# 2020 CIE/USA-DFW VIRTUAL ANNUAL CONVENTION

## TECHNOLOGY FUSION

# INDUSTRY TRANSFORMATION IN TODAY'S WORLD

August 8-9, 2020

**Chinese Institute of Engineers/USA**
**Dallas - Fort Worth Chapter**

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# Message from President

## Lun Tsuei

**President of CIE/USA-DFW**

On behalf of CIE/USA-DFW Chapter, I welcome and appreciate your participation of our first Virtual Annual Convention!

2020 is certainly a challenging year for all of our sponsors, members, and volunteers. The COVID-19 pandemic and social issues have impacted and divided our communities. CIE/USA-DFW chapter is committed to bringing the community together, and we have adapted many of our events to remote online formats to continue our efforts in providing high quality professional and youth programs.

We hosted three hands-on Students Engineering and Creativity Competition (SECC) workshops for grade K-12 students before the shelter in place announcements. Although the competition was eventually cancelled for the safety of all participants, these workshops have served as great learning opportunities for the students. Since March, we rolled out three virtual events so the community could enjoy the programs at home.

On April 18th, we hosted Spring Technical Symposium and Leadership Assessment Mentoring Program (LAMP) webinar that featured topics in "AI for Real-Life Applications" and "The Future of Diversity and Inclusion". On May 30th, with more than 125 volunteers' help, our flagship youth program, MathComp/MathFun and parenting seminar, was held online for the first time and attracted more than 800 students and adults. We also co-hosted the virtual Youth English Speech Workshop with the Texas Dragon Toastmasters Club on June 20th. To date, CIE/USA-DFW chapter has served more than 2,000 people through various programs in 2020, and all the events we offered were free of charge.

Each year, our Annual Convention has provided the platform to celebrate our partnership with the industries, universities, governments, and the communities. This year, we have decided to host all the associated Annual Convention programs online amid the COVID-19 pandemic. We believe the virtual platform will be more influential because it enables us to reach out to other CIE/USA chapters as well as professional societies across the nation. The theme this year is **"Technology Fusion - Industry Transformation in Today's World"**. Academic and industrial leaders are invited to discuss potential industry shifts and new technologies developed in reaction to the pandemic.

We sincerely appreciate our sponsors' continuous trust and generous support. We would also like to thank our board of directors and advisors for their guidance, especially during these challenging times. Personally, my deepest gratitude goes to our wonderful volunteers. Their dedication and tireless efforts are the reasons why we can always believe in a better future!

Sincerely,

*Lun Tsuei*

# 2020 Technical Symposium Program

## August 8th, 2020

### Technical Executive Forum

Session Moderator: Mary Cooley

10:00 - 10:10 AM Opening Remarks

10:10 - 10:35 AM Panel Introductions

10:35 - 11:27 AM Panel Discussions

11:27 - 11:50 AM Q&A

11:50 - 12:00 PM Survey & Closing

### Fall Symposium (Technial Track)

Session Moderator: Dr. J.-C. Chiao, SMU, VP of Technical Programs, CIE/USA-DFW

1:50 - 2:05 PM **Playing Video & Welcome**

2:05 - 2:10 PM **Opening Remarks**

2:10 - 2:50 PM Keynote Speech: *"Current Challenges in Health Care: We Need Your Help"*
**Dr. Robert Hendler**, Chief Medical Office,
Texas Hospital Association (THA) and Foundation (THAF)

2:50 - 3:35 PM *"Driving an Intelligent Revolution in Transportation"*
**Karl-Heinz Steinmetz,** General Manager,
Automotive Systems, HEV/EV & Powertrain, Texas Instruments

3:35 - 4:20 PM *"A Brief Introduction to COVID-19 Forecasting "*
**Dr. Qiwei Li**, Assistant Professor,
Mathematical Sciences, University of Texas at Dallas

4:20 - 5:00 PM "*Monitoring Genomic Evolution of COVID-19 Viruses"*
**Dr. Ching-Yung Lin**, CEO,
Graphen, Inc.

# August 9th, 2020

## Fall Symposium (Leadership and Career Development Track)

Session Moderator: Sheana Chen, Policy Advisor, CIE/USA-DFW

1:50 - 2:03 PM **Welcome**

2:03 - 2:08 PM **Opening Remarks**

2:08 - 2:48 PM *"Coping with Anxiety In The Era Of COVID-19"*
**Dr. Beverly Bo Wu**, Staff Psychiatrist and Associate Director of Psychiatric Emergent Department of Parkland Hospital.
Assistant Professor Department of Psychiatry in UT Southwestern Medical Center at Dallas

2:48 - 3:30 PM *"Channeling Leonardo: What 21st Century Engineers and Scientists Need to Be Successful"*
**Dr. Stephanie Adams**, Dean of the Erik Jonsson School of Engineering and Computer Science
University of Texas at Dallas

3:30 - 4:12 PM *"The Four Letter Word You Don't Want to Hear.. But Should More Often"*
**Thomas Rajan**, Managing Director, Global Co-Brand Partnerships
American Airlines

4:12- 4:40 PM **Panel Discussion**
**Sheana Chen**, Policy Advisor, CIE/USA-DFW

## Virtual Ceremony

4:40 - 4:43 PM **Youth Programs**
**Wen-Shin Wang,** VP of Youth Programs, CIE/USA-DFW

4:43 - 5:02 PM **Young Achiever Award (YAA) Recognition**
**Mark Reidmiller,** YAA/CRS Chair, CIE/USA-DFW

5:02 - 5:10 PM **Community Resilience Scholarship (CRS) Recognition**
**Mark Reidmiller,** YAA/CRS Chair, CIE/USA-DFW

5:10 - 5:15 PM **Sponsors & Volunteers Recognition**
**Lun Tsuei**, President, CIE/USA-DFW

5:15 - 5:18 PM **Poll/Prize Draw**

5:18 - 5:21 PM **Closing Remarks**
**Jan Benmard**, Convention Chair, CIE/USA-DFW


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## Mark Carpenter

**Senior Vice President,**
**T&D Operations**
**Oncor Electric Delivery Company**

## Forum Host

**Mark Carpenter** is Senior Vice President of Transmission & Distribution Operations at Oncor where he has spent his entire 44 year career. Throughout his career, he has focused on developing people and creating high performance teams. Mark earned a BSEE degree at Texas Tech in 1975 and is active in numerous professional activities. He is also active in the community as demonstrated by his involvement with the Chinese Institute of Engineers DFW Chapter and as President of Family Promise of Irving. He is active in his church and is married with five kids, four daughters-in-law, and eight grand kids.

## Dr. Claire Jung

**Engineering Director,**
**Texas Instruments Incorporated**
**(2019 AAEOY Awardee)**

### Forum Chair

**Dr. Claire Jung** was born and raised in Taiwan. In her current role at Texas Instruments Incorporated (TI) as an Engineering Director, Claire manages program management, product engineering, and sustaining teams that enable TI to bring new, next-generation application agnostic safety/non-safety products to the marketplace and accelerate growth for the company's existing product portfolio. During the past four years, Claire started and has led an important TI-wide Functional Safety Initiative with the goal of defining a Functional Safety strategy for TI and supporting business growth in the new and evolving Functional Safety area. She earned her Ph.D at the University of Arizona in Tucson and also holds a Master's Degree in Materials Science and Engineering. On TI's Technical Ladder, Claire was elected to Senior Member of the Technical Staff (SMTS) in 2002. She has four U.S. patent awards and several published technical papers.

## Dr. Mary Cooley

**Chief Operating Officer**
**Dynofit**

### Forum Moderator

**Dr. Mary Cooley** currently serves as Chief Operating Officer of Dynofit, a medical device start-up. She places a high value on giving back to the community, and joined the CIE/USA-DFW Board of Directors this year. After serving for 3 years as Section Chair of IEEE Dallas, she became a Certified Mentor for SCORE. In this role, she mentors entrepreneurs and small business executives in a broad range of businesses, and is also the EVP Elect for the Dallas chapter of SCORE.

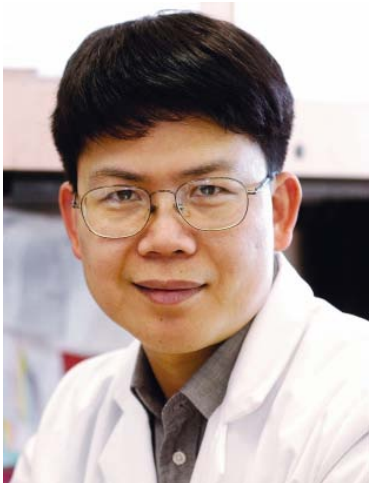
Prior assignments have included engineering and marketing leadership roles at Hewlett Packard, Xtendwave, Convex Computer and Texas Instruments. While at HP, she led the architecture and development of multiple generations of Superdome, the largest computer developed by the company.

## Bing Xie

**Senior Vice President,
Sales and Applications
Texas Instruments
Incorporated**

### Panelist

**Bing Xie** is a Senior Vice President of Texas Instruments responsible for the Sales and Applications organization. Prior to this role, he served as the vice president and deputy manager of the worldwide Sales and Applications organization. Throughout his career, he has held a number of leadership roles in the Sales and Applications organization in Asia and the Americas. He was President of TI China for six years. Earlier, Xie served as the general manager of the sales and marketing organizations for Greater China, including China, Hong Kong and Taiwan. Xie joined TI in 1999. He earned a Bachelor of Science in electronics engineering from Xidian University in China and a Master of Business Administration in international business from Clemson University in South Carolina.



