美南國建協進會

The Association of Chinese American Professionals

二零二三年科學工程技術研討會

2023

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

大會議程
Program

THEME:

Energy, Environmental Protection, Nano and Composite Technology, Accounting Offshore Technology, Biomedical, Health, and Business Management

會議主題:

能源、環境保護、奈米及複合科技、會計、海洋科技、生物醫學科技、健康、商務管理

CELEBRATING 45TH ANNIVERSARY

Saturday, June 24, 2023

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

http://www.acap-usa.org ACAP

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A Welcome Message from ACAP President

Welcome to the 45th Annual Science Engineering and Technology Seminars (SETS) hosted by the Association of Chinese American Professionals (ACAP, 美南國建會)!

On behalf of the organizing committee, I am pleased to extend a warm welcome to each and every one of you to this remarkable event that celebrates advancements in science, engineering, and technology. Our commitment to fostering scientific and technological exchanges between Taiwan and the United States aligns with our mission of promoting leadership and professional skill development among Chinese Americans.

As we gather here today, our goal is to provide a platform that not only showcases the latest breakthroughs but also attracts and nurtures young technology and business talents from Taiwan, integrating them into our community. We strongly believe in the power of intergenerational knowledge transfer, ensuring the continuous cultivation and preservation of ACAP's legacy for generations to come.

This year's conference is set to be truly exceptional as we have the honor of hosting Dr. Stephen Huang (黃壽萱), a distinguished Professor of Computer Science at the University of Houston, as our keynote speaker. Dr. Huang's expertise in AI technology is renowned, and his insights will undoubtedly provide valuable perspectives on how this rapidly evolving field will impact various aspects of our lives. We look forward to his enlightening session, which promises to inspire and shape our understanding of the future.

We extend our deepest gratitude to Minnie Tsai (蔡米惠), ACAP President-Elect and 2023 SETS Chair, for her meticulous planning and visionary leadership in organizing this conference. We would also like to extend a special thank you to Cecil Fong (方宏泰) and Daniel Chen (陳皇序) for their outstanding planning and leadership of the Diversity Summit (多元化高峰會議), which brought together over 400 participants to address the important topic of "Creating a Sense of Belonging in the Changing World," as well as Dr. Frank Lin (林國強) for his dedication in planning the ACAP 45th celebration banquet.

We thank our former presidents, Dr. Kwang-lee Chu (朱光立), Dr. Stephen Huang (黃壽萱), Dr. Frank Lin (林國強), Dr. Hsin-hui Grace Lin (林欣慧), and Betty Tung (閻寶印), for their valuable guidance in shaping ACAP's trajectory. Furthermore, we would like to express our heartfelt gratitude to the Taipei Economic & Cultural Office (駐休士頓台北經濟文化辦事處) and its Director General, Robert Lo (羅復文), for their generous support and partnership.

Congratulations to Betty Tung (閻寶印) and Tina Huang (黃宜容) on receiving the ACAP Distinguished Achievement and Outstanding Services Awards, respectively. Their personal successes and dedicated service to our community are truly commendable. These well-deserved awards reflect their numerous accomplishments.

Once again, welcome to the 45th Annual Science Engineering and Technology Seminars. Let us embark on this journey together, embracing the spirit of collaboration, innovation, and intergenerational knowledge transfer as we strive to shape a brighter future for scientific and technological advancements.

Best Regards,

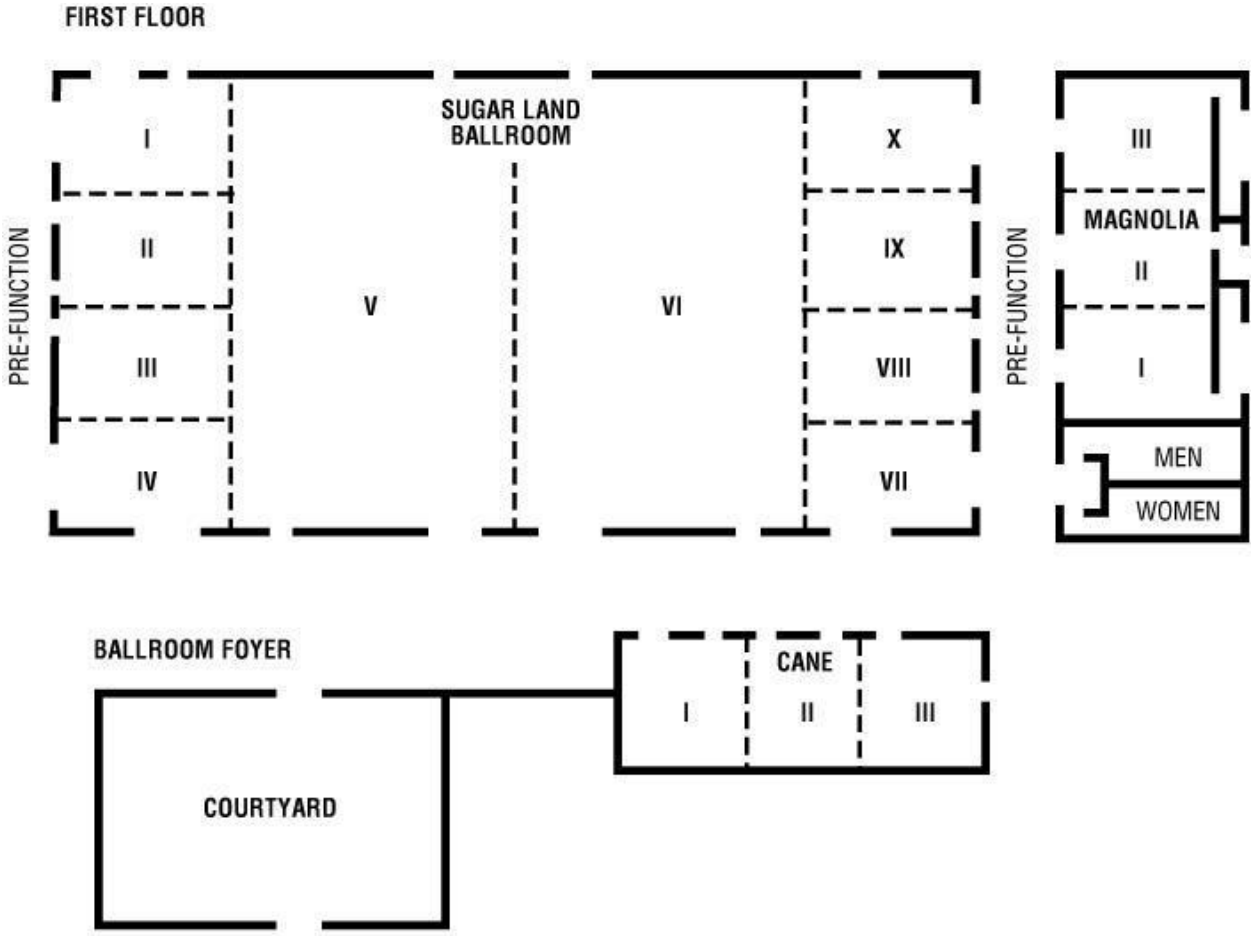
Paul Liou (劉志忠)
ACAP President 2022-2023

二零二三年科學工程技術研討會
2023 Science, Engineering and Technology Seminars (SETS)
Program-at-a-Glance

Time	Program	Room
7:30 am – 9:00 am	Speakers and Chairs Breakfast	Cane I
7:30 am – 3:00 pm	Registration	Ballroom Foyer
Morning Concurrent Sessions		
9:00 am – 11:50 am	Energy Session (能源講座) 美國華人石油協會(CAPA)協辦	Ballrooms VII-VIII
9:00 am – 11:50 am	Environmental Protection Session (環境保護講座)	Ballroom IX
8:30 am – 11:50 am	Nano and Composite Technology Session (奈米及複合科技講座)	Ballroom X
8:30 am – 11:50 am	Accounting, Tax, and Financial Session (財務，稅務和金融專業會計師講座) 休士頓華人會計師協會(HSCACPAs)協辦	Ballrooms I-III
Lunch Session		
12:00 pm – 2:15 pm	Luncheon, Keynote Address, and Award Ceremony (午餐、專題演講及頒獎)	Ballroom V-VI
Afternoon Concurrent Sessions		
2:30 pm – 5:30 pm	Offshore Technology Session (海洋科技講座) 休士頓華商經貿聯合會(FCTAGH) 協辦	Ballroom IX
2:30 pm – 5:30 pm	Biomedical Session (生物醫學講座) 德州台灣生物科技協會(TTBA)協辦	Ballroom X
2:30 pm – 5:30 pm	Health Session (健康講座)	Ballrooms VII-VIII
2:30 pm – 5:30 pm	Business Management Session (商業管理講座) 世界華人工商婦女企管協會美南分會(GFCBW)協辦	Ballrooms I-III

二零二三年科學工程技術研討會
2023 Science, Engineering and Technology Seminars (SETS)

