

# »» FORWARD TEXAS

## IMPERATIVES FOR HEALTH

### TAMEST ★ 2022 ANNUAL CONFERENCE

# CONFERENCE SUMMARY



June 20–22, 2022 | The Westin Riverwalk | San Antonio, Texas

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### TAMEST ★ 2022 ANNUAL CONFERENCE

June 20–22, 2022 | The Westin Riverwalk | San Antonio, Texas

## Conference Summary



TAMEST (Texas Academy of Medicine, Engineering, Science and Technology) held its annual conference, **Forward Texas: Imperatives for Health**, on June 20–22 in San Antonio, Texas.

The three-day event brought together the top minds in research and industry to examine the scientific successes in response to COVID-19 and discuss the barriers that still exist to better health care, education and infrastructure for our communities.

From **mapping, modifying and stabilizing the first coronavirus spike protein**, to **creating a patent-free, open science COVID-19 vaccine**, to discussions on **how educators and medical experts are teaming up to navigate a post-pandemic world** – **31 speakers and panelists** highlighted how Texas has played a vital role in combating barriers to health brought on by the COVID-19 pandemic.

**More than 250 registrants** from across disciplines contributed their experiences, perspectives and insights on how we can build healthier communities across our state. TAMEST members nominated **58 protégés** to attend the conference and **18 participated in the protégé poster challenge**.

TAMEST also honored **six TAMEST award recipients** and hosted The University of Texas at San Antonio's inaugural **Oskar Fischer Prize awards ceremony** celebrating innovation in Alzheimer's research.

"This conference looked at the health of communities, public health and social determinants of health," said **TAMEST Member and 2022 TAMEST Annual Conference Program Chair Nancy W. Dickey, M.D. (NAM), Executive Director, A&M Rural and Community Health Institute, Texas A&M Health**. "It was also a time to have a rich and healthy dialogue about the innovative solutions that have emerged as a result of COVID-19."

Photos, videos and presentations can be found at [tamest.org/2022](https://tamest.org/2022).

## TAMEST 2022 AT A GLANCE



**250+**

Registrants



**31**

Speakers and Panelists



**36**

Sponsors



**58**

TAMEST Protégés



**6**

TAMEST Awards



## Welcome from San Antonio Mayor Ron Nirenberg



*"I'm happy to say that despite our high social vulnerability here in San Antonio, we remain the most vaccinated major metro in the state of Texas ... the pandemic isn't over, but thanks to vaccines, new treatments and public health guidance, along with good practice from our citizens, we have returned to normal activities and are able to have in-person events like this conference."*

- Ron Nirenberg, San Antonio Mayor

## Presentation of The Kay Bailey Hutchison Distinguished Service Award

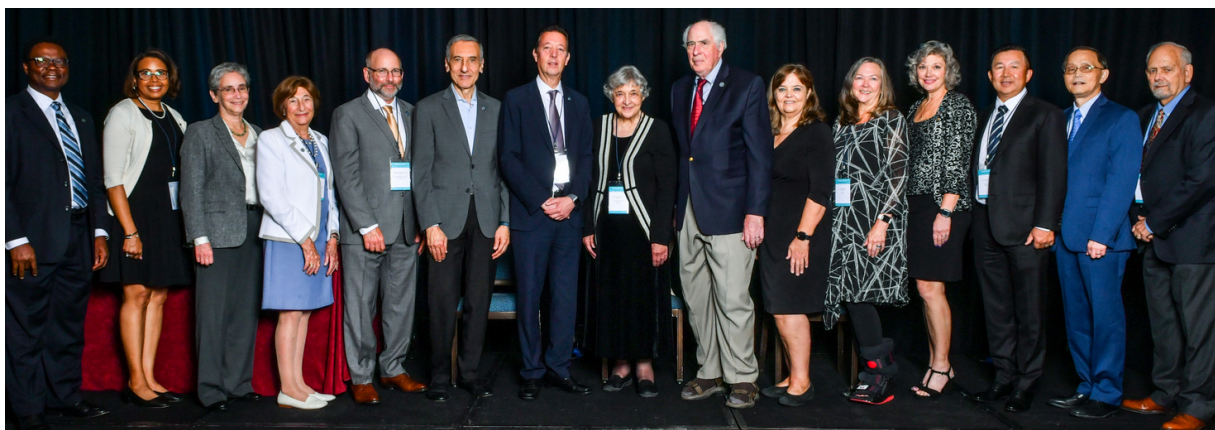
TAMEST Member John L. Junkins, Ph.D. (NAE) and the Hagler Institute for Advanced Study at Texas A&M University were honored with the **Kay Bailey Hutchison Distinguished Service Award** for attracting and nurturing top research talent in Texas. Since 2010, nearly 90 top-tier researchers have come to Texas for the Hagler Institute Fellows program, and thanks to its Founding Director, Dr. Junkins, many have stayed in the state and joined TAMEST after their fellowship concluded.

