

SPS & Sigma Pi Sigma
INFORMATION HANDBOOK
2025–2026



OVERVIEW OF THE AMERICAN INSTITUTE OF PHYSICS



American Institute of Physics advances, promotes and serves the physical sciences for the benefit of humanity.

As a 501(c)(3) non-profit, AIP is a federation that advances the success of our Member Societies and an institute that engages in research and analysis to empower positive change in the physical sciences. The mission of AIP (American Institute of Physics) is to advance, promote, and serve the physical sciences for the benefit of humanity.

OTHER AIP MEMBER ORGANIZATIONS:



**Sigma Pi Sigma, the physics
and astronomy honor society**
students.aip.org/sigma-pi-sigma



**Society of
Physics Students**
students.aip.org/sps

AIP MEMBER SOCIETIES:

American Association of Physicists in Medicine
American Association of Physics Teachers
American Astronomical Society
ACA The Structural Science Society
American Meteorological Society
American Physical Society
Acoustical Society of America
AVS: Science & Technology of Materials, Interfaces,
and Processing
OPTICA
The Society of Rheology

CONTACT
SPS?

- General questions: 301.209.3007 or sps@aip.org
 - Awards, Scholarships, Outreach, Internships: sps-programs@aip.org
 - Dues, Membership, and Meetings: sps-membership@aip.org
 - Sigma Pi Sigma : sigmapisigma@aip.org
- We respond to email and phone from 8:00 am through 4:30 pm Eastern time on the weekdays

The Society of Physics Students & Sigma Pi Sigma

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Everything in this handbook is available online: students.aip.org/chapter-resources
 Photos are courtesy of 2024-2025 Chapter Reports.

FOREWORD:

THE SOCIETY OF PHYSICS STUDENTS AND SIGMA PI SIGMA



OVERVIEW OF THE SOCIETY OF PHYSICS STUDENTS (SPS)

The Society of Physics Students (SPS) is a professional association explicitly designed for undergraduate students and their advisers. Membership, through collegiate chapters, is open to anyone interested in physics and astronomy. Besides physics and astronomy majors, our members include majors in chemistry, computer science, engineering, geology, mathematics, medicine, and many other fields. Everyone has a home within SPS.

At its core, SPS is a grassroots non-profit, structured as a chapter-based membership organization. With over 860 chapters located at colleges and universities across the United States and the world, SPS strives to be inclusive and supportive of the entire community.

Within SPS is housed Sigma Pi Sigma, the physics and astronomy honor society, which elects members on the basis of outstanding academic achievement and community service. These unique, linked-but-distinct societies operate within and are underwritten by the American Institute of Physics (AIP), a federation of professional science societies.

SPS: PURPOSE AND MISSION

SPS is a chapter-based society that exists to support departments and help students transform themselves into contributing members of the professional community. Traditional coursework develops one range of skills. Other professional skills students need include: effective communication and interpersonal networking, leadership, professional networking, effective presentation of scholarly work in professional meetings and journals, research, and science engagement with local communities through outreach. Through its members, advisers, chapters, and leadership, SPS fosters national initiatives and local impacts within the community.

Participating in SPS offers students the opportunity to enrich their college experience and advance science. An active SPS chapter serves as a vehicle for strengthening a department's sense of community, promoting cohesion, and providing professional development opportunities that courses alone cannot provide. A dynamic SPS chapter can also be an effective recruitment and retention tool for departments and programs. Involving students in an SPS chapter can be influential in transforming them from course-takers into contributing members of a professional community.



SPS connects students to a global professional community of individuals interested in the physical sciences.

The Society of Physics Students was formed in 1968 with a constitution that combined its two parent organizations, the AIP Student Sections and Sigma Pi Sigma, the physics honor society. SPS now has over

860 chapters on campuses across the country. The associated honor society, Sigma Pi Sigma ($\Sigma\Pi\Sigma$), has over 580 chapters of its own, with over 100,000 inductees throughout its history.

Interested in starting a new chapter? Email sps@aip.org for more information



SIGMA PI SIGMA

The physics and astronomy honor society

OVERVIEW OF SIGMA PI SIGMA ($\Sigma\Pi\Sigma$)

Founded in 1921 at Davidson College in North Carolina, Sigma Pi Sigma is the physics honor society housed within SPS. Induction into Sigma Pi Sigma is earned by outstanding academic achievement in physics and lasts for a lifetime. Sigma Pi Sigma alumni represent a wide diversity of career paths, but all members share in common a record of accomplishments in physics and astronomy. Sigma Pi Sigma has been an internationally certified honors society and a member of the Association of College Honor Societies (ACHS) since 1945. In 2021, Sigma Pi Sigma expanded to explicitly support physicists and astronomers.



SIGMA PI SIGMA: MISSION

Sigma Pi Sigma exists to honor outstanding scholarships in physics and astronomy; to encourage interest in physics and astronomy among all students; to promote an attitude of service among its members toward their fellow students, colleagues, and the public; and to provide a fellowship of persons who have excelled in physics and astronomy.

The Sigma Pi Sigma Mission Statement was adopted by the SPS Council on September 30, 1995 and answers the question, "Since membership in Sigma Pi Sigma is for a lifetime, what does membership in Sigma Pi Sigma mean long after the induction ceremony is over?" Sigma Pi Sigma supports departments and students alike through the ideals of service, excellence in research, encouragement, and fellowship.

TO LEARN MORE

Explore the SPS website:
students.aip.org/sps

Explore the $\Sigma\Pi\Sigma$ website:
students.aip.org/sigma-pi-sigma

Join us for the 2025 Physics and
Astronomy Congress:
students.aip.org/congress

General questions: sps@aip.org

Find us @SPSNational:



PART I: CONNECT TO SPS

2025-26

EXECUTIVE COMMITTEE

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Sigma Pi Sigma President

Blane Baker

William Jewel College
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AZC Student Representative

Leo Illing (2024 - 2025)

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Historian

Earl Blodgett (2009-2026)

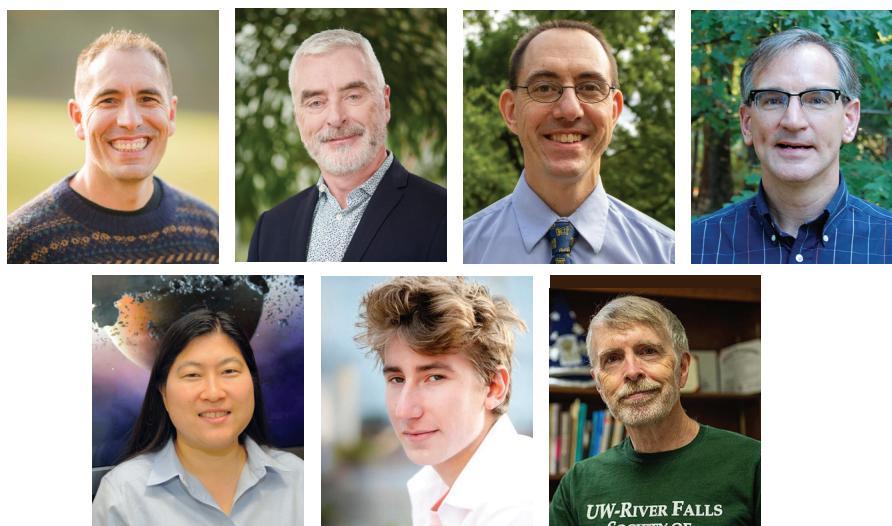
University of Wisconsin – River Falls
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GOVERNANCE OF SPS & SIGMA PI SIGMA

SPS and Sigma Pi Sigma are chapter-based organizations, with the chapters organized into 18 geographic zones that span the globe. While chapters are chartered at the local level, each is part of SPS and Sigma Pi Sigma National and has elected officials. Leadership of these organizations is a partnership between students and faculty. SPS and Sigma Pi Sigma are governed by the SPS constitution and bylaws which can be found online at students.aip.org/chapter-resources.