Sugar Land Marriott Floor Plan



Session Schedule

Time	Session	Room
9:00 am – 11:50 am	***Energy Session* (能源講座):** **Digitalization in Oil Field & New Energies** Chinese American Petroleum Association (CAPA) 美國華人石油協會協辦	**Ballrooms VII-VIII**
Co-Chairs	**Chih-Cheng Lin (林志成)**, Senior Production Engineer, SME – Sand Control, Shell Oil Company **Tzu-hao Yeh, Ph.D. (葉子豪博士)**, Reservoir Engineer, Shell International E&P	
Speaker ***Topic***	**Chuen Song Chen, Ph.D.,** AI Researcher, Deep Learning & AI, Shell International E&P **Predicting Seismic Image Changes Using Deep-Learning Techniques**	
Speaker ***Topic***	**Frank Frey**, PE, Vice President, GHD **Energy Transition: A Constructable Architecture**	
Speaker ***Topic***	**Alex Bruhn**, Cavern Specialist, GHD **Hydrogen Production and Transport and storage on the Gulf Coast**	
Speaker ***Topic***	**Fanxin Kong (孔凡欣)**, Deputy Chief Engineer, Warburg Energy **CT (Coiled Tubing) Services and Future**	
9:00 am – 11:50 am	***Environmental Protection* (環境保護講座)**	**Ballroom IX**
Chair	**Edward T. Chen (陳天生),** President, Chinese American Society of Environmental Protection & Safety, Houston, Texas	
Speaker ***Topic***	**Vance Nobe,** CEO, Akari Energy, Houston, Texas **Solar Power Update 2023: The Path to Energy Independence**	
Speakers ***Topic***	**Jonathan Greene**, P.E., CPD Consultants, Houston, Texas; **Doug Coenen**, P.E., Walter P Moore, Houston, Texas; **Chi-Chung Chang, Ph.D. (張濟群博士),** Principal Consultant, CPD Consultants, Houston, Texas, Adjunct Faculty, University of Houston **Sustainable Development Design in Response to a Changing Climate**	
Speaker ***Topic***	**Veronica Lizama,** Deputy Director of Administration, Solid Waste Management Department, City of Houston, Texas **The Past, Present, and Future of the City of Houston Solid Waste Management Department**	
Speaker ***Topic***	**Edward T. Chen (陳天生),** President, Chinese American Society of Environmental Protection & Safety, Houston, Texas **The Zero Waste Plan of Texas Cities**	

Speaker	**Michael Liu (劉志恆)**, President, American P & G Corp., Houston, Texas	
Topic	**Environmental Management for Risk Chemicals**	
8:30 am – 11:50 am	***Nano and Composite Technology*** **(奈米及複合科技講座)**	**Ballroom X**
Co-Chairs	**Howard Paul, Ph.D.(浦浩德博士),** P.E., Engineering Manager, America P & G **Guoqiang Li, Ph.D. (李國強博士)**, Professor, Louisiana State University (LSU)	
Speaker	**Howard Paul, Ph.D.(浦浩德博士),** P.E., Engineering Manager, America P & G, Houston, Texas	
Topic	**New Fire Proofing Materials Applied on Petrochemical Plants, Chemical Plants, and Other Fire Safety Areas (防火新材料適用於石化廠、化工廠等消防領域)**	
Speaker	**Guoqiang Li, Ph.D. (李國強博士)**, Professor, Department of Mechanical & Industrial Engineering, Louisiana State University, Baton Rouge, Louisiana	
Topic	**Nature Inspired Self-Healing Polymers (自然啟發的自修復聚合物)**	
Speaker	**Cheng Yan (严成)** and **Guoqiang Li, Ph.D. (李國強博士)**, Professor, Department of Mechanical & Industrial Engineering, Louisiana State University, Baton Rouge, Louisiana	
Topic	**Revolutionizing Polymer Discovery with Machine Learning: A Comprehensive Framework (用機器學習革的新聚合物發現：一個綜合框架)**	
Speaker	**Chengbin Yu (俞程缤)** and **Guoqiang Li, Ph.D. (李國強博士)**, Professor, Department of Mechanical & Industrial Engineering, Louisiana State University, Baton Rouge, Louisiana	
Topic	**Cross-linked Graphene/Cysteamine Aerogel (GCA) Supported Form-Stable Phase Change Materials (PCMs) for Pyroelectric Energy Harvesting (交聯石墨烯/半胱胺氣凝膠 支持的用於熱釋電能量收集的形式穩定相變材料)**	
Speaker	**Li Sun, Ph.D.,** Professor, Department of Mechanical Engineering, University of Houston, Houston, Texas	
Topic	**Scalable Fabrication of Nano-Engineered Stretchable Sensors (納米工程可伸縮傳感器的可擴展製造)**	
8:30 am – 11:50 am	***Accounting, Tax, and Financial Session*** ***(財務，稅務和金融專業會計師講座)*** Houston Society of Chinese American CPAs (HSCACPAs) 休士頓華人會計師協會協辦	**Ballrooms I-III**
Chair	**Isabelle Hui Liu (劉一慧)** CPA, MBA, New York Life Insurance Company	
Speaker	**Yun Wan, Ph.D.,** Professor, University of Houston Victoria	
Topic	**Artificial Intelligence: Now and Future**	
Speaker	**Michael Kraten, Ph.D.,** CPA, Professor of Accounting, Houston Christian University	
Topic	**The Personal Financial Planning Service: A Growth Area for Expanding CPA Practices**	

Speaker ***Topic***	**Hui Du, Ph.D.,** Professor of Accounting, University of Houston – Clear Lake **Information Technology (IT) Controls and Security in Accounting and Business Systems – Would You Give Me Your Password?**	
2:30 pm – 5:30 pm	***Offshore Technology Session*** **(海洋科技講座)** Federation of Chinese Traders Alumni Greater Houston (FCTAGH) 休士頓華商經貿聯合會協辦	**Ballroom IX**
Chair	**Jer-Fang Wu, Ph.D. (吳哲芳博士)**	
Speaker ***Topic***	**Alex Ran, Ph.D. (冉志煌博士),** Chief Technical Officer, OffshoreTech LLC **Development of a TLP Type FOWT Concept**	
Speaker ***Topic***	**George Lo (羅子瑋),** Principal Engineer, American Bureau of Shipping **Offshore Technology Trends**	
Speaker ***Topic***	**Jim Lin (林青岳),** Senior Training Manager, GE Power Houston Learning Center **Wind Energy Past, Present, and Future with Case Studies: United States, Denmark, and Taiwan**	
2:30 pm – 5:30 pm	***Biomedical Session*** **(生物醫學科技講座)** Texas Taiwanese Biotechnology Association (TTBA) 德州台灣生物科技協會協辦	**Ballroom X**
Co-Chairs	**I-Wen Song, Ph.D., (宋以文博士)**, Baylor College of Medicine, Houston, Texas **Chih-Wei Zeng (Vic), Ph.D. (曾志維博士)**, UT Southwestern Medical Center, Dallas, Texas **Hui-Chi Tang (湯惠棋)**, UT Health Science Center at Houston, Houston, Texas **Ching-Hwa Kiang, Ph.D. (江慶華博士)**, Associate Professor, Department of Physics & Astronomy, Rice University, Houston, Texas	
Speaker ***Topic***	**Laising Yen, Ph.D. (嚴來興博士)**, Associate Professor, Department of Pathology & Immunology, Baylor College of Medicine **Sink or Swim for Young Scientists – Are You Ready for an Academic Position?**	
Speaker	**Lu-Yu Hwang, Ph.D. (黃綠玉博士)**, Professor, UTHealth Houston School of Public Health	
Topic	**Academia Life in Research, Teaching, Services**	
Speaker ***Topic***	**Grace Hsuan-Chen Liu, Ph.D. (劉軒辰博士)**, Technical Account Manager **Career Development Pathway – From Bench Side to Corporate**	
Speaker ***Topic***	**Barry Jian-Yuan Li, Ph.D. (李健源博士)**, Research Scientist, Westlake Epoxy **Career Transition from Biotech to Chemical Manufacturing**	

2:30 pm – 5:30 pm	***Health Session* (健康講座):** **Movement Disorders and Related Diseases** **(行動障礙及相關疾病)**	**Ballrooms VII-VIII**
Chair	**Hue-Teh Shih, M.D., M.P.H (施惠德醫師),** Cardiac Electrophysiology	
Speaker ***Topic***	**Eugene Lai, M.D., Ph.D. (黎志豪醫師)**, Neurology, Houston Methodist Hospital **Parkinson's Disease and Parkinsonism**	
Speaker ***Topic***	**Chi-Ying "Roy" Lin, M.D., M.P.H., (林紀穎醫師)**, Neurology, Baylor College of Medicine **Non-Parkinsonian Movement Disorders (Virtual Presentation)**	
Speaker ***Topic***	**Hue-Teh Shih, M.D., M.P.H (施惠德醫師),** Cardiac Electrophysiology **Orthostatic Hypotension/Syncope**	
2:30 pm – 5:30 pm	***Business Management Session* (商業管理講座):** **Real Estate Investment and Management Elite Forum (房地產投資與管理菁英論壇)** Global Federation of Chinese Business Women in Southern USA (GFCBW) 世界華人工商婦女企管協會美南分會協辦	**Ballrooms I-III**
Chair	**Christi Yao (何真)**, President, GFCBW	
Speaker ***Topic***	**Steve Hsu (許文忠)**, Chief Executive Officer, Asian City Development **Houston Hotel and Commercial Real Estate Development** **(休士頓旅館與商業地產投資開發)**	
Speaker ***Topic***	**Nancy Chen (洪良冰),** GRI, Broker, President, Metro Prime Realty **Analysis of the Real Estate Market in the Houston Area** **(休士頓地區房地產市場分析)**	
Speaker ***Topic***	**Michelle Young (畢鑑明)**, President, Top One Mortgage **Current and Future Mortgage Rate Trends** **(利率的走向)**	
Speaker ***Topic***	**Amy Sung (宋秉穎)**, Esq., Fee Attorney, Stewart Title Company **Title Company - What does a title company do?** **(產權公司在地產交易、投資中能夠做的事)**	
Speaker ***Topic***	**Ted Lin (林思德)**, Chief Executive Officer & Founder, StayCozy **From Landlord to Superhost: "How to build your real estate empire with short-term rental strategies"** **(從普通房東到超級房東-利用短租模式打造房產帝國)**	

Honorable Guest

Robert Fu-Wen Lo (羅復文處長)
Director General of Taipei Economic and Cultural Office in Houston
駐休士頓台北經濟文化辦事處

Family:
Director General Lo was born on 31st October, 1967. He is married with one daughter.

