



The Joint Fall 2018 Meeting of the Texas Section of the APS (TSAPS), Texas Section of the AAPT, and Zone 13 of the Society of Physics Students will be held October 19-20, 2018 at The University of Houston in Houston, TX. The meeting will draw participants from all fields of physics and physics education throughout Texas and contiguous states.



[TSAPS 2018 Fall Meeting Website](#)

### **DEADLINES**

[Abstract submission](#) for contributed and poster deadline is September 21.

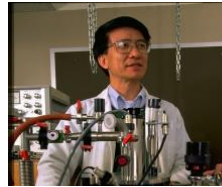
[Online Registration](#) is currently available, and the early registration deadline is September 21. Higher fees apply after this date. Note that one need not be an APS member to register for the meeting.

[Student travel award application](#): Application and registration are both due September 21.

[Judge student presentations](#) Attendees with Ph.D.s are encouraged to sign up to judge student oral and poster presentations. We need you!

### **SPEAKERS**

**Banquet Speaker: TSAPS Banquet, 6:15 PM, Friday October 19 at Club Suite-TDECU Stadium**



[Prof. Paul C.W. Chu](#) (U. of Houston) – *Solid State Physics and Superconductivity*

Prof. Chu is the T. L. L. Temple Chair of Science, and Founding Director & Chief Scientist of the Texas Center for Superconductivity at the University of Houston. His primary research interests center on experimental solid state physics: superconductivity, magnetism, and dielectrics at high pressure and low temperature; searching for novel superconductors; unraveling the mechanism behind high temperature superconductors (HTS); raising the  $T_c$ ; fabricating HTS; and developing practical uses of HTS. He is a member of the U.S. National Academy of Sciences, the American Academy of Arts and Science, the Chinese Academy of Sciences (Beijing), the Academia Sinica (Taipei), the Third World Academy of Sciences, The Electromagnetic Academy and the Russian Academy of Engineering.

**Plenary I, Friday October 19, 2018**



[Prof. David Alexander](#) (Rice University) "*The Space Physics of Star-Planet Interactions*"

David Alexander is a professor in the Department of Physics and Astronomy at Rice University, where his primary areas of research are solar physics exoplanetary physics and earth remote sensing. Professor

Alexander received a Presidential Early Career Award for Scientists and Engineers in 2004 and was appointed a Kavli Frontiers Fellow by the National Academy of Sciences in 2006. He is currently Chair of the Mauna Loa Solar Observatory Users' Committee. He is also former Chair of the Solar Physics Division of the American Astronomical Society and former Chair of the Solar Heliospheric Interplanetary Environment (SHINE) program.

**Plenary II, Saturday, October 20, 2018**



[Prof. Margaret S. Cheung](#) (University of Houston) “*Molecular Underpinnings of Postsynaptic Calmodulin-dependent Calcium Signaling*”

Margaret Cheung’s is the Moores Professor of Physics, of Chemistry, and of Computer Science at the U. of Houston. Her research focuses on the field of theoretical biological physics. She is interested in understanding the physical principles of macromolecules whose behavior inside a cell amounts to specific functions at a subcellular level. She is a Fellow of the American Physical Society, and she received the Hyer Award in 2010. She also serves as the Outreach Director, Center for Theoretical Biological Physics and as the Co-Director, Science Teacher Equity Project for Physics Teachers at the University of Houston.

**Plenary III, Saturday October 20, 2018**



[Prof. Robert L. Kleinberg](#) (Columbia University and Boston University) “*mK to km: How Millikelvin Physics is Reused to Explore the Earth Kilometers Below the Surface*”

Robert L. Kleinberg is Principal of Presidio Energy Technology, a non-resident senior fellow of the Institute for Sustainable Energy at Boston University, and adjunct senior research scholar at the Center on Global Energy Policy of Columbia University. From 1980 to 2018 he was employed by Schlumberger, attaining the rank of Schlumberger Fellow, one of about a dozen who hold this rank in a workforce of 100,000. Dr. Kleinberg is a member of the National Academy of Engineering, and is the 2018-2019 American Physical Society Distinguished Lecturer on the Application of Physics.

**AAPT/TSAPS Lunch Speaker:**

Luncheon AAPT/TSAPS Business Meeting, 11:50 AM, Saturday October 20, Club Suite-TDECU Stadium



[Prof. Rhett Allain](#) (Southeastern Louisiana University) “*Communicating Science with MacGyver and MythBusters*”

Dr. Allain's research interests are in the field of Physics Education Research (PER). The primary goal of PER is to explore how students understand physics. This typically leads to the development of new curriculum and instructional techniques. Currently, Dr.

Allain is interested in physics for elementary teachers, computational methods in introductory physics and student understanding of the nature of science

***HYER STUDENT RESEARCH AWARDS***

The Robert S. Hyer Research Award will be presented at the Fall 2018 TSAPS meeting to two pairs of recipients. The first pair will consist of a recipient who must have been a graduate student when the research was performed and this student's research advisor. The second pair will consist of a recipient who must have been an undergraduate student when the research was performed and that student's research advisor.