THE SPS EXECUTIVE COMMITTEE 2024-25

The Executive Committee has the administrative, supervisory, and fiscal responsibility for the operations of the Society of Physics Students and approves all policies of the Society of Physics Students before they are implemented. The Executive Committee is led by the SPS President and the Sigma Pi Sigma President (both elected for two-year terms, limited to two consecutive terms), with an elected Associate Zone Councilor (AZC) representative, the AIP CEO, the SPS & Sigma Pi Sigma Director, and the SPS & Sigma Pi Sigma Historian. This committee oversees the work of the SPS Council, provides guidance and advice to SPS staff, and acts to ensure the health and progress of the organization.



THE SPS COUNCIL 2024-25

The SPS Council is the governing body for SPS and Sigma Pi Sigma. The council is comprised of an elected faculty zone councilor (ZC) and an elected student associate zone councilor (AZC) from each of the 18 zones, an elected SPS president, and an elected Sigma Pi Sigma president. The council composition was carefully designed with students in mind, as SPS is a community of students and faculty mentors.

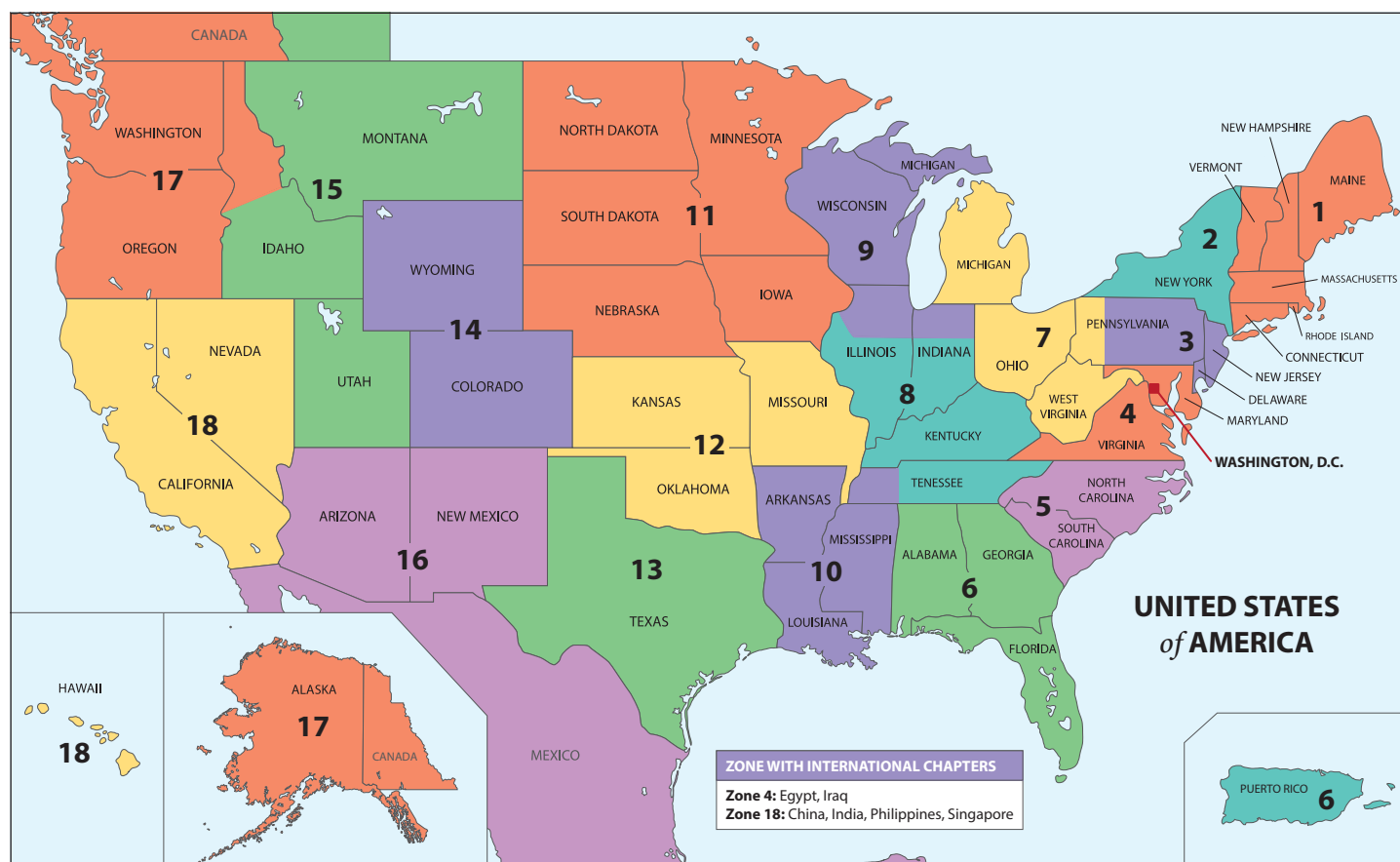
Elections occur during spring each year. AZCs are elected annually from each zone. ZCs are on a three-year election cycle. Elective officers may not serve more than two consecutive full terms on the Council in the same office. Each councilor speaks for all of the SPS and $\Sigma\Pi\Sigma$ chapters and members within their zone on matters of national importance. For more information about the SPS and Sigma

Pi Sigma Council or about the election process, visit students.aip.org/leadership/national-council-elections.

Additionally, the SPS Council is charged with evaluating, planning, and driving forward the initiatives of SPS and Sigma Pi Sigma. A bulk of the work done by the SPS and Sigma Pi Sigma Council is accomplished through committees, which are composed of ZCs, AZCs, SPS Office staff, and invited members. The entire council meets several times each academic year to address society needs, initiatives, and endeavors.

One of the most important tasks for ZCs and AZCs is to encourage communication and facilitate collaboration among the chapters within their zone and the SPS Office. To contact your ZCs and AZCs, visit students.aip.org/leadership/national-council. They are an important resource for each chapter.

To contact your ZCs and AZCs, visit
students.aip.org/leadership/national-council



THE 2025-26 SPS AND SIGMA PI SIGMA COUNCIL

1	AZC	Patrick Ryan	Harvard University	pjryan@wpi.edu
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13	AZC	John-Ryan C Lawrence	Texas A&M University Kingsville	John-Ryan.lawrence@students.tamuk.edu
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15	ZC	Kelby Hahn	University of Utah	kelby.hahn@utah.edu
16	ZC	Dwight Luhman	Sandia National Laboratory	drluhma@sandia.gov
17	ZC	Anthony Smith	Green River College	asmith@greenriver.edu
18	ZC	Chad Kishimoto	University of San Diego	ckishimoto@sandiego.edu

SPS STATEMENTS

SPS Statements are public policy statements drafted and voted on by the SPS Council and voted on at its annual meeting. The following are a few selected statements of particular importance for your chapter. The full text of all adopted statements is available at students.aip.org/leadership.