The Kay Bailey Hutchison Distinguished Service Award was established in 2013 by TAMEST to recognize individuals and organizations who have demonstrated outstanding leadership in furthering TAMEST's mission to bring together the state's brightest minds in medicine, engineering, science and technology to foster collaboration and to advance research, innovation and business in Texas.

The Honorable Kay Bailey Hutchison herself presented Dr. Junkins with the award.



## Recognition of New Members Inducted into TAMEST

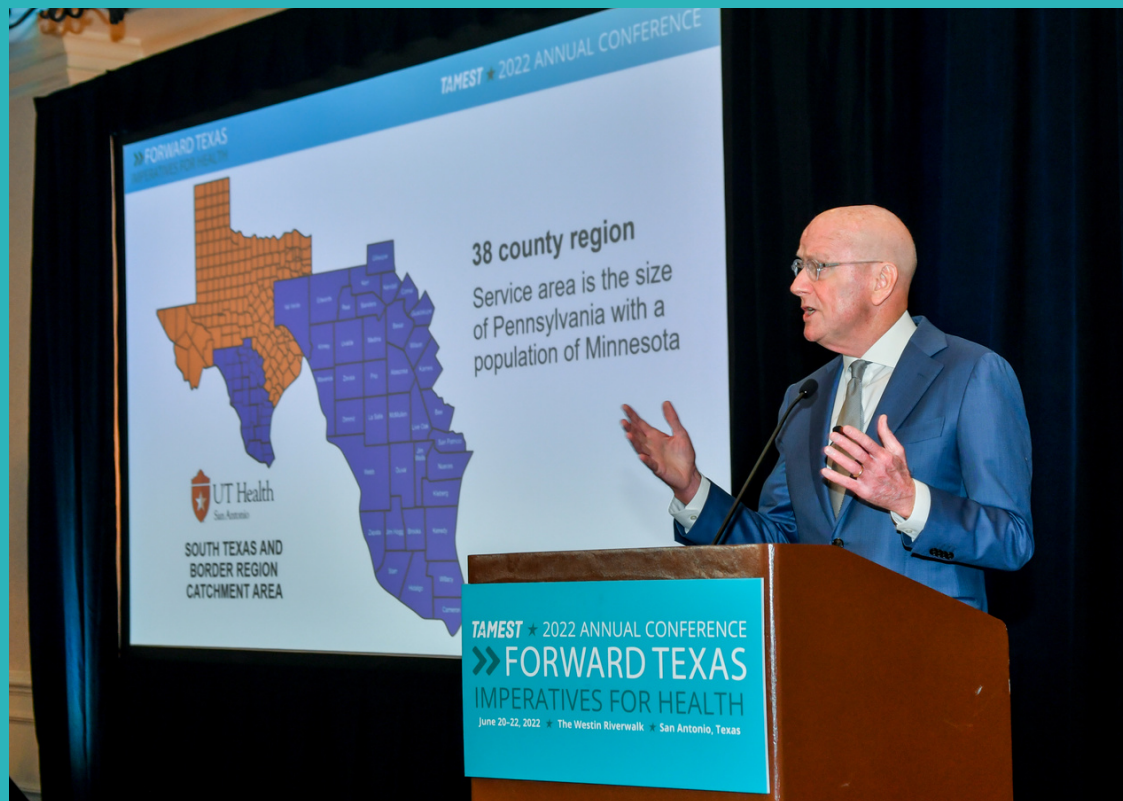


**TAMEST welcomed 29 new members in 2020 and 18 new members in 2021.** TAMEST was proud to officially welcome them to our organization at the Opening Reception of the conference.