SMU graduate student Eric Godat and SMU Professor Fred Olness received the 2017 Hyer Graduate Award for their work on parton distribution functions used to describe the internal structure of the proton. (Fall 2017 TSAPS)

The only criterion is excellence, including potential impact in the relevant scientific community. The research must be in physics or a physics-related subject, and it must have been presented at a Texas APS meeting within the past two years by either the student or the advisor, both of whom must have been TSAPS members at the time. We do allow the research to be presented at the same meeting in which the award is presented.

***HYER AWARD NOMINATIONS:*** The Texas Section of the APS is now accepting nominations for the Hyer Award for both undergraduate and graduate students and their mentors. Details about the award and the nomination process are available at <https://www.aps.org/units/tsaps/awards/hyer/>. Nominations should be submitted by September 21, 2018. The award winners will be announced at the Fall 2018 meeting ([TSAPS Fall 2018](#)).



TSAPS Chair Jodi Cooley presented the 2017 Hyer Undergraduate Award for research completed by an undergraduate student to Catherine Arndt and her mentor Dr. Howard Lee of Baylor University for their work on zero-index materials for ultrathin optical devices. (Fall 2017 TSAPS)

***TEXAS SECTION DISTINGUISHED SERVICE AWARD (TSAPS-DSA)***

This award is to recognize individuals who have made outstanding contributions over several years to the Texas section of the APS. These contributions include leadership through service on the executive committee and/or TSAPS sponsored activities such as the Fall and Spring Regional conferences, or other activities that significantly promote excellence in Physics in the Texas region.

Award and nomination details are at <https://www.aps.org/units/tsaps/awards/dsa>. Distinguished Service Award nominations are due September 21. The award winners

will be announced at the Fall 2018 meeting ([TSAPS Fall 2018](#)).

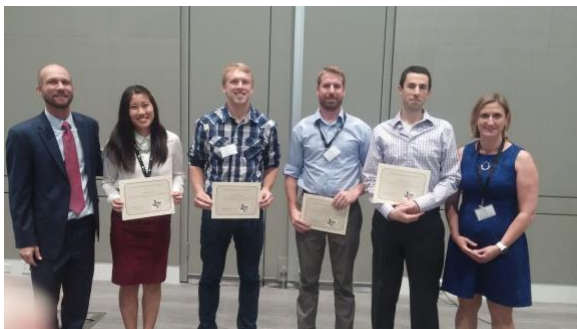


**Dr. Heather Galloway, Texas State University at San Marcos, received the 2017 Distinguished Service Award for her dedication to the TSAPS. Member Texas Section Executive Committee (2000-2003), Chair Line Texas Section Executive Committee (2003-2007), Council Observer (2007-2008), Councillor of National APS (2008-2011), Secretary/Treasurer Texas Section (2010-2017).**

### ***STUDENT PRESENTATION AWARDS***

The Texas Section of the American Physical Society recognizes outstanding student presentations with cash prizes. Graduate students and undergraduate students are judged in separate categories. Both oral and poster presentations are eligible to win. Students sign up to have their presentations judged when they [submit their abstracts](#).

If you would like to help **judge the student presentations**, please sign up [here](#).



**TSAPS meeting host Jason Slinker and TSAPS Chair Jodi Cooley along with students receiving outstanding presentation awards Fall 2017 TSAPS Meeting.**

### ***CONGRATULATIONS TO OUR NEWEST TSAPS AND TEXAS UNIVERSITY FELLOWS***

**Gnade, Bruce E.** [2017]

Southern Methodist University

Citation: For contributions to the development of electronic materials and device technologies that span microelectronics, display technologies, and large area sensors.

Nominated by: Forum on Industrial and Applied Physics

**Oden, Patrick I.** [2017]

Texas Instruments

Citation: For contributions to the commercial success of digital micromirror micro-electro-mechanical systems-based displays through co-invention of a highly flexible and scalable pixel architecture based on a new understanding of mirror dynamics, shape, and force interactions via novel integration of metrology techniques.

Nominated by: Forum on Industrial and Applied Physics

**Zhang, Chuanwei** [2017]

University of Texas at Dallas

Citation: For seminal contributions to theoretical research in ultracold atomic physics, including studies of spin-orbit coupled quantum gases, topological superfluids with Majorana or Weyl fermions, and Fulde-Ferrell superfluid states.

Nominated by: Division of Atomic, Molecular & Optical Physics

### ***TSAPS CHAIR'S MESSAGE***

Dear TSAPS Members:

We are happy with the steady growth of our membership and the successes of our meetings, one in the Spring (organized by Texas Section of the American Association

of Physics Teachers ,TSAAPT) and one in the Fall (organized by TSAPS). The APS Texas Section has an interesting history, which can be read at [TSAPS History](#).

This short history is based on material compiled by one of the TSAPS co-founders, J. David Gavenda (UT Austin). As described in detail in a slide presentation during the AAPT/TSAPS/Zone 13 SPS Spring Meeting on March 23, 2007, the TSAPS owes its birth to its mother, the Texas Section of the American Association of Physics Teachers. The idea of a TSAPS was originally launched during the TSAAPT Fall meeting in 1954. See: [Launch of TSAPS](#).

