

TAMEST NEWS

THE OFFICIAL PRINT NEWSLETTER OF THE TEXAS ACADEMY
OF MEDICINE, ENGINEERING, SCIENCE & TECHNOLOGY

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to Extend and Expand Hill Prizes

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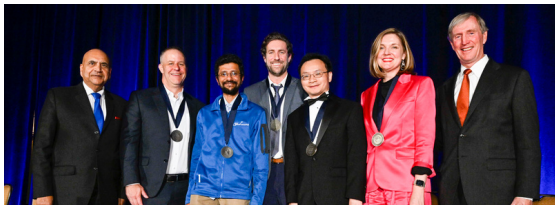
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TAMEST 2024 Annual Conference Celebrates 20 Years

TAMEST ★ 2024 ANNUAL CONFERENCE

ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

February 5–7, 2024 | Austin, Texas | #TAMEST2024

The **TAMEST 2024 Annual Conference: Artificial Intelligence and Machine Learning**, February 5–7, 2024, took place at the AT&T Hotel and Conference Center in Austin, Texas, and celebrated the 20th anniversary of TAMEST.

The conference had record-breaking registration and sponsorship levels. It explored the current practical and clinical use of AI/ML, examined its limitations and investigated its true potential for significant advancements in science and society. Speakers examined the challenges and opportunities of AI/ML in aerospace, defense, high-performance computing, self-driving technology, precision medicine and health care delivery.

CONFERENCE STATISTICS

27	SPEAKERS AND PANELISTS
30	SPONSORS
56	TAMEST PROTÉGÉS
42	POSTER CHALLENGE PARTICIPANTS
410	REGISTRANTS



VIEW PHOTOS,
SLIDES AND VIDEOS:

TAMEST.org/2024

TAMEST

2024 Board of Directors

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Former United States Ambassador
to NATO*

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Rice University

Kim Orth, Ph.D. (NAS)

UT Southwestern Medical Center

Roderic Pettigrew, M.D., Ph.D.

(NAM, NAE)

Texas A&M Health

Texas A&M University

Houston Methodist Hospital

Marlan O. Scully, Ph.D. (NAS)

Texas A&M University

Lyda Hill Pledges \$10 Million to Extend and Expand Hill Prizes

Hill Prizes Expansion by the Numbers



\$10M

in
Funding

3

Year
Expansion

6

Prizes
\$500K Each

\$1M

Additional
Discretionary
Funding

After an incredibly successful first year of TAMEST's newest program, the Hill Prizes, Lyda Hill Philanthropies has committed over \$10 million in funding to continue the prize program for the next three years.

The \$10 million will include the addition of a new prize in the category of Public Health, resulting in six prizes per year of \$500,000 each. In addition, at least \$1 million in discretionary research funding will be allocated by Lyda Hill Philanthropies on an ad hoc basis to highly ranked applicants and finalists not selected as recipients.



"Our organization is committed to funding game-changing advances in science and nature and that is exactly what the Hill Prizes' mission is," **said Lyda Hill, Entrepreneur and Founder of Lyda Hill Philanthropies.** "We hope that the funding awarded to these Texas scientists will help enable them to launch their pivotal research into development and continue to make advancements in scientific innovation."

Applications for the 2025 Hill Prizes will be open from May 1–31, 2024.

2025 Hill Prizes Information Session:

Don't miss the 2025 Hill Prizes Information Session on **April 18, 2024, at 10 a.m.** to learn more about the prize program and application process.

Learn more: TAMEST.org/hill-prizes

Save the Date: TAMEST 2025 Annual Conference

Save the Date

TAMEST ★ 2025 ANNUAL CONFERENCE



**TRANSFORMATIONAL
BREAKTHROUGHS**

February 4–6, 2025 | Irving, Texas | TAMEST.org/2025



Save the date for the **TAMEST 2025 Annual Conference:**

Transformational Breakthroughs, February 4–6, 2025, at the Westin Irving Convention Center at Las Colinas in Irving, Texas. The conference will explore some of the most disruptive breakthroughs in science and technology set to change our way of life in the coming years.