*"From my viewpoint, the fundamental principle that underlies the implicit aims of public health is that every life matters ... good public health is harmonizing policy and process to yield the best health outcomes."*

- WILLIAM L. HENRICH, M.D.  
PRESIDENT, UT HEALTH SAN ANTONIO



## **What Health Science Centers Can Do For Communities**

- William L. Henrich, M.D., UT Health San Antonio

**Summary:** William L. Henrich, M.D., a specialist in kidney diseases, has served as the president of UT Health San Antonio since 2009. Dr. Henrich discussed the elements standing in the way of the best possible patient care, including social determinants of disease like access to care, poverty, education and politics. He also stressed the importance of communicating science effectively and forcefully combating anti-fact/anti-science messaging.



## How Academia, Government and Industry Can Improve Community Health



*"Speaking truth and science and using data to tell our message is critical and more important than ever before."*

- Sylvia Trent-Adams, Ph.D. (NAM), Executive Vice President & Chief Strategy Officer, University of North Texas Health Science Center

- Moderator: Sylvia Trent-Adams, Ph.D. (NAM), University of North Texas Health Science Center
- Shara McClure, Blue Cross and Blue Shield of Texas
- Robert Phillips, M.D. (NAM), The Center for Professionalism & Value in Health Care

**Summary:** This panel discussed how to use technology to get the most out of community health efforts, including electronic medical records, claims data and the potential of collaborative research, telehealth and telelearning. The panel agreed on a need to curb the rising cost of health services while increasing access to care for the state's workforce. In the future, they stressed that harnessing partnerships will help drive health equity.

## COVID-19: From Pandemic to Endemic

*"I think there are a number of things we can do [regarding a long-term plan for COVID-19], but what's not going to work is continuing to shut down the country and keep students out of school. This is just not a future solution. We are going to have to be developing new vaccines as fast as the virus tries to evade the ones we've got."*

- Marcia McNutt, Ph.D. (NAS),  
President, The National Academy of Sciences



- Marcia McNutt, Ph.D. (NAS), The National Academy of Sciences
- Interviewer: Kim Orth, Ph.D. (NAS), UT Southwestern Medical Center

**Summary:** Dr. McNutt, President of the National Academy of Sciences (NAS), virtually addressed how COVID-19 is transforming from pandemic to endemic and discussed the interventions and policies that will allow us to move forward in this next phase of the disease. The discussion surrounded re-prioritizing general health, as those with pre-existing conditions are at the highest risk for COVID-19, investing more research into the causes of long COVID and teaching ways to instill in Americans a concern for others around them and not just themselves when it comes to spreading disease.



## Mary Beth Maddox Award and Lectureship



The **Mary Beth Maddox Award and Lectureship** was established in honor of Mary Beth Maddox, former Executive Director of TAMEST, and recognizes women scientists in Texas bringing new ideas and innovations to the fight against cancer.

**Yun Nancy Huang, Ph.D., Associate Professor, Texas A&M Health Institute of Biosciences and Technology**, is the 2022 recipient of the award for her research on epigenetics or the “software” that runs the human genome, one of the most promising targets for disease prevention.

**TAMEST Member Kenneth S. Ramos, M.D., Ph.D. (NAM), Texas A&M Health** along with **Mary Beth Maddox Award and Lectureship Committee Honorary Chair and TAMEST Past President Amelie G. Ramirez, Dr.P.H. (NAM), UT Health San Antonio** presented the award.

