force, Department of Energy, and various industries. His research/education projects are supporting over 250 college students per year as well as numerous high school teachers and students. Since 1996, Dr. Pang has received 34 U.S. national/regional awards in research and education, including: Presidential Award for Mentoring (at the White House); Tibbetts Award for SBIR Model of Excellence (at the White House); AAAS National Mentor Award; ACAP Distinguished Achievement Award; AACP Outstanding Achievement Award; etc. Since 2008, Dr. Pang has delivered over 40 invited speeches/seminars on various education/research topics to numerous universities and organizations in Taiwan, Hong Kong, Macau, China, and United States. He was bestowed an Honorary Doctorate (Doctor of Science honoris causa) from the University of Macau, China in 2006. E-mail: mepang@me.lsu.edu

A shape memory polymer (SMP) is a *smart* material capable of maintaining two distinct shapes depending on its temperature. When copolyester thermoplastic additives are dispersed in a SMP, it becomes capable of self-healing at both molecular level and structural level. Whenever crack or fracture occurs in the polymer, the surfaces at the damage interface have to come into contact for efficient healing; the shape memory effect, coupled with a confined recovery (healing) process, ensures this. This study examined the effects of the roughness of the surfaces at the damage interface on the efficiency of the healing process. Polystyrene shape memory polymer (PSMP) was the matrix, while copolyester thermoplastic additives (CP) were used as the reinforcement.

Compressive programming to 10% pre-strain was performed on the CP-PSMP which was then tested for flexural strength by three-point bending. Next, the surfaces were varied using sandpaper of different embedded particle diameters and the CP-PSMP was healed using a previously validated close-then-heal (CTH) self-healing mechanism. The recovered strength was obtained using another three point bending test and the healing efficiency was obtained as the fraction of the recovered flexural strength to the pre-healing flexural strength. Healing efficiency was found to be higher for CP-PSMP with smoother surfaces (i.e. low values for R_a and R_q). The highest healing efficiency of 0.39 was found in the sample with R_a and R_q values of 0.425 and 0.617 μm , respectively.

Generally, higher healing efficiencies were found in CP-PSMP treated with sandpaper of particle diameters categorized as very fine and super fine. The effects of sanding on healing efficiency was also examined by comparing the healing efficiencies of two sets of CP-PSMP with similar R_a and R_q values; one set was treated with sandpaper while the other was not. The sanded CP-PSMP was found to be 24 % more efficient in healing.

**Earn up to 3.5 hours of Professional Development Hours (PDH) by attending this session. Certificate will be issued after conference*

9:00 am - CPA - Financial Management Session [專業會計師 - 財務管理講座]

11:50 am 休市華美會計師協會協辦

Co-Chairs: Andy Jan, CPA (詹煥彩會計師)

Vera Lee, CPA (李尤梅會計師)

Speaker: Andy H Jan, CPA, (詹煥彩會計師)

Topic: The American Taxpayer Relief Act of 2012

Andy Jan has completed his Master of Science in Accounting from University of Houston-Clear Lake in 1987. He holds Certified Public Accountants license from state of Texas since 1992. He is currently the President of Houston Society of American Chinese CPAs. Prior to starting his accounting firm in 2003, Andy worked as a Financial Controller for a British Oil Service firm located in Houston. Andy who holds life, health license and Series 6,26,63 security licenses is an investment advisor with Transamerica Financial Advisors, Inc.

The American Taxpayer Relief Act of 2012 will be discussed. This Act extends certain tax relief provisions enacted in 2001 and 2003, and provides for expedited consideration of a bill providing for comprehensive tax reform, and for other purposes.

Speaker: Michelle Arend, CPA, RR

Topic: Defined Benefit Plan for Retirement Planning

Michelle Arend graduated Cum Laude from the University of Houston and began her career with Pennzoil Oil Company in the federal tax department in 1981. Michelle passed the CPA exam on the first attempt and she later accepted a position with a local public accounting firm specializing in taxes and qualified plans. She was later hired by Ernst & Young as a tax manager of the Entrepreneurial Services division.

Michelle is affiliated with a broker/dealer and consults with individual and business clients. Michelle has a Bachelor of Science in Accounting. She has been a Certified Public Accountant since 1983. She is also a registered representative, maintains a life and health license, as well as Series 6, 63 and 65 securities licenses. Michelle is married with two children and resides in Houston, TX.

Defined Benefit Plan is an employer-sponsored retirement plan where employee benefits are sorted out based on a formula using factors such as salary history and duration of employment. Investment risk and portfolio management are entirely under the control of the company. There are also restrictions on when and how you can withdraw these funds without penalties.

