TAOAPS Newsletter November 2026

Texas, Arkansas, Oklahoma Section

TAOAPS

Joint Fall 2026 Meeting of the Texas, Arkansas, and Oklahoma Section of APS (TAOAPS), the Texas Section of AAPT, and Zone 13 of the SPS

Texas A&M University – Corpus Christi will host the TAOAPS Fall 2026 meeting in Corpus Christi, Texas, on November 6-9, 2026. The meeting will draw participants from all fields of physics and physics education throughout **Texas, Arkansas, and Oklahoma**.



The TAOAPS Fall 2026 meeting website can be found at
https://engage.aps.org/taoaps/meetings/annual

We encourage **registrations** and submissions of abstracts for invited talks, contributed talks, and posters from all areas of physics. A welcoming reception will be on November 6th at 6:00 pm.

Student presentation judges: If you have a Ph.D. in physics or a related field, we would greatly appreciate your help in judging the student presentations. Outstanding oral and poster presentation awards will be given to graduate and undergraduate students based on the excellence of their physics research and the quality of their presentations.
We need your help, and students need your support!

Invited Speakers:



Mini Das

Moores Professor of Physics, Biomedical Engineering and Electrical Engineering at the University of Houston (UH)

Mini Das's research interests span areas of applied and optical physics, optical engineering, inverse problems, advanced detectors, biomedical imaging, image science and psychophysics. She is a recipient of the National Institute of Health (NIH) K25 Career Development Award, the DOD Congressionally Directed Medical Research Programs (CDMRP) Breakthrough Award, the National Science Foundation CAREER Award, UH Award for Excellence in Research and Scholarship, and the UH Advance Fellowship. She was selected as one of the SCIALOG Fellows for advancing bioimaging by the Research Corporation for Science Advancements. A Fellow of the International Society of Optics and Photonics (SPIE) since 2022, and a Fellow of the International Optical Society (Optica) since 2026, she is keen to develop educational and outreach activities to advance and promote interdisciplinary research. In addition, she is passionate about interdisciplinary research for societal benefits such as wide-spread accessibility to novel low-cost imaging systems.



Bhaskar Dutta

Professor, Mitchell/Heep Chair of High Energy Physics, Director, Mitchell Institute for Fundamental Physics and Astronomy, Department of Physics and Astronomy, Texas A& M University

Professor Bhaskar Dutta, an expert in theoretical high-energy, and a fellow of the American Physical Society is recognized "for outstanding and original contributions to the understanding of particle physics phenomenology, in particular dark matter, neutrinos, models and collider physics." Dutta joined the Texas A&M Department of Physics and Astronomy in 2005 as an associate professor, earning promotion to full professor in 2009, and was appointed the Mitchell-Heep Chair of High Energy Physics in 2019. He received his Ph.D. from Oklahoma State University in 1995 and completed postdoctoral study at the University of Oregon (1995-1998) and Texas A&M (1998-2002) before beginning his independent academic career as an assistant professor at the University of Regina in Canada (2002-2005). In 2017, he was honored with the Distinguished Alumni Award from Oklahoma State University. Dutta is considered one of the most prolific theorists of his generation, given his distinguished record of research in high energy physics with highly cited publications in top journals, fundings and many invited plenary talks at major international conferences.



Mike Headley

Executive Director of the South Dakota Science and Technology Authority and the Laboratory Director of the Sanford Underground Research Facility (SURF)

Over the past 18 years, Mike Headley's leadership established SURF as America's underground lab, hosting world-class science, engineering, and education. SURF is home to the Deep Underground Neutrino Experiment, the largest experiment ever undertaken on American soil. Mike earned a computer science degree from South Dakota State University (SDSU) in 1992. After graduation, he served six years in the U.S. Air Force and was awarded the Defense Meritorious Service Medal for directing a 200-member team at the National Reconnaissance Office that oversaw satellite intelligence systems. In 1998, Mike joined the Earth Resources Observation and Science (EROS) Center near Garretson, SD. At EROS, he managed a $280 million budget and led a 120-member team to build the next-generation Landsat satellite mission. He then joined the SDSTA at SURF in 2008. Mike has an MBA from Loyola Marymount University in Los Angeles. The SDSU College of Engineering named him a Distinguished Engineer in 2024. Mike also received an honorary doctorate in science from SDSU in 2026.