Education:
Department of Diplomacy, National Chengchi University (Taiwan)

Experience:

- Director, Branch Office at Taiwan Taoyuan International Airport, Bureau of Consular Affairs, MOFA
- Deputy Counselor, Embassy of the Republic of China (Taiwan) to the Republic of the Marshall Islands
- Division Director, Taipei Economic and Cultural Office in Guam
- First Secretary, Taipei Economic and Cultural Office in Brunei Darussalam
- Section Chief, Bureau of Consular Affairs, MOFA
- Second Secretary, Taipei Representative Office in the Republic of Singapore
- Third Secretary, Embassy of the Republic of China (Taiwan) to the Republic of Malawi
- Officer, Department of African Affairs, MOFA

Hobby:
Sports, Fishing

Keynote Speaker

Steven Huang, Ph.D.
Professor of Computer Science
The University of Houston, Houston, TX

Professor Stephen Huang received his B.S. in Mathematics from the National Cheng Kung University of Taiwan and his Ph.D. in Computer Science in 1981 from the University of Texas-Austin. Since then, he has been at the University of Houston (UH), where he is currently a full professor. Dr. Huang was a National Research Council-NASA Senior Research Associate at NASA Goddard Space Flight Center, Greenbelt, Maryland, from 1989 to 1990. He is also a senior member of IEEE and a member of ACM. Dr. Huang served as one of the delegates from U.S. universities to the US-EC Consortium "Towards a Common Computer Science Curriculum and Mutual Degree Recognition" at their annual meeting in Nice, France, in 1999. Dr. Huang's main research areas include Cybersecurity, Algorithms, and Data Analytics, and he has published over one hundred refereed conference and journal papers. His current research is on detecting active adversaries hiding behind anonymity networks.

Dr. Huang has taught Computer Science at the University of Houston for over 40 years. He has served in several administrative positions at UH, including Director of Graduate Studies, Associate Chairman, and Department Chairman. He also serves as Director of Research at UH's Center for Information Security Research and Education. Dr. Huang's research and education projects have been sponsored by the National Science Foundation, NASA, the National Security Agency, and the Department of Education.

黃壽萱教授簡介

黃壽萱教授自成功大學數學系畢業，曾獲得德州大學計算機系博士學位。黃教授在休士頓大學計算機系任教已超過四十年，曾任研究所主任，系主任等職務。他的研究領域是演算法，及計算機及網路安全的入侵偵測。歷年來黃教授的研究計劃得到美國國科會、國家安全局、太空中心、教育部等聯邦政府機構的贊助。

Distinguished Achievement Award

Betty Tung (閻寶印)

Betty Tung was born in Taipei, Taiwan and immigrated to the United States of America to attend graduate school at the UTHealth School of Public Health. She then worked as a Faculty Associate at the UTHealth School of Public Health for 37 years managing clinical trials for the National Eye Institute. In this role, she was the Project Manager / Co-Investigator for three major national studies: the Multicenter Trial of Cryotherapy for Retinopathy of Prematurity, Feasibility Trial of Light Reduction for Retinopathy of Prematurity, and Early Treatment for Retinopathy of Prematurity. The findings from these studies have become the foundation of many policies and procedures used at hospitals across the United States. In addition, Betty has published over 80 publications.

Some of the people who worked closely with her over 30 years had this to say about her: “She has an ability to bring clarity to discussions” and “All who have had contact with her admire her intelligence, diligence and perseverance” and “Betty is able to combine a strong command of best research practices with an affable and approachable leadership style.”

After she retired from the UTHealth School of Public Health, Betty started a new career as a Senior Research Manager at Baylor College of Medicine and Texas Children's Hospital. In this role, she received the Distinguished Service Award for contributions to the Doximity 2020 Best Plastic Surgery Residency Program for Research.

Also, due to her extensive research expertise in the field of retinopathy of prematurity, she was asked to be a consultant for several on-going studies through the Pediatric Eye Disease Investigator Group sponsored by the National Eye Institute. As a Study Leads and Protocol Monitor, she has to travel to research sites around the United States frequently.

Outstanding Service Award

Tina Huang (黃宜容)

Tina Huang is a junior partner in the CPA firm Shieh, Lee & Company in Houston, Texas. She joined the firm in 2004 as student intern and was with the company ever since. She obtained her Master of Science in Accountancy and a Bachelor of Business Administration in Accounting from University of Houston C.T. Bauer College of Business. She is a Certified Public Accountant with over eighteen years of experience in various accounting and tax practices.

Tina is actively involving in Church and various professional organization. She is a member of Taiwanese American CPA Association (TACPA) and Houston Society of Chinese American CPAs (HSCACPAs). She is the current vice president of TACPA and former president of HSCACPAs. With her expertise in accounting and taxes, she was treasurer for Chinese American Relief Effort in 2012 and treasurer for Association of Chinese American Professionals since 2018. She is active member of Fort Bend Community Church, small group leader and church AV team leader.

Abstracts and Session Speakers Information

9:00 a.m. - 11:50 a.m.	***Energy Session* (能源講座): Digitalization in Oil Field & New Energies** **Chinese American Petroleum Association (CAPA) 美國華人石油協會協辦**
Co-chairs:	**Chih-Cheng Lin (林志成), Senior Production Engineer, SME – Sand Control, Shell Oil Company** **Tzu-hao Yeh, Ph.D. (葉子豪博士), Reservoir Engineer, Shell International E&P**

Speaker: Chuen-Song Chen, Ph.D., AI Researcher, Deep Learn & AI, Shell International E&P
Topic: Predicting Seismic Image Changes Using Deep-Learning Technologies

Abstract. The Oil & Gas exploration sector has been very actively experimenting in Machine Learning, with the aim of solving challenging problems, changing the way of working, and reducing the cycle time. In this talk, I will present a fast image-morphing operator to assist geophysicists to speed up our subsurface velocity model scenario testing. It predicts image structure changes under velocity uncertainty. The novelty of the 3D image-morphing operator is in speeding up surface velocity model scenario tests. It allows us to predict image structure changes under velocity uncertainty with negligible computation time in inference.

About the Speaker. Dr. Chen holds a degree in electrical and computer engineering with 15+ years of O&G industry experience, working primarily on seismic exploration projects. He has been actively working on developing specific neural network architectures to solve relevant problems in seismic processing and imaging space.

Speaker: Frank Frey, P.E., Vice President, GHD
Topic: Energy Transition: A Constructable Architecture

Abstract. The baseline architecture for energy transition is typically considered as replacing the internal combustion engine with battery EVs, replacing coal and natural gas with renewable power generation, and using renewable power for building and industrial heat. In this presentation, we explore the quantity of key materials required to construct the baseline architecture and compare that to known reserves and production capacity to assess its constructability. An alternate architecture is proposed consisting of carbon capture and storage (CCUS) with blue hydrogen. An assessment of CO2 storage, capture, and pipeline requirements is performed along with an assessment of hydrogen production and key metal requirements. CCUS and hydrogen are shown to have constraints, but remain a proven, safe, and constructible energy transition architecture.

About the Speaker. Based in Houston, Texas, Mr. Frey has been designing a broad range of oil & gas facilities for over 30 years. His experience includes design at refining and petrochemical facilities, as well as mid-stream and upstream projects. He has a strong background in underground storage facilities, brine infrastructure, terminals, and pump / compressor stations.

Mr. Frey is currently supporting GHD's Future Energy Program by assisting the oil & gas and mid-stream industries with the energy transition. He has developed projects in Hydrogen, A-CAES, pipeline change of service, carbon sequestration, and renewable natural gas.

Speaker: Alex Bruhn, Cavern Specialist, GHD
Topic: Hydrogen Production and Transport and Storage on the Gulf Coast

Abstract. Sources of hydrogen are not only purpose-manufactured hydrogen (SMR's) but also byproducts from various chemical processes. The nature of these multiple smaller sometimes intermittent sources requires both a storage and distribution network that enables the effective recovery and distribution. Concurrent purification assures high purity hydrogen being available. These systems create efficient recovery networks that allow the recovery of potentially stranded hydrogen sources that might otherwise be flared. Back up feed stock sources allow reliable operation of not only large users but smaller users on the industrial corridors serviced by the pipelines, which have a much more competitive and reliable source of hydrogen than they might have in an isolated location.

About the Speaker. Mr. Bruhn has 30+ years of experience in the production of syngas, for hydrogen, CO and acetylene. He managed daily hydrogen storage operations at Moss Bluff, Texas, for Praxair and Linde. He is experienced in SMR operations and hydrogen production, hydrogen process optimization, dehydration, and purification, having managed the daily operations of a multi-plant natural gas derivates site. He specializes in the design, construction, operation, and optimization of dehydration units for ethylene, acetylene, syngas, and underground hydrogen storage, and has served as Engineering Project and Process Manager for multiple natural gas pipeline liquid removal and storage Retrofits.

Speaker: Fanxin Kong (孔凡欣), Deputy Chief Engineer, Warburg Energy
Topic: CT (Coiled Tubing) Services and Future

Abstract. An introduction for CT (Coiled Tubing) service, its overall applications in oil & gas, advanced services such as CT Logging (with a case study of CT fishing with intelligent CT tools) and CT Drilling, and CT service in the future.

CT services have been in the oil and gas field for more than 50 years. CT has been widely utilized in wellbore cleanout, N2 kickoff, simulation, velocity string, and other well interventions. Especially in last 20 years, by following the trend of digitalization and automation, CT Logging and CT Drilling services have been enhancing the applications.

About the Speaker. Mr. Kong graduated from Tsinghua University in 1993. He started his O&G career in SLB as the first CT field engineer in China in 1997 and served SLB for 17 years. Thereafter, he took different roles after in engineering and management in the last 9 years. He has worked in the Far East, Middle East, West Siberia, GOM, and Alaska. He has a strong background of well intervention, stimulation (for both acidizing and fracturing), completion, pipeline, and project management. He is familiar with upstream operations and productions. He has been focusing on new technologies in CT services.

9:00 a.m. - 11:50 a.m. ***Environmental Protection Session*** **(環境保護討論會)**

Chair: **Edward T. Chen (陳天生), President, Chinese American Society of Environmental Protection & Safety, Houston, Texas**

Speaker: Vance Nobe, CEO, Akari Energy, Houston, Texas
Topic: Solar Power Update 2023: The Path to Energy Independence

Abstract. Solar Power is one of the many sources of energy that is key to the continued economic growth and energy independence of the United States. Although there has been a significant increase in solar power implementation, we still have a long way to go. The solar power development process is similar to other energy development and continues to need significant time and resources. With our upcoming large-scale project soon to be constructed, we outline the challenges.