## Dr. Zhijian 'James' Chen

**Professor,
Investigator of
Howard Hughes
Medical Institute
University of Texas Southwestern
Medical Center
(2019 AAEOY Awardee)**

### Panelist

**Zhijian 'James' Chen** received his B.S. degree in Biology in 1985 from Fujian Normal University and his Ph.D. degree in Biochemistry in 1991 from the State University of New York at Buffalo. After his postdoctoral training at the Salk Institute, Chen joined Baxter Healthcare in 1992 as a Research Scientist to work on Cancer Immunotherapy. In 1994, Chen became a Senior Scientist at ProScript Inc, a start-up biotechnology company where he helped discover the proteasome inhibitor VELCADE, a medicine used for the treatment of multiple myeloma and mantle cell lymphoma. In 1997, Chen joined the University of Texas Southwestern Medical Center (UT Southwestern) as an Assistant Professor and rose through the rank to become a Professor in 2005. Since 2005, Chen has been an Investigator of Howard Hughes Medical Institute. He is also George L. MacGregor Distinguished Chair in Biomedical Science and Director of Inflammation Research Center at UT Southwestern.

Chen has made a series of discoveries that transformed our understanding of cell signaling and innate immunity. These include the discovery of MAVS and cGAS, two proteins that play a central role in the recognition of bacteria and viruses as well as cancer cells by the body's immune system. These discoveries have led to intense efforts in the pharmaceutical industry in developing effective therapies against cancer and autoimmune diseases.
For his work, Chen has received numerous honors, including the National Academy of Science Award in Molecular Biology (2012), the American Society of Biochemistry and Molecular Biology (ASBMB) Merck Award (2015), and the Lurie Prize in Biomedical Sciences (2018). In 2018, Chen received the Breakthrough Prize in Life Sciences, the largest science prize in the world. Chen is a member of the National Academy of Sciences.

## Dr. Tsu-Jae King Liu

**Dean and Roy W. Carlson Professor of Engineering**
**College of Engineering, EECS Department**
**UC Berkeley**
**(2019 AAEOY Awardee)**

### Panelist

**Tsu-Jae King Liu** is internationally recognized for her innovations in semiconductor devices and technology, and is highly regarded for her achievements as an instructor, mentor and administrator. As a researcher at Xerox Palo Alto Research Center, she helped develop thin-film transistor technology used in HD flat panel displays. Her technical contributions, including her work on the FinFET transistor design, have enabled the semiconductor industry to continually improve the performance of leading-edge microchips.

She has authored or co-authored more than 500 publications and holds 96 U.S. patents in the field of integrated-circuit devices and technology. Liu's numerous honors include election as fellow to the Institute for Electrical and Electronics Engineers and to the National Academy of Inventors, and induction to the National Academy of Engineering and to the Silicon Valley Engineering Hall of Fame. She serves on Intel's Board of Directors, and in 2018 she was named dean of UC Berkeley's College of Engineering. Liu earned her B.S., M.S. and Ph.D. degrees in electrical engineering at Stanford University in 1984, 1986 and 1994, respectively.

## Jorge Varela

**CEO**
**Bio North Texas**

### Panelist

**Jorge Varela** believes that businesses improve the quality of lives through the commercialization of new discoveries and through economic growth. He is a businessman who started or was part of the executive team at numerous companies in diverse industries with financially profitable exits. In the past 10 years he mentored and coached startups in the life sciences whose financial successes exceeded $3 Billion.
Jorge is CEO of Bio North Texas, the nonprofit that represents, connects, and promotes the biotech industry in North Texas. He is also Managing Director of AltusVista, a consultancy that works with leaders to build better companies, non-profits and executives.
Prior to Bio North Texas, he was Co-Founder and CEO of VelocityTX, an innovation district in San Antonio offering incubation, mentorships, and seed investments to startups. VelocityTX is a wholly-owned subsidiary of the Texas Research & Technology Foundation (TRTF) where Jorge served as Executive Vice President of Innovation & Investments. From 2012 to 2017 Jorge served as Director at TECH Fort Worth where he coached founders of life sciences companies with innovative technology.
Jorge's passion is working with leadership to develop and grow for- and non- profit organizations to enable:

- financial independence and the creation of economic opportunities globally; and,
- to improve the quality of life through the commercialization of new technologies.

# Symposium Keynote Speaker

## Dr. Robert S. Hendler

**Chief Medical Officer: Texas Hospital Association (THA) and Foundation (THAF)**
**Clinical Professor of Medicine, University of Texas Southwestern Medical School**

## Current Challenges in Health Care: We Need Your Help

**Dr. Robert S. Hendler** received his B.S. in Biology, Boston College, and M.D. at the University of Texas Medical Branch, Galveston. He was trained and is board certified in Internal Medicine and Gastroenterology at Parkland Hospital and the University of Texas Southwestern Medical School. He was in private practice for twenty years. He is a founding member of Digestive Health Associates of Texas – one of the largest specialty groups in the United States.

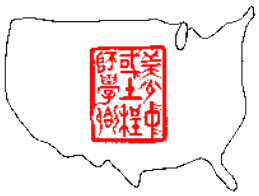
Dr. Hendler served as a Vice President in Tenet Healthcare, a Fortune 500 company, and worked in all areas of the corporation for fifteen years. In his role in Quality Improvement for Tenet, in 1999 he visited and worked with 100 hospitals in one year in creating the first set of hospital-based quality core measures. He has served as Chief Quality and Safety Officer during the first three years of the Parkland Health and Hospital System Corporate Integrity Agreement and improvement process. In his fourth year at Parkland, he held the position of Associate Chief Medical Officer and Senior Vice President of Professional and Academic Affairs at the Parkland Hospital and Health System.

During this three years, Parkland improved from a near Federal closure of the hospital to being recognized by Leapfrog Group as a top 10% hospital for quality and safety.

He is a former Clinical Professor of Medicine at the University of Texas Southwestern Medical School. He is currently the Chief Medical Officer at the Texas Hospital Association (THA) and Foundation (THAF). His interests are in reliability of process, organizational sociology, and sustainable continuous quality improvement in health care.

**Abstract:**
For over thirty years, U.S. health care has been striving to reach levels of quality and safety that are the norm in other industries. The presentation will describe some reasons for the slow progress of health care in quality and safety. A greater working relationship of health care personnel and engineers is needed to make more rapid advances and move beyond the one-sigma range of medical errors.

Using the COVID-19 pandemic as an example, several engineering challenges will be presented that are essential to the successful resolution of the pandemic. Creating innovative solutions would have an immediate effect on patient care and provide long- term benefits to patients and communities.



# SPECIAL RECOGNITION AWARD

**presented to**

# *Dr. Robert S. Hendler*

**Chief Medical Officer:**

**Texas Hospital Association (THA) and Foundation (THAF)**

## For
## Visionary Leadership in Technology and Sustainability for Healthcare

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**DALLAS-FORT WORTH CHAPTER**

**August 8th, 2020**

*Simon Chang*

Simon Chang
Chairman

*Lun Tsuei*

Lun Tsuei
President

# Special Recognition Award

## *Technical Track*

**Karl-Heinz Steinmetz**

**General Manager, Automotive Systems, HEV/EV & Powertrain**
**Texas Instruments**

### Driving an Intelligent Revolution in Transportation

**Karl-Heinz Steinmetz** is the general manager for worldwide automotive powertrain at Texas Instruments in its automotive systems business. Karl-Heinz leads TI's hybrid and electric vehicle and powertrain sector team. Karl-Heinz's team empowers automakers to reduce vehicle emissions through greater vehicle electrification and improving the efficiency of internal combustion engines. In 2003, Karl-Heinz joined TI as a systems engineer supporting TI's audio-video systems. Prior to his current role, Karl-Heinz lead the European application-specific standard product (ASSP) business development and system engineering team at TI. Karl-Heinz received a Master's Degree in electrical engineering from the Karlsruhe University of Applied Sciences in Karlsruhe, Germany.

**Abstract:**
Automotive transportation is undergoing a revolution, as advanced electronics enable the electrification of vehicle engines, as well as increasing automation, safety, comfort and convenience. As a result, these changes make the future of driving look very different from our experiences today. Cities will be filled with probably self-driven, hybrids (HEV/PHEV) and zero-emission electric vehicles (EVs) that communicate among themselves and with the roadway and grid infrastructure.

**Dr. Qiwei Li**

**Assistant Professor,**
**Mathematical Sciences,**
**University of Texas at Dallas**

### A Brief Introduction to COVID-19 Forecasting

**Dr. Qiwei Li** is an Assistant Professor of Statistics in the Department of Mathematical Sciences, The University of Texas at Dallas. He received his Ph.D. in Statistics from Rice University in 2016, M.Phil. in Information Engineering from The Chinese University of Hong Kong in 2010, B.Sc in Economics from Peking University, and B.Eng. in Electronic Engineering from Tsinghua University in 2008. Before joining UTD in 2019, he was an Assistant Professor at The University of Texas Southwestern Medical Center. His research focuses on the development of Bayesian statistical methodologies to analyze real world data in medicine, biology, and epidemiology.

**Abstract:**
COVID-19, a respiratory disease caused by the novel coronavirus SARS-CoV-2, has rapidly become an ongoing global pandemic since late 2019. It has become the leading cause of death in the United States and is still spreading fast in almost every county. Given the extent of the physical and economic suffering caused by the pandemic, there is an urgent need for reliable predictions of future trends of the diseases. In this talk, I will briefly introduce a variety of prediction models in epidemiology used for short and long-term forecasting. To help us, especially those policy-makers in the Dallas-Fort Worth area, evaluate how different policies and intervention procedures affect the progress of the disease, I will introduce a recently developed epidemiological model that utilizes Apple, Facebook, and Google mobility data for more accurate forecasting. The public can interact with our real-time prediction and simulation on the spread of mortality of COVID-19 via the link qiwei.shinyapps.io/PredictCOVID19/.