Mental Well-being

The Society of Physics Students (SPS) and Sigma Pi Sigma ($\Sigma\Pi\Sigma$) acknowledge that the success of all students is tied to mental health. As the national organization representing those with an interest in physics and astronomy, we encourage chapters and advisers to discuss issues of mental health and to identify resources for students.

Diversity, Inclusion, Ethics, and Responsibility

The Society of Physics Students (SPS) welcomes all students with a passion for physics and astronomy independent of identity, regardless of but not limited to race, ethnic origin, religious beliefs, gender, gender identity, sexual orientation, disability, age, family and socio-economic status, or cultural background. Many groups are under-represented in physics and SPS and Sigma Pi Sigma have not always been welcoming to diverse groups. Today all our events are subject to our Code of Conduct, and SPS and Sigma Pi Sigma are committed to working to correct this exclusion and will continue to update our policies and best practices in pursuit of promoting diversity, inclusion, and equity.

Commons Rooms, Department Health, and Identity

The Society of Physics Students (SPS) recognizes that a physics and astronomy commons room or physics lounge encourages community and provides a space for learning. Physics and Astronomy students, faculty, and guests benefit from a dedicated place for discussion and discovery. Access to a commons room empowers undergraduate students in their studies while also promoting collaboration. SPS is committed to providing resources that support and highlight student commons rooms. We encourage other groups within the physics and astronomy community to create student commons rooms with the goal of nurturing our physics communities.

Climate Crisis

The Society of Physics Students and the Sigma Pi Sigma National Council encourage chapters to sponsor, engage in, and pursue outreach events that promote awareness of the scientific basis of human-induced climate change to the general public. Furthermore, chapters are encouraged to champion initiatives that address the climate crisis and to practice environmental sustainability.

Diversity

The Society of Physics Students recognizes that there is a vast untapped intellectual resource in all groups underrepresented in physics and astronomy. For this reason, the Society of Physics Students is committed to making physics more accessible to everyone. We are committed to providing programs, resources and opportunities that encourage greater participation in the community of physics from members of all groups.

Inclusivity

The Society of Physics Students (SPS) has, since its inception, been open to anyone interested in physics and astronomy and recognizes that lasting engagement in the community of physics from members of all groups is vital to the sustainability of physics as a discipline.

Therefore, all SPS chapters and their members should strive to make all gatherings and events, whether formal or informal, local, regional, or national, welcoming to anyone interested in physics. The Society of Physics Students is committed to providing resources that promote and support the development of inclusive physics and astronomy communities where members of all groups feel welcomed, valued, and empowered to be themselves.

Outreach

The Society of Physics Students recognizes that outreach inspires scientific literacy while promoting public understanding of the benefits of physics and astronomy education and research. Community and educational partnerships also foster curiosity and passion in the next generation. These activities enrich the experience of the participating undergraduate students as ambassadors of science by promoting a deeper commitment to their discipline. We are committed to providing programs, resources and opportunities that highlight physics and astronomy and encourage community outreach partnerships.

Physics and Astronomy Departments under Threat of Reduction, Merger, or Closure

The Society of Physics Students and Sigma Pi Sigma Council recognizes that many physics and astronomy departments are under threat of reduction, merger, or closure. The Council is concerned about student success and the future of physics and astronomy departments. We applaud the resilience and creativity of faculty, students, and chapters to sustain the traditions and networks that support our communities. The Council acknowledges that SPS and Sigma Pi Sigma, through its chapters, must fortify and focus on the support of undergraduates and departments to ensure the health of our community and guarantee opportunities for future generations. We encourage chapters to reach out to the SPS office for additional help and to consult resources developed by the broader physics and astronomy community. We urge colleges and universities to support physics and astronomy departments as a vital part of their institutions.



THE SPS OFFICE

The SPS Office staff are equipped to connect our members, advisers, and chapters to the resources they need. Our inboxes and phones are staffed Monday-Friday from 8:00 am - 4:30 pm Eastern time.

Email us anytime at sps@aip.org and sigmapisigma@aip.org.



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FOR QUESTIONS REGARDING

Outreach, awards, scholarships,
and internships, contact:

sps-programs@aip.org

SPS membership, dues,
and meetings, contact:

sps-membership@aip.org

Sigma Pi Sigma inductions, regalia
or other matters, contact:

sigmapisigma@aip.org

All other inquiries
may be directed to

sps@aip.org



ANNUAL CALENDAR OF APPLICATION DEADLINES



FALL DEADLINE November 15

- Marsh W. White Award
- Future Faces of Physics Award
- SPS Chapter Research Award
- Sigma Pi Sigma Chapter Project Award
- SPS-AAPT-ALPhA Undergraduate Award for Outstanding Laboratory Development
- Marian H. Rose Research Memorial Scholarship
- Sigma Pi Sigma Leadership Scholarship



WINTER DEADLINE January 15

- SPS Summer Internship



SPRING DEADLINE March 15

- SPS Scholarships
- Outstanding Undergraduate Research Award
- Outstanding Chapter Advisor Nominations
- Journal of Undergraduate Research in Physics and Astronomy
- Sigma Pi Sigma Leadership Scholarships
- SPS Google Scholarships



SUMMER DEADLINE June 15

- Chapter Reports including the Blake Lilly Prize

ONGOING OPPORTUNITIES

- SPS Travel, Research, & Reporter Awards
- SPS Outstanding Service Awards
- SOCK Outreach Kit Requests
- SPS & Sigma Pi Sigma Service Awards

For a detailed list of award and program deadlines, please visit
students.aip.org/awards or students.aip.org/scholarships

APPLICATION DEADLINES FOR AWARDS AND PROGRAMS

Online Application System

All applications and proposals for SPS and Sigma Pi Sigma awards and programs, with the exception of the Outstanding Chapter Award, Blake Lilly Prize, SPS and Sigma Pi Sigma Service Awards, and Zone Meeting Grants, are handled via a single online system. Details on how to apply, along with access to the online application system, can be found on the individual award and scholarship webpages or by logging into your SPS member profile. To access your profile, click the “Member Login” link located in the upper right-hand corner of the SPS homepage (students.aip.org/sps).

Award and Program Deadlines are broken into four application periods. SPS awards, scholarships, and programs follow four main application cycles: fall, winter, spring, and ongoing. For a full list of current deadlines and opportunities, please visit: students.aip.org/awards and students.aip.org/scholarships.

Fall Deadline: Applications due November 15

AAPT-ALPhA Undergraduate Award for Outstanding Laboratory Development

- Awarded to (an) undergraduate(s) on the basis of their exceptional contributions to advanced laboratory development and letters of recommendation.
- Winners will present their work at the summer national AAPT meeting, supported by a \$1,000 student travel award, a \$500 faculty travel award, a \$500 student honorarium, and a \$500 award to the department to advance the department’s advanced laboratory.

Future Faces of Physics Award

- Several awards of up to \$500 may be made each year
- Awarded to chapters for activities that promote physics or astronomy related across cultures

Marian H. Rose Research Memorial Scholarship (NEW)

- One \$15,000 award given each year
- Awarded to a female or female-identifying current early career graduate student in an accredited college intending to pursue meaningful research.
- Preference given to research in the environmental sciences or climate science.