*依照美國會計師協會之規定，專業會計師執照持有人每年需進修若干小時。本課程與下午電腦講座班合乎美國會計師協會之規定，可算八小時進修學時。

9:00 am - Education Session (教育講座)

11:50 am Co-Chairs: Dr. Grace Hsin-Hui Lin (林欣慧), Associate Professor, University of Houston - Victoria

**Dr. Mandy Mei-Chih Wang (王美智), Assistant Professor,
University of Louisiana at Lafayette**

Theme: Parenting Education: Children and Social Media

Speaker: Dr. Irene Linlin Chen (陳琳琳), Professor, University of Houston-Downtown

Topic: Popular Social Media

*Professor
Department of Urban Education,
College of Public Service
University of Houston-Downtown
cheni@uhd.edu*

Speaker: Dr. Mandy Mei-Chih Wang (王美智), Assistant Professor, University of Louisiana at Lafayette

Topic: Young Children and Social Media

*Assistant Professor
Department of Curriculum and Instruction
College of Education
University of Louisiana at Lafayette
mwang@louisiana.edu*

Speaker: Dr. Hsin-Hui Lin (林欣慧), Associate Professor, University of Houston at Victoria

Topic: Teenagers and Social Media

*Associate Professor
Department of Teacher Leadership and New Literacies
School of Education and Human Development
University of Houston at Victoria
linh@uhv.edu*

Speaker: Dr. Kwang-Lee Chu (朱光立), Research Scientist, Psychometric and Research Services

Topic: Young Adult and Social Media

*Research Scientist
Psychometric and Research Services
Pearson
Kwang-Lee.Chu@Pearson.com*

*3 hours of continuing education unit (CEU) will be available upon request (with a \$5 processing fee).

2:30 pm - Alternative Energy Technology Symposium - Session III (替代能源討論會 III)

5:30 pm Co-chairs: Dr. Michael Wen (文又新)

Dr. C. C. Wang (王家驄)

Theme : Unconventional Energy Resources

Speaker: Dr. Michael Wen (文又新), ExxonMobil Upstream Senior Technologist

Topic: Oil Sands Processing

Dr. Wen work experience includes 1990-1999 (Exxon Downstream R&D), 2000-current (ExxonMobil Upstream Research). His expertise is in coal liquefaction, autothermal reforming, GTL, heavy oil upgrading, oil sands processing.

B.S. Chemical Engineering / Chung-Yuan University

Ph.D. Chemical & Fuels Engineering / University of Utah

MBA Louisiana State University

Close to home in North American there are enormous amount of bitumen resources that rival Saudi Arabia and they can serve as stable and secure crude oil supply to the United States for decades to come. History of Hot Water Extraction process to recover bitumen and technological steps used in commercial oil sands processing will be presented. Current commercial processes have certain issues that producers try to overcome to improve reliability and reduce costs. Facing the challenges of tailings management producers are joining R&D effort by sharing technologies and testing various ways to reduce net water use and speed up land reclamations. Production forecast from ExxonMobil and Canadian Association of Petroleum Producers will show increasing importance of bitumen for greater market share in the future. Producers and pipeline companies are also pursuing several pipeline expansion proposals to broaden market reach.

U.S. oil sands resources are significantly different to Canadian oil sands in term of extraction chemistry and technology selections. U.S. oil sands development is in early stage and its potential will be assessed. Summary will provide a general guidance on near term and future oil sands development trend.

Speaker: Dr. Jonathan Kwan (關德沛), Reservoir Engineering Advisor, ConocoPhillips

Topic: Less Publicized Unconventional Resources – Heavy Oil, Oil Shale & Hydrates

Dr. Kwan is currently served as reservoir engineering advisor at ConocoPhillips, working on enhanced recovery projects in mature oil and gas fields located in Norway, Alaska, and Texas Permian Basins. He is also a visiting scientist at Rice University. He has over 30 years of oil, gas and geothermal experiences in research, operations, natural gas marketing, strategic planning, and international business development. Dr. Kwan obtained his B.S. degree from UC Berkeley and his graduate degrees in Chemical and Environmental Engineering from University of Southern California. jonathan.t.kwan@conocophillips.com

The game changing unconventional gas and oil is well publicized and widely debated in the US and internationally. There is no doubt their development will have major impacts in economic and energy security to many energy importing countries. However, still more than half of the global

hydrocarbons are remain trapped in the following less publicized resources - methane hydrates, oil shale, and tar sand.

Gas hydrates are found where gas molecules (CH₄, CO₂, etc.) are encapsulated inside a frozen cage of water. Methane hydrate has been discovered beneath arctic permafrost and in deep water sedimentary deposits in Russia's Siberia, Alaska's North Slope, Japan's Nankai Trough, China's South China Sea, and India's Andaman Convergent Margin. Hydrate deposits in these parts of the world are much closer to high-population areas and allow surrounding countries that currently import natural gas to become self-sufficient. The current challenge is to inventory the resource and find a safe, economical ways to develop it. Several international cooperative hydrate E&P projects had been conducted in Alaska, Canada, and offshore Japan funded by various government agencies. ConocoPhillips and US DOE concluded a CO₂ sequestration project with naturally occurring hydrates in Alaska and reported successful results in 2011.