## Technical Track

### Live Monitoring of Worldwide COVID-19 Virus Mutations

**Dr. Ching-Yung Lin**

**CEO**
**Graphen, Inc.**

**Dr. Ching-Yung Lin** is the CEO of Graphen, Inc. and an Adjunct Professor in the Depts. of EECS in Columbia University. Before June 2017, he was the IBM Chief Scientist (for the area of Graph Computing) and led to create IBM's first AI products in the Financial Industry. He created the Network Science and Machine Intelligence department at IBM T. J. Watson Research Center. Dr. Lin was named an IEEE Fellow in Nov 2011, the first in the area of Network Science. Inspired by human's brain structure being a network of billions to trillions of nodes and edges, his research interest has been on realizing Artificial Intelligence of full brain functioning via fundamental R&D breakthrough of graph-based technologies. Graphen's mission is to create state-of-the-art AI platform and utilizes it for industry solutions, especially in the Financial Industry and Healthcare Industry. In 2015, he and the White House Chief Data Scientist were invited as co-panelists by the President of American Medical Association to discuss Big Data / AI impact in Healthcare in the AMA's annual meeting. He was also an invited speaker in Federal Reserve, European Central Bank, FINRA, etc, and led large projects for the US government and foreign governments, and for the largest banks in USA, Asia, and Europe.

**Abstract:**
Graphen created a live monitoring system that analyzed the variants of each reported whole genome sequencing from more than 100 countries or regions to date and identified the mutations as they spread. By understanding the mutation of each virus and locating where those variants are in its near 30,000 genetic locations, Graphen identifies each virus' evolution chain, as well as clusters. AI technologies including Network Flow analysis and Graph Spectral Analysis were used to decide such evolution chain and identify key clusters. Such mutation and propagation patterns can help companies better identify targets for drug development, public health prediction on the spreading speed, or even predict the harmfulness of specific variants that may cause symptoms beyond those observed from the original strain.

## Leadership and Career Development Track

### Dr. Beverly Bo Wu

**Assistant Professor,
Staff Psychiatrist and Associate
Director of Psychiatric
Emergent Department of
Parkland Hospital**

## Coping with Anxiety in the Era of COVID-19

**Dr. Beverly Bo Wu** graduated from West China University of Medical Sciences in Chengdu, Sichuan, China. She was an internal medicine physician and had a fellowship in Nephrology. In 1992, Dr. Wu came to the US and did two postdoctoral fellowships, one in University of Texas Medical Branch in Galveston, and another one in Johns Hopkins University. During this period, Dr. Wu focused on basic research in immunological mechanisms of Myasthenia Gravis. Then her interest was shifted back to clinical medicine. After passing USMLE, she matched into psychiatry resident training program in JPS/UNT. After graduation, Dr. Wu worked seven years as staff psychiatrist at JPS and four years as associate director for its residency program. She moved to UT Southwestern Medical Center six years ago and worked in Zale Lipshy University Hospital first as attending psychiatrist, and then Parkland Hospital. Dr. Wu is an emergency psychiatrist dealing with crisis daily as associate director of Psychiatric Emergency Department and volunteered for Hurricanes Katrina and Harvey, and recently volunteered in a crisis intervention group for health professionals in Wuhan, China for COVID-19.

**Abstract:**
Everyone experiences anxiety – a diffuse, unpleasant, vague sense of apprehension, often accompanied by autonomic symptoms, such as headache, perspiration, palpitation, tightness in the chest, mild stomach discomfort, and restlessness, indicated by an inability to sit or stand still for long. Anxiety is an alerting signal: it warns of impending danger and enables a person to take measures to deal with a threat. Anxiety is a response to a threat that is unknown. It can happen in normal people and it may cause debilitating disorder that is quite common. External stresses or crisis may worsen internal feel of uncomfortableness and create new onset of anxiety or worsen existing anxiety. COVID19 pandemic has drastically changed our ways of living and created enormous stresses on everyone. I'd like to share my knowledge about what triggers our anxiety and how should we cope with it in this, likely, long lasting COVID era.

## Leadership and Career Development Track

**Dr. Stephanie G. Adams**

**Dean of the Erik Jonsson School of Engineering and Computer Science University of Texas at Dallas**

### Channeling Leonardo: What 21st Century Engineers and Scientists Need to Be Successful

**Dr. Stephanie G. Adams** is the 5th Dean of the Erik Jonsson School of Engineering and Computer Science at the University of Texas, Dallas and Past President of the American Society of Engineering Education. Previously Dr. Adams served as the Dean of the Frank Batten College of Engineering and Technology at Old Dominion University (2016–2019), Department Head and Professor of Engineering Education at Virginia Tech (2011–2016) and held faculty and administrative positions at Virginia Commonwealth University (2008–2011) and the University of Nebraska-Lincoln (1998–2008).

Her research interests include: Broadening Participation, Faculty and Graduate Student Development, International/Global Education, Teamwork and Team Effectiveness, and Quality Control and Management. In 2003, she received the CAREER award from the Engineering Education and Centers Division of the National Science Foundation. Dr. Adams is a leader in the advancement and inclusion of all in science, technology, engineering, and mathematics (STEM) education. She has worked with a number of colleges and universities, government agencies and non-profit organizations on topics related to graduate education, mentoring, faculty development and diversifying STEM.

Dr. Adams is an honor graduate of North Carolina A&T State University, where she earned her BS in Mechanical Engineering, in 1988. In 1991, she was awarded the Master of Engineering degree in Systems Engineering from the University of Virginia. She received her Ph.D. in Interdisciplinary Engineering from Texas A&M University in 1998, where she concentrated on Industrial Engineering and Management.

**Abstract:**
The Engineer of 2020 Report, published in 2004, called for engineering graduates in 2020 to have "the ingenuity of Lillian Gilbreth, the problem-solving capabilities of Gordon Moore, the scientific insight of Albert Einstein, the creativity of Pablo Picasso, the determination of the Wright brothers, the leadership abilities of Bill Gates, the conscience of Eleanor Roosevelt, the vision of Martin Luther King, Jr., and the curiosity and wonder of our grandchildren." In combination, this depiction by the National Academy of Engineering describes what undergraduate engineering programs should seek to develop - "A Renaissance Engineer."

Leonardo da Vinci was the quintessential Renaissance man: a painter, sculptor, inventor, architect, musician, engineer, and scientist. Similar to how da Vinci's interests and expertise stretched across a variety of domains, successful engineers of tomorrow will need to exhibit depth in one or two core disciplines and breadth across multiple spheres. To foster the development of such Renaissance Engineers, the larger community called for colleges and universities to reexamine engineering teaching and learning. However, the actual student and young professional has a role to play as well.

This presentation will describe 1) a vision for the role of engineering educators, 2) the purpose research fulfills in transforming the overall educational experience, and 3) ideas for students and young professionals to consider and embrace to ensure they are adequately ready to be fully prepared for the challenges they face in the coming decades.

# Symposium Speakers

## *Leadership and Career Development Track*

### Thomas Rajan

**Managing Director, Global Co-Brand Partnerships**
**American Airlines**

### The Four Letter Word You Don't Want to Hear...But Should More Often

**Thomas Rajan** is the Managing Director for Global Co-Brand Partnerships for American Airlines. In this role, Thomas oversees the airline's extensive co-branded credit card portfolio that helps drive customer engagement with the industry-leading AAdvantage® loyalty program, and is responsible for the worldwide commercial relationships that power its mission. He took on this role after serving as Managing Director of Global Learning for the airline, overseeing all talent development strategy. Prior to this role, Thomas has held a variety of leadership and advisory roles at private and public sector institutions such as the Boys & Girls Clubs of America, McKinsey & Company, The Boeing Company, US Airways, British Airways & America West Airlines. Thomas holds a Master of Business Administration (MBA) from Harvard Business School and a Bachelor of Science (BS) Summa Cum Laude in Finance from Arizona State University.

**Abstract:**
What's standing in the way of achieving your true leadership potential while also supporting the needs of your own team and the thousands of lives you potentially impact every day in your role? This session will allow you to reflect on this by considering the three most important factors that influence your personal growth. For over two decades, Thomas Rajan has been observing these factors in his own career and in the organizations he's worked with and for across the private and public sector as a management consultant, and as a functional leader in industry. If you've ever thought about your calling as a leader and how you can be even better, then you won't want to miss this!

### Sheane Chen

**Policy Advisor**
**CIE/USA-DFW**

### Panel Discussion

**Sheane Chen** is a senior legal executive with over 20 years of experience in international commercial transactions, IP strategies, cross-border dispute resolution, as well as ethics and compliance governance.

As a forward-thinking international lawyer, Sheana is passionate about the intersection between law and technology. She brings innovative solutions to help companies solve complex legal and business challenges. Sheana serves as the Policy Advisor and a board member to the Chinese Institute of Engineers/USA-DFW Chapter. She has held Vice President roles in semiconductor companies where she leads a global legal team to provide legal support to business units, sales, manufacturing and support entities, while managing ethics and compliance.
Sheana is a dual qualified English Solicitor and Barrister and a qualified New York State Attorney. Sheana was a Partner at Baker & McKenzie and has worked in Dallas, Taipei, Shanghai, Singapore and London.

Sheana has a Master's degree in International Commercial Law from the University of London and a LL. B Honors degree from the University of Manchester. She also has a Postgraduate Degree in Professional Legal Skills from the Inns of Court School of Law.
Sheana has completed the Harvard Business School Executive Education program, and the INSEAD Women Leading Global Change Program in France and is a Fellow with the International Women's Forum.