2024 Hill Prizes

\$2.5 Million Awarded by Lyda Hill Philanthropies to Texas Researchers to Accelerate High-Risk, High-Impact Ideas

The Hill Prizes, funded by Lyda Hill Philanthropies, accelerate high-risk, high-reward research ideas with significant potential for real-world impact. They recognize exceptional innovators by providing seed funding to advance groundbreaking science and highlight Texas as a premier destination for world-class research. Each of the five winning proposals will receive \$500,000 in funding from Lyda Hill Philanthropies to accelerate their work.

MEDICINE



**Martin M. Matzuk,
M.D., Ph.D. (NAS)**

**Baylor College
of Medicine**

*for creating a
novel approach
to treat
endometriosis*

ENGINEERING



**Maria A. Croyle,
Ph.D.**

**The University of
Texas at Austin**

*for demonstrating
innovative techniques that
will allow vaccines and
biological drugs to be
transported without the
need for temperature
control*

BIOLOGICAL SCIENCES



**Russell A. DeBose-
Boyd, Ph.D. (NAS)**

**UT Southwestern
Medical Center**

*for his work's
potential to make
statins more effective
and provide insight
into their side effects*

PHYSICAL SCIENCES



**Allan H. MacDonald,
Ph.D. (NAS)**

**The University of
Texas at Austin**

*for his potential to
create a new energy
storage device, the
quantum
supercapacitor, a new,
low-carbon way to
store energy*

TECHNOLOGY



**Hermann Lebit,
Ph.D.**

**Alma
Energy**

*for developing
clean, emission-
free direct lithium
extraction using
geothermal
energy*

Learn more about the Principal Investigators: TAMEST.org/hill-prizes

TAMEST Board Meets with UT Austin Leadership



The TAMEST Board of Directors met with The University of Texas at Austin leadership in September to discuss UT Austin's strategic plan and expanding research initiatives across the institution. Guests included UT Austin President Jay C. Hartzell, Ph.D.; Vice President for Research Daniel T. Jaffe, Ph.D.; and Executive Vice President and Provost and TAMEST Member Sharon L. Wood, Ph.D. (NAE). The group discussed UT Austin's three main research areas highlighted in its recent strategic plan: health and wellness, energy and environment and technology and society.



TEXAS' RISING STAR RESEARCHERS

2024 O'Donnell Awards Recipients

Opening a new field of study to understand the way brain cells communicate. Discovering the magic of taking a pristine picture through fog, smoke and driving rain. Bringing to light how we deal with the molecules that we put into the environment. Understanding a whole new approach to treating COVID-19. Developing new methods for making robots more usable by humans across time delays in space. These are the breakthroughs by Texas' rising stars in research being honored with the 2024 Edith and Peter O'Donnell Awards by TAMEST.

"The Edith and Peter O'Donnell Awards bring together a broad group of disciplines and expertise and creates the space to talk about cross-disciplinary approaches to future solutions – and we couldn't be prouder of this year's group of innovative recipients," **said Edith and Peter O'Donnell Awards Committee Chair Oliver Mullins, Ph.D. (NAE), SLB Fellow, SLB.** "These researchers are transforming the future of science and innovation in our state, and these awards are an important mechanism for maintaining a link between academia and industry and moving the research needle forward for our society."

MEDICINE



Benjamin Deneen, Ph.D.

Baylor College of Medicine

for his groundbreaking research that has opened an entirely new field of study set to ultimately impact brain tumor patients and give potential insights into a wide range of developmental diseases

BIOLOGICAL SCIENCES



Vincent Tagliabracci, Ph.D.

UT Southwestern Medical Center

for his potentially life-saving research in understanding how enzymes work

ENGINEERING

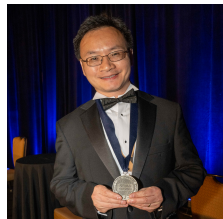


Ashok Veeraraghavan, Ph.D.

Rice University

for his revolutionary imaging technology that seeks to make the invisible visible

PHYSICAL SCIENCES



Shengqian Ma, Ph.D.

University of North Texas

for his innovative work in the field of decontamination, potentially leading to incredibly important impacts on environmental and energy sustainability

TECHNOLOGY INNOVATION



Kimberly A. Hambuchen, Ph.D.