About the Speaker. Vance Nobe is President, CEO and Founder of Akari Energy, which was established in 2008 in Houston, Texas. His combination of management, sales, and technical expertise has driven Akari Energy's growth and profitability over the past 14 years.

As CEO/President of Akari Energy, he has developed large-scale solar projects throughout the United Sates. He has also cemented relationships with long-term clients such as Rice University, Kaneka, and RMS Foods.

Mr. Nobe has obtained licenses throughout multiple states to construct solar power. He leads the solar development and technical team for all interconnection applications, and local, state, and federal permitting. He has driven the company to obtain Minority Business Enterprise (MBE) certifications nationally, and through several State and City levels throughout the USA, opening opportunities for solar development.

Mr. Nobe is also board certified by the North American Board of Certified Energy Practitioners (NABCEP) as a solar PV Installation Professional.

As a solar power subject matter expert, he is regularly invited to speak at technical conferences and to international audiences, including the Energy Makers Show web interview on renewable energy, speaking engagements on renewable energy and/or technology. He has a Bachelor of Science degree in Electrical Engineering, Power Emphasis, from the California Polytechnic University at Pomona, California.

Speakers: Jonathan Greene, P.E., CPD Consultants, Houston, Texas
Doug Coenen, P.E., Walter P Moore Inc., Houston, Texas
Chi-Chung Chang, Ph.D. (張濟群博士), Principal Consultant, CPD Consultants, Houston, Texas; Adjunct Faculty, University of Houston
Topic: Sustainable Development Design in Response to a Changing Climate

Abstract. This presentation discusses how current sustainable design can be seen as a response to the challenges presented by a changing climate. We discuss the current

scientific findings on the rising CO2 concentrations in the atmosphere and the likely Impacts this will have on the earth's temperature and sea levels. These impacts will result in warmer average temperatures and have roll-on impacts on storms, wildfires, and sea levels. Our ability to surpass political divisions and respond to these challenges will determine what sort of a world we leave to our children and grandchildren.

As a result of these changes, looking to the past for our design criteria is becoming increasingly short sighted. This presentation examines three current design efforts to make designs more sustainable:

A. Water usage
B. Energy used for heating and cooling.
C. Flood resilient designs

About the Speakers.

Jonathan Greene, P.E., CPD Consultants: Mr. Greene is a highly skilled environmental engineer. He has over 45 years of experience in conducting environmental site remediation, engineering design and construction, and planning projects for chemical and petrochemical plants. He completed numerous projects including applying ex-situ soil washing technologies for Complex Mission Critical Facilities. As an Environmental Engineer, Mr. Greene brings a multi-faceted experience to ensure the success of the Environmental Design Tasks for this Project.

Doug Coenen, P.E., ENV SP, Walter P Moore Inc.: Mr. Coenen's 26 years of experience encompass a broad range of management and design of engineering projects that include federal, state, municipal, and private infrastructure engineering. His diverse range of design experience includes civil site, roadway, water main and sanitary sewer main design; hydrology and hydraulics including storm drain design, detention ponds, creek studies and floodplain analysis, and erosion control; and platting, traffic control, and signage. He has a niche expertise related to flood protection. In addition, he has participated in the design of several facility upgrade and rehabilitation projects. He also serves as an expert on litigation cases related to civil/site engineering. He joined Walter P Moore in 2008 and is a resident of Kingwood.

Chi-Chung Chang, Ph.D., CPD Consultants: Dr. Chang has over 40 years of experience in managing and conducting architectural planning, engineering design, construction management, and sustainability and resiliency planning projects for health care institution, education and research institutions, local, state and federal agencies as well as Fortune 100 firms. His diversified technical background and strong management skills grant him the privilege to lead multi- discipline project teams and subcontractors to provide cost-effective solutions to clients. He has extensive knowledge and hands-on experience in facility damage assessment, disaster recovery and mitigation, building envelope engineering, floodplain management, urban flood assessment, drainage design assessment. He is an Adjunct Faculty at the Department of Construction Management of the University of Houston. He has taught Construction Management classes at the University of Houston since 2013. He is also an adjunct faculty at Prairie View A&M University's School of Architecture since 2018.

Speaker: Veronica Lizama, Deputy Director, Administration, City of Houston Solid Waste Management, Houston, Texas
Topic: The Past, Present, and Future of the City of Houston Solid Waste Management Department

About the Speaker. Veronica Lizama is a Deputy Director of Administration for the City of Houston's Solid Waste Management Department. She holds a Bachelor of Science in Management from Park University and has a proven track record of success in leading and managing teams. Veronica is currently the Deputy Director of Administration for the City of Houston's Solid Waste Management Department, where she oversees various departments, including Communications, Community Outreach, Customer Service, Capital Improvements, Safety and Training, and the Recycling division.

With a keen eye for detail and a passion for excellence, Veronica has helped the department to serve nearly 400,000 residents in the City of Houston. She is also an active member of the Solid Waste Association of North America, where she dedicates her time to mastering planning, developing, and managing integrated solid waste management systems. Veronica is committed to positively impacting her community and advocates for Keep Houston Beautiful and the Houston Recycling Collaboration.

Speakers: Edward T. Chen (陳天生), President, Chinese American Society of Environmental Protection & Safety, Houston, Texas
Topic: The Zero Waste Plan of Texas Cities

Abstract. The U.S. Conference of Mayors has defined the Zero Waste concept to go beyond recycling and composting at the end of a product's life cycle, to encompass the entire life cycle of a product, beginning with product design and envisioning the use and management of materials in ways that preserve value, minimize environmental, and conserve nature resources. In this presentation, I will discuss the concepts of the Zero Waste plan and the current Texas cities Zero Waste plans and policies.

About the Speaker. Mr. Chen has more than forty five (45) years of experience in research and operations in the area of environmental pollution control, with an emphasis on municipal solid waste operations, recycling, waste to energy, planning and design transfer station, landfill disposal, circular economy, household hazardous waste (HHW) management, end user markets, recycled product procurement, waste minimization/prevention, waste audit, design material recovery facility (MRF), biomass technology, construction & demolish (C&D) waste recycling, and CO2 reduction. He developed an award-winning public-private recycling partnership that has saved millions dollars for the City Houston: a partnership that resulted in the implementation of a comprehensive recycling program for Houston, cementing Mr. Chen as a founder of the City of Houston's comprehensive recycling program since 1982.

Mr. Chen received his Bachelor of Science in Biology and Chemistry from Northwestern Oklahoma State University and his Master of Science in Environmental Health from the University of Arkansas. He has previously served in various Director positions for the Environmental Protection Department for the City of Taipei and the Department of Solid

Waste Management for the City of Houston.

Mr. Chen is a frequently invited keynote and guest speaker for waste management and environmental protection conferences. He is currently the President of the Chinese American Society of Environmental Protection & Safety and is additionally a Member of the Steering Committee for Waste Technology and of the Steering and Scientific Committee for Solid Waste Management at Ching-Hua University in Beijing, China.

Speaker: Michael Liu (劉志恆), President, America P & G Corp., Houston, Texas
Topic: Environmental Management for Risk Chemicals

Abstract. All firms utilizing hazardous substances must work to prevent chemical accidents and to ensure the safety of the public and the environment. Firms regulated under the General Duty Clause must identify the risks related to the hazardous chemicals they have on site and take steps to avoid chemical accidents. Risk Management requires that most firms must also create a detailed accident prevention program that will help to prevent the accidental release of hazardous chemicals.

About the Speaker. Mr. Liu is in the business of water & wastewater treatment technology and environmental projects. He has a B.S. in Chemistry from Chinese Culture University, Taiwan, M.S. degrees in Chemical Engineering from the University of New Mexico and in Industrial Engineering from Southern Methodist University, Texas. He worked at Bechtel Corp. as a start-up engineer in the 3rd Taiwan Nuclear Power project in 1984 and at Euroasia Corp. in Taiwan as a project manager in petrochemical projects until 1988. After many years' expertise, he returned to the United States and founded America P & G Company, teaming up suppliers and contractors to work projects internationally. He successfully completed a hundred installations for water plants and wastewater treatments in the Far East Market. Currently, he is retired and lives in Sugar Land, Texas.

His efforts in helping the community can be seen through his services on the board of the Criminal and Public Safety with Houston-Galveston Area Council (H-GAC) for the City of Sugar Land Police Department, which funded millions of dollars each year for community crimes protection and safety enforcement in region of Houston-Galveston Area. He has also served on the board of the Friendship Committee of Fort Bend County and Global Initial of Fort Bend County Judge Committee, which support the county in making internationally education and culture exchanges. To encourage citizens to vote and mainstream connections, he is being elected as a GOP precinct chair in the Greatwood area. In past years, he has served as chair in the Chinese American Professional Association in 2005, Fort Bend Chinese American Voter League 2006, Fort Bend Chinese American Association in 2007-2010 and Hakka Association of Houston 2013-2015. Currently, he is chair for the Houston China Youth Corps.

8:30 a.m. - 11:50 a.m. ***Nano and Composite Technology Session*** **(奈米及複合材料科技講座)**

Co-Chairs: **Howard Paul, Ph.D. (浦浩德博士), P.E., Engineering Manager, America P & G**
Guoqiang Li, Ph.D. (李國強博士), Professor, Louisiana State University

Note: *Earn 4 hours of Professional Development Hours (PDH) by attending this session. Certificate will be issued as per request after conference. (得 4 PDHs, 根據要求會議後發出證書)*

Speaker: Howard Paul, Ph.D. (浦浩德博士), P.E., Engineering Manager, America P & G, Houston, TX

Topic: New Fire Proofing Materials Applied on Petrochemical Plants, Chemical Plants, and Other Fire Safety Areas
(防火新材料適用於石化廠、化工廠等消防領域)

Abstract. New fireproofing materials are fire code tested and certified for fire-resistance that can be utilized in petrochemical, refinery, and chemical plants for fire safety protection. The fireproofing coating can be applied by spraying flame-retardant materials on plant equipment and cable wires for fire prevention and mitigation in case hazardous chemicals are accidentally released, causing explosions and fires. High-tech computer software can be utilized to simulate accidental release of flammable and explosive chemicals. These off-site consequence results can display on the local map to prevent the risk of hazardous chemical release accidents. High performance fire-retardant materials can withstand extreme temperature of 1,100 oC fire generated by gasoline, oils, fossil fuel combustion in oil fields, and petrochemical and refinery plants for fire safety prevention. New fireproofing materials were tested by ASTM E-119 and other fire resistant standards ASTM E-662, plus certified by Underwriter Laboratory (UL).