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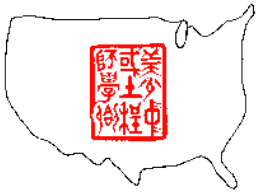

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**Society of Hispanic Professional Engineers (SHPE)**
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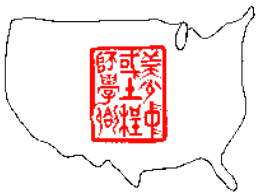
**Texas Dragon Toastmasters Club**
**Dallas Ft. Worth Asian-American Citizens Council (DFW AACC)**

# 2020 CIE Virtual Programs Team Award



**CIE/USA-DFW recognizes and thanks**

**Jan Benmard**

**Hao Chen**

**J.-C. Chiao**

**Greg Nichols**

**Minkai Wu**

**Marrisa Yang**

**Tiger Zhou**

**for their contributions in this year's breakthrough online programs**


The Science and Technology Division of the Taipei Economic and Cultural Office in Houston is the representative office of the Ministry of Science and Technology (MOST) of Taiwan in the central United States (Arkansas, Illinois, Iowa, Louisiana, Minnesota, Mississippi, Missouri, Oklahoma, Texas and Wisconsin). We facilitate collaboration in research, development, and innovation between Taiwan and the central US.

Mission:

1. Promote collaboration in science and technology between Taiwan and the central US.
2. Provide services for science and technology related businesses in the central US.
3. Help bidirectional exchanges, recruitment, and visits of young talent, including undergraduates, graduates, and post-docs in science and technology between Taiwan and the central US.
4. Help to arrange bidirectional visits of experts in science and technology between Taiwan and the central US.
5. Encourage investments in Science Parks in Taiwan.
6. Establish a database of Taiwan talent in the US.
7. Help expert institutions and Taiwan talent in the central US organize science and technology conferences based on the future development of science and technology in Taiwan.
8. Help promote the programs designed to recruit talent to Taiwan and international collaboration, such as LiFT, Einstein and Columbus programs, LEAP, as shown on the next page.
9. Attend science and technology meetings as the representative of Ministry of Science and Technology in the central US.
10. Help promote science and technology developments in Taiwan to the central US.

Service Area:
Arkansas, Illinois, Iowa, Louisiana, Minnesota, Mississippi, Missouri, Oklahoma, Texas, and Wisconsin

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Website: https://www.most.gov.tw/houston/en

LiFT ∞ TAiWAN
Leaders in Future Trends

MOST 科技部
Ministry of Science and Technology

The Ministry of Science and Technology has kept up the call for overseas talents to return/ go to Taiwan and serve. The program provides a platform for establishing connections between overseas talents and Taiwan's industries, universities, and research institutes through both online and offline activities. Through this Program, qualified overseas talent will receive round-trip airfare and fully accommodations in Taiwan. Arrangements will be made for participants to attend the "Leaders in Future Trends O2O Conference," and they will have opportunities to meet face-to-face with domestic firms, universities, and research organizations with the goal of finding employment opportunities in Taiwan.
https://lifttaiwan.stpi.narl.org.tw/

## Columbus Program

The Columbus Program was established by the Ministry of Science and Technology (MOST) to encourage young research fellows and scholars to engage, on a long-term basis, in research with potential, importantance, and innovation; to conduct research and exchanges with research institutions overseas; and to establish international collaboration teams, in order to broaden international horizon and establish international influence. https://www.most.gov.tw/folksonomy/list?menu_id=b64c0e60-430b-4353-870e-baec5de5908d&subSite=&l=ch

## Einstein Program

The Einstein Program is established by the Ministry of Science and Technology (MOST) to encourage young research fellows and scholars to make bold, innovative research attemptsin various aspects, and to cross over the supposed boundaries of science without being confined by convention.
https://www.most.gov.tw/folksonomy/list?menu_id=876ee953-9fad-41d6-8f26-f51a5010afff&l=ch

LEAP
Learn • Explore • Aspire • Pioneer

The LEAP Program was launched by the Ministry of Science and Technology (MOST) of Taiwan in 2017. We cooperate with high-tech companies, start-ups,and venture capital funds in the US to facilitate cross-country knowledge circulation and business development. Through the program, overseas companies that become LEAP enterprise partners will host carefully screened, selected, and matched participants as LEAP Fellows for one year. https://leap.stpi.narl.org.tw

# 2020 Young Achiever Award

## Chair: Mark Reidmiller

The Young Achiever Award (YAA) is one of the flagship programs of CIE/USA-DFW. The YAA is designed to encourage the younger generations of CIE members to achieve high academic performance, develop leadership skills, develop a strong interest in science and engineering, and excel in extracurricular and community volunteer activities. These well-rounded skills will enable them to become strong leaders in this very competitive global marketplace, and achieve the greatest possible impact in our community.

CIE/USA-DFW is honored to have professionals from various industries to serve as judges in selecting the YAA recipients. Here are some of the impressive achievements of this year's recipients:

**Academic & STEM Achievements:**

- Pritzker Engineering Early Distinction Award at the University of Chicago
- National Speech and Debate Association Academic All-American
- 2020 AIME qualifier
- 3 time consecutive Texas Grade Chess Champion and Team Captain
- Colleyville Heritage High School Valedictorian
- World Science Scholar
- Multiple All-State/All-Region, and soloist awarded musicians
- Southern Private Conference All-Conference Athlete (Swimming)
- International Public Policy Forum Top 16
- UIL Texas State Solo Ensemble-Ensemble (2018), Solo division 1(2019), Solo(2020)
- Concert Master of TMEA Dallas All Region Symphonic Orchestra (2017)
- Showstopper 2019 Gulf Coast Finals Dance Competition overall 3rd place winner
- 5th Place TMSCA State Overall Science
- 4-time 1st prize winner at the Fort Worth Music Teachers Association Solo Competition

**Community Service, Special Talent & Interest Achievements:**

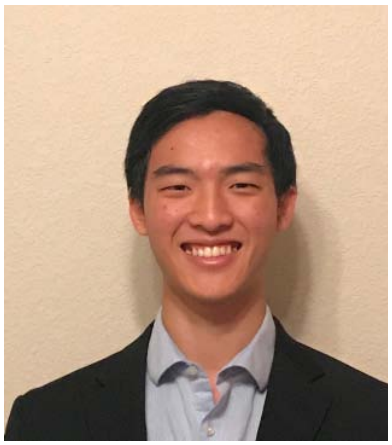
- Collectively volunteered 2500+ hours across their communities
- Co-founder of Big & Mini, a nonprofit that connects youth and seniors for video calls
- Co-founder of HP Chess Tutoring
- HELP Student Branch Director
- VP of Cultural Events at the Dallas Youth Volunteer Association
- Multiple President' Volunteer Service Awards
- President of the Plano West Senior High School Band
- Developed official Alexa skill for the City of Dallas 311 Department
- Compassion International Program

The YAA trophies and scholarship will be presented to the recipients during the CIE/USA-DFW virtual annual convention on Sunday, August 9th, 2020.

# 2019 Young Achiever Award Recipients

David Yang
St. Mark's School of Texas

Brian Jiang
Colleyville Heritage
High School

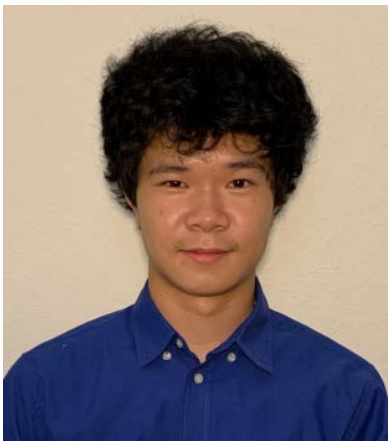


Anthony Zhou
Texas Academy of
Math and Science

Veronica Fang
The Hockaday School

Kai Tsuei
Highland Park High School

Justin Li
Highland Park High School



James Li
Plano West Senior High School

Haoyu(Emily) Zhong
Highland Park High School

# 2020 Community Resilience Scholarship

## Chair: Mark Reidmiller

In response to the unprecedented impact that the COVID-19 pandemic has had on communities across the globe, CIE/USA-DFW has created the Community Resilience Scholarship to be awarded this year. This scholarship recognizes students and their families who have experienced profound impact, provided special inspiration, or have gone above and beyond to help fight COVID-19 or support the community. This includes student contributions/experience or students who have immediate family members that include a First Responder such as policeman, firefighter, paramedic/medical professional or other related fields. Qualified applicants were required to submit an essay detailing the impact, inspiration, and support provided to the community.