Marsh W. White Award

- Several awards of up to \$500 may be made each year
- Awarded to chapters for physics and astronomy outreach activities to grades K-12 and the general public

Sigma Pi Sigma Chapter Project Award

- For details, see the “ΣΠΣ Awards” section

SPS Chapter Research Award

- Several awards of up to \$2,500 may be made each year
- Awarded to chapters for physics and astronomy research projects

Winter Deadline: Applications due January 15

SPS Internship Program

students.aip.org/internships

- For details, see the “SPS Programs & Resources” section

Spring Deadline: Applications due March 15

SPS Scholarships

Scholarships are applied for via one application through the online awards system. Applicants are encouraged to apply for all scholarships that they qualify for. SPS Scholarship amounts and eligibility are listed below:

Future Teacher Scholarship

- One \$2,500 award may be made each year
- Awarded to undergraduate students on the basis of scholarship, SPS participation, and a stated teaching career objective(s)

Herbert Levy Scholarship

- One \$2,500 award may be made each year
- Awarded to undergraduate students on the basis of scholarship, SPS participation, and financial need
- Established in the memory of the late Dr. Herbert Levy, by Margaret Sussman Levy

Kirsten R. Lorentzen Award

- One \$2,500 award is made each year
- Awarded to a female student in her sophomore or junior year of study
- Awarded to an exceptionally well-rounded student who excels in her studies as well as outdoor activities, service, sports, music, or other non-academic pursuits or who has overcome significant obstacles
- The Lorentzen Award is an Association for Women in Science (AWIS) Educational Foundation program administered by SPS

LLNL-AIP Leadership Scholarship

- Up to three \$2,500 may be awarded and funded in conjunction with the SPS Leadership Scholarships
- Awarded on the basis of academic performance and SPS/department participation

Outstanding SPS Chapter Advisor Award

- One award is made each year to a chapter advisor, nominated by their students
- Winners receive \$6,000: 60% to the chapter advisor, 20% to the chapter, 20% to the department
- Awarded to a chapter advisor whose chapter has received an Outstanding Chapter Award within the preceding two years during their tenure as SPS chapter advisor

- Awarded on the basis of leadership, student leadership development, chapter support, and encouragement the advisor has provided to the chapter

Peggy Dixon Two-Year Scholarship

- One \$2,500 award may be made each year
- Awarded to undergraduate students on the basis of scholarship, SPS participation, and attendance at a two-year college
- Established in the memory of the late Dr. Peggy Dixon

Science Systems and Applications, Inc. (SSAI)

Academic Scholarship

- One \$2,500 award may be made each year
- Awarded to undergraduate students on the basis of scholarship and SPS participation

Science Systems and Applications, Inc. (SSAI) Underrepresented Student Scholarship

- One \$2,500 award may be made each year
- Awarded to undergraduate students who are from a group that is underrepresented in science and engineering, on the basis of scholarship and SPS participation

SPS and AAPT Mary Beth Monroe Memorial Scholarship

- One \$2,500 award may be made each year
- Awarded to undergraduate students majoring in physics or physics education on the basis of scholarship, SPS participation, attendance at a community college, and intent to pursue a career in education

SPS Award for Outstanding Undergraduate Research

- Two or more awards may be made each year
- Awarded to SPS members on the basis of their research, letters of recommendation, and SPS participation
- Winners are able to attend and present their research at a AIP member society meeting of their choice (registration and travel costs up to \$2,000 are eligible for reimbursement)
- Receive a \$600 honorarium for themselves and a \$600 honorarium for their SPS chapter

SPS Leadership Scholarship

- Several \$2,500-\$6,000 awards may be made each year
- Applicants must have junior level standing
- Awarded on the basis of academic performance and leadership in SPS

Sigma Pi Sigma Scholarships

Scholarships are applied for via one application through the online awards system. Applicants are encouraged to apply for all scholarships that they qualify for. Sigma Pi Sigma Scholarship amounts and eligibility are listed below:

Sigma Pi Sigma Leadership Scholarship

- Several \$2,500 and larger awards may be made each year.
- Applicants must be Sigma Pi Sigma members.
- Awarded on the basis of research, academic performance, and leadership and upholding the four pillars of Sigma Pi Sigma

Summer Deadline: Applications due June 15

SPS Annual Chapter Reports

students.aip.org/chapter-resources/chapter-reports

Submission of an SPS Annual Chapter Report qualifies your chapter for the Outstanding SPS Chapter Award and other chapter designations. Within the Chapter Report, you can apply for the Blake Lilly Prize.

For details about Chapter Reports, please see the “SPS Chapter Health” section.

Blake Lilly Prize

- One award per zone may be made each year
- Winners receive a physics or astronomy related publication and a certificate
- Awarded to chapters or individuals that engage in physics outreach activities
- Established in the memory of the late Blake Lilly by his parents

SPS Outstanding Chapter Award

- Several awards may be made in each zone every year
- Winners receive a certificate and national recognition
- Awarded to chapters that demonstrate active involvement on the local, zone, and national levels in keeping with the mission of SPS
-

Ongoing Application Opportunities

Sigma Pi Sigma Outstanding Service Award

Applications are accepted on a rolling basis

- The awardee should be a deserving individual who has had a positive impact on a Sigma Pi Sigma chapter, its department, or community.
- The awardee is chosen by an individual chapter or group of chapters on the basis of their actions.
- Awardees do not need to be alumni of chapters giving the award or members of Sigma Pi Sigma
- The award can be given at the same time the awardee is received into membership in the society, if they are not already a member.
- Recipients receive a certificate from the SPS office and recognition in a publication. There is no cost for this award.
- Nomination packets are reviewed by the Director of SPS and Sigma Pi Sigma and the Sigma Pi Sigma President

SPS Reporter Award

Applications are accepted on a rolling basis up to 10 business days before the conference

- Multiple \$300 awards may be made each year for meetings
- Awarded to SPS members reporting on national professional meetings for SPS publications
- Awarded to undergraduates, on a first-come first-served basis
- Limited to one award, per person, per academic year

SPS Research Reporter Award

Applications are accepted on a rolling basis up to 10 business days before the conference

- Multiple \$300 awards may be made each year for meetings
- Awarded to SPS members to conduct their research at a national laboratory, international laboratory, or observatory
- Awarded to undergraduates on a first-come first-served basis
- Limited to one award, per person, per academic year

SPS Research Travel Award

Applications are accepted on a rolling basis up to 10 business days before the event

- Multiple \$300 awards may be made each year for meetings
- Awarded to SPS members conducting research at national labs, observatories, or similar institutions.
- Awarded to undergraduates, on a first-come first-served basis
- Limited to one award, per person, per academic year

SPS Travel Award

Applications are accepted on a rolling basis up to 10 business days before the conference

- Multiple \$300 awards may be made each year for meetings
- Awarded to SPS members presenting their research at AIP Member Society national meetings
- Awarded to undergraduates on a first-come first-served basis
- Limited to one award, per person, per academic year

SPS Zone Meeting Kits and Grants

students.aip.org/chapter-resources/zone-meetings

Applications are accepted on a rolling basis up to 10 business days before the zone meeting

- Up to \$1,000 per zone per year may be allotted to the chapter hosting the zone meeting
- A Zone meeting kit will be sent with give aways, information, and presentation materials
- A final report is required to receive all funds
- This is NOT accessible via the online awards system, please email lquijada@aip.org for details

The SPS Outstanding Service Award

Applications are accepted on a rolling basis

- Awarded to faculty and students who exemplify an attitude of service to the discipline of physics and astronomy through actions at the local, national, or international level
- Nominees should have had a positive impact on an SPS chapter, a department, or the broader community
- Recipients receive plaque purchased from the National office by the awarding chapter
- Nomination packets are reviewed by the Director of SPS and Sigma Pi Sigma and the SPS President, in consultation with the SPS Executive Committee

SPS: PROGRAMS & RESOURCES

Careers Toolbox for Undergraduate Students and their Mentors

students.aip.org/plan-your-future

The Careers Toolbox for Undergraduate Physics Students and their Mentors, a product of the Careers Pathways Project, is a set of professional development tools that guide students through their career options and prepare them for success in the job search. Careers Toolbox workshops materials are available online.