Speakers: Guoqiang Li, Ph.D. (李國強博士), Professor, Department of Mechanical & Industrial Engineering, Louisiana State University, Baton Rouge, LA

Topic: Nature Inspired Self-Healing Polymers (自然啟發的自修復聚合物)

Abstract. Polymers and polymer composites with sensing, actuating, and healing capabilities are highly desired in many applications. In this talk, I will discuss the damage healing strategy inspired by nature. Particularly, I will present the human skin inspired close-then-heal (CTH) self-healing strategy, and the historical development of the CTH strategy in my lab.

Speakers: Cheng Yan (严成) and Guoqiang Li, Ph.D. (李國強博士), Professor, Department of Mechanical & Industrial Engineering, Louisiana State University, Baton Rouge, LA

Topic: Revolutionizing Polymer Discovery with Machine Learning: A Comprehensive Framework (用機器學習革的新聚合物發現：一個綜合框架)

Abstract. Over the past decade, machine learning (ML) has shown great potential in speeding up the process of discovering new polymers, thanks to significant advancements

in computing power and algorithms. In this presentation, we provide a comprehensive framework for ML-accelerated polymer discovery by summarizing recent research papers. The framework consists of four key steps: dataset selection, fingerprinting, forward ML prediction, and inverse material digging. We also identify several major challenges facing ML-accelerated polymer discovery and provide an outlook for the field. Our aim is to provide a useful resource for newcomers and deepen the understanding of those already involved in this exciting field.

Speakers: Chengbin Yu (俞程缤) and Guoqiang Li, Ph.D. (李國強博士), Professor, Department of Mechanical & Industrial Engineering, Louisiana State University, Baton Rouge, LA

Topic: Cross-linked graphene/cysteamine aerogel (GCA) supported form-stable phase change materials (PCMs) for pyroelectric energy harvesting (交聯石墨烯/半胱胺氣凝膠 (GCA) 支持的用於熱釋電能量收集的形式穩定相變材料 (PCM))

Abstract. Phase change materials (PCMs) can absorb and release a large amount of heat during the phase transition process. However, leakage is a serious problem that restricts thermal energy applications. To prevent the leakage problem and sustain high thermal energy storage (TES), the supporting material is selected to hold plenty of pure PCM to fabricate form-stable PCM composite. For supporting materials, 3D porous graphene aerogel is an appropriate choice because of its excellent thermal and chemical stabilities. Although the high porosity of graphene aerogel can sustain form stability, volume shrinkage causes some loss of internal space which can decrease the TES of PCM composite. To reduce the volume shrinkage and increase the mechanical property and flexibility of graphene aerogel, cross-linked graphene aerogel is fabricated. This modified graphene aerogel is synthesized by the cysteamine vapor method and graphene/cysteamine aerogel (GCA) supported PCM composites are connected to the pyro-electrode that the pyroelectric power generator can produce stable and continuous output electrical voltage and current without any leakage during the light-on/-off process.

Speaker: Li Sun, Ph.D., Professor, Department of Mechanical Engineering, University of Houston, Houston, TX

Topic: Scalable Fabrication of Nano-Engineered Stretchable Sensors
(纳米工程可伸縮傳感器的可擴展製造)

Abstract. Through Nano-scale design and engineering, we demonstrated that it is possible to integrate functional nanomaterials with polymers to fabricate functional devices with high level of stretchability while maintaining high piezoelectric sensitivity, achieving improved linearity and reducing instability. We first demonstrated the development of two step transfer method to first transfer certain amount of structured CNTs from CNT sponge onto a Scotch tape and then through a second-step stamping process, to create transparent and conductive (TCF) CNT films with controlled micro-structures are on viscous substrates to be used as electrodes. Such transparent thin films exhibit high piezoresistive responsiveness; combining high sensitivity, low hysteresis and large working strain range. The proposed methodology had been extended to fabricate micro-electrodes on patterned elastomers with same effectiveness. Next, a nano-engineered bilayer composed of cracked carbon nanotube (CNT) network and elastomer infiltrated CNT composite has been developed. This design takes advantage of the cracked CNT network layer which is able to

provide the sensor with high resistance sensitivity, wide strain measurement range, and good linearity. The coupled elastomer nanocomposite layer is utilized to confine the crack evolution resulting in significantly improved stability and reproducibility (>10,000 loading-unloading cycles). Application of such bilayer construction also processes fast response time (<10 ms) and cyclic drift less than 0.01% in human motion detection. Piezoresistive responses of sensors can be designed and effectively tuned to meet specific requirements through the choosing of CNT sponge properties and control of individual layer thickness. More recently, we have conducted further experiments to show that by introducing patterning or engineering the micro-cracks in CNT thin films, it is possible to fine tune piezo-resistive behavior of these materials for stretchable device applications.

About the Speaker. Dr. Sun is currently a Professor of Mechanical and Materials Engineering and the Director of Subsea Engineering at University of Houston. Dr. Sun received his B.S. degree in Physics from Nanjing University and Ph.D. in Materials Science and Engineering from Johns Hopkins University. Dr. Sun's research interest and expertise are in the general area of multifunctional materials and applications. His current research focuses on soft materials, nanocomposites, magnetic materials and biomedical and energy materials. He has published more than 100 SCI papers and secured more than $5M research funding.

8:30 a.m. -	***Accounting, Tax, and Financial Session* (財務，稅務和金融專業會計師講座)**
12:00 p.m.	**Houston Society of Chinese American CPAs (HSCACPAs)**
	休士頓華人會計師協會協辦
Chair:	**Isabelle Hui Liu (劉一慧) CPA, MBA, New York Life Insurance Company**

Note: *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有固定在職進修時數。本課程與下午商業管理講座合乎美國會計師協會之規定，可算八小時進修時數。*
Sign in, sign out, and completed evaluation forms are required for up to 8 CPE hours.

Speaker: Yun Wan, Professor at University of Houston Victoria
Topic: Artificial Intelligence: Now and Future

Abstract. This presentation covers the current and future trends of artificial intelligence (AI). AI is being used in various industries, from automating tasks to increasing efficiency. The development of deep learning algorithms has significantly improved the accuracy and reliability of AI systems. Among the proven AI technologies, the most recent breakthrough is generative AI. It has the potential to revolutionize a wide range of industries, from entertainment to healthcare. It can help automate repetitive and time-consuming tasks such as data entry and analysis, providing real-time assistance to accountants and improving the accuracy of financial reporting. By reducing the burden of manual tasks, accountants can focus on more strategic and analytical work. However, it may also raise ethical and security concerns regarding data privacy and potential bias in decision-making. Therefore, it is important to carefully consider the benefits and risks of implementing AI in accounting practices. The future of AI is expected to focus on developing more explainable and transparent systems. Additionally, ethical and responsible AI will be a key area of focus to ensure that it aligns with human values and avoids potential biases.

About the Speaker Dr. Wan is a professor of computer information systems and department chair at University of Houston Victoria. He studies electronic commerce, decision support systems, and enterprise systems development. He authored or co-authored more than 90 papers and books in information systems field. He serves as senior editor for Electronic Markets. He received his Ph.D. in Management Information Systems from the University of Illinois at Chicago.

Speaker: Michael Kraten, PhD, CPA, Professor of Accounting, Houston Christian University
Topic: The Personal Financial Planning Service: A Growth Area for Expanding CPA Practices

Abstract. Clients of Certified Public Accounting (CPA) practices are burdened with increasingly complex financial and legal challenges. Many clients are relying on their businesses to provide the wealth that finances their personal lifestyles and secures the futures of their family members. Conversely, other clients find that their businesses are reliant on capital contributions that drain resources from their personal needs.

Thus, CPA firms that primarily serve businesses are ideally positioned to extend their client bases from an organizational focus to an owner/manager focus. In other words, many CPA firms find that the individuals who own and manage their corporate clients may seek their advice about issues involving their health and medical needs, insurance, long term savings, personal debt, retirement planning, wealth management strategies, and other issues of personal financial planning.

Join Dr. Michael Kraten for an exploration of this growing field. He will discuss the revenue generation opportunities that are available for CPAs, review case examples of firms that have successfully developed new services, and provide a pragmatic step-by-step guide for entering this growth sector. He will also highlight several examples of publicly available free or low-cost resources that can be utilized to create a Personal Financial Planning practice.

About the Speaker. Dr. Kraten is Professor of Accounting at Houston Christian University. He is the Chair of the Personal Financial Planning Committee of TXCPA Houston, where he serves as a Member of the Board of Directors.

Dr. Kraten has practiced in Personal Financial Planning and Wealth Management for more than twenty years. He has authored articles about the discipline for Journal of Financial Planning, CPA Journal, Pension Governance, Family Foundation Advisor, and other venues.

He possesses expertise in entrepreneurial financial planning, risk management, socially responsible investing, and valuation methodologies. As a longstanding member of collegiate faculties, he also specializes in programs that assist Millennial and Generation Z members in developing personal financial plans.

He has earned a PhD in Behavioral Accounting from the University of Connecticut, a MPPM in Management from Yale University, and a BBA in Public Accounting from Baruch College (CUNY).

Speaker: Hui Du, Professor of accounting at University of Houston – Clear Lake
Topic: Information Technology (IT) Controls and Security in Accounting and Business Systems – Would You Give Me Your Password?