Max Fan, Lebanon Trail High School
- Member of TechnicBots, FTC robotics team that designed, produced, and donated PPE to 40+ clinics and hospitals
- Manufacturing, Equipment Diagnostic & Repair

Ellen Sun, Coppell High School
- Member of TechnicBots, FTC robotics team that designed, produced, and donated PPE to 40+ clinics and hospitals
- Materials Procurement, Order Management, Distribution

Max Fan
Lebanon Trail High School

Ellen Sun
Coppell High School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Tel:886-3-5773311

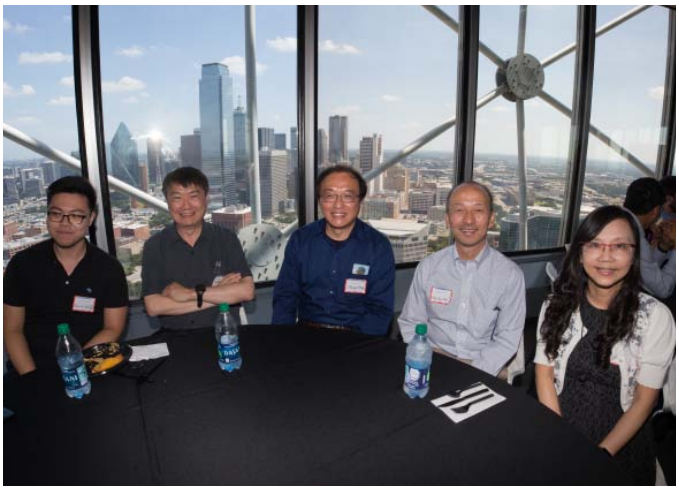
# 2019-2020 CIE/USA-DFW Events

| Date | Event | Event Chair | Location |
|---|---|---|---|
| August 16, 2019 | Technical and Cultural Tour | Huawen Jin | Multiple |
| August 16, 2019 | Job Fair and Career Seminar | Kevin Liang | Renaissance Dallas at Plano Legacy West Hotel |
| August 16, 2019 | 2019 Annual Convention | Greg Nichols | Renaissance Dallas at Plano Legacy West Hotel |
| August 17, 2019 | Technical Executive Forum | Bing Xie<br>Qing Zhao | Renaissance Dallas at Plano Legacy West Hotel |
| August 17, 2019 | International Technology & Leadership Conference | Simon Chang | Renaissance Dallas at Plano Legacy West Hotel |
| August 17, 2019 | 2019 Asian American Engineer of the Year (AAEOY) Award and Conference | Claire Jung<br>Lun Tsuei | Renaissance Dallas at Plano Legacy West Hotel |
| December 14, 2019 | 2020 CIE Officers/Volunteers Orientation | Lun Tsuei | Oak Point Recreation Center, Plano |
| December 15, 2019<br>January 25-26, 2020<br>March 1, 2020 | Student Engineering and Creativity Competition (SECC) Workshops | Wen-Shin Wang | Multiple |
| April 18, 2020 | Spring Technical Symposium | J.-C. Chiao | Online |
| April 18, 2020 | Spring Leadership Assessment and Mentoring Program (LAMP) | Marrisa Yang | Online |
| March 30, 2020 | MathComp/MathFun (MCMF) & Parenting Seminar | Hao Chen | Online |
| June 20, 2020 | Youth English Speech Workshop | Minkai Wu | Online |
| August 8-9, 2020 | 2020 Annual Convention | Jan Benmard | Online |

**Chair: Huawen Jin**

AAEOY guests were invited to visit Halliburton research center in the morning. They were given a short presentation on the importance of fracture drilling, its benefits, its impact on energy independence. The group had lunch at the rotating Cloud Café, 500ft above ground, in the Reunion Tower at downtown Dallas. After lunch, the group enjoyed a guided tour at "the Star in Frisco", the location for the Dallas Cowboy's headquarters and training facility.


Group Photos at Halliburton Research Center



Lunch at Reunion Tower


Group Photos at Ford Center at the Star

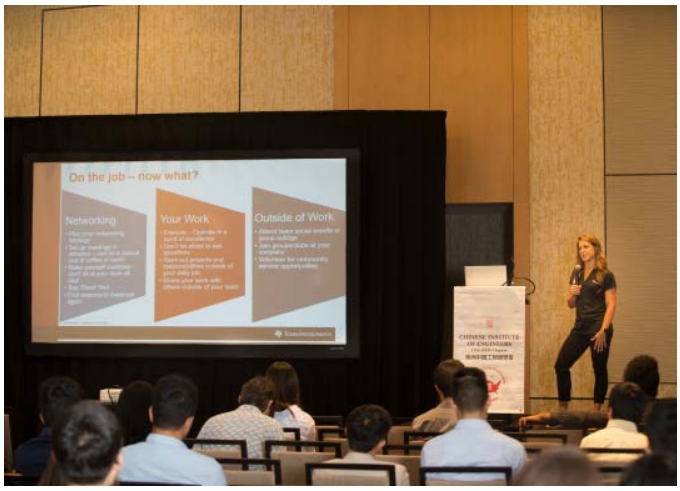

Group Photo Before the Tour

# 2020 Job Fair and Career Seminar

**Chair: Kevin Liang**

A job fair was held at the event hotel in the afternoon of 8/16. There were 15 companies in attendance of the job fair ranging from large Fortune 500 companies to local startups who brought hiring managers to interview and hire potential applicants. Over 650 students and working professionals in the STEM field registered for the event making this one of the largest STEM job fairs in the DFW metroplex. In addition to the job fair there was also a professional development seminar with speakers from Boeing, Texas Instruments, and Oncor who presented various topics of career development and growth to the audience.


Job Fair




Career Seminar


Career Seminar


Job Fair

# 2019 CIE/USA-DFW 30th Convention

**Chair: Greg Nichols**

The AAEOY Pre-Award dinner was jointly held with CIE/USA-DFW chapter's 30th Convention Banquet. More than 400 people attended the celebration including close to 100 AAEOY guests and volunteers. The keynote speaker, Dr. Chi-Foon Chan (President and co-CEO, Synopsys), one of the 2019 AAEOY Distinguished Science & Technology Award recipients, gave a speech around this year's theme "Technology Fusion – Invent a Better Future". His speech began with the evolution of modern technology, followed by his own "Going West" life, and ended with answering the question, "Why is now the best time for engineers?". Dr. Chan closed with an emphasis on "Virtue" as the most important thing in life. After presenting CIE/USA-DFW's Young Achiever Awards to this year's recipients, 2019 AAEOY Co-Chair Lun Tsuei introduced the Asian American Engineer of the Year award program to the audience. He also congratulated this year's AAEOY award recipients and sent his appreciation to all of the sponsors.

Banquet


Banquet


Past presidents at CIE/USA-DFW 30th anniversary


Volunteers

# 2019 CIE/USA-DFW 30th Convention


DFW convention chair Greg Nichols


DFW Banquet MC Jeffrey Cornell


Dr. Faa-Ching Wang


Keynote speaker Dr. Chi-Foon Chan


Young Achiever Awardees (YAA)
CIE/USA-DFW 30th Convention Banquet


Student Preformer Celebrated CIE/USA-DFW Chapter's 30th Anniversary with AAEOY Guests at the Pre-Award Dinner Banquet

# 2019 Technical Executive Forum

**Host: Bing Xie / Chair: Qing Zhao**

The first AAEOY Technical Executive Forum was offered as an invitation-only event for the Dallas AAEOY Conference. The four panelists included 2 past AAEOY awardees: Dr. Jinrong Qian (VP and Business Unit Manager, Texas Instruments) and Dr. Naveed Hussain (VP and General Manager, Boeing Company); one 2019 awardee: Dr. Bala Rajaraman (Fellow and VP, IBM); and a long-term CIE supporter: Mark Carpenter (Senior VP, Oncor Electric Delivery Company). The panel was kicked off by Forum Chair, Dr. Qing Zhao of Oncor, as well as Forum Host, Bing Xie, Senior VP of Sales and Applications for Texas Instruments. Dr. Mary Cooley moderated this group of outstanding panelists before an audience of about 70 people. Questions ranged from iPhone-like technology fusion expectations in each industry over the coming decade to the leadership and management of large and diverse global teams. In addition, the panel included a lively discussion on possible over-reliance on electrical versus mechanical innovations.


Four Panelists Dr. Bala Rajaraman, Dr. Jinrong Qian, Dr. Naveed Hussain, Mr. Mark Carpenter, and Moderator Dr. Mary Cooley

The Audience Had a Lively Discussion

The Four Panelists with Technical Executive Forum Host Bing Xie, chair Qing Zhao, AAEOY chair Claire Jung, and Moderator Mary Cooley

About 70 Industrial and Academic Leaders Participated the Event

# International Technology & Leadership Conference

**Chair: Simon Chang**

2019 International Technology and Leadership Conference (ITLC) was kicked-off with a brief introduction by Mr. Simon Chang, President of CIE/USA-DFW Chapter. The keynote session was packed with over 300 participants. Dr. Peter Crouch, Dean of the School of Engineering at The University of Texas at Arlington, delivered the opening remarks. The three keynote speakers were Dr. Alexa Dembek, Chief Technology and Sustainability Officer at DuPont, Dr. Tsu-Jae King Liu, Dean of College of Engineering at The University of California at Berkeley, and Dr. Sean Wang, President of Industrial Technology Research Institute International Inc. The keynote speakers offered forward thinking on innovation and affirmed technology fusion will continue to drive novel discovery. After the keynote, the ITLC divided into three parallel tracks that covered topics from artificial intelligence (AI) and energy to leadership and career development. In the AI session, four speakers talked about AI and Internet of Things (IoT) from various angles and offered insightful views on their impact. In the Energy session, the exciting battery and power electronic technologies, and why wirelessly transferred electricity may power the world's future were discussed. Leadership and Career Development session also had four speakers. The speakers offered valuable insights on leadership development and emphasized the importance of treating leadership as a journey not a destination.