Dr. Huang shared her groundbreaking research at the conference and will be featured in a lecture series this fall. The first lecture will take place at the Texas Medical Center on September 28th from 4–6 p.m. in Houston, Texas. The second lecture will be on November 15th from 4–6 p.m. at UT Southwestern Medical Center in Dallas, Texas.

**Nominations for the 2023 Mary Beth Maddox Award and Lectureship open this fall.**

**Learn More: [TAMEST.org/Mary-Beth-Maddox-Award](https://TAMEST.org/Mary-Beth-Maddox-Award)**

## Behind the Scenes of a COVID-19 Vaccine for the World: The Intersection of Open Science and Diplomacy

*"The decolonization of science really means to work collaboratively, to empower others and to share the responsibilities. ... We make sure we are sharing the cultural needs of not just who we are working with but also who we are serving."*

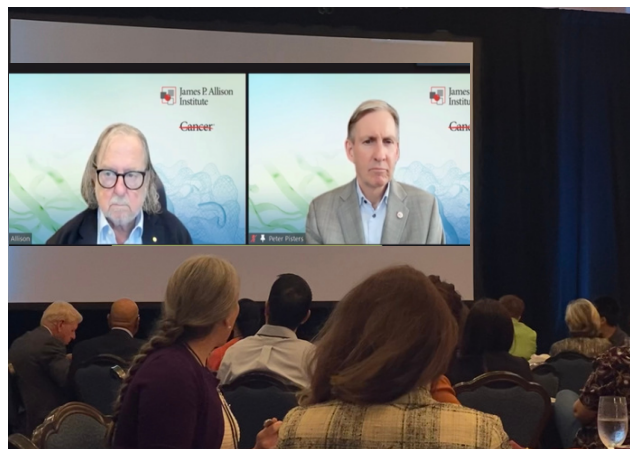
- Maria Elena Bottazzi, Ph.D.,  
Associate Dean, National School of Tropical Medicine, Baylor College of Medicine

- Maria Elena Bottazzi, Ph.D., Baylor College of Medicine



**Summary:** Dr. Bottazzi is an internationally recognized tropical and emerging disease vaccinologist, global health advocate and co-creator of a patent-free, open-science COVID-19 vaccine technology that led to the development of Corbevax, a COVID-19 vaccine for the world. She worked on the vaccine alongside TAMEST Member Peter J. Hotez, M.D., Ph.D. (NAM), Baylor College of Medicine. Dr. Bottazzi discussed the goal to decolonize science and work on international business models that enable teams to operationalize their research to reach and benefit who needs it most.





## **Nobel Laureate Session: Immune Checkpoint Blockade in Cancer Therapy**

*"I've always considered myself a basic scientist who developed something that helps people. My contributions are humbling and not something that I necessarily set out to do. At the same time, it makes me eager to do more work to extend [those contributions]."*

*- Nobel Laureate James P. Allison, Ph.D. (NAM, NAS),  
Regental Professor and Chair, Department of Immunology,  
MD Anderson Cancer Center*

- Nobel Laureate James P. Allison, Ph.D. (NAM, NAS), MD Anderson Cancer Center
- Interviewer: Peter WT Pisters, M.D., MD Anderson Cancer Center

**Summary:** Dr. Allison was virtually interviewed by MD Anderson President Dr. Pisters and discussed his fundamental discoveries in T-cell biology that helped to develop the first immune checkpoint inhibitor approved to treat patients with cancer. The two discussed the breakthrough that led to his 2018 Nobel Prize in Physiology or Medicine and the new James P. Allison Institute at MD Anderson Medical Center. The Institute aims to be a visionary research and innovation hub to conduct groundbreaking science that integrates immunobiology across all disciplines.

## **TAMEST Protégé Poster Challenge**

*Sponsored by H-E-B*



Through the **TAMEST Protégé Program**, early-career researchers are selected on an individual basis by TAMEST members to attend the TAMEST annual conference, join our TAMEST protégé breakfast and have the option to participate in our TAMEST protégé poster challenge.

This year TAMEST welcomed **18 posters** and nominated **58 TAMEST Protégés** to attend the conference.