Abstract. Major computer system breaches, such as the Colonial Pipeline ransomware attacking the billing system of the company in May 2021 that crippled fuel supply in 17 states and Washington, D.C., alert organizations of the importance of the security of business computer systems. Texas Department of Public Safety made news headlines in February 2023 for sending thousands of Driver's Licenses to an organized crime group in New York because 3,000 fraudulent accounts were created in its computer systems. Most victims are Asian Texans. These two examples and many other incidences exposed the increased risks and vulnerabilities of business computer systems in a ubiquitous world of computer and IT. With the growing trend of employees' work from home and using mobile computing (e.g., smart phones and tablets), cyber security and proper IT protocols are essential to the protection of information assets. Consequently, passwords are the first line of defense to ensure authorized access to an organization's computer systems and sensitive data. Yet password sharing can occur when convenience and efficient work performance are at stake, making employees the "weakest link" in computer and data security. Therefore, we recommend a clearly presented information security policy instead of high-level code of ethics for organizations.

About the Speaker. Dr. Du is a professor of accounting at University of Houston – Clear Lake. She teaches Accounting Information Systems, Data Analytics in Accounting, and Financial Reporting and Analysis. Her research interests include the interface between emerging technologies and accounting, financial reporting, and auditing. She has over 30 publications in peer-reviewed academic journals such as Journal of Information Systems, Auditing: A Journal of Practice and Theory, and Journal of Accounting and Public Policy. She has also published in practitioner-oriented journals such as Journal of Accountancy, The CPA Journal, and Today's CPA. She is currently serving as the co-senior editor for Journal of Emerging Technologies in Accounting of American Accounting Association's Strategic and Emerging Technology section. Dr. Du has her bachelor's degree in history from Peking University in P. R. China, M.B.A. in professional accounting and Ph.D. in accounting from Rutgers – The State University of New Jersey.

12:00 p.m. - 2:15 p.m. ***Luncheon and Keynote Address*** **(午餐專題演講)**
Master of Ceremonies: Minnie Tsai (蔡米惠), ACAP President-Elect

Speaker: Stephen Huang, Ph.D. (黃壽萱教授), Professor of Computer Science, The University of Houston, Houston, TX
Topic: Artificial Intelligence: From Data, Training, to Intelligence

Abstract. Artificial intelligence (AI) studies the computer's ability to imitate human behavior and perform intellectual tasks without human intervention. AI applications have become very popular recently because of the availability of data collection and the advancement of algorithms, machine learning, natural language processing, and computing power. ChatGPT,

released by Microsoft recently, is the convergence of many advances in information technology. GPT is called "generative" because it can generate new text based on the input it receives. The generative aspect of ChatGPT allows it to provide creative and original responses rather than relying solely on pre-defined templates or a limited set of predetermined answers. This flexibility and ability to generate text make ChatGPT suitable for various conversational tasks and applications. We will give a non-technical overview of the technology.

Can we trust AI? Since AI acquired intelligence by training on data, it can be biased because of the biased data or algorithm. An adversary may attack the system by introducing compromised data into the training process. We will show an example of how important it is to understand the data. Another major concern is whether AI will replace the labor force. Recent studies indicate that certain jobs will be impacted more than others.

AI has caused great concern in society. Criminals are using the new technology to their advantage. Who owns the right to an AI-generated painting of an artist? Is it right to use the knowledge accumulated over thousands of years to build systems to profit a few companies? What kind of jobs are more likely to be replaced by ChatGPT? This talk will also examine the impact of AI on education, employment, and related legal and ethical issues.

人工智慧研究電腦模仿人類行為並執行智能任務的能力。由於數據收集的可行性以及演算法、機器學習、自然語言處理和計算能力的進步，人工智慧應用近年來變得非常流行。最近由微軟推出的ChatGPT是信息技術多方面進展的結合。GPT被稱為「生成式」，因為它可以根據收到的輸入生成新的文字。ChatGPT的生成性質使其能夠提供有創意和獨特的回應，而不僅僅依賴於預定義的模板或有限的預先確定答案集合。這種靈活性和文字生成能力使得ChatGPT適用於各種對話任務和應用。我們將對這項技術進行非技術性概述。

我們能信任人工智慧嗎？由於人工智慧是透過在數據上訓練而獲得智能，它可能因為數據或演算法的偏見而產生偏見。駭客可能通過將惡意數據引入訓練過程來攻擊系統。我們將用一個例子，說明了解數據的重要性。這次講座還將探討人工智慧對教育、就業以及相關的法律和倫理問題所產生的影響。

About the speaker. Prof. Stephen Huang received his B.S. in Mathematics from the National Cheng Kung University of Taiwan and his Ph.D. in Computer Science in 1981 from the University of Texas-Austin. Since then, he has been at the University of Houston (UH), where he is currently a full professor. Dr. Huang was a National Research Council-NASA Senior Research Associate at NASA Goddard Space Flight Center, Greenbelt, Maryland, from 1989 to 1990. He is also a senior member of IEEE and a member of ACM. Dr. Huang served as one of the delegates from US universities to the US-EC Consortium "Towards a Common Computer Science Curriculum and Mutual Degree Recognition" at their annual meeting in Nice, France, in 1999. Dr. Huang's main research areas include Cybersecurity, Algorithms, and Data Analytics, and he has published over 100 refereed conference and journal papers. His current research is on detecting active adversaries hiding behind anonymity networks.

Dr. Huang has taught Computer Science at the University of Houston for over 40 years. He has served in several administrative positions at UH, including Director of Graduate Studies,

Associate Chairman, and Department Chairman. He also serves as Director of Research at UH's Center for Information Security Research and Education. Dr. Huang's research and education projects have been sponsored by the National Science Foundation, NASA, the National Security Agency, and the Department of Education.

黃壽萱教授自成功大學數學系畢業，曾獲得德州大學計算機系博士學位。黃教授在休士頓大學計算機系任教已超過四十年，曾任研究所主任，系主任等職務。他的研究領域是演算法，及計算機及網路安全的入侵偵測。歷年來黃教授的研究計劃得到美國國科會、國家安全局、太空中心、教育部等聯邦政府機構的贊助。

2:30 p.m. - 5:30 a.m. ***Offshore Technology Session*** **(海洋科技講座)**
Federation of Chinese Traders Alumni Greater Houston (FCTAGH)
休士頓華商經貿聯合會協辦
Chair: Jer-Fang Wu, Ph.D. (吳哲芳博士)

Speaker: Alex Ran, Ph.D. (冉志煌), Chief Technical Officer, OffshoreTech LLC
Topic: Development of a TLP Type FOWT Concept

Abstract. Currently, the majority of commercially operating offshore wind turbines are based on fixed-bottom technology. However, when the water depth exceeds 60 m, fixed offshore wind turbines become less feasible. Development of floating solutions is of special importance in addressing the challenges in harvesting wind energy in deeper waters.

This presentation introduces the development of a TLP type floating offshore wind turbine (FOWT) concept. The design is based on a 15 MW reference wind turbine in 100 m water depth. The substructure is a mono-column TLP with three pontoons, end cells, and bracings. The tendons are composed of nine steel wires connecting the end cells to foundation structures on the seabed. An air-over-water ballast system is designed to substitute the complicated equipment and piping system usually exist in conventional ballasting systems. The wind turbine, tower, and TLP can be integrated at the quayside and transported to the offshore site by either wet tow or dry tow.

Fully coupled wind turbine, floating substructure, and tendons analyses are carried out in time-domain. The results show that the proposed TLP type FOWT is able to sustain typical 50-yr extreme design conditions in South China Sea.

About the Speaker. In the position of Chief Technology Officer and Chief Naval Architect, Dr. Ran has nearly 30 years of industrial experiences in naval architecture and offshore engineering.

He has participated in many high profile offshore projects including the first compliant tower in the world. His technical experiences include jacket platform design and installation engineering, compliant tower platform design and installation engineering, floatover

installation engineering, and floating platform (Spar, TLP, semi-submersible) design and installation engineering. He was the lead marine engineer for an early industry floatover installation project (Ras Laffan, 1998) and the lead naval architect for the design of the first permanent synthetic mooring system on deep water floating platforms in Gulf of Mexico (Mad Dog Spar platform).

In addition to his rich technical experience in the offshore industry, Dr. Ran has strong theoretical background and knowledge. He is the principal developer of the state-of-art engineering software HARP, which has been widely used in the offshore industry for the deep water floating platform design and mooring/riser system design.

Speaker: George Lo (羅子瑋), Principal Engineer, American Bureau of Shipping, USA
Topic: Offshore Technology Trends

Abstract. This presentation provides a concise review of offshore technology trends, focusing on recent advancements and their implications for the industry. Understanding these advancements is crucial for stakeholders navigating the evolving offshore operations landscape. The trend analysis encompasses environmental sustainability, renewable energy, subsea technology, digitalization and automation. Advancements of each area as well as the benefits and challenges will be outlined and discussed in this presentation.

About the Speaker. Mr. Lo is a Texas registered professional engineer (P.E.) who graduated with a Master of Science in Mechanical Engineering from Texas A&M University in 2005. He currently works for American Bureau of Shipping. He has more than 18 years of experience on structural analysis and assessment in offshore and marine industries with more than 20 publications. He worked in offshore engineering companies, KBR (Energo engineering) and JP Kenney, during 2005 and 2011 on various offshore oil & gas structures including offshore fixed platforms, offshore wind turbine support structure, mobile offshore drilling units (MODUs), floating production installations (FPIs) and offshore topside structure.

To date, he has developed ABS standards related to bottom-founded offshore wind turbine support structures, Self-Elevating Units (SEUs) structural analysis, conversion of MODUs to FPIs, subsea service Offshore Support Vessels (OSVs), offshore fish farming installations, aquaculture service vessels, subsea mining vessels.

He also developed new buckling criteria for curved panels and proportions of unstiffened brackets for FPIs, simplified fatigue methods for Aluminum high speed vessels, and updated the ABS offshore fatigue guide.