Graduate School Resources

[GradSchoolShopper.com](https://gradschoolshopper.com)

GradSchoolShopper.Com is the most comprehensive resource for undergraduates looking for graduate programs in the physics, astronomy, and related fields. Students can search for their graduate schools by research specialty, acceptance rate, due dates, campus setting, and location! The GradSchoolShopper directory lists a programs in related-fields, including materials science, engineering, chemical physics, optics, and many more.

Additional Grad School Resources

Looking for advice for navigating the graduate school admission process or information on the Physics GRE? SPS provides resources and articles to help you find the best graduate school and program for you in the fall issue of the SPS Observer. Visit students.aip.org/news-stories for access to all Graduate School resources.

Physicist And Astronomer Profiles

students.aip.org/alumni/hidden-physicists-and-astronomers-submission

SPS compiles physicist and astronomer profiles to help students, parents, and the public learn about the diverse career paths available to those who study physics, and typical factors associated with various jobs. Read about career options or submit a profile yourself!

SPS Alumni Engagement Program

students.aip.org/alumni/become-a-mentor

The Alumni Engagement program provides SPS alumni and $\Sigma\Pi\Sigma$ members the opportunity to stay connected with the undergraduate physics and astronomy community. Through the Alumni Engagement Program, alumni can sign-up to be a part of the SPS Speakers Bureau, volunteer for the Adopt-a-Physicist program, conduct informational interviews, and even mentor current SPS students. Chapters and SPS Members can search for alumni based on location and type of requested interaction, SPS will assist in matching the requests to volunteers.

SPS Internship Program

students.aip.org/internships

The SPS summer internship program offers 10-week positions for undergraduate physics and astronomy students in science research, education and policy with various organizations in the Washington, DC area. Eligible applicants must be undergraduates, members of the SPS organization, and have at least two years of college physics (or equivalent). SPS summer interns receive a stipend of \$6,500, local housing, travel costs, and have the opportunity to participate in a number of engaging supplemental activities that explore the full range of career options available to physics majors.

SPS Outreach Demonstrations

students.aip.org/chapter-resources/outreach

Looking for a new demonstration for an outreach event? Want to jump start your chapter on outreach? SPS staff and interns have designed easily-accessible online demonstrations to help you make a difference in your local communities. Each demonstration includes a parts lists, instructions, key physical concepts to explain, and demonstration videos (where appropriate).

SPS SOCK (Science Outreach Catalyst Kits)

students.aip.org/chapter-resources/outreach

Science Outreach Catalyst Kits, or SOCKs, contain an exploratory physics and science activity that is specifically designed for SPS chapters to use in outreach presentations to elementary, middle and high school students. Each SOCK comes with the basic materials to conduct a set of demonstrations, a comprehensive manual, and instructions on how to expand the demonstration to become a tried-and-true outreach activity. SOCKs are designed and implemented annually by the SPS SOCK Intern and National Office staff.

SIGMA PI SIGMA ($\Sigma\Pi\Sigma$): PROGRAMS AND AWARDS

Sigma Pi Sigma programs are grounded in its mission to honor outstanding scholarship in physics; to encourage interest in physics among students at all levels; to promote an attitude of service of its members toward their fellow students, colleagues, and the public; and to provide a fellowship of persons who have excelled in physics. Programs are funded by generous donations of alumni and underwritten by the American Institute of Physics. To learn how you can contribute, see aip.org/foundation.

$\Sigma\Pi\Sigma$ Service to High School Physics Classes: Adopt-a-Physicist

adoptaphysicist.org

Adopt-a-Physicist connects high school students to physics degree recipients, recruited primarily from among the Sigma Pi Sigma membership. These adoptees are eager to share their stories as a means of helping students understand the benefits of studying physics and the career opportunities it provides. Working in areas ranging

from particle physics research to freelance writing, the participating physicists embody a huge range of careers, backgrounds, interests, and educational levels. Adopt-a-Physicist connects classes with the physicists of their choice through online discussion forums that are active for a specific three-week session.

$\Sigma\Pi\Sigma$ Awards

Awards issued by Sigma Pi Sigma, the physics and astronomy honors society

students.aip.org/sigma-pi-sigma

Sigma Pi Sigma Scholarships

Scholarships are applied for via one application through the online awards system. Applicants are encouraged to apply for all scholarships that they qualify for. Sigma Pi Sigma Scholarship amounts and eligibility are listed below:

Sigma Pi Sigma Chapter Project Awards

Applications due November 15

- Several awards of up to \$500 may be made each year
- Awarded to Sigma Pi Sigma chapters for funding of chapter inductions and events that aim to engage alumni or expand the recognition of Sigma Pi Sigma within the campus and surrounding community

Sigma Pi Sigma Leadership Scholarship

- Several \$2,500 and larger awards may be made each year.
- Applicants must be Sigma Pi Sigma members.
- Awarded on the basis of research, academic performance, and leadership and upholding the four pillars of Sigma Pi Sigma

Sigma Pi Sigma Outstanding Service Award

Applications accepted on a rolling basis

- Awarded to individuals who have performed meritorious service to the field of physics, to Sigma Pi Sigma, or to a local Sigma Pi Sigma chapter
- Awards can be bestowed by individual chapters and do not need approval from SPS
- Recipients receive recognition and certificate

Worth Seagondollar Award

The most prestigious award offered by Sigma Pi Sigma

Applications accepted on a rolling basis

- Recipients receive a medal and certificate
- Awarded to individuals who have served on the SPS Council or Executive Committee and demonstrated extraordinary levels of service and commitment to Sigma Pi Sigma and the Society of Physics Students
- Nominations may be submitted by members of Sigma Pi Sigma or the SPS Council, and selection requires a unanimous vote of the SPS Executive Committee

PUBLICATIONS

students.aip.org/news-stories

Journal of Undergraduate Research in Physics and Astronomy

The Journal of Undergraduate Research in Physics and Astronomy (JURPA) is a focal point for professional communication within the physics and astronomy undergraduate community. Printed annually, articles published in JURPA are hosted by AIP Publishing and include, but are not limited to physics, astronomy, and related fields. JURPA is free for undergraduate SPS members. JURPA is available in print and online formats. The 2023 editor is Will Slaton.

Radiations

Radiations is the official publication of Sigma Pi Sigma. Published biannually, each issue contains interesting feature articles, connections to the broader world around us, community and member activities, physics news, society updates, member spotlights, and thought provoking pieces written by members. It is published in hard copy format and online. Subscriptions are included with your lifetime Sigma Pi Sigma membership dues. The 2023 editor is Kendra Redmond.