NASA Johnson Space Center

for her seminal research in developing new methods for making robots more autonomous and usable by humans across a time delay



2025 Edith and Peter O'Donnell Awards

Help TAMEST recognize the next generation of Texas researchers

Nominations are open through April 30:

TAMEST.org/odonnell-awards

2024 Mary Beth Maddox Award and Lectureship Recipient



Nidhi Sahni, Ph.D.
Associate Professor
Department of Epigenetics and
Molecular Carcinogenesis
The University of Texas MD Anderson
Cancer Center

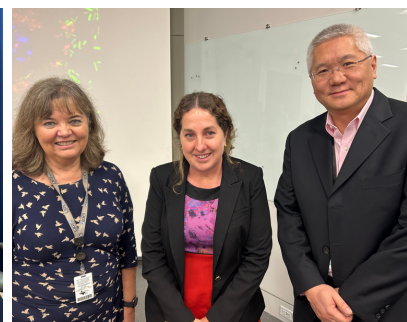
TAMEST announced Nidhi Sahni, Ph.D., The University of Texas MD Anderson Cancer Center, as the recipient of the 2024 Mary Beth Maddox Award and Lectureship in cancer research. She was chosen for her role in identifying novel biomarkers and drug targets, which are expected to have a significant impact on cancer by translating into more effective prognosis and therapy for the disease.

Dr. Sahni pioneered “functional variomics” as an approach to identify mechanisms by which DNA sequence variation impacts diseases, establishing a new field with major impact on precision oncology, early detection and therapeutics in cancer.

“Dr. Sahni is an interdisciplinary leader in systems biology and computational medicine and has made unique, original and significant contributions to cancer research by seeking to understand a fundamental question in biology, namely the genotype-phenotype relationships in cancer,” **said Nominator and TAMEST Member Anil K. Sood, M.D. (NAM), MD Anderson.** “The novel biomarkers and drug targets her work has identified will truly transform outcomes for cancer patients and I am thrilled the Mary Beth Maddox Award committee agrees that she is deserving of this honor.”

*The Mary Beth Maddox Award and Lectureship recognizes women scientists in Texas bringing new ideas and innovations to the fight against cancer. **Learn more:** [TAMEST.org/mary-beth-maddox-award](https://tamest.org/mary-beth-maddox-award)*

TAMEST 2023 Mary Beth Maddox Lecture Series



In addition to being honored at the TAMEST 2023 Annual Conference, the 2023 Mary Beth Maddox Award recipient, Florencia McAllister, M.D., The University of Texas MD Anderson Cancer Center, promoted her work and discoveries across the state at established lecture and seminar series at TAMEST member institutions with NIH National Cancer Institute Designated Cancer Centers:

- **September 12, 2023:** John H. Blaffer Lecture Series, MD Anderson Cancer Center
- **November 16, 2023:** Grand Rounds, UT Health San Antonio
- **January 23, 2024:** Dan L Duncan Comprehensive Cancer Center, Baylor College of Medicine
- **Upcoming: May 22, 2024:** Excellence in Immunology Seminar Series, UT Southwestern Medical Center (in partnership with Simmons Cancer Center)

Learn more: [TAMEST.org/mary-beth-maddox-award](https://tamest.org/mary-beth-maddox-award)



Kay Bailey Hutchison Distinguished Service Award Given to CPRIT

TAMEST announced the **Cancer Prevention and Research Institute of Texas (CPRIT)** as the recipient of the **Kay Bailey Hutchison Distinguished Service Award**. TAMEST recognized CPRIT for their work improving the lives of Texans, advancing cancer research and prevention, and recruiting National Academy members to Texas. CPRIT's success in attracting top-tier cancer scientists and companies to the state is an enormous benefit to Texas.