Speaker: Jim Lin (林青岳), Senior Training Manager, GE Power Houston Learning Center, General Electric, USA
Topic: Wind Energy, past, present, and future with case studies United States, Denmark, and Taiwan

Abstract. This discussion will include a variety of topics, starting with a high-level introduction to a new deepwater oil production project in the Gulf of Mexico. Other topics include the historical use of wind turbines across the globe, including the first power

generating wind turbine (1887) as well as the 1973 Oil Crisis with US Federal funding driving innovations. The discussion will also cover the first large scale commercial wind farms established in Northern Europe and California and the North American Natural Gas Crisis of 2000-2008 driving widespread large-scale commercial wind farms throughout the US. We will also discuss the future of wind power in conjunction with case studies from Denmark, the U.S., and Taiwan. The discussion will conclude with Q&A session.

About the Speaker. Mr. Lin is a graduate of the United States' Navy Nuclear Power School, and he honorably served in the United States' Navy for 10 years as Nuclear Power Plant Operator. He participated in Gulf War Conflicts and Third Taiwan Strait Crisis.

Mr. Lin earned his Bachelor's Degree in Mechanical Engineering Technology from Old Dominion University, Norfolk, Virginia. He has been with General Electric since 2005.

2:30 p.m. - 5:30 p.m.	***Biomedical Session* (生物醫學科技講座): The Future of Scientific Innovation: Fostering Collaboration Between Academia, Biotech, and Chemical Industries** **Texas Taiwanese Biotechnology Association (TTBA)** **德州台灣生物科技協會協辦**
Co-Chairs:	**I-Wen Song, Ph.D. (宋以文博士), Baylor College of Medicine, Houston, TX** **Chih-Wei Zeng (Vic), Ph.D. (曾志維博士), UT Southwestern Medical Center, Dallas, TX** **Hui-Chi Tang (湯惠棋), University of Texas Health Science Center, Houston, TX** **Ching-Hwa Kiang, Ph.D. (江慶華博士), Associate Professor, Department of Physics & Astronomy, Rice University, Houston, Texas**

Speaker: Laising Yen, Ph.D. (嚴來興博士), Associate Professor, Department of Pathology & Immunology, Baylor College of Medicine

Topic: Sink or Swim for Young Scientists – Are You Ready for Your Next Position in the Academic Track?

Abstract. Developing a career in today's academia is exciting but also scary. In this session, we will have an informal conversation on how to prepare for a successful career in academia. Potential topics (depending on the interests of audience) may include choosing research areas, public speaking, writing and grantsmanship, mentor-apprentice relation, patent applications, job searching strategies, and alternative career pathways.

About the Speaker. Dr. Yen is a tenured Associate Professor at Baylor College of Medicine. He obtained his Ph.D. degree from Yale University and post-doctoral training at Harvard Medical School. His research areas include RNA-based gene regulation system and RNA-mediated genomic recombination in cancer. Dr. Yen is the inventor of several international patents that were licensed to biotech and pharmaceutical companies. He is the recipient of the Norton Rose Fulbright Excellence Faculty Teaching Award that recognizes excellent teachers/mentors at Baylor College of Medicine.

Speaker: Lu-Yu Hwang, M.D., Ph.D. (黃綠玉教授), Professor, UTHealth Houston School of Public Health, TX

Topic: Academia Life - in Research, Teaching, Services

Abstract. The academic life includes activities of research, education, and professional service in academic institutions. How to achieve in research, education, and scholarship at academic institutions will depend on an individual's passion, vision, and persistence for the goal pursued. Foreign-born and foreign-educated graduate may struggle even more with inherent language and culture barriers. During this seminar, we'll discuss how to pursue the goal of promotion and tenure in the professional ranks of an academic career, especially for foreign-born and -educated graduates. UT HOOP's General Guidelines for Consideration on Promotion are as follows: 1. A minimum of three years in the rank of assistant professor (or associate professor); 2. Academic credentials congruent with the expectations of the school and department; 3. Developing peer recognition that is reflected by an emerging national (or international) peer reputation; 4. Evidence of scholarly achievement reflected in peer recognition of works from original research, clinical observations, educational programs, etc.; 5. Significant scholarly accomplishments in at least two of the three academic activities: teaching, research and service; 6. Board certification or its equivalent, if pertinent. Awarding of tenure to faculty currently holding university appointments: In addition to the criteria 1-5, above on promotion, evidence of positive institutional citizenship, manifested as effective participation in service activities, mentoring of more junior colleagues, support of university missions and values, collegiality and leadership initiative are essential.

About the Speaker. Dr. Hwang is a Professor in the Department of Epidemiology, Human Genetics and Environmental Science and Center for Infectious Diseases at the UTHealth School of Public Health (SPH). She is the Coordinator for Global Health Certificate Program at SPH. She has received numerous awards for excellence in teaching and research at UTHealth and is a current member of the Infectious Diseases Society of America, American Public Health Association, and American College of Epidemiology. She is an internationally well-known infectious diseases epidemiology expert on epidemiology and prevention research of viral hepatitis, HIV/STD, HPV and TB. She has been the director and mentor of the NIH/Fogarty International training grant, "Center for International Training on AIDS Research (CITAR)" and currently is a member of National Task Force on Hepatitis B. She has had over 120 peer-reviewed publications, and advised over 30 doctor and 70 master graduate students. She is currently teaching the courses of Epidemiology and Control of Infectious Diseases and Global Health Overview at the UTHealth School of Public Health.

Speaker: Grace Hsuan-Chen Liu, Ph.D. (劉軒辰博士), Technical Account Manager, Sino Biological, Inc., TX

Topic: Career development pathway- From bench side to corporate

Abstract. The talk will cover my life story starting from Taiwan. What are the key turning points for me to decide on my personal and professional development? I'll share the path for me to move from the bench side to the industry.

About the Speaker. Dr. Liu received her Ph.D. in biomedical science from Baylor College of Medicine in Houston, Texas. She studied the development of therapeutic and diagnostic

reagents for HPV-associated cancer. After her graduation, she joined Houston Methodist Research Institute as a postdoctoral researcher and worked on the development of an implantable device for intratumoral immunotherapeutics. After three years of research, she made a career move out of academia and is currently a project manager supporting CRO services in the western and central US region at Sino Biological Inc.

Speaker: Barry Jian-Yuan Li, Ph.D. (李健源博士), Research Scientist, Westlake Epoxy, TX
Topic: Career Transition from Biotech to Chemical Manufacturing

Abstract. I will briefly introduce my scientific journey and how I decide on each new step through my career path. Then, I will share why I transitioned careers from biotech/academia to chemical manufacturing/Industry and my job interview experience.

About the Speaker. Dr. Li obtained his Ph.D. in synthetic organic chemistry from Purdue University where he worked on the modification of brucine and its derivatives as chiral ligands and their application in asymmetric synthesis. During his postdoctoral training at University of Houston, his first project was the total synthesis of flexinine, a selective anticancer natural product showed selective cytotoxicity for 4 cell lines in the National Cancer Institute's NCI-60 cell line screen with very potent activity. Additionally, Dr. Li was involved in the project of organocatalyzed asymmetric conjugate addition of alkenyl boronic to β-(2-indole)-enones and β-(2-pyrrole)-enones. After his postdoctoral training, Dr. Li joined the Center for Drug Discovery (CDD) as a DNA Encoded Chemical Technology (DEC-Tec) chemist where I use my synthesis skills/methodology to help develop new DNA encoded libraries for different pharmaceutical applications. After 5 years in CDD-BCM, he was promoted to DEC-Tec team leader and instructor at Department of Pathology, BCM. During his almost 7 years at CDD, he has built more than 20 libraries including targeted and non-targeted libraries. Meanwhile, he also performs on-DNA validation of hits generated from selection data and design new scaffold library. During the COVID-19 pandemic, a potential SARS-Cov-2 Mpro inhibitor was identified from our kinase focus library which used on-DNA Suzuki-coupling reaction. In 2023, Dr. Li joined Westlake Epoxy as research scientist. His job duties focus on development of novel epoxy resins (EPs) and EPs materials in practical applications.

2:30 p.m. - 5:30 p.m. ***Health Session*** **(健康講座):**
Movement Disorders and Related Diseases (行動障礙及相關疾病)
Chair: Hue-Teh Shih, M.D., M.P.H (施惠德醫師), Cardiac Electrophysiology

Speaker: Eugene Lai, M.D., Ph.D. (黎志豪醫師), Neurology, Houston Methodist Hospital
Topic: Parkinson's Disease and Parkinsonism

Abstract. Parkinson's disease is a relatively common progressive neurodegenerative disorder that afflicts about 1 million people in the US. Its cardinal symptoms are bradykinesia, rigidity, resting tremor, and postural instability. There are many symptomatic treatments, but no therapy that can slow down its progression or cure the disease. Also, there are several other disorders that mimic Parkinson's disease, but they have different disease courses and treatment challenges.

帕金森病是一種比較常見的進行性神經退行性疾病，在美國約有100萬人患病。 其主要癥狀是運動遲緩、肌肉強直、靜止性震顫和姿勢不穩。 目前，此症有很多對症治療，但沒有一種療法可以減緩其進展或治癒疾病。 還有其他幾種類似於帕金森病的疾病，但它們具有不同的病程和治療挑戰。

About the Speaker. Dr. Lai is Professor of Neurology and Neuroscience at the Weill Cornell Medical College and the Houston Methodist Neurological Institute. He holds the Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease Research and Treatment. He is also the Director of the Neurodegenerative Diseases Clinic.

Dr. Lai received his bachelor degree in Biochemistry from the University of Wisconsin and his doctorate degree, also in Biochemistry, from the University of Washington. He conducted research in molecular and cellular biology. He then studied medicine at Baylor College of Medicine and completed his Neurology residency training at Baylor Affiliated Hospitals in Houston.

Dr. Lai is a clinician-scientist who has special interests in the causes and treatments of neurodegenerative diseases, such as Parkinson's disease, Alzheimer's disease, Amyotrophic Lateral Sclerosis and other related disorders. He is the principal investigator or co-investigator of many clinical research studies. He has authored more than one hundred peer-reviewed scientific publications and book chapters, and has lectured widely on topics in neurodegenerative diseases. Dr. Lai is board certified in Neurology and is a Fellow of the American Academy of Neurology. He is the past President of the Houston Neurological Society and has also served as the Vice-President of the Texas Neurological Society. He enjoys teaching medical students, residents and fellows in his clinical practice. He has been voted "Best Teacher" by his neurology residents. He has been recognized as one of American's Top Physicians, Texas Super Doctors and Houston Super Doc.