SPS News

SPS News is the e-newsletter from the Society of Physics Students. SPS News is delivered to current SPS members' email inboxes during the academic year and monthly during the summer. Issues cover chapter- and program-related deadlines and announcements, upcoming scientific and member society meetings, zone meetings, REU and internship opportunities, SPS featured jobs, and more.

The SPS Observer

Each issue of The SPS Observer contains interesting topic-specific feature articles, advice from experienced voices, chapter and zone activities, physics problems, alumni connections, society news, announcements, and meeting notes from SPS reporters. It is published in print and online formats in the Fall, Winter, and Spring. Print subscriptions are mailed to the SPS Advisor at each chapter and all individual members. The 2023 editor is Kendra Redmond.

SPS MEMBERSHIP

Local connection to a global community

SPS represents all students interested in physics and astronomy. SPS helps to build a community and voice for undergraduate students. Membership in the national organization of the Society of Physics Students is an important first-step in professional affiliation for students. Connection to SPS helps students and mentors transform themselves into members of the professional community. As SPS is a partnership between students and faculty, advisors are encouraged to join to take advantage of the resources SPS provides to support department health and promote a sense of community.

A professional organization for students and their mentors

While coursework provides the necessary foundation in physics and astronomy, success in classes develops only one range of essential

skills. SPS enables students to transform from “course-takers” into contributing members of the professional science community.

Connecting students and their mentors with opportunities

SPS provides students with opportunities to develop effective professional communication skills, gain leadership experience, and be part of an international professional network. A lifetime of interactions begins with SPS. Active involvement as an SPS member provides opportunities to present research at professional meetings, professional development tools and advice, access to a robust online job portal and career building resources, science outreach tools, connections to in the local community and beyond, and eligibility for competitive SPS scholarships, grants, and awards.

Discover a wide range of career options

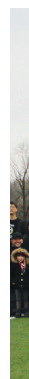
SPS supports the Careers Toolbox and GradSchoolShopper. These tools are designed to equip physics and astronomy departments and their students with resources for effective career preparation - whether or not that includes graduate school.

The Careers Toolbox was designed to identify common features among physics departments with a strong record of preparing physics bachelor's for the science, technology, engineering, and mathematics (STEM) workforce and to disseminate that information to the physics community. Available as both workshop materials and a standalone student guide, the Careers Toolbox is designed to help undergraduate physics and astronomy students prepare to enter the science, technology, engineering, and mathematics workforce. The Careers Toolbox is a free-downloadable resource and can be found here - students.aip.org/plan-your-future.

GradSchoolShopper.com a comprehensive directory of graduate programs in physics, astronomy, and related fields. Participating departments update their highly searchable program profiles annually, allowing students to find programs based on specialty, location or other key search terms. Additional data is also made downloadable so that students can compare programs by acceptance rate, deadlines, enrollment data and more. Each September GSS material is presented in the Fall issue of The SPS Observer to create an issue of advice and guidance specific to finding a grad program in physics, astronomy or a related field. The content is available alongside the searchable programs on the GSS website as well as in print.

SPS: Working to improve the undergraduate experience

SPS is open to anyone interested in physics and astronomy, welcoming students from all majors and diverse backgrounds to participate in the great science of physics. Locally, regionally, nationally, and internationally, SPS provides important enrichments to the students' experience. Faculty mentors and other members of the physics community are also encouraged to be part of SPS.



HOW TO JOIN SPS

Membership in SPS provides many benefits and access to local, regional, and international programs and awards. There are three ways to join as an SPS member.

Individual Membership - Best for immediate membership

You can join SPS immediately to access awards and scholarships for \$24 per year (\$30 for international addresses). With this membership type, you receive a printed version of The SPS Observer. Log-in to membership.spsnational.org 24/7 to join or renew.

Group Membership

If your chapter has at least 5 members, we offer a group discount in which you save by submitting multiple registrations at a time. The more people who join, the larger your discount. This discount is available to undergraduates, graduate students, faculty, and staff and these members receive the same benefits as individual members. Visit students.aip.org/sps/join for details. This option is great for chapters looking to have their chapter officers stay connected to SPS and Sigma Pi Sigma.

Chapter Membership

For a flat rate of \$350 (\$200 for two year colleges), your entire chapter becomes SPS members, including students and faculty. Through the chapter membership program, your chapter receives benefits such as copies of the Careers Toolbox, officer lapel pins, and an SPS wall decal for your lounge/department. Individuals participating in the Chapter Membership program will receive an electronic subscription to The SPS Observer. Visit students.aip.org/sps/join for details.

SPS MEMBER BENEFITS

SPS paid members receive:

- *Physics Today* (monthly): A monthly award-winning publication
- *The SPS Observer*: magazine for undergrad physics and astronomy majors
- Journal of Undergraduate Reports in Physics & Astronomy (JURPA): An annual publication of scholarly reports by SPS undergraduate members
- Free membership in two AIP Member Societies for up to three years (undergraduates only)
- Free membership in the National Society of Black Physicists (NSBP) and/or the National Society of Hispanic Physicists
- Eligibility to apply for grants, scholarships, internships, and other awards/programs
- Eligibility for outreach and chapter research monetary awards
- Physics demonstrations and free outreach kits (SOCKs) Research and travel grants to attend regional and national meetings
- Physics and Astronomy Congress—the largest national undergraduate conference for physics and astronomy majors
- SPS News (bi-weekly): electronic newsletter highlighting SPS meetings, upcoming awards and programs, physics news, and other items of interest to the undergraduate physics community
- Careers Toolbox for Undergraduate Physics Students and their Mentors
- GradSchoolShopper.com
- Professional development opportunities
- Connection to undergraduate-specific regional conferences and meetings
- Opportunity to run for the SPS council and serve on SPS committees
- Access to policy alerts and government advocacy events
- Community service events and outreach
- Diversity and inclusion resources & best practices for your chapter





JOURNAL of
UNDERGRADUATE
RESEARCH IN PHYSICS
AND ASTRONOMY

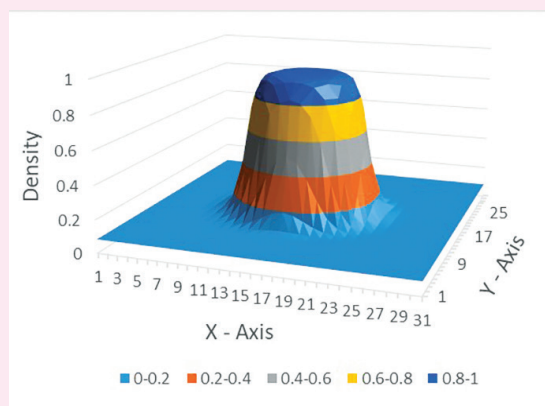
What is JURPA?

The Journal of Undergraduate Research in Physics and Astronomy (JURPA) is a peer-reviewed publication of the society of Physics Students comprised of research, outreach, and scholarly reporting.

JURPA provides exposure for SPS members conducting physics and astronomy research while also supporting faculty who conduct undergraduate research and scholarship through peer-reviewed publication.

Research & Scholarship

JURPA publishes independent research from across the physical sciences, including physics, astronomy, quantum, engineering physics, astrophysics, optics, mathematical physics, nano-science, acoustics, meteorology, physics and astronomy education, particle physics, electronics, medical physics, and more. Papers are peer-reviewed, and accepted submissions are indexed and searchable.



Submit Your Research!

All current SPS members are eligible to submit to JURPA. The author(s) must have performed all the work reported in the paper as an undergraduate student.

