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## 2024 AAPT award citations at the summer meeting in Boston, Massachusetts **FREE**



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### Tatiana Erukhimova—2024 David Halliday and Robert Resnick Award



The 2024 David Halliday and Robert Resnick Award for Excellence in Undergraduate Physics Teaching winner is Tatiana Erukhimova, Instructional Professor and inaugural holder of Marsha L. '69 and Ralph F. Schilling '68 Endowed Chair in the Department of Physics & Astronomy, Texas A&M University. She received her Ph.D. from the Russian Academy of Sciences in 1999 and joined Texas A&M University in 2001. Her approach to teaching can best be summarized by her 2018 keynote presentation at Texas A&M's Transformational Teaching and Learning Conference titled: "It's not business, it's personal. Teaching large classes, one student at a time." These words describe Erukhimova's sincere interest in the individual student and her investment fostering a strong sense of community with her students.

Regarding her selection for this award, Erukhimova said, "Over the years, I have learned how important it is to make every class interactive and memorable. How many of the students will consider my introductory physics class a highlight of their time here at Texas A&M? How many of them will remember it 20, 30, 40 years later? If there are quite a few, I couldn't imagine a better reward."

The culture of Erukhimova's classrooms is one of engaged, communal learning supported by innovative and research-backed pedagogy. She forms a community of mutual support where all students are expected to help each other learn. For content delivery, she uses a mix of engaging lecture, scaffolded problem-solving, peer instruction with

in-class questions, and experimental demonstrations almost every day. Her courses personify the active learning encouraged by recent research. Students must be awake, engaged, and thinking at all times. The outcome of this, beyond students who are excited to be in class each day and courses which fill up long before other instructors, is students who learn and perform better in their courses.

Erukhimova's passion for student learning, combined with excellent classroom instruction, has earned her many awards throughout the years, including the Presidential Professor for Teaching Excellence in 2017, University Professor for Undergraduate Teaching Excellence (2021), American Physical Society Fellow (2019), The Nicholson Medal from the American Physical Society (2023), and multiple Association of Former Students awards (a high honor for faculty at Texas A&M).

Through her mentoring, Erukhimova has had a significant impact on students beyond her own classroom. In October 2014, she gave a series of presentations on effective teaching practices open to all graduate students in her department. Since then, she has been a mentor and advocate for graduate students who have opted to pursue instructional faculty positions at universities, offering them resources and materials, guidance, and suggestions on course structure and pedagogy, and being an open ear and perspective for continuing advice.

In addition to her exceptional work in formal classes, Erukhimova has expanded and created multiple informal physics outreach programs designed to give students invaluable experiential learning opportunities beyond the classroom. Her signature program, Discover, Explore, and Enjoy Physics and Engineering (DEEP), created in 2012, involves undergraduate students working throughout the year in small teams led by graduate physics students to design and build interactive physics demonstrations. Then, the students show them at the outreach events. These demonstrations become their legacy here at Texas A&M; some of them become part of the formal curriculum. The DEEP alumni started similar programs at Rice University and the UT-Austin.

### Chandralekha Singh—2024 John David Jackson Award

The American Association of Physics Teachers (AAPT) announced that the John David Jackson Excellence in Graduate Physics Education Award for 2024 has been awarded to Chandralekha Singh, Distinguished Professor of Physics, University of Pittsburgh, Pittsburgh, PA.

Singh is recognized for education research work that has profoundly impacted graduate physics education and for scholarship in support of graduate physics education at the national and international level, born from her own prolific demonstration of skilled teaching and mentoring practices.



Singh earned her B.S. and M.S. in Physics at the Indian Institute of Technology, Kharagpur and her M.A. and Ph.D. in Physics at the University of California, Santa Barbara.

A Life Member of AAPT, Singh has served as a member of the various AAPT Committees, e.g., Committee on International Physics Education, Committee on Graduate Education in Physics, Committee on Women in Physics, Committee on Science Education for the Public and the Programs Committee. Her work in physics education research has produced high quality papers that have been published in journals such as the *American Journal of Physics*, *Physics Today*, and *Physical Review*. Singh co-edited three Physics Education Research Conference (PERC) proceedings and the May 2010 theme issue of *American Journal of Physics* focusing on the Gordon Conference on Experimental Research and Labs in Physics Education.

Elected to the Presidential chain of AAPT in 2018, she served as Vice-President, President-Elect, President, and Past-President through 2022. As part of those roles, she served as Chair of AAPT committees: Governance Structure, Review Board Committee, and Awards Committee. She was co-organizer of the first National Conference for all of the Past US Team Members to the International Conferences on Women in Physics, Provo (2019), and Chair, Program

Committee, Summer AAPT National Meeting, Provo (2019), the Winter AAPT National Meeting, Houston (2019).

Regarding her selection to receive this award, Singh commented: "I am truly honored and humbled to get this award. I have been a member of AAPT since the late nineties and I am incredibly grateful to AAPT for providing this stimulating community of educators who are passionate about improving the teaching and learning of physics at all levels." Singh's pioneering research in the teaching and learning of quantum mechanics has played a significant role in advancing physics education research in advanced courses. In addition to educational research in advanced courses, she has conducted research on cognitive issues in learning physics, improving student problem-solving and reasoning skills as well as improving equity and inclusion in physics learning environments. For a decade, she conducted workshops at the national AAPT meetings on "What every physics teacher should know about cognitive research" and on "Strategies to help women succeed in physics related professions." She has conducted workshops at the national and regional AAPT meetings on "Research-based approaches to improving student understanding of Quantum Physics." Singh has conducted workshops on teaching quantum mechanics during New Faculty workshops. She is also the co-organizer of the first conference on Graduate Education in Physics and chair of the second conference on Graduate Education in Physics.

The following new fellows of AAPT were announced in the summer 2024 meeting:

**Jennifer Blue**, Miami University, Oxford, Ohio

**Juan Burciaga**, Colorado College, Colorado Springs, Colorado

**Stephanie Chasteen**, Independent Consultant, Boulder, Colorado

**Brad Conrad**, National Institute of Standards and Technology, Gaithersburg, Maryland

**Tatiana Erukhimova**, Texas A&M University, College Station, Texas

*Information on Stephanie Chasteen, the recipient of the 2024 Lillian McDermott Medal, and Don Lincoln, the recipient of the 2024 Klopsteg Memorial Lecture Award, will appear in The Physics Teacher. Jocelyn Bell Burnell received her 2023 Richtmyer Memorial Lecture Award in the 2024 summer meeting. Her award citation appears in the March 2023 issue of AJP.*