In early 70s, ExxonMobil, Unocal, Occidental all had built above-ground heat processing facilities to extract oil from the crushed oil shale that contains organic matter called kerogen. Last 20 years, Royal Dutch Shell has been working on in-situ conversion (ICP) and in-situ upgrading (IUP) processes for oil shale and heavy oil, respectively. These two processes produce liquid synthetic crude utilizing conventional wells, electrical heaters, and a novel idea of ice wall to improve conversion efficiency and subsurface remediation. Currently, many companies in Canada are using a combination of horizontal well pair and stream to produce oil from tar sand in an in-situ process called SAGD (steam assisted gravity drainage).

In this knowledge sharing session, a brief description of the processes will be presented to illustrate technological innovation and geoscience/engineering ingenuity in the energy profession. The challenges remain in development economic, competitive pricing dynamics, government policies/regulations, and environmental acceptance. Nevertheless, these resources will serve human kind in time to crunch our forever thirst in energy consumption.

Speaker: Mr. Hengky Mualim, Process Manager, Air Liquide (presented by Chung Fan, Engineer/Senior Estimator at Air Liquide)

Topic: FutureGen 2.0: The World's First Commercial Scale Oxy-combustion Project

Mr. Hengky Mualim, Air Liquide Process and Construction,

Hengky.Mualim@Airliquide.com

Mr. Chung Fan is an Engineer/Senior Estimator at Air Liquide Process and Construction.

He has over 30 year working experience in the process and industrial gas industries. Before join ALPC, he worked in Linde in the areas of proposal engineering for FGD, ASU, SMR, H₂/He liquefaction, CO₂ liquefaction, LNG, H₂/Co separation. Chung.Fan@Airliquide.com

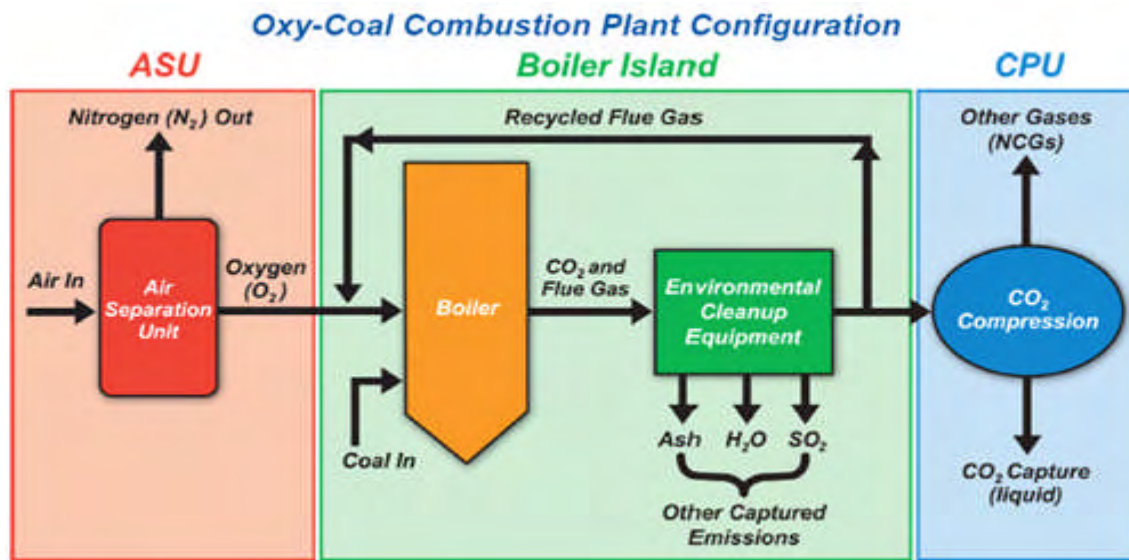
1967 B.S. Agricultural Chemistry, Chun Hsin University, Taichung, Taiwan

1978 M.S. Chemical Engineering, Manhattan College, Bronx, N.Y

For over a decade The Babcock & Wilcox Company (B&W) and Air Liquide (AL) have been developing the oxy-coal combustion technology utilizing pulverized (PC) coal. After multiple successful testings at a pilot scale during 2007 to 2008, B&W and AL submitted an application for funding for a commercial scale validation. On August 5, 2010, the U.S. Energy Secretary Steven Chu and U.S. Senator Dick Durbin (D-Ill) announced the award of \$1 billion in Recovery Act funding to the FutureGen Alliance (FGA) and Ameren Energy Resources (AER) to build FutureGen 2.0.