We are deeply grateful to Robert Beck (Texas A&M) and Leonard Diana (UT Arlington) for their pioneering efforts to establish the TSAPS in 1982, after a long time since its conception.

Recently, Christina Market (UT Austin) and her graduate student, Ryan Hannigan, prepared a detailed statistical analysis of TSAPS membership; this can be found at: [Statistical analysis of TSAPS membership](#).

As of July 2018, we have about 1600 members and, as expected, our flagship universities in physics research contribute the bulk of the membership. But also notable is the large number of members outside the state of Texas, in industry, and numerous members overseas. The TSAPS also strongly motivates minority recruiting. See: [TSAPS minority recruiting](#).

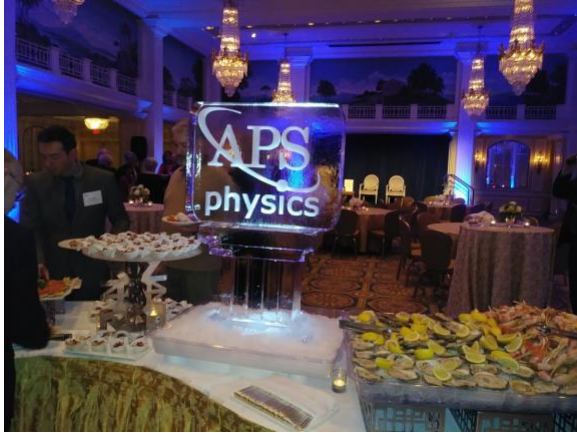
The 2018 Joint Fall Meeting of the TSAPS, TSAAPT and Zone 13 of the Society of Physics Students will be held at the University of Houston, October 19-20, 2018. Invited speakers and contributions to diverse fields in physics research and education will fill in two days of lively seminars and

discussions. Last October the meeting at UT Dallas was a great celebration for the Texas physics community, and this time it will not be different. Donna Stokes (U of Houston, email: [dstokes@uh.edu](mailto:dstokes@uh.edu)) is the chair of the organizing committee. A number of career-building sessions and physics education workshops will be organized as well by the TSAAPT. The TSAPS meeting is an excellent opportunity for students to present their work, serving as a preparation for their participation in larger national APS or international conferences or workshops.

During the fall meeting two APS Texas Section Robert S. Hyer Awards will be awarded: one to an undergraduate and their advisor and the second to a graduate student and their advisor. The criteria for the award is excellence in research in physics or in a physics related field. The research has to be presented by either the student or the advisor at a TSAPS meeting within two years of the date of the award. More information about the Hyer award can be found at: [Hyer Award](#).

Please send your Hyer nominations to [carlos.bertulani@tamuc.edu](mailto:carlos.bertulani@tamuc.edu). Nominations for the 2018 awards should be received by Friday, September 21, 2018. This year, the Hyer award committee is composed of Fred Olness (Southern Methodist University), Jason Slinker (University of Texas at Dallas), and Chris Littler (University of North Texas).

Sincerely,  
Carlos Bertulani



**2018 APS Medal Ceremony and Reception at the Willard Intercontinental in Washington, D.C.** The APS Medal for Outstanding Achievement in Research honored 2018 recipient Eugene Parker. This event occurs during the APS Leadership Convocation each year.

### ***TSAPS EXECUTIVE COMMITTEE***

**Chair:** Carlos Bertulani (04/18 - 04/19) Texas A&M Univ – Commerce

**Chair-Elect:** Sally Hicks (04/18 - 04/19) Univ of Dallas

**Vice Chair:** Rene Bellwied ( 04/18 - 04/19) Univ of Houston

**Past-Chair:** Jodi Cooley (04/18 - 03/19) SMU

**Secretary/Treasurer:** Walter Wilcox (04/17 - 03/20) Baylor Univ

**Member-at-Large:** Lorenzo Brancaleon (04/16 - 03/19) Univ of Texas, San Antonio

**Member-at-Large:** Alexander Weiss ( 04/16 - 03/19) Univ of Texas, Arlington

**Member-at-Large:** Michael Kesden (04/17 - 03/20) Univ of Texas, Dallas

**Member-at-Large:** Christina Markert (04/17 - 03/20) Univ of Texas, Austin

**Assigned Council Representative**  
Carlos Wexler, Prairie Section

**Newsletter Editors:**  
Donna Stokes (Univ of Houston), Rebecca Forest (Univ of Houston), and Sally Hicks (Univ. of Dallas)

**Hyer Award Committee:** Fred Olness (SMU), Jason Slinker (UTD) and Chris Littler (UNT)

**Distinguished Service Award Committee:**  
Heather Galloway (Texas State, 2019), Suresh Sharma (UT Arlington, 2018), Dwight Russell (Baylor, 2019), Felicia Manciu (UT El Paso, 2018)



TSAPS Executive Committee Members Michael Kesden (Member-at-Large), Carlos Bertulani (Chair), and Sally Hicks (Chair-Elect) visit Representative Kenny Marchants Office on APS Congressional Visit Day. Also shown is Ms. Lindsay Hurley, Legislative Correspondent, Office of U. S. Representative Marchant.