Dale Harrison

Co-founder and CTO of VUV Analytics

Dale Harrison is a co-founder and CTO of VUV Analytics, where he leads the development of vacuum ultraviolet (VUV) optical technologies for analytical instrumentation. He has over 30 years of experience in optical spectroscopy, with more than two decades focused on the design and development of optical systems employing VUV light. Dale holds more than 40 U.S. patents and has authored numerous technical publications. Prior to founding VUV Analytics, he was co-founder and CTO of Metrosol, a start-up that brought VUV metrology instruments to market for the semiconductor industry. He holds a Ph.D. in experimental condensed matter physics from Simon Fraser University.



Qiuzi Li

Engineering and Computational Physics Manager at ExxonMobil

Qiuzi's academic and professional journey spans theoretical physics, applied research, and strategic leadership. She earned her Bachelor of Science in Physics from Zhejiang University (China) in 2008 and completed her Ph.D. in Theoretical Condensed Matter Physics at the University of Maryland, College Park in 2013. Her doctoral research encompassed four diverse

and cutting-edge areas: electronic transport in disordered mesoscopic systems (with a primary focus on graphene), quantum computation, three-dimensional topological insulators, and cold dipolar molecules.

In 2013, Qiuzi joined ExxonMobil Research and Engineering – Corporate Strategic Research, where she has led and contributed to multidisciplinary research at the intersection of geoscience and materials science. Collaborating with experts across theoretical and experimental physics, computational science, and materials science, she has driven innovation in several domains. Notably, she invented a magneto-seismic method for hydrocarbon detection and developed a foundational theoretical framework for the induced polarization exploration technique. From 2022 to 2024, she served as a technical advisor to the Vice President of ExxonMobil Low Carbon Solutions Technology. She served as a Business Development Advisor at ExxonMobil Product Solutions from 2024 to November 2025. Qiuzi is currently the Engineering and Computational Physics Manager, where she builds and mentors high-performing teams, sets technical direction and performance goals, and drives professional development. She also defines and executes technical strategy aligned with business priorities, translating physics-based insights into scalable solutions that accelerate innovation across the energy industry. Beyond her technical achievements, Qiuzi is a committed advocate for diversity, equity, and inclusion in science and engineering. She currently serves on the Awards Committee of the Society of Women Engineers and previously served on the Committee on the Status of Women in Physics of the American Physical Society. She is also actively engaged in STEM education and outreach, participating in initiatives such as “Introduce a Girl to Science & Engineering” and Kid’s Day at the Red Mill Museum in Clinton, NJ. Within ExxonMobil, she has held leadership roles including Chair of the New Professionals Program and President of the Asian Connection for Excellence, an Employee Resource Group.



Khanh Linh Nguyen

Scientist, Focused Energy

Khanh Linh Nguyen is a laser-plasma scientist at Focused Energy, a US-German startup pioneering laser-driven inertial fusion energy. He studied theoretical and computational laser-plasma physics, using large-scale simulations on high-performance computing (HPC) systems. He earned a PhD at the University of Rochester. As a graduate research assistant, he worked both at the Laboratory for Laser Energetics (LLE) and at Los Alamos National Laboratory (LANL). After years of academic and national-lab research, he moved into the fast-growing private fusion industry. Linh still bring the same scientific depth to his work, but now it has to meet engineering milestones and commercial timelines.



Peter Ventzek

Senior Manager, Tokyo Electron America

Peter Ventzek manages the Concept and Feasibility Lab (CFL) at Tokyo Electron America, Inc. in Austin Texas where he is also a

Fellow. He is an AVS Fellow and recipient of the 2013 AVS Plasma Prize. Active in various societies and international conferences, Peter has served as chair of AVS Plasma Science and Technology Division and the Gaseous Electronics Conference. In addition to having held various research and management positions throughout the industry, he was a member of faculty at Hokkaido University and Keio University in Japan. Peter is an author of over 100 refereed scholarly publications and has over 100 granted US patents. His recent research interests include the advancement of fundamental plasma process science through the use of first principles based simulation methods for A7 and beyond semiconductor device fabrication.



Yong Wang

Associate Professor in the Department of Physics at the University of Arkansas

Dr. Yong Wang is an Associate Professor in the Department of Physics at the University of Arkansas, with affiliations in the Cell and Molecular Biology Program and the Materials Science and Engineering Program. He received his Ph.D. degree in Physics from the University of California Los Angeles, and conducted postdoctoral research at the University of Illinois Urbana-Champaign and the University of Toronto before joining the University of Arkansas in 2016. Dr. Wang's research group works at the interface of physics, nanotechnology, materials science, and biology. His lab develops and applies quantitative fluorescence microscopy, single-molecule techniques, and computational approaches to investigate the physical mechanisms underlying biological motion, molecular diffusion, and interactions. His recent work focuses on the diffusion dynamics of individual proteins in living bacteria under environmental stress, as well as bacterial motility and flagellar dynamics in complex environments (e.g., polymer networks and porous media).