The FutureGen 2.0 project is based on the oxy-combustion technology, which is one of several cost-effective approaches identified by the Department of Energy's National Energy Technology Laboratory to clean up existing coal-fueled facilities and capture CO₂ for geologic storage.

Oxy-combustion burns coal with a mixture of oxygen and CO₂ instead of air to produce a concentrated CO₂ stream for safe, permanent storage. In addition, the FutureGen 2.0 plant will take other emissions, such as SO_x, NO_x, and other emissions, to near-zero levels.



Speaker: Dr. C. C. Wang (王家驊), Technology Manager, Air Liquide

Topic: Clean Coal Applications

Dr. Chia-Chung (CC) Wang is Lurgi Technologies Manager in the Houston office of Air Liquide. He has over 30 years of process engineering experience in the chemical and petrochemical industries. In his career, he has worked for Ciba-Geigy, Shell Oil, GTC Technology, Rentech, and URS before joining Air Liquide Process and Construction (ALPC) in 2011. In his current position, Dr. Wang is leading ALPC process teams to market Lurgi syngas technologies, particularly Rectisol, SMR H₂ plant and Methanol, in the America region. Dr. Wang graduated from the Chemical Engineering Department of National Taiwan University in 1976, received a ChE Master degree from the University of Wyoming in 1980 and a ChE PhD degree from Colorado School of Mines in 1988. He is married with two children and has lived in Houston, Texas since 1989.

It is commonly believed that the worldwide supply of petroleum oil and natural gas has reached its peak. In the coming years, alternative energy sources including oil shale, tar sand, coal, and the more desirable renewable energies such as biomass, solar, wind, etc. need to be developed and commercialized.

Among these alternatives, coal has been used in human history for a long time, second only to the biomass. Consequently, the infrastructure for coal's mining and transportation is already in place and relatively efficient technologies to convert its energy for daily use have been fully developed.

Its abundant existences throughout the world have also made its usage a top priority for countries (China, India, etc.) looking for energy independence.

One of the drawbacks for utilizing coal is its solid form that makes its retrieval and transportation rather complicated. Most importantly, coal combustion emits more pollutants such as sulfur (acid rain), heavy metals (mercury), and CO₂ comparing with conventional fuels such as natural gas and petroleum. Fortunately, the recent advancements of clean coal technologies have made coal applications more attractive.

The objective of this paper is to review these clean coal applications utilizing the current state-of-art coal gasification technologies, which include dry and slurry feed, entrained flow and fluidized bed processes offered by well-known companies as Shell, GE, Siemens, Conoco and Philips, and KBR. Finally, the impacts of Carbon Capture and Sequestration (CCS) on economics of clean coal applications are discussed.

2:30 pm - Green Technology Symposium - Session II (綠色科技討論會 II)

5:30 pm Chair: Edward Chen (陳天生), ACAP Former President

Speaker: Bessy Fan, Ph.D. (范增璞), Discovery Analytical Consulting

Topic: Introduction of Algae and Cellulosic-Based Biomass as Feedstock for Biofuel.
藻類和纖維素基原料做生物燃料的介紹

范增璞博士 擁有臺灣大學士學位, 及休士頓大學的化學博士學位. 在休士頓殼牌石油公司的分析化學部門工作 25 年, 對煉油廠, 化工廠的原料, 產品提供鑑定分析和技術指導, 協助解決生產線各方面的問題, 以及協助新石化產品及生產技術的研發。范博士是儀器分析和質譜法方面的專家, 她的工作還包括新分析儀器和技術的引進, 實驗室管理, 項目規劃和協調。公司在 2007 年開始全力發展生物燃料的研究, 在這個全球性的研發團隊中, 范博士是全美負責化學分析組的領導人。范博士於 2010 年從資深研究員職位退休, 隨即成立了 *Discovery Analytical Consulting* 分析諮詢有限責任公司, 繼續在能源行業方面從事諮詢工作

高油價和替代能源資源的需求, 以及全球氣候變暖的關注推動了近年來公眾和科學界對生物能源的關注。藻類和纖維素均為再生能源, 藻類可提煉生物柴油, 纖維素可製造生物乙醇。這個講題將對用藻類和纖維素作為生物燃料的原料作一個總體的介紹, 包括這兩種原料的優點, 缺點, 它們的組織成分, 如何從這些材料中生產生物燃料, 目前使用的加工技術, 以及大量生產所面對的挑戰, 和未來研究發展的方向。

Speaker: Jeff Dunham, CEO, JACO Environmental

Topic: Styrofoam green technology

Mr. Jeff Dunham is an entrepreneur in the Houston, TX area for the last 40 years. He is committed to the economic development and sustainability of the Houston economy, Mr. Dunham owner of Consolidated Distributors, Inc. currently operates a national transportation division, an appliance recycling division and an expandable polystyrene (EPS) division. For over 20 years Mr. Dunham has transported and installed appliances for Sears, Whirlpool, Best buy and other appliance and furniture distributors.

