Society of Physics Students (SPS) is open to all interested in physics and astronomy. 800+ chapters at two- & four-year institutions. [www.spsnational.org](http://www.spsnational.org)  
Director: Brad Conrad

**National Initiatives & Local Impacts**

- For undergraduates and their mentors
- Transform students → professional community

**Professional development:**

- Internships / Networking
- Communication skills / Leadership
- Career Toolbox
AIP Statistical Research Center - reports on the trends in education and employment of physicists and related scientists.

www.aip.org/statistics
Only global graduate program network exclusively dedicated to the physics, astronomy and the physical sciences.

- Students create profiles to reference later
- Compare saved schools
- Advertise your program
- Print and online
Partnership for Integrating Computation into UG Physics

**Goal:** Survey of the current usage of computational work in undergraduate physics programs (report available early 2017). Annual Computational Physics Faculty Development Workshop. Computational Physics workshops at AAPT section meetings, and APS and AAPT national meetings

**Contact:** Bob Hilborn, rhilborn@aapt.org  
**URL:** [www.compadre.org/picup](http://www.compadre.org/picup)  
**Support:** NSF: 1432363, 1524963, 1505278
Portal: Introductory Physics for the Life Sciences

**Goal:** Transformative web site for sharing, testing, and disseminating materials for IPLS and related courses. Being developed by AAPT and eight colleges and universities. Up and running by mid-2018

**Contact:** Bob Hilborn, rhilborn@aapt.org

**URL:** [www.compadre.org/ipls/](http://www.compadre.org/ipls/)

**Support:** NSF: 1624185
Undergraduate Curriculum Taskforce
White Papers

**Product:** AAPT recommendations for the Undergraduate Physics Laboratory Curriculum

**Product:** AAPT recommendations for Computational Physics in the Undergraduate Physics Curriculum

**Source:** Both available on your USB drive

**Contact:** Ernie Behringer, ebehringe@emich.edu

**URL:** [www.aapt.org](http://www.aapt.org)
Recent AAPT Policy Statements:

- Computational Physics
- Research Experiences for Undergraduates
- Research in Physics Education
- Teacher Education in Physics
- Coming Soon: Safe Classrooms

Read more at aapt.org/Resources/policy
**Who:** Women and people who are gender and sexual minorities

**What:** An online space to share experiences, find resources, and report responses to bias

**Why:** Gender bias in physics means that many talented physicists end up leaving the field. We need to ensure that all physicists feel welcome.

Visit: [genderbias.compadre.org](genderbias.compadre.org)
Goal: Provide best-practice advice on topics relevant to improving and supporting physics departments


Phys21: Enhance career readiness of majors – [www.compadre.org/Phys21](http://www.compadre.org/Phys21)


Physics Teacher Education Coalition (PhysTEC)

**Goal:** Increase the number of highly qualified high school physics teachers; Build a national coalition of universities engaged in this work

**Strategy:** Encourage and support physics departments to work proactively to recruit and educate future teachers. Provide best-practices and advocate for successful strategies (national meeting: 8-10 Feb 2018)

**Contact:** Monica Plisch, plisch@aps.org

**Support:** NSF-0108787, 0808790, 1646913, 1707990

**URL:** [www.phystec.org](http://www.phystec.org)
Physics InSight Slideshow

Goal: Provide a careers-oriented hallway slideshow for recruitment

Strategy: Slideshow comes out ~2x/semester and features profiles of physicists in industry, national labs, and other non-academic (mostly) careers; focus on individuals without PhDs (students already get information on academic careers); editable to include local information; hundreds of slides available

Contact: Crystal Bailey, bailey@aps.org

URL: www.aps.org/careers/insight

PHYSICIST PROFILE

Kate McAlpine (Physics BS)
Science Writer and Physics Rapper
CERN—Geneva, Switzerland

Why Physics?
Kate began her adventure with Physics at Michigan State, where she studied to be a science writer.

Since then, Kate has been at the Large Hadron Collider (LHC) doing outreach writing, and managing the news website for ATLAS (one of the experiments running on the LHC).

Kate is also responsible for the infamous "LHC Rap," which has gained worldwide notoriety through the internet!

"My goal is to explain scientific topics in a way that is relevant, interesting, and understandable," she says. "While accuracy is serious business, the science should still be fun."

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25 SECONDS OF PHYSICS

The Physics of Yoga
Many people associate physics with complex technologies and far-out discoveries—but did you know physics is also an essential principle in yoga?

For every object, there is a point in space where you can imagine all of its mass is concentrated. This point is called the "center of mass" of the object.

In order for a yoga pose to be stable, the yogi’s center of mass must sit directly above the yogi’s point of contact with the ground—as though it was a heavy ball sitting on a support.

As a person moves, their center of mass shifts around in space.

So, mastering a pose involves carefully shifting one’s position so that their center of mass is balanced over their point of support—and that takes physics!
Guide for Program Assessment, Improvement, and Review

**Goal:** Develop a working document to guide departmental review, assessment, and improvement

**Strategy:** National task force to design, write, vet, and disseminate a collection of effective practices and guide for self-assessment, along with its inherent review structure to improve undergraduate physics. Although not accreditation at this time, it will form the basis of a document that could be used in this fashion; first sections likely to come out this spring with the full guide released in early 2019.