The finalists were invited to present their research on the conference stage.



- **1st Place:** Denise K. Marciano, M.D., Ph.D., UT Southwestern Medical Center, "Novel Regenerative Strategies for Kidney Disease Using Engineered Renal Tissue"
- **2nd Place:** Tanya Hutter, Ph.D., The University of Texas at Austin, "Traumatic Brain Injury Patients: Monitoring of Cerebral Metabolites via Mid-Infrared Spectroscopy"
- **3rd Place:** Han Xiao, Ph.D., Rice University, "Bring the Power of Antibodies to the Bone"

*TAMEST Poster Challenge Judges included **Nancy W. Dickey, M.D. (NAM), Texas A&M Health; Adam Hamilton, Southwest Research Institute; and Amelie G. Ramirez, Dr.P.H. (NAM), UT Health San Antonio.***



### TEXAS' RISING STAR RESEARCHERS *2022 O'Donnell Awards Recipients*

Mapping and altering coronavirus spike proteins to create COVID-19 vaccines. Utilizing polymers to provide degradable and reusable solutions for organic batteries and energy storage. Replicating the brain's unique capabilities through tunable electronic materials. Integrating digital electronics and automation into oil and gas wellbores to provide faster and safer drilling at depths never seen before. These are the discoveries by Texas' rising stars in research being honored with the 2022 Edith and Peter O'Donnell Awards.

The Edith and Peter O'Donnell Awards showcase the best and brightest in Texas research, whose creative work could have a lasting impact on our lives. Their work meets the highest standards of science, and the paths to their discoveries show immense ingenuity and imagination. The awards are named in honor of Edith and Peter O'Donnell, who spent their lives as Texas' staunchest advocates for excellence in scientific advancement and STEM education.



#### MEDICINE

**Jason McLellan,  
Ph.D.**

Welch Chair in Chemistry  
and Professor, Department  
of Molecular Biosciences  
The University of Texas at  
Austin



#### ENGINEERING

**Jodie L. Lutkenhaus,  
Ph.D.**

Axalta Coating Systems Chair  
and Chemical Engineering  
Professor; Presidential Impact  
Fellow; Dean's Fellow  
Texas A&M University



#### SCIENCE

**Sarbjit Banerjee,  
Ph.D.**

Davidson Chair in Science  
and Professor of  
Chemistry and Materials  
Science & Engineering  
Texas A&M University



#### TECHNOLOGY INNOVATION

**Ashers Partouche**

Program Manager, Ora  
Intelligent Wireline  
Formation Testing  
Platform  
Schlumberger

**New for 2023:** the Edith and Peter O'Donnell Awards program has expanded to create a secondary science award thanks to a generous gift from the O'Donnell Foundation. The annual awards will now recognize recipients in the medicine, engineering, biological sciences, physical sciences and technology innovation categories. Learn more: [tamest.org/odonnell-awards/](https://tamest.org/odonnell-awards/)







## Responding and Adapting to COVID-19

- Craig Boyan, H-E-B

**Summary:** Throughout the pandemic, H-E-B has been a leader in developing strong COVID-19 safety measures to protect their partners, customers and communities. Mr. Boyan, H-E-B's President, discussed how the company develops disaster response plans and its response to the COVID-19 pandemic.

## National Science Foundation: Priorities for Impacting Health and Innovation

*"We need to welcome every international talent we can get to come here, at the same time we need to inspire every bit of domestic talent as well. Both are important for us to be in the vanguard of competitiveness."*

*-Sethuraman Panchanathan, Ph.D.,  
Director, National Science Foundation*



- Moderator: Roderic Pettigrew, M.D., Ph.D. (NAM, NAE), Texas A&M University, Texas A&M Health and Houston Methodist Hospital
- Sethuraman Panchanathan, Ph.D., National Science Foundation
- Daniel Reed, Ph.D., National Science Board

**Summary:** Dr. Panchanathan and Dr. Reed were interviewed by Dr. Pettigrew on how the priorities, vision and future of the National Science Foundation (NSF) can lead to better outcomes in health and well-being. NSF priorities include delivering research benefits, building an inclusive and diverse STEM community and expanding the geography of innovation. The panel agreed that applications and collaborations are needed for future pandemic responses, as is considering social determinants when looking at barriers and inequities in health care.