Mr. Dunham has witnessed and understands the enormous volume of expandable polystyrene (EPS) or Styrofoam waste generated by manufactures throughout the US and the world. Mr. Dunham is committed to addressing the problem of this Styrofoam waste stream with affordable solution for the Houston area and the world. Throughout research and development he has implement a mobile Styrofoam Recycling Truck. Our mobile unit makes it affordable for all business owners to solve the problem of the Styrofoam waste stream they generate. Mr. Dunham currently provides mobile Styrofoam recycling service for the City of Houston solid waste recycling division. We currently provide service for many private businesses in the Houston area. Mr. Dunham has plans to duplicate the Styrofoam mobile recycling service throughout the US and the world.

Mr. Dunham is currently working with consultant group and lobbyist in the Washington, D.C. to apply for a government grant throughout the US Department of Energy and EPA. Mr. Dunham is in the research and development phase of addressing other plastic waste stream generated by the appliance industry. Mr. Dunham holds a degree in Science from the University of Houston. He also works with Jaco Environmental, the largest refrigeration recycling company in

the US currently in 40 cities in the US. Mr. Dunham also consults with the president and funding committee of Clean Conversion Technology in San Antonio, TX.

Speaker: Keith Koski, City of Houston, Dept. of Solid Waste Management, Reuse Warehouse

Topic: A Worthwhile Diversion: Keeping Materials Out of Landfills to Build

Mr. Keith Koski has an undergraduate degree in History from New York University and a graduate degree in architecture from Rice University. He worked for Fehr, Grossman, and Cox Architects for 6 years plus an additional 20 years experience in the construction industry. For the past three years he has managed the City of Houston Building Materials Reuse Warehouse, a component of the Department of Solid Waste Management.

The City of Houston Reuse Warehouse, a component of the Department of Solid Waste Management, accepts building materials from individuals and companies, diverts the material from landfills, and gives all of the material to non-profit organizations for free.

We will investigate which types building materials are being diverted from landfills, which are more difficult, and why. Examine currently-established landfill diversion/reuse programs as well as new strategies. See examples of reused building materials in action and discuss ways to augment the process.

Speaker: Chi-Chung Chang, Ph.D. (張濟群), Principal Program Manager, URS Corp

Topic: Case Studies for Low Impact Development (LID) and Leadership in Energy and Environmental Design (LEED)

Dr. Chang is a Principal for Program Management at URS Corp. (URS) Houston Office. He has over 30 years of experience managing and conducting engineering, environmental, and planning projects for various state and federal agencies as well as industrial and municipal clients. He has a diversified technical background and strong management skills to lead multi-discipline project teams and subcontractors to provide cost-effective solutions to our clients. He has extensive knowledge and hands-on experience in watershed planning urban flood management. His expertise include flood mitigation, damage recovery assessment, and facility disaster prevention. He also provides technical consulting on remedial action design (biological, chemical and thermal enhancement), hydrological modeling, site assessment, chemical fate and transport analysis, multiphase flow analysis, risk assessment, wetland restoration, wetland mitigation, wetland delineation, and site closure to other URS offices nationwide.

Dr. Chang serves on the Advisory Board for the Civil and Environmental Engineering Department at Rice University. He is a member of the Board of Directors to American Chinese Association of Professionals. He also serves on the Committee of Water Resources Management Institute of American Society of Civil Engineers. Dr. Chang has authored over 60 technical reports for agency submittal and published papers and books in the area of hazard mitigation, hydrological modeling, floodplain management, environmental remediation design, fate and transport application, multiphase flow modeling, and wetland restoration. In addition to consulting and project management, he has taught seminars on hazard mitigation and flood management for Water Resources Agency as well as on environmental remediation and management for the EPA of Republic of China in Taiwan

Low Impact Development (LID) has been characterized as a sustainable storm water practice by an approach to land development (or re-development) that works with nature to manage storm water as a resource rather than a storm sewer. LID employs principles of "Green infrastructure" such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. The green structure includes as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, permeable pavements and water retention facilities. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions. LID can be applied to new development, redevelopment, or as retrofits to existing development. LID has been adapted to a range of land uses from high density ultra-urban settings to low density development.

Leadership in Energy and Environmental Design (LEED) is a voluntary, consensus-based, market driven program that provides third-party verification of green buildings. The LEED program promotes the environmental friendly and energy saving design and construction of buildings. From individual buildings and homes, to entire neighborhoods and communities, LEED is transforming the way built environments are designed, constructed, and operated. comprehensive and flexible, LEED addresses the entire lifecycle of a building. LEED projects have been successfully established in 135 countries. International projects, those outside the United States, make up more than 50% of the total LEED registered square footage.