Keynote Session

Break Out Session


The Audience Had a Lively Discussion

The Audience Had a Lively Discussion

# International Technology & Leadership Conference

Keynote Speech

CIE President Simon Chang, Opening Remarks Dr. Peter Crouch, Keynote Speakers Dr. Tsu-Jae King Liu, Dr. Alexa Dembek, and Dr. Sean Wang (from left to right)


CIE/USA-DFW 2019 President Simon Chang


Energy is Technology's Next Big Thing Session Speakers


Career and Leadership Development Session Speakers

Artificial Intelligence, Machine Learning, IoT Session Speakers

# 2019 AAEOY Award Banquet

**Chair: Dr. Lun Tsuei and Dr. Claire Jung**

There were more than 320 guests attending the 2019 AAEOY dinner banquet. The banquet started with a "Welcome" video which was followed by the presentation of colors by members of the U.S. Navy. After the national anthem was sung by the Di's Vocal Art, Emcee Mr. Arnold Zhang made the welcome announcement and invited event chair Dr. Claire Jung and CIE-USA national council chairman Mr. Simon Ma to give the opening remarks. Dr. J.-C. Chiao read the congratulatory letter from Texas governor Mr. Greg Abbott and expressed appreciation to other parties who sent the congratulatory letter. Throughout the night, the AAEOY awardees walked through the red carpet with spotlight and music, accepted their awards and made their speeches. The most prestigious Distinguished Lifetime Achievement Award this year, was given to Dr. Morris Chang. Unable to receive the award in person, Dr. Chang recorded his appreciation speech to play during the award session. The award was received by his delegate Dr. Alex You. The 2019 AAEOY team played the 2019 AAEOY featured video to present the proud Asian American contributors to our lives in the past, present, and future. The banquet ended with closing remarks by the event co-chair, Dr. Lun Tsuei, and the announcement that the 2020 AAEOY would be hosted by the chapter in the San Francisco Bay Area.


Awardee: Dr. Morris Chang, Received by Dr. Alex You
(Distinguished Lifetime Achievement)


Awardee: Dr. Zhijian 'James' Chen
(Distinguished Science & Technology)


Awardee: Dr. Chi-Foon Chan
(Distinguished Science & Technology)


Awardee: Dr. Tsu-Jae King Liu
(Distinguished Science & Technology)

# 2019 AAEOY Award Banquet


AAEOY Awardees


Keynote speaker: Bill Magness
President and Chief Executive Officer Electric
Reliability Council of Texas

Banquet

Banquet

Presentation of Colors, United States Navy


Performance

# 2020 Officers/Volunteers Orientation

**Chair: Lun Tsuei**

CIE/USA-DFW chapter held its 2020 Officers / Volunteers Orientation on Saturday, December 14th 2019, at the Oak Point Recreation Center at Plano, Texas. The main goal of the orientation was to introduce CIE's history as well as the chapter's By-Laws, Policy, and Ethics to the 2020 officer team and new volunteers. It also presented an opportunity for the officers and volunteers to meet each other and understand the individual roles and responsibilities. Our 2020 DFW Chapter President, Lun Tsuei, kicked off the orientation session. After team introductions, Faa-Ching Wang, the chapter founder was invited to present the CIE/USA-DFW chapter's history and vision. Next, CIE advisor Grace Tyler gave a brief overview of the chapter's By-Laws, Policy, and Ethics and used several hypothetical cases as examples to practice the ideas. After that, advisors Mark Carpenter and Claire Jung introduced the Mentoring Circle program, which was designed to provide mentorship to CIE officers and volunteers in career and personal development. After a short break, 2019 President and 2020 Chairman of the Board Simon Chang gave a review of the 2019 programs and achievements. The last session of the event was to invite each of the 2020 new officers to give a brief self-introduction and explain their roles and responsibilities. About 20 people attended the networking and the orientation.

CIE/USA-DFW founder Faa-Ching Wang introducing the chapter history and vision

Advisor Grace Tyler presenting CIE ethics and policies with challenging examples

Advisors Mark Carpenter and Claire Jung introducing the Mentoring Circle program

Thanks to the 2020 officers and volunteers who attended the orientation! Lots of hard work ahead for everyone this year

CIE 2019 President and 2020 Chairman Simon Chang reviewing 2019 programs

DFW chapter president Dr. Lun Tsuei kicking off the session

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# 2020 Spring Techinical Symposium

**Chair: Dr. J.-C. Chiao**

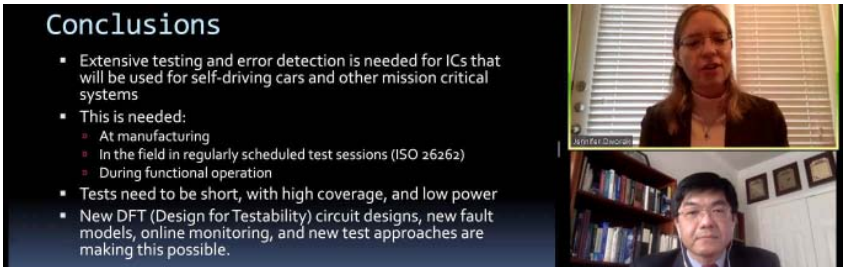
The Spring Technical Symposium and LAMP (Leadership Assessment Mentoring Program) Webinar was held on April 18th, 2020. Amid the COVID-19 pandemic, this was our first attempt to host a virtual event and it attracted more than 200 registrations.

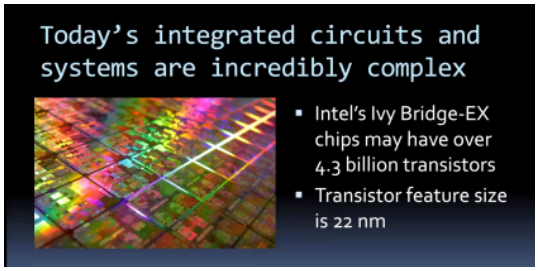
The Spring Symposium featured a technical session "AI for Real-Life Application", aimed to exchange ideas, best practices, and technical innovations in the field of artificial intelligence. The LAMP program invited three female executives and leaders to discuss "The Future of Diversity and Inclusion". It was especially designed for young professionals and graduating university students who desire to enhance their knowledge and experience on the hiring process, career development, corporate culture, and leadership.

The first speaker in the technical session was Professor Jennifer Dworak from Electrical & Computer Engineering at SMU. Her speech "I Want my Self-Driving Car to Work! - Testing Integrated Circuits for Mission Critical Applications" discussed how to design highly effective and efficient tests on the decision-making AI algorithms and underlying integrated circuits.

The next speaker was Mr. Shahmeer Mirza from 7-Eleven. His talk "How 7-Eleven Built a Cashierless Store in Less Than a Year" provided a case study of 7-Eleven's journey. Starting with 7 engineers, in 7 months they succeeded in their pursuit of redefining convenience: a cashierless store.

The third and last speech in the technical session, "Harnessing Video Games to Crowd Source AI", was given by Professor Cory Clark at SMU. He demonstrated how the Human and Machine Intelligence (HuMIn) Game Lab at SMU is using video games to analyze retinal images as well as new innovative human-in-loop collaborative machine learning methodologies.

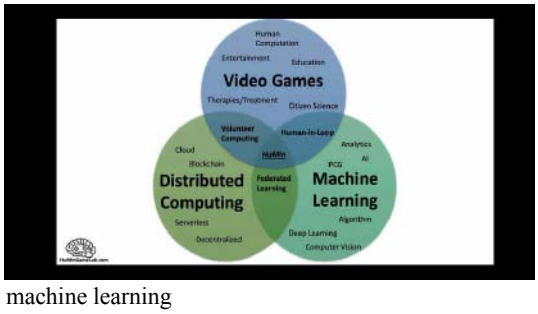



Professor Jennifer Dworak from SMU, and the symposium Chair Dr. J.-C. Chiao



Mr. Shahmeer Mirza from 7-Eleven on the challenge of creating a cashierless store


Professor Cory Clark from SMU on the integration of video games, distributed computing and machine learning

# Leadership Assessment Mentoring Program

**Chair: Marrisa Yang**

The LAMP program started with Ms. Kim Cummings, AVP of Human Resources & Diversity at BNSF Railway. Her talk "Graduation (√) Now What? HR Advice for Preparing for a Career Search" provided insightful advice for new college graduates as they start their career.

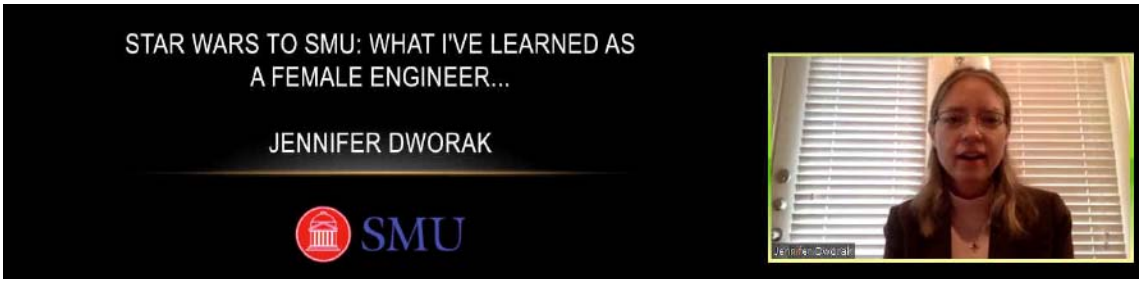
The next speaker, Ms. Cecelia Smith, VP & General Manager at Texas Instruments, delivered a talk in "Drive Inclusion, Accelerate Innovation". She shared her own stories on how industries could benefit from driving diversity.

Professor Jennifer Dworak came back and shared her journey in academic research, "Star Wars to SMU: What I've Learned as a Female Engineer…". The program continued with a Q&A Panel discussion with the three LAMP speakers as panelists. They addressed many questions submitted online from the audiences.

This online symposium was chaired by Dr. J.-C. Chiao and Marrisa Yang. Greg Nichols provided background technical support. The event received much positive feedback from the post event survey. The event attracted professionals nationwide with more than 25% of the audience attending from outside the DFW area. We would like to thank our volunteers and generous sponsors for this event!