Steven Weinberg and Robert S. Hyer Research Awards

The Steven Weinberg and Robert S. Hyer Research Awards will be given to candidates who were graduate and undergraduate students, respectively, when the research was performed. The main criterion is excellence, including potential impact in the relevant scientific community. The research must be in physics or a physics-related subject and must have been presented at a TAOAPS meeting within the past two years by the student, who must have been a TAOAPS member at the time. We do allow the research to be presented during the meeting when the award is given. Details of these awards can be found at:

- Steven Weinberg Research Award page
- Robert S. Hyer Research Award page

Congratulations to the 2026 student awardee:

- **Hao-Tian Wei (Rice University)** for the Steven Weinberg Award.

Understanding how strongly interacting electrons in materials produce phenomena such as quantum magnetism and superconductivity often requires calculations beyond the capabilities

of classical computers. Hao-tian's thesis develops theoretical and computational tools for studying these systems using a quantum computer built from ultracold atoms trapped and controlled by arrays of laser beams. First, he developed a numerical method for designing arrays of laser traps to control the parameters of their native Fermi–Hubbard model. Second, he introduced a quantum–classical feedback method in which a classical computer uses measurements of the atoms to guide their quantum state preparation, allowing the same hardware to simulate models beyond its native model. Numerical tests and theoretical analysis provide evidence that, for certain problems, this approach could offer an exponential computational advantage over widely used classical methods as simulation errors are reduced, opening a route to the accuracy needed to resolve the underlying physics.

- **Xavier Grundler (East Texas A&M University)** for the Robert S. Hyer Award.

Under Dr. Bao-An Li's supervision, Xavier performed research on how measurements of neutron stars' mass and radii can constrain the properties of neutron-rich nuclear matter at high densities. For the study, he used Bayesian statistical methods with a parameterized equation of state meta-model. Over nearly three years, he has studied various assumptions in a meta-model, including the effects of a first-order phase transition or a smooth crossover to quark matter in the core of neutron stars.

Student Outstanding Presentations and Posters Awards:

For several years, TAOAPS has sponsored cash awards for outstanding presentations by both undergraduate and graduate students at its annual meetings. Undergraduate and Graduate Student Outstanding Oral Presentation and Poster Awards will be given to the meeting presenters based on the excellence of the physics research and quality of the presentations. Details about this award can be found at this website. This award program is underwritten by the general operating fund of the Section but has benefited in the past from contributions by industry sponsors. Such contributions to the award program are always welcome.

Rules for Entering Undergraduate and Graduate Student Competition:

(This should be read by both students and faculty who help students submit abstracts)

Prizes will be awarded for outstanding papers presented by undergraduate and graduate students in both oral and poster sessions at the TAOAPS Fall Meeting. To compete, the following must be criteria must be satisfied:

1. The student must be the first author and presenter of the paper.
2. Students may compete in only one paper. In general, only one APS abstract is accepted with the same first author.
3. Undergraduate and graduate students should identify themselves as such when giving their oral or poster presentations to help the judges identify which presentations are eligible and need to be evaluated.

Student Travel Awards:

There is a limited number of student travel grants for those who plan to give a presentation. The application form for student travel grants is available here.

Please complete steps 1-3 below by the abstract submission deadline to be eligible for a Student Travel Award.

1. Complete the application form.
2. Submit an APS abstract with the student as the first author and presenter. The abstract deadline was October 12, 2026.
3. Have your research supervisor or department chair complete the form supporting the travel award.

Additionally, you will also need to take the following steps before the meeting.

1. Register for the meeting by the registration deadline.
2. Join the American Physical Society. Membership is free for the first year for students. The application is online, and you need to make sure that you **add the Texas, Arkansas, and Oklahoma Section**.

Travel awards will be up to $300 for as many students as possible, but funds are limited and will be given on a first-come, first-serve basis.

Report from 2026 Congressional Visits Day and APS Leadership Meeting

Current Chair Line members and members at large of the TAOAPS executive committee are encouraged to participate in the Congressional Visits Day and attend the APS Annual Leadership Meeting (ALM). The 2026 meeting and the Congressional Visits Day took place on February 3–7, 2026. Four faculty members (Dr. Gemunu Gunaratne, Dr. Felicia S. Manciu, Dr. Amena Khan, and Dr. Saptaparna Bhattacharya) represented the TAOAPS Section. They served on one Texas team and other district teams together with representatives from other APS divisions and chapters. The 2027 ALM and Congressional Visits Day will take place on Jan. 27-29, 2027 at the Grand Hyatt Washington hotel in Washington, D.C.