Principles and cases of LID and LEED will be discussed in this seminar.

2:30 pm - Health Session (健康講座)

5:30 pm Co-Chairs: Karl K. Chen, M.D., Ph.D. 陳康元醫師
Grace L Chen, Ph.D., R.N. 陳王琳博士

Theme: Strategies for Healthy Living and Longevity

主題： 少病、長命、旅美華人健康須知

Speaker: Jianwei Feng, M.D. Ph.D., FACC (豐建偉醫師)

Chairman, Department of Cardiology at Memorial Hermann Hospital SW

Topic: The Heart Truth Campaign: Serious Messages about Women and Heart Disease
不可忽視的健康問題： 婦女與心血管疾病

Heart disease is the No. 1 killer of women, but many don't recognize the warning signs. They may ignore the symptoms or mistake them for more benign ailments. Symptoms and risks unique to women, how to minimize the risk as well as other concerns will be addressed.

心血管疾病是女性的頭號殺手，但很多不認識它的警告標誌，也可能忽略它的症狀，或誤認為是婦女的良性疾病。講題內容不但包括女性特有的心血管疾病風險和症狀，還包括如何預防並且降低心血管疾病的風險。

Speaker: Zhengnan Yin, M.D. (殷正男醫師)

Memorial Southwest Family Practice

Topic: Understand Diabetes
認識糖尿病

From 1980 through 2011, the number of U.S. adults aged 18 years or older with diagnosed diabetes has more than tripled (from 5.5 million to 19.6 million). Diabetes is widely affecting people's lives. A better understanding of this disease has special significance for the prevention and treatment of diabetes.

糖尿病正在日益嚴重和廣泛地影响到人们的生活；從 1980 到 2011，美國 18 歲以上的成人，被診斷出糖尿病的人數已經增加了至少 3 倍。認識糖尿病，對於預防和治療糖尿病有着特別重要的意義。

Speaker: Li-Hung Kuo, RPH (郭禮宏藥劑師)

The Woman's Hospital of Texas

Topic: Knowing & Choosing Over the Counter (OTC) Drugs
認識和選擇非處方用藥

The following four aspects of OTC drugs will be introduced: 1.) Differences between prescription drugs and non-prescription drugs; 2.) Categories of OTC drugs; 3.) Safety issues; and 4.) how to choose OTC drugs.

處方藥和非處方藥的區別，非處方藥的種類，非處方藥的安全性，以及如何正確的選用非處方藥。

Speaker: Karl K. Chen, M.D., Ph.D, (陳康元醫師)

Medical Director, Department of Radiation Oncology at Kathryn O'Connor Regional Cancer Center, Citizens Medical Center, Victoria

Topic: Cancer, Genetics, Emotion, and Health
癌症、基因、情緒、與健康

Cancer risk factors, including sporadic cancer vs. hereditary cancer linked to inherited gene changes will be discussed, using colorectal cancer and breast cancer as examples of illustration. Ways to minimize cancer risk and maximize health will be addressed. 將討論癌症的危險因素，包括「零星的癌症」與鏈接繼承的基因變化之「遺傳性癌症」；將以「大腸癌」和「乳腺癌」作為例子說明。也將介紹如何降低患癌症的風險，並最大限度地提高健康的方法。

2:30 pm - Business Session (商業講座)

5:30 pm 世界華人工商婦女企管協會美南分會協辦 GFCBW

Co-Chairs: Ying Shi Lai (李迎霞)

Ming Burdett (陳明華)

Theme: Alternative investments vehicles - What is Angel Investing? Global Foreign Exchange Risk; The New Era in High-Tech Fraud

Session I:

How to look beyond stocks, bonds and real estate to find top-notch investment vehicles that work together while staying true to our personal goals and values?

Speakers: Andrew Clark and Ming Burdett

Ming Chen Burdett has been in commercial lending for 15 years and has made over hundred millions of loans to small to mid-size companies in her banking career. Ming is also an active angel investor and member of Houston Angel Network and Rice Investment Club. Ming Graduated from Rice Executive MBA and recently joined Cadence Bank as Senior Vice President for Middle Market. Ming is also the Vice President of GFCBW

Andrew Clark, Managing Member, Texas Halo Fund; member Houston Angel Network
Andrew is a managing member of the Texas Halo Fund, an early stage investment fund associated with the Houston Angel Network. Angel investors are individuals who invest in early stage or start-up high growth businesses in the technology, life sciences, energy, and consumer products arenas. Andrew is a prior President and Chairman of the Houston Angel Network (HAN
www.houstonangelnetwork.org) where he has invested in numerous companies. He is also a founder of the SURGE accelerator (www.surgehouston.com) dedicated to identifying and growing world class companies at the intersection of energy and software. Andrew graduated from the Wharton School of the University of Pennsylvania and has spent his entire career involved in technology businesses here in Houston including more than a decade with Compaq Computer.