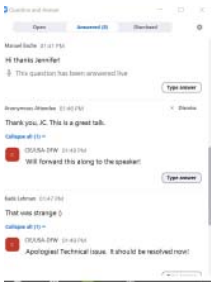

Ms. Kim Cummings, AVP of Human Resources & Diversity, BNSF Railway


Ms. Cecelia Smith, VP & General Manager, Texas Instruments




Professor Jennifer Dworak, Electrical & Computer Engineering, SMU

LAMP chair Ms. Marrisa Yang and our panel of amazing and strong women mentors!



CIE/USA-DFW 2:02 PM
Jennifer: This is a good question. ATPG is generally focused on detecting time zero defects (as you said). It can also be used in the field or for field returns (when a product that is broken is returned and you try to figure out why it failed).

# 2020 Youth Programs

## *Student Engineering and Creativity Competition (SECC) & STEM Workshops*

**Chair: Wen-Shin Wang**

CIE/USA-DFW hosted 3 workshops in preparation for the 2020 Student Engineering & Creativity Competition (SECC), a new program which began in 2019. The goal of this program is to inspire student's (K-12) interest in STEM through hands-on & creative projects, recognition, real world challenges, and interaction with the industry.

The competition was broken into 3 divisions (A, B, and C) with each focusing on a specific grade level. Division A was geared towards K to 5th grade students with a project introducing physics – the catapult game. Students would experiment with a pre-purchased catapult to understand the effects of tension and force in order to launch Ping-Pong balls at a target positioned at various distances.

Division B focused on 6th to 8th grade students and taught the concept of computer science with a rover challenge. The participants would program a rover to execute a pre-determined path within a certain time limit. Both the time limit and part of the path distances were unknown and would be revealed on the day of competition. This challenged the students to create enough flexibility in their code to be able to process and determine this information during the competition.

Division C was for 9th to 12th grade and challenged the students to design, engineer, and 3D-print a beam structure to hold a targeted weight. This taught the student the fundamentals of design work and introduced them to 3D printing in parallel. Students had to take into consideration the material, how the structure was printed, and the best way for it to support a certain weight all at the same time for their beam.

The first two workshops were held in mid-December 2019 and late January 2020 to introduce students to the projects themselves and key concepts to get them started. The last workshop in March 2020 was for the competitors specifically and provided last-minute guidance before the competition. While SECC ended up being canceled due to COVID-19, over 200+ participants attended these workshops in total. The workshops generated great motivation for these projects and both stimulated and inspired the students' own interest in STEM. Additionally, these projects encouraged the students to be innovative with different ways of thinking and consider multiple solutions.

The workshops were chaired by Wen-Shin Wang and each division was led by a division lead (Division A: Richard Bailey, Division B: Min Chu, Division C: Hedison Mui). CIE/USA-DFW would like to express our sincere appreciations to all the volunteers and corporate sponsors who helped to make these workshops a great success!

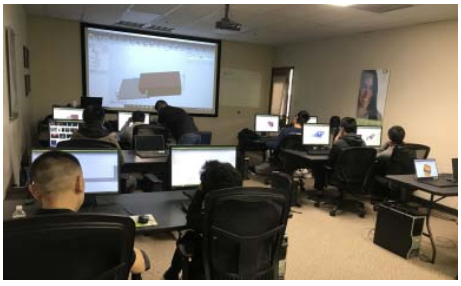
Workshop #1 for Division A&B

Division A Catapult demonstrations

Testing out rovers in Workshop #1

Division B contestants fine tuning their rover setups in Workshop #2

Division C learning about the 3D print project at GoEngineer in Workshop #1



Division C teams designing their own 3D print structures

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Capital One

# 2020 Youth Programs

## *MathComp/MathFun*

**Chairs: Hao Chen, Dr. Sean Luo and Marrisa Yang**

CIE/USA-DFW successfully held the 31st annual MathComp/ MathFun on Saturday, May 30th, 2020. It is the flagship youth program of CIE/USA-DFW, featuring a math competition for students from first through eighth grade, a parenting seminar, and a math fun fair. to discover and develop their interest in Science, Technology, Engineering and Mathematics (STEM).

This was the first year that the event was held online in order to maintain everyone's health and safety during COVID-19. More than 300 contestants participated in the MathComp (math competition), which was held via Zoom with each grade level hosted in their own respective sessions. Hosting this event online expanded CIE/USADFW's impact to students outside the Dallas-Fort Worth Metroplex, including participants from Oklahoma, Washington, California, Florida, and more. As the contestants took their tests through Google Forms, the proctors monitored the contestants virtually via web cam. Contestants then participated in MathFun. Through the online platform Kahoot, they participated in a series of games and interactive activities designed for students to broaden their critical thinking skills and to learn to apply mathematics in real life. Students also had options to play math related Jeopardy or a Choose Your Own Adventure.

In the afternoon, over 400 parents and guests attended a separate parenting seminar and panel discussions. The theme of the parenting seminar was "A Strong STEM Foundation". Opening remarks were given by Lun Tsuei, President of CIE/USA-DFW. William Jordan served as the Master of Ceremony and moderator for this session with four panelists including: Dr. Glênisson de Oliveira (Dean of the Texas Academy of Math and Sciences, and the Dean of Honors College, UNT), and students Amy Li, Julia Camacho, and Kevin Meng. After the speeches, the panel discussion drew many interesting questions from the audience. The topics ranged from things like how to stimulate students' interests in math to how to balance school and extracurricular activities.

Tiger Zhou was the Master of Ceremony for the awards ceremony. CIE presented "Math Super Star" trophies to 71 winners who were ranked in the top 20% of their grade. In addition, 70 students received honorable mention medals. Congratulations to the award winners!

MathComp/MathFun 2020 was chaired by Hao Chen. The program committee and CIE/USA-DFW would like to express our sincere appreciations to all the volunteers and corporate sponsors - Oncor, Texas Instruments, Cathay Bank Foundation, AoPS Academy, and Altair - for their contributions to make this event a great success.


Parenting Seminar Panelist and MC William Jordan


Students during MathComp on Zoom

# 2020 Youth Programs

## *MathComp/MathFun*

| | | | | | |
|---|---|---|---|---|---|
| Math Super Star Trophy | 1st Grade | Cyrus Kuang | Lara Teng | Honorable Mention Medal | Tina Gao, Shahzain Khan, Michael Li, Leo Lin, Vikram Thoduguli, Shuxuan Wu |
| | | Bryan Shan | Jessalyn Wang | | |
| | | Miya Su | Caleb Zhang | | |
| | 2nd Grade | Madhav Anand | Kurtis Odell | | Avery Hu, Arnev Jindal, Jayden Lu, Eric Qin, Brihasa Veduru, Praneetha Vinoth, Aubrey Wu, Harry Yang, Emma Yang, Lillian Ye |
| | | Avahan Gautam | Athena Quach | | |
| | | Nathan Lee | Shaheem Samsudeen | | |
| | | Jayden Lin | Grace Yan | | |
| | | Yifei Mei | | | |
| | 3rd Grade | Alex Deng | Jason Tang | | Aurora Cai, Ruby Chen, Justin He, Joseph Lee, Cody Li, Jason Pi, Andrea Tang, Kaylee Zhao |
| | | Karen Li | David Xiao | | |
| | | Derek Lin | Madeline Xing | | |
| | | Nathan Liu | Yuqi Daniel Zhou | | |
| | | Chloe Ni | Emma Zhu | | |
| | | Joshua Shu | | | |
| | 4th Grade | Tim Csallner | Prajit Saravanan | | Calvin Jiang, Samuel Li, Devin Li, Amber Lin, Terry Liu, Eric Liu, Edward Ni, Himani Patadia, Arka Rebbapragada, Claire Wang, Thomas Wu, Jacob Yang, Lucas Zhu |
| | | Raghunand Dayanandan | Aiden Shan | | |
| | | Bryan Fu | Evan Tsai | | |
| | | Bryan Kuang | Vivinsha Veduru | | |
| | | Bryan Li | Leo Zhang | | |
| | 5th Grade | Keshav Anand | Dylan Tran | | Michael Chang, Jenny Chu, Bryce Chua, Andy Lee, Jingting Liu, Joshua Wu, Ian Wu, Jeffrey Xu, Yi Han Zhang |
| | | Jennifer Duan | Shourya Vyas | | |
| | | Christopher Huang | Claire Wu | | |
| | | Leo Li | Andrew Xiao | | |
| | | Isaac Ma | Alex Zhao | | |
| | | Edgar Poon | | | |
| | 6th Grade | Kaitlyn Fan | Hayden O | | Adriana Cheng, Krish Goudar, Billy Hoang, Kevin Hong, David Hu, Brice Jiang, Grace Jiang, Andy Li, Eric Qian, Isabella Tran, Brian Wei |
| | | Aaron Kuang | Ethan Poon | | |
| | | James Lee | Arun Rebbapragada | | |
| | | Winston Lin | Harini Venkatesh | | |
| | | David Liu | Kayden Zhong | | |
| | | Edward Mou | Henry Zhu | | |
| | 7th Grade | Alan Huang | Jessie Wang | | Keon Attarha, Rosalind Chang, Yash Goudar, Winnie Hu, Richard Jeong, Jason Ma, Matthew Xie, Frank Xu |
| | | Ellen Li | Jonathan Wang | | |
| | | Guanjie Lu | Max Yan | | |
| | | Audrey Perry | Andrew Yu | | |
| | 8th Grade | Luke Ting | Aaron Zhou | | Matthew Gomez, Kate Lee, William Liu, Jake Wang, Alysa Zhao |
| | | Anthony Xu | | | |
| | | Max Yin | | | |

MathComp winner list


US map of attendees

Trophies

MathComp winner photos

# 2020 Youth Programs

## *DFW Youth English Speech Workshop*

**Chair: Minkai Wu**

The annual Youth Speech Workshop (part of the Youth English Speech Contest) was co-hosted by the Texas Dragons Toastmasters Club on Saturday, June 20th, 2020, with over 200+ participants. It was also the first time this event was held online. This event has served the DFW community for over 10 years with the goal of boosting young student's confidence and competence in public speaking.