Speaker: Chi-Ying "Roy" Lin, M.D., M.P.H. (林紀穎醫師), Neurology, Baylor College of Medicine
Topic: Non-Parkinsonian Movement Disorders (Virtual Presentation)

Abstract. Movement disorders include more than Parkinson's disease and Parkinson-plus syndrome. Other movement disorders, including essential tremor, cerebellar ataxia, dystonia, chorea, and myoclonus could significantly affect patients' quality of life and cause physical injury. In this talk, we are going to discuss these non-parkinsonian movement disorders and its main clinical symptoms.

動作障礙不只包含帕金森氏症以及非典型帕金森氏症。其他的動作障礙疾病，包含原發性顫抖症，小腦萎縮症，肌張力不全症，舞蹈症，以及肌抽躍症都能嚴重影響病人的生活品質。在林醫師今天的講座，我們將要討論這些動作障礙疾病的主要臨床表現以及相關重要議題。

About the Speaker. Dr. Lin is a board-certified neurologist specializing in movement and memory disorders. He completed a 2-year movement disorders fellowship under the mentorship of Drs. Stanley Fahn and Sheng-Han Kuo at Columbia University Medical Center. Prior to that, he completed a neurology residency at The Mount Sinai Hospital in

NYC and a research fellowship in postmortem human cerebellar pathology in essential tremor at Columbia University's New York Brain Bank. His current research focuses on studying the cognitive and behavioral cerebellum and its contribution to neurodegenerative disorders.

Speaker: Hue-Teh Shih, M.D., M.P.H (施惠德醫師), Cardiac Electrophysiology
Topic: Orthostatic Hypotension/Syncope

Abstract. Syncope, also "fainting" or "blackout," results from the brain losing blood supply then consciousness. Multiple conditions can decrease blood supply to the brain, including dehydration, anemia, reflexes that cause dilatation of blood vessels, autonomic nervous dysfunction, or cardiac arrhythmias. Parkinsonism may have syncope related to autonomic dysfunction.

暈厥，就是昏倒或不省人事，大致是因腦部失去血液供應而喪失知覺的結果。很多情況可使腦部失血，包括脫水、貧血、使血管擴張的神經反射、自主神經功能失調、或不整心律。類帕金森氏症可能因自主神經功能失調引致暈厥。

About the Speaker. Dr. Shih graduated from Taipei Medical College with a M.D. degree in 1980 and Harvard School of Public Health with a Master of Public Health in 1982.

After finishing post-graduate training in Medicine/Pediatrics, Cardiology, and Clinical Cardiac Electrophysiology, Dr. Shih spent many years as academic physician and began a solo practice in 2006 after serving as the Director of Cardiac Electrophysiology at Baylor College of Medicine, Houston, TX.

Dr. Shih has participated in activities of the Chinese Community for years. He was President of Chinese American Doctors Association of Houston from 2010 to 2011. He takes part in the annual Chinese Community Health Fair and was President of Health Education for Asians League of Houston, the predominant organizer of the Health Fair from 2014 to 2020. In 2015, the annual Food Safety and Hygiene Seminar was started by the Chinese Health Fair Organization Committee with 2019 marking the fifth time the Seminar was held.

2:30 p.m. - 5:30 p.m. ***Business Management Session*** **(商業管理講座):**
Real Estate Investment and Management Elite Forum (房地產投資與管理菁英論壇)
Global Federation of Chinese Business Women in Southern USA (GFCBW)
世界華人工商婦女企管協會美南分會協辦
Chair: Christi Yao (何真), President, GFCBW

Speaker: Steve Hsu (許文忠), Chief Executive Officer, Asian City Development
Topic: Houston Hotel and Commercial Real Estate Development (休士頓旅館與商業地產投資開發)

Abstract.

➢ 旅館在商業地產中的地位於優缺點
➢ 通貨膨脹對旅館及傷夜地產的影響
➢ 利息快速增長對旅館及商業地產的影響
➢ 目前因應之道

Speaker: Nancy Chen (洪良冰), GRI, Broker, President, Metro Prime Realty
Topic: Analysis of the Real Estate Market in the Houston Area (休士頓地區房地產市場分析)

Abstract. 解析2023年休士頓房地產及預測-房屋市場存量會增多嗎？ 高利率會抵擋房屋市場嗎？買方市場或是賣方市場？

Speaker: Michelle Young (畢鑑明), President, Top One Mortgage
Topic: Current and Future Mortgage Rate Trends (利率的走向)

Abstract. 從近期的贷款利率走势看，符合標準的抵押貸款利率已從今年早些時候 7% 的高位有所改善，並穩定在 5% 至 6% 的範圍內。
近期的經濟數據表明，通脹可能已經見頂，經濟衰退似乎尚未開始 - 在其中任何一項發生變化之前，利率可能會繼續保持在當前的範圍內。
2021 年的低利率已經過去，現在的利率範圍是我們的新常態。

Speaker: Amy Sung (宋秉穎), Esq., Fee Attorney, Stewart Title Company
Topic: Title Company - What does a title company do? (產權公司在地產交易、投資中能夠做的事)

Abstract. 何謂產權保險，為什麼買房子需要它？

當您購買房地產時，產權保險可以保護您免受關於產權、所有權問題的影響，那些問題可能是購買前就存在的問題。在您購買房地產之前，產權公司會搜索及調查需要更正的產權問題、及協助客戶解決產權問題。
當然，產權公司不僅提供產權保險服務，還有其他附加服務，在這次的研討會中，主講人會為您娓娓道來。

Speaker: Ted Lin (林思德), Chief Executive Officer & Founder, StayCozy
Topic: From Landlord to Superhost: "How to build your real estate empire with short-term rental strategies" (從普通房東到超級房東-利用短租模式打造房產帝國)

Abstract. AirBnB 商業模式以及入門簡介、三種常見營利類型，市場評估調查教學、實際案例說明、房源上架前注意事項。.

二零二三年科學工程技術研討會

2023 Science, Engineering and Technology Seminars (SETS)

Acknowledgements

美南國建協進會
感謝下列社團共同策劃

世界華人工商婦女企管協會美南分會
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美南國建協進會
The Association of Chinese American Professionals Fact Sheet

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.

THE ASSOCIATION OF CHINESE AMERICAN PROFESSIONALS (ACAP)
10303 Westoffice Drive Box 194, Houston, Texas 77042
http://www.acap-usa.org

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National Science and Technology Council

Science and Technology Division, Taipei Economic & Cultural Office in Houston

The Science and Technology Division of the Taipei Economic and Cultural Office in Houston is the office of the National Science and Technology Council (NSTC) of Taiwan in the central U.S. We facilitate collaboration in research, development and innovation between Taiwan and the central U.S.

Mission:

1. Promote collaboration in science and technology between Taiwan and the central U.S.
2. Help bidirectional exchanges, recruitments, and visits of young talents in science and technology fields between Taiwan and the central U.S.
3. Help arrange bidirectional visits of experts in science and technology between Taiwan and the central U.S.
4. Encourage investments to Science Parks in Taiwan.
5. Help talents in the central U.S. organize science and technology conferences based on the future development of science and technology in Taiwan.
6. Help promote science and technology developments in Taiwan to the central U.S.

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INNOVATING
A BETTER FUTURE

2030 Technology Strategy and Roadmap

To innovate a better future, ITRI has drawn up its 2030 Technology Strategy and Roadmap, in which it enhances the development of intelligentization enabling technologies and focuses on three application domains: Smart Living, Quality Health, and Sustainable Environment. The Institute strives to use technological innovation to shape new lifestyles, develop market-oriented solutions, and find uncontested spaces.

Smart Living

Digital transformation has become a driving force for global economic innovation. With the prevalence of IoT and AI, people are seeking a faster, easier, and smarter life with the introduction of intelligent devices/services and new business models. Therefore ITRI is developing personalized devices and services, autonomous mobility systems, and smart industries and services for the Smart Living domain. ITRI is also working on human-machine interaction, enhanced imaging and perception systems, autonomous decision-making and control, and smart business technologies and services.

Quality Health

As many countries are moving towards hyper-aged societies, demands for medical personnel and healthcare resources are increasing. New business opportunities in the emerging diagnosis and treatment market are also created through integrated solutions that include smart long-term care systems, personalized/precision medicine, and healthcare models. In the domain of Quality Health, ITRI leverages Taiwan's strengths in ICT and medical care systems to develop smart medical and healthcare technologies. The R&D scope includes smart medical electronics, regenerative medicine, wearable devices, digital healthcare services, and many more.

Sustainable Environment

Due to the current climate change, greenhouse effects, and limited energy sources and resources, how to coexist with Mother Nature has become an important issue when developing new technologies. A sustainable environment can be maintained by creating a circular ecosystem, cutting down time and energy consuming production processes, and discovering green energy sources. ITRI is thereby enhancing the technology development in the circular economy, smart manufacturing, and green energy and environment fields by exploring high-value circular materials, smart manufacturing systems, and supply chain management to achieve ecological symbiosis.

Intelligentization Enabling Technology

Intelligentization enabling technology is the backbone supporting multiple applications in the 2030 Technology Strategy and Roadmap. As a result, ITRI turns to AI, semiconductor, communications, cybersecurity, and cloud technologies to foster technology breakthrough in the above three application domains. At the same time, Intelligentization enabling technology can ensure data privacy and information safety when combating cyber threats.

ITRI International Inc. (a subsidiary of ITRI) **San Jose, CA, USA. Web:** www.itri.org.tw **Email:** info@itri.com

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2023 SCIENCE, ENGINEERING AND TECHNOLOGY SEMINARS (SETS)
二零二三年科學工程技術研討會

TAIWAN
REPUBLIC OF CHINA

Taipei Economic and Cultural Office in Houston

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