The topic will discuss angel investing as an alternative asset class including expected returns, challenges in seeking that return, and need to develop a portfolio of deals. Andrew will introduce the Texas Halo Fund as an angel investment vehicle that delivers diversification needed in building a proper angel portfolio. The Halo Fund is a side-car fund. Ming will discuss how angel groups employ side car funds.

Session II

Navigating Global FX Risk in a Multiple Black Swan Environment

Speaker: Ken Hogan

Ken Hogan was named Senior Vice President of Cadence Bank, N.A., in January 2012 and is responsible for the Foreign Exchange Division which covers developed and emerging markets currencies and all major products in locations around the globe. Ken earned his Executive MBA from Tulane University's A.B. Freeman School of Business and completed his undergraduate coursework at Texas A&M University

The continuing Sovereign debt crises in Europe, currency wars, horrific natural and manmade disasters...not to mention a near global economic collapse only a few years ago. In statistics, these events are known as kurtosis or “fat-tail” risks because they represent the extreme worst-case scenarios and are very unlikely to occur. Yet the global markets appear to have entered into a state of quasi-stasis defined by a multiple black swan environment. Please join Ken Hogan, Head of Foreign Exchange at Cadence Bank, for a lively discussion of navigating FX market risk in the current global market environment.

Section III

Corporate Account Takeover: The New Era in High-Tech Fraud

Speaker: Andrea Cruz Lawson

Andrea Lawson has over 12 years in banking, all dedicated in the field of Treasury Management sales. Most recently she joined Cadence Bank focusing her efforts to provide innovative solutions with a consultative approach to cash management. She is a native Spanish speaker, born in Mexico City. Andrea was honorably discharged from Regular Army with the rank of Corporal in 1997

Corporate Account Takeover is the business equivalent of personal identity theft. Hackers, backed by professional criminal organizations, are targeting small and medium businesses to obtain access to their web banking credentials or remote control of their computers. These hackers will then drain the deposit and credit lines of the compromised bank accounts, funneling the funds through mules that quickly redirect the monies overseas into hackers' accounts. Join Andrea Cruz-Lawson, Vice President of Treasury Management at Cadence Bank, for an essential discussion of what you need to know in order to take proactive steps and avoid, or at least minimize, most threats.

2:30 pm - Computer Technology Session [電腦科技講座]

5:30 pm Chair - Jessie Wang (汪乃強)

Theme: Mobile Computing with Smartphone and Tablet

主題：移動計算與智慧型手機的運用及操作

Speaker: Jessie Wang, Director, Business Technology, Chroma Oil & Gas

Jessie is an IT professional specializes in system integration and technology application. Prior to Chroma, Jessie has worked for Enron, Compaq Computer and Conoco Phillips.

In recent years, if you ask “what is the most influencing power of the computing world?” the answer will be the mobile devices. Smartphones and tablets have fundamentally changed the way how people use computer/Internet, replacing desktop and laptop computer, and they are the most popular areas if you visit any computer electronic shop today.

We will introduce different types of mobiles devices via live demo, and also review from functionality, pricing and usability perspective, help you to find the one that best suited for your need. We will also discuss cloud computing, since it has a lot to do with the take-off of the smartphones and tablets.

Topics: Current Computing Environment

- Cloud Computing
- Mobile Internet
- Social Network

Mobile devices

- Smartphone
- Tablet
- Phablet – hybrid of smartphone and tablet

Mobile Computing

- Smartphone & Tablet demo
- Smartphone & tablet comparison
- iPhone, Android phone and Windows Phone
- iPad, Android tablets and Windows Surface / Convertible

近幾年來，主導人們使用電腦的最大動力，非智慧型手機莫屬。在前蘋果電腦總裁賈布斯（Steve Jobs）大力推展之下，iPad 及平板電腦也開始取代了傳統的電腦（desktop/laptop computer）。智慧型手機及平板電腦的特性是輕巧易帶，隨時連線，使用起來十分方便。如果你現在到電子家電的賣場，最火紅的就屬這兩種產品。在眾多品牌、機型之下，如何選擇合適的產品，可不是容易的事。此次講座將會以現場示範的方式，為各位介紹不同智慧型手機及平板電腦，從價錢、功能、到使用性，與現場觀眾分享使用的經驗。同時我們也會介紹最新的雲端計算的科技，智慧手機及平板電腦會如此普及，與雲端科技有著密不可分的關係。