SPS National will accept submissions to JURPA on a rolling basis, but the final deadline for the print edition is **March 15**.



To submit your report and review previous JURPA publications, please visit students.aip.org/jurpa



PART II:

SPS CHAPTER HEALTH – DEVELOPMENT AND SUPPORT

SPS Community – It starts with your chapter!

While SPS and Sigma Pi Sigma are nationally driven, the success of the organization depends on the activities carried out by the over 850 chapters at colleges and universities across the globe. Each chapter is unique. The initiatives, programs, and opportunities conceived and planned by the SPS Council are personalized by each chapter to best serve the interest of the local chapter's members, department, campus, and geographical setting.

It is through local chapter activities that students become involved with SPS outreach, awards, scholarship opportunities, research, professional development opportunities, networking, and so much more. Each individual chapter has a constitution and set of bylaws modeled after the SPS constitution that detail how the organization functions at the chapter level.



ADVISOR RESOURCES

A supportive SPS Advisor is key to the success of an SPS chapter. Among their many roles, the SPS Advisor supports chapter growth and development. They guide student leaders in identifying chapter goals and objectives, encourage officer development, and serve as a liaison between the chapter, faculty, and SPS. SPS Advisors promote an active and healthy community that represents the students' interests, year after year through leadership transitions. To better help advisors in their important role, SPS has developed a suite of resources available at: students.aip.org/chapter-resources.

ANNUAL CHAPTER REPORT

To be eligible for the SPS Outstanding Chapter Awards and the SPS Outstanding Chapter Advisor award, each SPS chapter must submit an annual chapter report (students.aip.org/chapter-resources/chapter-reports). These reports convey the many and varied activities of local chapters and provide important data used by the SPS Council and National Office to advocate for programs, funding, and other support for local chapters. Those chapters that clearly exhibit and carry out SPS initiatives for their campus, community, and zone can be named as SPS Outstanding Chapters (learn more about Outstanding Chapters at students.aip.org/outstanding-chapter-award). Outstanding Chapters are selected by the ZCs and AZCs on the SPS Council.

The SPS Council reviews all Chapter Reports to share the best practices. If you are seeking ideas, don't hesitate to reach out to your AZC and ZC to learn about programs and initiatives that have worked for other chapters.

CONNECTING WITH OTHER CHAPTERS

students.aip.org/leadership/national-council

Chapters are also encouraged to plan joint activities with other chapters. You can find contact information for other chapters in your zone by contacting your zone leadership or through searching the SPS online zone directory. Your AZC and ZC may also set up other ways for chapters to communicate including Facebook groups, listservs, or Google groups. Be sure to watch out for these channels and contribute announcements and news from your chapter.

Possible opportunities to collaborate include physics and astronomy outreach days at local amusement parks, co-hosting a speaker, taking a tour of a nearby research facility, or even just a social event like a picnic or trivia night.

ZONE MEETINGS

Each zone is encouraged to host at least one zone meeting each year. These are typically coordinated by the AZC and ZC of the zone, but any institution within a zone may work with their zone leadership to serve as a host or co-sponsor. Synopses of past meetings, a list of upcoming zone meetings and information on how to host a zone meeting can be found online at students.aip.org/chapter-resources/zone-meetings. The National Office has toolkits available to assist zones with planning, publicizing and executing these meetings.

Zone meetings are important networking opportunities between SPS members, chapters, and the professional physics and astronomy community. A typical zone meeting includes both scientific and social components. The scientific program may feature speakers, poster presentations by students, tours of campus, or industrial site visits. Social events may include icebreakers, team building activities like a ropes course, physics and astronomy trivia, meals, design competitions, service projects, or joint outreach events. When planning your zone meeting be sure to include lots of time for your attendees to meet one another. It's through these connections that our community grows stronger!

STARTING AN SPS CHAPTER

All institutions of higher education which regularly offer at least a two-year curriculum that includes physics and astronomy and are accredited by the appropriate national or regional accrediting agency are eligible to have a Society of Physics Students chapter.

Chapters are chartered via petition to the SPS Executive Committee. Instructions and a template of the petition are available at students.aip.org/chapter-resources

All chapters should have a slate of student officers and official faculty or staff advisor. Once the SPS Executive Committee has approved the petition, SPS will be in touch regarding specific procedures for installing your chapter.



MAINTAINING A HEALTHY CHAPTER

The following list of principles, tips, and suggestions, can help your chapter remain active, healthy, and an integral component of your physics and astronomy department:

1) Decide that your SPS chapter is going to make a meaningful contribution to the students and department.

Decided that your chapter is going to make meaningful contributions to the professional development of the students, and to the culture of your department and that YOU are going to be the person who makes it happen.

2) Decide from the beginning that your chapter will participate in SPS Zone meetings.

Such involvement will pump everything else your chapter hopes to accomplish. Contact your Zone Councilor and Associate Councilor for information about the next meeting on your Zone or nearby Zones, or check listings at students.aip.org/chapter-resources/zone-meetings. Make necessary plans (e.g., fund raising) well in advance. Be innovative in ways to cut expenses (e.g., some host chapters will invite visitors with space to roll out sleeping bags in the homes and dorm rooms of their members).

3) Plan local meetings, tours, and social events; about one event per month.

Your chapter will benefit from SPS-sponsored chapter colloquiums with local speakers (these can be part of the department's regular colloquium schedule, or a separate schedule run by SPS), and tours of nearby academic or industrial laboratories. Showing a physics or astronomy-related video or science-fiction film is enjoyable. Include several social events on your calendar (e.g., parties and picnics). Fellowship is very important.

For speakers, ask physicists and other scientists from your campus or nearby schools, and local engineers and other technical people who use the sciences and mathematics in industry and business. Local speakers will usually speak to student groups at no charge to you, but do not forget to practice hospitality (e.g., have cookie time before the talk, and, if possible, take the speaker to dinner afterwards).

4) Look to the future.

This begins with Zone participation, and continues by "taking physics and astronomy on the road," with programs such as "Physics

Circuses" to local grades K-12. Until every physicist (including the undergraduate physicist) is at least taking lenses and magnets into a local elementary school classroom, and working cooperatively with the teacher there to encourage the pupil's interest in science, we as a professional community are not doing all we know to do for science literacy and appreciation. When it comes to science outreach to grades K-12 and the general public, the SPS can show the rest of the professional community the way.

Set up a math-physics tutoring service for your campus or a nearby elementary or secondary school. Help a local school organize and judge its science fair. Collaborate with other campus student organizations in projects of mutual interest. Present papers on your outreach programs at Zone meetings.

To assist your outreach activities, the SPS publishes The Physics Outreach Notebook. When your chapter has an established outreach program, you may wish to submit an article about it for publication in the Notebook. Other chapters may be able to adapt your ideas.

5) Involve students in undergraduate research experience.

The research experience does not have to be publishable—the publishable stuff can come later, and the objectives of undergraduate research are too important to leave only to publishable projects. These objectives include the following:

Developing the skills and habits of mind that cannot be taught in courses, acquiring communication skills in presenting results at Zone meetings, and becoming a participant in the life of the professional community through involvement in meetings.

As a possible aid to starting and maintaining an undergraduate research program, even with zero funding, the SPS Office has published the booklet How to Involve Undergraduates in Research available at students.aip.org/sps.

6) Make SPS visible.