Congratulations to the 2026 Nobel Prize in Physics, APS Fellowship, Prize, and Award Recipients:



Francis Halzen is the winner of the **2026 Nobel Prize in Physics** for the search of ghost particles He also received the 2026 APS Medal, the Society's largest prize, and was named an APS Fellow in 1994. He joins a distinguished community of physics Nobel laureates who have been APS members, including nearly two-thirds of all the prize winners since 2000. Halzen's prize-winning research was published in APS journals, including two studies on the discovery of astrophysical neutrinos. Since 2000, APS journals have published the core discovery papers behind more than 60% of the Nobel Prizes in Physics. All of the Nobel Prize-winning research published in APS journals is available to read for free.

In 2026, several physicists in the area of TAOAPS were awarded APS fellowships, prizes and awards as well as other international recognitions. **Congratulations!**

- **APS Medal for Exceptional Achievement in Research:** Francis Halzen (IceCube Neutrino Observatory) for neutrino astrophysics.
- **Julius Edgar Lilienfeld Prize:** Hitoshi Murayama for particle physics and public outreach.
- **Panofsky Prize in Experimental Particle Physics:** Joel Butler (Fermilab) for work on quark-flavor experiments and the Large Hadron Collider.
- **George E. Valley Jr. Prize:** Lorenzo Gavasino for relativistic viscous fluid dynamics.

APS Global Physics Summit 2027

The APS Global Physics Summit 2027 will be held from April 11–16, 2027, at the Georgia World Congress Center in Atlanta, Georgia. Organized by the American Physical Society, this world's largest physics research conference unites over 14,000 global scientists, students, and industry leaders.

History and Section Name Change

The Texas Section of AAPT evolved with the changing landscape of physics and the growing needs of its members. Although the organization thrived in the decades after its 1954 founding, the 1970s saw a significant increase in contributed presentations, particularly by students, focused on physics research rather than physics education. While some members questioned whether such presentations aligned with AAPT's educational mission, the affordability and supportive environment of Texas Section meetings made them an attractive alternative to national APS conferences. At the same time, the rapid expansion of high-tech industries in Texas generated interest in engaging industrial physicists and showcasing their research, providing educators and students with valuable insight into career opportunities beyond academia. These developments prompted discussions within the Texas AAPT Executive Council, leading to the formation of an ad hoc committee in 1981 to explore establishing a Texas APS Section. Chaired by Robert Beck Clark, with Len Diana and David Gavenda as members, the committee organized an initial meeting at Texas Christian University, marking the inception of the Texas APS Section.



Dr. Bruce N. Miller (TCU emeritus professor) with the group of researchers from the University of Texas at El Paso (UTEP) at the Fall 2025 Joint Meeting of the Texas, Arkansas, and Oklahoma Section of APS, the Texas Section of AAPT, and Zone 13 of the SPS.

Reflecting its continued growth and regional impact, the section officially changed its name on June 18, 2025, from the Texas Section of the APS (TSAPS) to the Texas, Arkansas, and Oklahoma Section of the APS (TAOAPS). The new name recognizes and celebrates the broader community of physicists served across all three states.

We look forward to continuing our work together as the Texas, Arkansas, and Oklahoma Section and to building an even stronger and more inclusive regional physics community.

2026–2027 Texas, Arkansas, and Oklahoma Section Executive Committee Members:

Chair: Gemunu Gunaratne (04/26–04/27)
University of Houston

Chair-Elect: Felicia S Manciu (04/26–04/27)
University of Texas at El Paso

Vice Chair: Kenneth Carrell (04/26–04/27)
Angelo State University

Past Chair: Jeremy W Holt (04/26–04/27)
Texas A&M University College Station

Secretary/Treasurer: Amena Khan (04/26–04/29)
University of Texas at Dallas

Assigned Council Representative: Kenneth R Podolak (01/23–12/26)
SUNY Plattsburgh

Member-at-Large: Saptaparna Bhattacharya (04/25–04/28)
Southern Methodist University

Member-at-Large: Elena Caceres (04/25–04/28)
University of Texas at Austin

Member-at-Large: Hana M Dobrovolny (04/26–04/29)
Texas Christian University

Member-at-Large: Yong Wang (04/26–04/29)
University of Arkansas Fayetteville

Student Member: David Scherm (04/25–04/27)
University of Texas at Dallas

Student Member: Diego Armando Juarez (04/26–04/28)
University of Texas at El Paso

Newsletter Editors: Felicia S Manciu (University of Texas at El Paso and Chair-Elect of TAOAPS) and Gemunu Gunaratne (University of Houston and Chair of TAOAPS).