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Student Research Poster Presentation

駐休士頓台北經濟文化辦事處教育組協辦

Chair: Dr. Shian-uei Hwu; Judge Panel: Dr. K. C. Wang

主持人：胡先葳博士, Judge Panel：王國治博士

2013 ACAP Student Poster Contest Finalist List

Engineering & Sciences

1. Andy, Chih-Yuan Chang, 張智淵, "**Regional Air Quality Impacts of Eagle Ford Shale Development in South Texas**," Ph.D. Candidate, Environmental Engineering, Texas A&M University-Kingsville, csmu188@msn.com
2. Kung-Po Chao, 趙公柏, "**Characterizing Assembly of Semiconducting Nanoparticles with Conjugated Polymer Systems for Solar Cell Applications**," Ph.D. Candidate, the Department of Chemical and Biomolecular Engineering, Rice University, kc7@rice.edu
3. Ya-yu Hew, 丘雅鈺, "**The Next Generation Commercial Transport Design with Thrust Vector Control**," Undergraduate Senior, Aerospace Engineering, The University of Texas at Arlington, ya-yu.hew@mavs.uta.edu
4. Yen-Tien Lu, 盧彥典, "**Nanopore-type black silicon anti-reflection layers fabricated by a one-step silver-assisted chemical Etching**," PhD student in Chemical Engineering at Rice University, yentien.lu@gmail.com,
5. Sinjaya Tan, 賴信福, "**Shear/Anchorage Bond Behavior of Thin Prestressed Slab Beams in Bridges**," PhD in Civil Engineering, University of Houston, civil.itb@gmail.com
6. Wen-Yueh Yu, 游文岳, "**Hydrogen Production from Formic Acid Decomposition on Pd-Au Bimetallic Catalysts at Ambient Temperature**," Department of Chemical Engineering, The University of Texas at Austin, wenyueh@che.utexas.edu

Medical & Health

1. Yun-Chen Chiang, 江昀真, "**Development of HIF-1 α /HIF-1 β heterodimerization inhibitors using a novel bioluminescence reporter assay system**," Ph.D. Candidate, Graduate School of Biomedical Sciences, University of Texas Health Science Center at Houston, ychiang@mdanderson.org
2. Hsing-I Ho, 何性毅, "**Kin recognition protects cooperators against cheaters**," Baylor College of Medicine, [hsxingih@bcm.edu](mailto:hxingih@bcm.edu)
3. Chih-Chun Lin, 林致均, "**Lipid Metabolic Regulation upon Environmental Nutrient Anticipation**" Department of Molecular and Human Genetics, Baylor College of Medicine, chihchul@bcm.edu
4. Shiuan (Kevin) Wang, 王璿, "**Loss of the retromer, a protein complex associated with Parkinson's disease, leads to photoreceptor degeneration and Rhodopsin mistrafficking**," Ph.D. student at Baylor College of Medicine, shiuanwang@gmail.com

Social Sciences

1. Yu-Tang Hsieh, 謝雨唐, "**Mixed-Residential/Commercial-Use Development: Regulation Study by Geographic Information System and Neighborhood Design**," Community and Regional Planning (MSCRP), University Of Texas At Austin, hyt321@gmail.com
2. Ya-Wen Liang, 梁雅雯, "**Speechless Parrots: Voicelessness of Chinese Women Married to U.S. Citizen in the U.S.**", Counselor Education, Sam Houston State University, yml001@shsu.edu

二零一三年年會暨科學工程技術研討會
2013 Science, Engineering and Technology Seminars (SETS)

ACKNOWLEDGEMENT

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ACAP is an association of Chinese American professionals with a wide variety of expertise including engineering, science, health care, business, humanity, and arts and culture. Founded in 1978, and currently with a total membership of approximately 300, the ACAP recruits its members from, but not limited to, the states of Texas, Louisiana, Mississippi, Arkansas and Oklahoma.

In 2001, the ACAP, in collaboration with JPMorgan Chase, Shell Oil Company and Marathon Oil Company, organized the inaugural Diversity Summit annual conference. This annual conference has since gained wider support and attendance from other major corporations and organizations in the greater Houston area with an attendance over 300 people.

As a non-profit organization, the ACAP strives to foster the professional development and fellowship among its members, to facilitate the development of leadership skills of Chinese Americans professionals, and to address various issues that Chinese American professionals faced in the workplace.

In order to encourage professional advancement of the members, the ACAP regularly hosts technical seminars and workshops with various professional disciplines throughout the year. The flagship activity is the Science, Engineering and Technology Seminars (SETS) held in Houston in the spring/ summer of each year. SETS usually draw 200 to 300 participants. These seminars, workshops and conferences are multidisciplinary, and often involve guest speakers from other states and foreign countries.

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