### Health Impacts of Indoor Air Quality

*"Source control is definitely important, but because we cannot stop exhaling and we cannot stop certain emissions, we have to have good ventilation systems."*

- Pawel Misztal, Ph.D., Assistant Professor, The University of Texas at Austin

- Pawel Misztal, Ph.D., The University of Texas at Austin



**Summary:** Dr. Misztal shared his estimation that Americans spend about 90% of their lives inside and that indoor air is generally more polluted than outdoor air. He said we need to embrace the complexities and effects the environment can have on human health and discussed the importance of testing mask use and efficiency during pandemics. He also stressed the need for premium ventilation systems and standardizing indoor air quality markers in future research.

### Education Challenges and Opportunities in Texas



*"We have to tell the truth about student achievement [in Texas] and hold ourselves responsible for results."*

-Margaret Spellings, President and CEO, Texas 2036

- Margaret Spellings, Texas 2036

**Summary:** Secretary Spellings, who served as U.S. secretary of education from 2005 – 2009, leads Texas 2036, a nonprofit organization building long-term, data-driven strategies to secure Texas' prosperity. Although Texas added four million people between 2010 and 2020 and about 400,000 just last year, Spellings shared that the state falls behind many other states in reading and math levels. She stressed the dramatic disparities in the state's education system and the need to look at educational data to get information into the hands of those who can use it to challenge action.





## The Future of Education in Texas

*"The reality is that education is the most essential driver of social mobility and economic vitality. Too often, at the K-12 level and in higher education, it has served as a gatekeeper and not a gate opener toward social mobility."*

- Charles R. Martinez Jr., Ph.D., Dean, College of Education, The University of Texas at Austin

- Moderator: Shari Albright, Ed.D., Charles Butt Foundation
- Charles R. Martinez Jr., Ph.D., The University of Texas at Austin
- Elaine Mendoza, Texas A&M University Board of Regents

**Summary:** Texas ranks 45th in spending per student and the average salary for a teacher lags behind the national average, according to Dr. Albright. The panel stressed that modern approaches to education have to think more holistically and incorporate solutions to the barriers standing in the way of student success. Further, they urged the need to engage in authentic research and practice partnerships to identify and deliver what communities need to foster educational success.



## Attracting Top-Tier Talent to Texas



*"Quite simply, this institute is a streamlined method that allows the individual ... to dream the impossible dream."*

- John L. Junkins, Ph.D. (NAE), Director, Hagler Institute for Advanced Study at Texas A&M University

- Interviewer: David E. Daniel, Ph.D. (NAE), TAMEST Board President
- John L. Junkins, Ph.D. (NAE), Texas A&M University

**Summary:** Dr. Junkins, the recipient of the Kay Bailey Hutchison Distinguished Service Award, shared his story of success building the Hagler Institute for Advanced Study at Texas A&M University and how it has led to the recruitment of top talent to Texas. The Hagler Institute selects top national and international scholars to pursue advanced study at Texas A&M for up to a year. The program's goal is to provide a stellar environment for research and scholarship, with the Hagler Fellows having the freedom to pursue their research interests and collaborations.



## THE OSKAR FISCHER PRIZE CEREMONY

TAMEST hosted a special awards ceremony and reception at the close of the 2022 conference for The University of Texas at San Antonio (UTSA) to recognize the 10 inaugural recipients of the Oskar Fischer Prize.

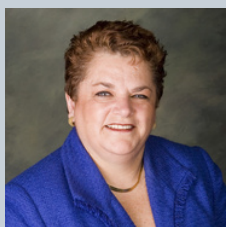
TAMEST Member and NI Co-Founder James J. Truchard, Ph.D. (NAE) created the award to recognize distinct, innovative ideas that will further our understanding of Alzheimer's Disease.