**CPRIT
by the
Numbers:**

302

Distinguished
Researchers
Recruited to
Texas

17

NASEM Members
and One Nobel
Laureate
Recruited to Texas

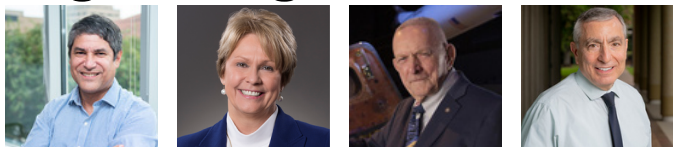
60

National Academy
Members and One
Nobel Laureate are
CPRIT Grantees

\$3B

Research and
Prevention
Grants Given
in Texas

New National Academy of Engineering Members



TAMEST is proud to congratulate four new members on their election to the National Academy of Engineering (NAE) in 2024, bringing our active membership to 345.

- Noel Thomas Clemens, Ph.D. (NAE), The University of Texas at Austin
- Vicki A. Hollub (NAE), Oxy (Occidental Petroleum Corp.)
- Eugene Francis Kranz (NAE), NASA Johnson Space Center
- James M. Tour, Ph.D. (NAE), Rice University

TAMEST will welcome these and other new members at the opening reception of the TAMEST 2025 Annual Conference in Irving, Texas.

TAMEST VPR Research Workshop



Nearly 50 research leaders and presidents from Texas research institutions, universities and health centers joined together in Austin for a VPR Research Workshop preceding the TAMEST 2024 Annual Conference.

The workshop focused on two major statewide research initiatives: the Cancer Prevention and Research Institute of Texas (CPRIT) and semiconductor innovation in Texas (with a focus on opportunities from the federal and state CHIPS acts).

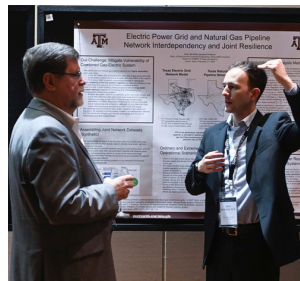
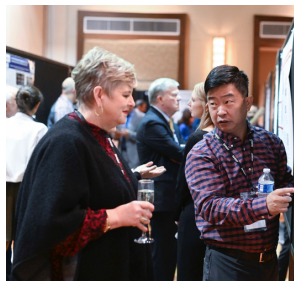
Michelle M. Le Beau, Ph.D., Chief Scientific Officer, CPRIT, was the featured speaker of the CPRIT session of the workshop. Adriana Cruz, Executive Director of the Texas Economic Development and Tourism Office, Office of the Governor, was the featured speaker of the semiconductor portion of the workshop.

TAMEST Member Institution Leaders Meet with TAMEST Board



TAMEST member institution leaders from across the state joined the TAMEST Board of Directors at their February meeting to give updates on research initiatives happening on their campuses. Guests included leadership from Baylor University, Texas Tech University, Texas Tech University System, Texas Tech University Health Sciences Center, The University of Texas at El Paso and The University of Texas Rio Grande Valley.

TAMEST Presents 2024 Protégé Poster Challenge



Forty-two TAMEST protégés participated in the 2024 TAMEST Protégé Poster Challenge. The protégés presented their posters to judges and conference attendees, and the top four presented them on the conference stage. The winner of the challenge was Aaron T. Becker, Ph.D. (far left), University of Houston, for his poster, "Magnetic Milli-scale Robots for Blood Clot Removal."

TAMEST Profiles

TAMEST profiles one of its members or affiliates in each issue of its digital newsletter. See all TAMEST news and updates and sign up for the digital newsletter at TAMEST.org/news.

On Exploring the Galaxy:

"How can you not want to know what 95 percent of our universe is made of? I'm living in an era where we have some ideas for what could make up that dark matter. For example, it could be some kind of fundamental particle that hasn't been discovered yet ... Most of our galaxy is made of dark matter, and we are very sure about that, and so we've got to figure out what exactly it is."



Katherine Freese, Ph.D. (NAS),
The University of Texas at Austin

About the TAMEST Mary Beth Maddox Award and Lectureship:

"Historically, women have had more challenges in research. **A lot of women in the early stages of their careers are also juggling family commitments with their research laboratories.** I appreciate that this award has a broad eligibility from very basic research to more translational research."