Four experienced speakers from the Texas Dragons Toastmasters Club shared different techniques to help improve public speaking. Shuming Liu started off by teaching the participants how to develop and organize a speech. Ruiting Xu followed afterwards to discuss the importance of body language and effective ways to use gestures throughout a presentation. Yanping Chen discussed the impact of vocal variety and when to use soft versus loud tones. Jan Benmard closed out the educational speeches by integrating all the above topics into one speech about her pet. The attendees were encouraged to participate via an online poll on how she could improve her speech using the techniques they learned in previous presentations. Jan integrated all the audience's feedback and presented a much-improved version of her speech again.

Three students were invited to share their own demonstrative speeches to the participants. Each speech was followed by instant feedback from seasoned Toastmasters evaluators (many of them being Distinguished Toastmasters) so that the attendants can also learn in real time. Melissa Zhou went first with a speech titled "The Bike Ride" which was evaluated by Batuk Bista. Oliver Chen went after with "The Camp I Was Never Informed About" with Marrisa Yang being his evaluator. Arya Ajith wrapped up the demonstration speeches with "Invisible" and had Jennifer L. Hoch as an evaluator.

The keynote speaker for the workshop was the 2003 World Champion of Public Speaking, Jim Key. His speech, "The Door", focused heavily on perseverance and the importance of not giving up when moving towards a goal. It was inspiring to hear about his journey through the World Championship in 2001 and 2002 to his success as the Champion in 2003 which highlighted the dedication needed to push through in times of adversity.

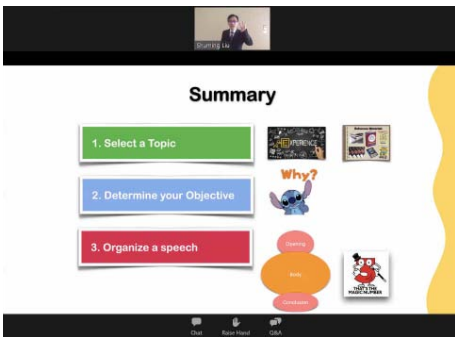

Keynote speaker: Jim Key

Ruiting Xu

Jan Benmard

Yanping Chen

Melissa Zhou




Shuming Liu's speech

Event chair: Minkai Wu, MC Jeffrey Cornell, all speakers and cohosts

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# About CIE

**Mission**
Chinese Institute of Engineers (CIE/USA) is dedicated to promoting engineering and scientific excellence, professional advancement and leadership development of Asian-Americans.

**History**
The Chinese Institute of Engineers was founded in 1917 in New York by a group of Chinese engineers who graduated from American universities and served in various industries in the United States. The main organization moved back to China during World War II, then moved to Taiwan. The American counterpart became a separate chapter. In 1977, the institute was renamed the "Chinese Institute of Engineers, USA (CIE/USA)," with a mission to serve members from all over the United States. Since then, seven area chapters, namely the Greater New York, San Francisco-Bay Area, Seattle, Dallas-Fort Worth, OCEESA, New Mexico, and South CAL chapters have been established.

CIE/USA works with other professional organizations to sponsor events, such as venture capital and management seminars, technical conferences, and high-tech exhibitions, and to promote joint interests and partnership in technology among the US, China and Taiwan. CIE/USA also co-sponsors the Sino-American Technology Engineering Conference (SATEC) in Beijing and the Modern Engineering and Technology Seminars (METS) in Taipei every other year.

**CIE/USA-DFW Area Chapter**
The Dallas-Fort Worth Chapter was established in January, 1989 and registered in the state of Texas as a non-profit organization in 1992. Over the years, the CIE/USA-DFW chapter has established close ties with major corporations and government bodies around the world. Leaders from these sponsoring organizations highlight every year's convention by sharing their experience and insight in business and technology at our evening banquet.

# Membership Drive

## Welcome! 2020 NEW MEMBERS & LIFE TIME MEMBERS!

CIE/USA-DFW Chapter membership provides value beyond professional development, as more than three hundred life members can attest. Programs sponsored by DFW Chapter are creative, educational, and diverse, providing insights into technology, personal communications, career development, investment strategies, and youth development. As a result, DFW Chapter has experienced tremendous growth in membership since 1989. DFW Chapter expects the growth to continue in the years to come.

**Benefits of CIE/USA-DFW Chapter Membership**

**Technical Advancement -** DFW Chapter provides firsthand and first class technical information through our members' affiliation with high-tech industries in the global market and international business.

**Networking Opportunities** - Attending DFW Chapter sponsored seminars and social activities within each technical group provide abundant networking opportunities.

**Employment Opportunities** - Attending DFW Chapter job related seminars and networking with our members who are managers in local Fortune 500 companies provides potential employment opportunities.

**CIE Website** - The DFW Chapter website (www.cie-dfw.org) provides news and highlights of DFW Chapter sponsored technical and non-technical seminars and notices of DFW Chapter sponsored business, educational, cultural, and social programs.

**Special Discounts** - DFW Chapter members enjoy discounts on attending the DFW Chapter annual convention and DFW Chapter sponsored events and activities. Discounts are provided by our sponsors and vendors.

## About CIE

Check out our website for the latest event!

CIE/USA-DFW CHAPTER

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# CIE/USA-DFW Chapter

To develop and support engineers and technologists

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Lun Tsuei

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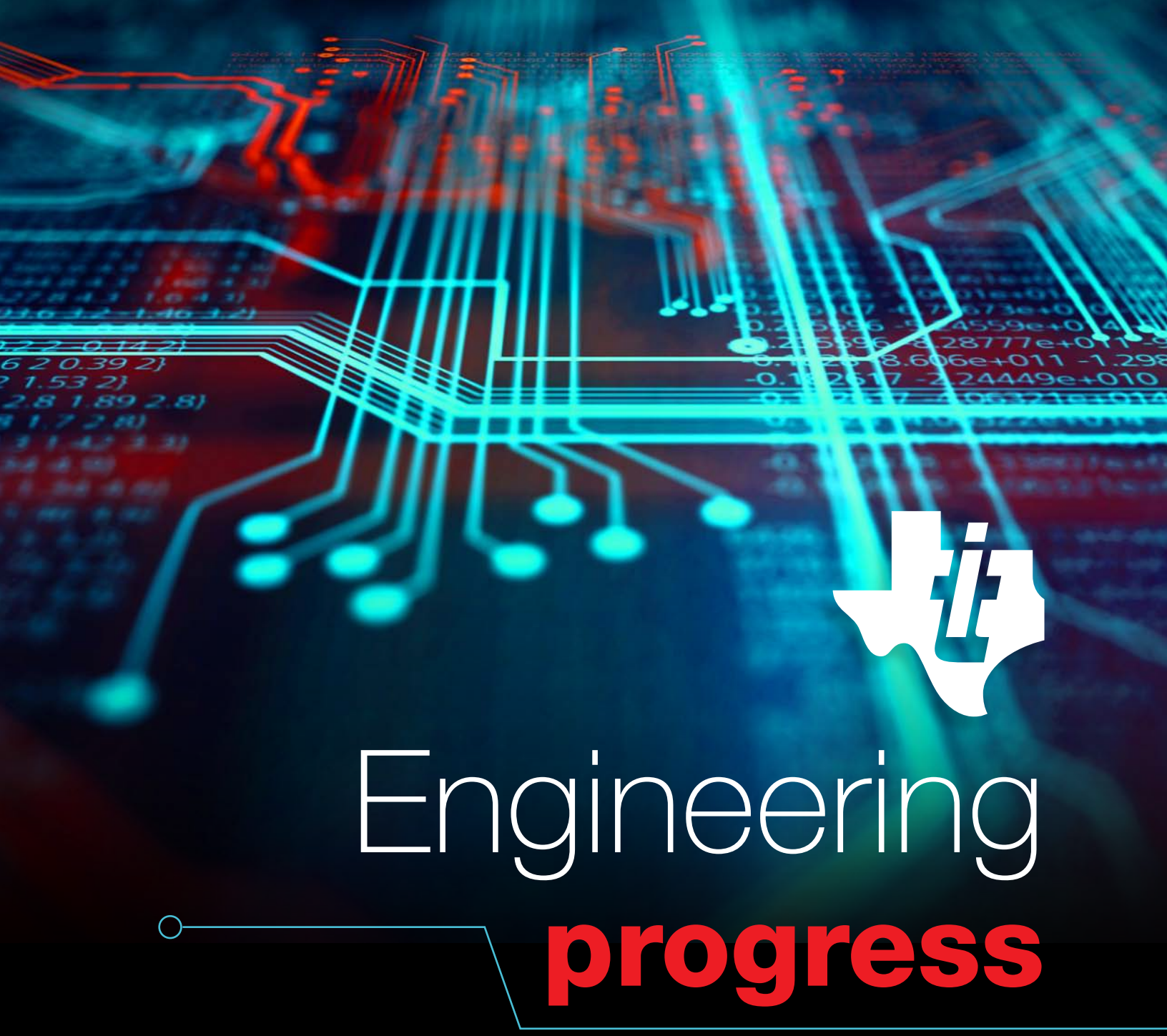

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