Ceremony speakers included:

- President Taylor Eighmy, Ph.D., The University of Texas at San Antonio
- The Honorable Kay Bailey Hutchison
- James J. Truchard, Ph.D. (NAE), NI
- Jenny Hsieh, Ph.D., The University of Texas at San Antonio

Following the ceremony, The Oskar Fischer Prize and UTSA hosted a networking reception to end the conference.

## 2022 ANNUAL CONFERENCE PROGRAM COMMITTEE



### CONFERENCE PROGRAM CHAIR

**Nancy W. Dickey, M.D. (NAM)**  
President Emeritus, Texas A&M Health;  
Executive Director, A&M Rural and  
Community Health Institute



### CONFERENCE HONORARY CHAIR

**Amelie G. Ramirez, Dr.P.H. (NAM)**  
Past President, TAMEST;  
Professor and Chair, Department of Population  
Health Sciences, UT Health San Antonio



**David E. Daniel, Ph.D. (NAE)**  
President, TAMEST;  
President Emeritus, The University of Texas at Dallas



**Carlos Roberto Jaén, M.D., Ph.D. (NAM)**  
Professor and Chair of the Department of Family  
and Community Medicine, UT Health San Antonio



**Ellen R. Gritz, Ph.D. (NAM)**  
Professor Emerita and Former Chair  
Department of Behavioral Science  
The University of Texas MD Anderson Cancer Center



**A. Ray Pentecost, Dr.P.H.**  
Ronald L. Skaggs and Joseph G. Sprague Chair of  
Health Facilities Design; Director, Center for  
Health Systems & Design, Texas A&M University



**Adam L. Hamilton**  
President and CEO  
Southwest Research Institute



**C. Michael Walton, Ph.D. (NAE)**  
Ernest H. Cockrell Centennial Chair in Engineering  
Department of Civil, Architectural and Environmental  
Engineering, The University of Texas at Austin





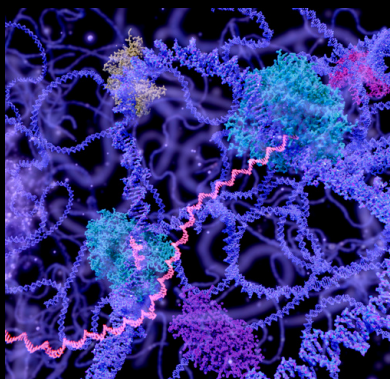
"Hopefully you're all going home energized and enthusiastic to carry the flag forward."

TAMEST 2022 PROGRAM CHAIR  
NANCY W. DICKEY, M.D. (NAM),  
TEXAS A&M HEALTH





»»» Save the Date: TAMEST 2023



# »»» FORWARD TEXAS

## ACCELERATING CHANGE

### TAMEST ★ 2023 ANNUAL CONFERENCE

May 23–25, 2023

The InterContinental Houston - Medical Center  
Houston, Texas

Save the date for the **TAMEST 2023 Annual Conference, Forward Texas: Accelerating Change**, which will take a look at how research is leading to fundamental changes in society. The conference will explore profound transitions enabled by CRISPR, artificial intelligence and big data, nanoscience and decarbonization.

#### Conference Co-Chairs:

##### Medicine:



**Lydia E. Kavraki, Ph.D. (NAM)**  
Noah Harding Professor of  
Computer Science; Director, Ken  
Kennedy Institute  
Rice University

##### Science:



**Joshua T. Mendell, M.D., Ph.D.**  
Charles Cameron Sprague, M.D. Chair  
in Medical Science; Investigator,  
Howard Hughes Medical Institute  
UT Southwestern Medical Center

##### Engineering:



**Robert B. Gilbert, Ph.D. (NAE)**  
Professor and Department Chair  
of Civil, Architectural and  
Environmental Engineering  
The University of Texas at Austin

##### Technology Innovation:



**Christian A. Davies, Ph.D.**  
Principal Scientist  
Nature Based Solutions  
Shell Projects & Technology USA

Learn more: [tamest.org/2023](https://tamest.org/2023)



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