Helen Heslop, M.D., D.Sc. (NAM), Baylor College of Medicine
Mary Beth Maddox Award and Lectureship Committee Member

On Being the First UTRGV Faculty Member Elected to a National Academy:

"As someone who lacked female role models early in my education, it **sets the example to UTRGV students that they can accomplish anything** they set their minds to, no matter their starting point. It provides to our younger generation a 'si se puede.'"



Karen Lozano, Ph.D. (NAE),
The University of Texas Rio Grande Valley

Participating in the TAMEST Protégé Program:

"It was a fantastic meeting with the best minds in Texas. I learned so much about great initiatives and ...research in the state. It felt great to be a part of this community."



Maksim Mamonkin, Ph.D.,
Baylor College of Medicine
TAMEST 2023 Protégé Poster Challenge Winner

Co-Chairing the TAMEST 2024 Annual Conference:

"It is remarkable the way that TAMEST brings together people from across sectors, and really **catalyzes a sense of commitment for what we can do to advance research, innovation and business in Texas.**"



Karen E. Willcox, Ph.D. (NAE),
The University of Texas at Austin
TAMEST 2024 Annual Conference Co-Chair

Receiving The Edith and Peter O'Donnell Award:



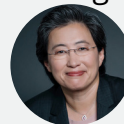
Joshua T. Mendell, M.D., Ph.D.,
UT Southwestern Medical Center

2016 Edith and Peter O'Donnell Award Recipient in Medicine

"I was deeply honored to receive the O'Donnell Award and I greatly appreciate being nominated for this award by the Chair of my department and TAMEST Member Eric N. Olson, Ph.D. (NAM, NAS). **It is truly inspiring for a young scientist to be recognized by the illustrious members of TAMEST and it motivated me to keep taking risks in order to push our science forward into uncharted territory.**"

Understanding the Future of AI on Society:

"At AMD, we believe **AI will be more transformational than the Internet or the mobile phone**, both of which have radically changed modern life in profound ways."



Lisa Su, Ph.D. (NAE),
AMD

On National Academy Membership:

"When I was elected to become a member, I realized it's not just an honor but it's an obligation. **I feel obligated to do everything I can to support the whole infrastructure of science and to support my colleagues.**"



Karen Wooley, Ph.D. (NAS),
Texas A&M University

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Upcoming Deadlines and Events:

April 18, 2024	April 30, 2024	May 22, 2024	May 1-31, 2024	August 1- September 30, 2024	February 4-6, 2025
2025 Hill Prizes Information Session TAMEST.org/hill-prizes	2025 Edith and Peter O'Donnell Awards Nomination Deadline TAMEST.org/odonnell-awards	2023 Mary Beth Maddox Lecture Series, UT Southwestern Medical Center TAMEST.org/mary-beth-maddox-award	2025 Hill Prizes Request for Applications Open TAMEST.org/hill-prizes	2025 Mary Beth Maddox Award Nominations Open TAMEST.org/mary-beth-maddox-award	TAMEST 2025 Annual Conference: Transformational Breakthroughs, Irving, Texas TAMEST.org/2025

About TAMEST

*Texas Academy of Medicine,
Engineering, Science & Technology*

TAMEST (Texas Academy of Medicine, Engineering, Science and Technology) was co-founded in 2004 by the Honorable Kay Bailey Hutchison and Nobel Laureates Michael S. Brown, M.D., and Richard E. Smalley, Ph.D. With more than 340 members, 8 Nobel Laureates and 22 member institutions, TAMEST is composed of Texas-based members of the three National Academies (National Academy of Medicine, National Academy of Engineering and National Academy of Sciences) and other honorific organizations. We 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.

TAMEST's unique interdisciplinary model has become an effective recruitment tool for top research and development centers across Texas. Since our founding, more than 300 TAMEST members have been inducted into the National Academies or recruited to Texas.



TAMEST recognizes members of the Founders of the Endowment and the Legacy Circle, whose extraordinary commitment ensures sustainable funds to continue the mission of promoting excellence in science and technology.

Founders of the Endowment

Anadarko Foundation • AT&T • BNSF Foundation • ConocoPhillips • Energy Future Holdings • Edith and Peter O'Donnell • Temple-Inland • The USAA Foundation

Legacy Circle

The Eugene McDermott Foundation