**Contact:** Theodore Hodapp, [hodapp@aps.org](mailto:hodapp@aps.org)

**Support:** American Physical Society, NSF: 1738311, 1747563
Goal: Advocating for faculty’s role in providing undergraduate research opportunities for students

Strategy: Develop faculty networks, develop tools and resources that support faculty, assess impact of undergraduate research, advocate and pilot new ways to engage students in research

Contact: Terry Oswalt (ERAU), terry.oswalt@erau.edu

URL: www.cur.org
Goal: Help research mentors improve their mentoring skills

Strategy: Provide a guidebook and materials to facilitate a 10-week seminar for physics researchers. Includes guidance on how to run workshops, directed readings, and strategy tips

Contact: Monica Plisch, plisch@aps.org

URL: www.aps.org/link/mentor-training
Goal: Advocate for physicists, and the broader community

Topics: Education
- Ethics and Values
- Human Rights
- Internal Policy
- National Policy

Education Topics:
- Undergraduate Research Statement
- K-12 Education Statement
- Career Options for Physicists
- Advocacy for Science Education
- Improving Education for Professional Ethics, Standards and Practices
- Assessment and Science Research in Physics Education

URL: www.aps.org/policy/statements

Coming soon: Physics GRE
APS Conferences for Undergraduate Women in Physics (CUWiP)

**Goal:** Three-day regional conferences for undergraduate physics majors, to help women continue in physics by providing them with information about graduate school, professional career advice, and networking opportunities with other women in physics

**Contact:** women@aps.org

**Support:** NSF: 1346627, 1622510; DOE: DE-SC0011076

**URL:** www.aps.org/cuwip
**Goal:** Increase the number of African American, Hispanic American, and Native American undergraduates obtaining physics bachelor’s degrees

**Strategy:** Connect students with local faculty mentors and provide support and resources. Emergency financial aid fund to mentees (BEAM Fund). National recognition of mentoring service (coming).

**Contact:** David May nmc@aps.org

**URL:** [www.aps.org/nmc](http://www.aps.org/nmc)
**Goal:** Improve recruitment and/or retention of women in physics (WiP)

**Strategy:** Provide mini-grants (up to $1,000) to build, improve, or sustain WiP groups; collect and share ideas on activities

**Examples:** Workshops on careers, communication, negotiation, leadership, dealing with bias, other skills; high school or middle school classroom visits; lab tours or field trips; research expos; book club or journal club; group lunches, dinners, or social events

**Contact:** [women@aps.org](mailto:women@aps.org)

**URL:** [www.womeninphysics.org](http://www.womeninphysics.org)
Goal: Increase the number of underrepresented (URM) students earning a PhD in physics or astrophysics

Strategy: Collect applications from URM students not admitted, and make available to departments. Provide best-practices in admissions, mentoring, retention and support (Meeting: Oct 2018)

Contact: Erika Brown, brown@aps.org

URL: www.apsbridgeprogram.org

Support: NSF-0958333, 1143070
CSWP Site Visits to Improve the Climate for Women and Minorities

**Goal:** Improve the climate for underrepresented individuals in physics departments

**Strategy:** 1-2 day site visits resulting in a formal report to the chair; 1-year follow up; focus on Research Universities, National Laboratories, Scientific Collaborations; 79 visits over last 25 years; best-practices in hiring, retention, climate, etc. available on the website; led by the APS Committee on the Status of Women in Physics (CSWP) and APS Committee on Minorities (COM)

**Contact:** women@aps.org

**URL:** www.womeninphysics.org
Professional Skills Development Workshops

**Goal:** Improve the negotiation and communication skills for women

**Strategy:** 1-day workshop at national APS meetings; facilitation by nationally recognized leaders in negotiation and communication strategies

**Contact:** women@aps.org

**Support:** NSF-0347210, 0752540, 1012585, 1419913

**URL:** [www.womeninphysics.org](http://www.womeninphysics.org)
**Goal:** Enable women in physics and astronomy departments (particularly those who are isolated) to create their own eAlliance, a peer mentoring group of other women physicists or astronomers who share similar characteristics.

**Contact:** eAlliances@aapt.org

**URL:** ealliances.aapt.org

**Support:** NSF: 1500529
**Goal:** Close the gender gap in undergraduate physics degrees  
**Strategy:** Enlist large numbers of high school physics teachers to directly recruit women to pursue a physics degree  
**Contact:** Kathryne Sparks Woodle, woodle@aps.org  
**Support:** NSF: 1720810, 1720869, 1720917, 1721021  
**URL:** www.stepup4women.org
Public Outreach

**Goal:** Build excitement in populations beyond the physics/astronomy community for physics and science

**Strategy:** Mini-grants for outreach ($10,000); comic books, posters, and science kits for middle school classrooms (PhysicsQuest); blogs and social media posts on “cool” science

**Contact:** Becky Thompson, thompson@aps.org

**URL:** www.physicscentral.org