

Call for Presentations

Below is a list of topics specific to SM25 that members have proposed to see at the conference. If you think your presentation fits into one of these categories, please indicate that in your submission. Otherwise, please use one of the more general Presentation topics below.

Alternative Assessment

This session will explore alternative approaches to assessment that may include but is not limited to portfolio assessment, standards-based grading, specifications grading, contract-grading and/or ungrading.

Apparatus for Fluids

Share your apparatus for fluid dynamics experiments.

Astronomy Education Research

If you're doing Astronomy Education Research, share your results with AAPT through this session. From preliminary results to robust, completed studies, all topics, grade levels, and methodological designs are of interest. Both oral and poster presentations are welcome.

Bio Focused Advanced Labs

There is increasing recognition that exposure to physics in interdisciplinary contexts will better prepare physics majors for wider opportunities. This session will showcase advanced labs with a biological context.

Building Classroom Culture In the Physics Classroom

In this session, teachers are invited to share classroom routines that build classroom culture while still teaching physics skills and content knowledge.

Connecting Graduate Students to Graduate Programs

Present your work and insights on issues affecting prospective graduate students' diverse pathways to graduate degrees and issues affecting graduate programs ability to attract them.

Culturally Responsive Teaching

As student populations continue to increase in diversity, culturally responsive teaching is a valuable research based approach to teaching that gives all students access to rigorous curriculum and develops higher level academic skills. Share your work on culturally responsive teaching and what it can look like practically in the K-16 physics classroom.

Demos in a Box

In this session, we are looking for individuals to demonstrate the use of small, portable demonstrations that can be used in classrooms, museum presentations, or in support of EPO activities in community schools. Come and share information about your material list and/or budget for small demonstration apparatus(es). Explain the apparatus(es) show us how to do the demonstration successfully. We hope the session will be of particular interest to labs with a limited EPO budget and/or technicians who travel to nearby schools for lessons.

Developing Scientific Reasoning and Decision-Making Abilities

Various curricula and methodologies, which have been implemented in different educational settings such as labs and group-based projects, have been shown to promote higher order skills involved in scientific reasoning and decision-making. This session focuses on effective practices in the development and assessment of students' scientific reasoning and decision-making skills, as well as dissemination of related curriculum and teaching practices to promote these skills.

How do you teach about Women in Science?

Share your lessons or activity suggestions for how you introduce women and other gender minorities into their lessons.

Impactful Field Trips

Sometimes, students need a change in scenery to invigorate their brains. Field trips take us out of the classroom and into the wild, stimulating senses and taking a break from routine. But how do you get the most out of a field trip? Our presenters will share the ins and outs of setting up a trip and share some of their unique offerings.

Influences of Quantum Mechanics on Society

2025 is being celebrated as the International Year of Quantum Science and Technology. To mark this moment, the committee invites abstracts discussing any aspect of history or philosophy of quantum physics. Abstracts on societal impact of quantum physics are also welcome.

Innovations in Quantum Curriculum

It is the International Year of Quantum. Over nearly a century of quantum undergraduate education there have been a lot of innovations in teaching. This session invites speakers to present their methods of teaching quantum mechanics in the 21st century.

K-12 PER

In this session, physics education researchers describe their research involving K-12 students and/or K-12 teachers.

Peer instruction in Different Physics Cultures

Peer-instruction may work in one culture but won't work in the other for reasons that we don't know. For example, in some cultures it could be hard to be approached, and peer-instructed, by someone from another gender or age.

Phenomena-based approaches to teaching and learning about waves

In this session, teachers are invited to share phenomena-based approaches to teaching and learning about waves in the physics classroom.

PICUP: Ideas for Integrating Computation into Physics Courses

Have you integrated computational activities into one or more Physics courses? Come share your work and learn from others! You can present on curricular materials you developed,

materials you modified for use in your course, or a description of how you integrated materials developed by others. How did the course go? What did the students learn that they would not have learned without computation? What advice do you have for other instructors wanting to integrate computational activities in their Physics courses?

Quantum Labs

A session devoted to labs related to quantum mechanics.

Reframing how we Teach Physics for Engagement

Students in our classrooms are most engaged in learning when they are having fun. In this session, teachers are invited to share alternative strategies for instruction that promote engagement in the physics classroom.

Science Research in High Schools

Science Research was formally initiated in the 1970s at the Bronx High School of Science and through its demonstrated success subsequently expanded nationwide. This session is an opportunity for science researchers and secondary-level teachers to celebrate collaborations between teachers, students, and researchers. Participants will learn how teachers bring science research -- in which students contribute to professional-level research -- into their schools and the outcomes of these unique collaborations.

Sense-Making across Different Domains

This session explores sensemaking across different domains such as scientific reasoning, mathematical reasoning, teacher training etc.

Teaching the Introductory Physics for the Life Sciences (IPLS) Course Poster Session

This session focuses on teaching methodologies specific to the introductory physics for the life sciences courses. The first part of the session will be invited speakers followed by an interactive poster roundtable.

The Role of Modern Physics in a Four-Year Sequence

It is the International Year of Quantum. Over nearly a century of quantum undergraduate education there have been a lot of innovations in teaching. Modern Physics is often considered the gateway course into higher-level quantum mechanics and taught in the third or fourth semester. Should modern physics be introduced earlier? What choices must be made to introduce modern physics earlier in the curriculum? Are there other roles this course fulfills ranging from course content to student sense of belonging?

Tracks, Concentrations, Certificates and Other Enhancements

Tell us about enhancements you have made to your physics program. How are they affecting recruitment, retention, and student outcomes?

21st Century Physics and Astronomy in the Classroom

Share your successes incorporating current research into the undergraduate curriculum! Help others inspire their students with your experience! Either with single lectures on current topics in traditional classes or with the development of special topics classes, tell us what you did, what students learned, and how it went.

General Call for Contributed Talks & Posters:

Below is a list of general topics we commonly see at the meeting. If you are not sure that your presentation would fit into any topic in the more specific call above, consider submitting it under one of these more general topics.

- Astro
- K-12
- Teacher Preparation
- Informal Physics
- Science Communication
- Intro Courses
- Labs/Apparatus
- Two Year Colleges
- Educational Technology
- Beyond Intro Physics
- DEI
- Physics Education Research (PER): General
- PER: Assessment
- PER: DEI
- PER: K-12
- PER: Intro Courses
- PER: Beyond Intro
- Quantum
- Other