Send your campus and other local newspapers descriptions of your members' outreach efforts to the local community, your participation in professional meetings, and other activities. Send the SPS Office newsworthy items that we can pass on to other chapters. Place an SPS mailbox in the department mailroom, obtain an electronic mail address for SPS use, and arrange for an SPS student office/lounge. Point out to the department chair that these amenities are an investment in the esprit de corps of the physics and astronomy



majors. When the majors “own” a piece of the department, they have a sense of identity with it that course work alone cannot provide. Participate with other campus organizations in projects of campus-wide interest. Have an exhibit on new-student welcome week. If your school has a homecoming parade, have an SPS entry in it!

SPS chapters are encouraged to make their own logo, based off the SPS logo.

7) Make your chapter a valuable asset to the physics and/or astronomy department.

The esprit de corps of your chapter can set the tone for the departmental culture. The accomplishments of your chapter can serve as an important and documentable asset in the recruitment of prospective students. Your chapter meetings can serve as colloquiums for the department.

8) Involve freshmen, sophomore, and transfer students.

Too often an active chapter becomes inactive when one or two student leaders graduate. To make meaningful activity in your chapter a tradition, invite students to join SPS as soon as possible, and get them involved in all your activities and events without delay. Posters on campus and scheduled five-minute presentations in introductory university physics and astronomy courses are helpful, and personal contacts are especially effective. Make sure some newer students attend Zone meetings, even if they go as spectators. While their colleagues present papers they begin visualizing themselves presenting papers too. If you have more volunteers than jobs, create more jobs (e.g., “chapter publicist,” “chapter historian,” etc., are all useful titles).

9) If your chapter does not already have a Sigma Pi Sigma chapter, take steps towards chartering one.

See the Sigma Pi Sigma Mission Statement, and information about chartering a chapter of Sigma Pi Sigma: students.aip.org/sigma-pi-sigma.

10) Look over the Chapter Annual Report Form and SPS Calendar now.

These will help you get started by providing objectives at which to aim. In May, be sure to send the completed report to the SPS Office by the deadline date. That way, your chapter will be eligible for an “Outstanding Chapter Award.”

OTHER IDEAS FOR YOUR CHAPTER

For SPS Meetings and Colloquia:

- SPS colloquiums can include student speakers, such as those practicing their talks before going to Zone meetings, or those who recently completed a summer research project.
- Informal lunch “brown bag” meetings, with a speaker describing some project or recent trip to a conference are enjoyable.
- Discuss resume writing, job interviews, and the job market.
- Discuss recent articles in physics and astronomy magazines or journals.
- Invite the department chairperson to an informal rap session on what the department is doing, what its goals and problems are.
- Invite recent alumni to talk about their graduate school and/or employment experiences.

Physics and astronomy Outreach to Grades K-12 and the Public:

- Develop a “Physics Circus” or other program to take into local schools (or that they can attend on your campus).
- Invite local high school physics students to join SPS as members of your chapter and participate in your programs (there are no high school SPS chapters). This is also a splendid student recruitment tool for your department.
- Arrange for public viewing of astronomical objects through the department’s telescopes.
- Working with the chemistry and biology departments, arrange for tours of your campus laboratories by school children.
- Help coach pre-college students for the exams that seek the United States Physics Team for the International Physics Olympiad.
- Help a local school conduct its Science Fair (e.g., volunteer to be judges).

Service to the Physics and astronomy Department (making your chapter indispensable):

Conduct problem-solving sessions for groups of students in introductory physics courses.

- Offer a tutoring service for individual students who come by your SPS room.
- Carry out a course evaluation survey for the physics and/or astronomy department.
- Prepare bulletin boards and window displays illustrating physical phenomena, historical personalities, the influence of physics and astronomy in society, the department’s programs and personnel.
- Host a SPS Zone meeting.
- Publish a semi-annual chapter and departmental newsletter. This can be sent to alumni, prospective students, donors, university administrators, students’ parents and friends, colleagues in other institutions, and other friends of the department with whom you wish to maintain contact.
- Maintain a chapter and departmental scrapbook.
- Collect, organize, and post information about graduate schools. Your department chair receives loads of this stuff all the time and would appreciate having someone take the task of dealing with it off their hands.

Social Events:

- Hold a student-faculty picnic at the beginning of the academic year, and another at the end of the academic year.
- Have a chapter camping trip.
- Have parties at holiday times.
- After a big exam, have a “decompression party.”
- Plan to have a dignified Sigma Pi Sigma induction ceremony every year. An evening banquet with a speaker, presented with class and engaging all the department, can become a high point of the departmental calendar.

Membership Promotion:

- Participate in Freshman Orientation Programs that acquaint new students with campus organizations.
- Have SPS members visit introductory physics classes and make a five-minute presentation.
- Involve interested freshmen in all SPS activities. Involve them first; and then membership will take care of itself.
- If the department has a graduate program, invite the graduate students to all SPS functions, and to join

- SPS and hold offices. Indeed, in some universities, the graduate students are more active in SPS than the undergraduates!
- Place prospective majors on your mailing list during new student recruitment. The accomplishments of your chapter can be a tremendous asset for recruitment.
- Give a SPS membership as a door prize as part of the drive for new members.

Fundraising:

- Design and sell chapter T-shirts or coffee mugs. The SPS Office can provide logos and assistance.
- Collect used textbooks, journals and calculators and have a sale. Faculty usually have a few items to donate.
- Have a garage sale.
- Ask the department chair if the SPS can sell coffee and donuts.
- Bake cookies and sell them.
- Use your connections with local businesses to obtain items to raffle.

Many SPS activities can be supported with a small budget funded by local chapter dues. As a campus organization, the SPS chapter may be eligible to receive an allocation from the Student Government Association upon the submission of the necessary paperwork and budget. Often the physics department will assist the chapter with transportation and mailing expenses. Travel can be done cheaply if members split car expenses and use sleeping bags at the destination (assuming the host is willing).

CONDUCTING SPS CHAPTER MEETINGS AND BUILDING YOUR CHAPTER

The personality of a local SPS Chapter is as unique as the individuals that comprise the chapter. Each chapter has the ability to determine the frequency of their chapter meetings and the content/activities conducted within their chapter meetings. The best practices for chapter meetings are to incorporate activities and events that foster a sense of community and culture for your local department. SPS is whatever it needs to be and we celebrate these variations.

The below list includes great ideas for things that local chapters can do to help foster community and culture and can form the basis for the agendas of your chapter meetings:

Encouraging National Membership

SPS leaders are encouraged to work to get the entire local chapter registered as dues paying SPS members. The benefits are many. For one, all the members in the chapter have a common set of knowledge about SPS programs and opportunities. This builds community and energy for participating in the larger organization. Many chapters have SPS membership as a requirement for travel with the chapter, and find creative ways for fundraising to pay for individual or chapter dues. There is a reduced rate if chapter members sign up as a group or as a chapter. Information pertaining to the membership discounts can be found here students.aip.org/sps/join.

Encourage Participation in SPS Programs

Find ways to encourage chapter members to participate in SPS programs and opportunities. This is another way to make the point

that no matter what the size of the chapter, SPS members are a part of something bigger. Award winners and scholarship winners are recognized in SPS publications, both in print and electronically. For departments, these awards can serve as recruitment and retention tools, as they demonstrate the engagement and success of students and faculty mentors in the department. Students should also be encouraged to attend regional and national AIP member society and professional meetings. Students should be encouraged to present research at these scientific meetings, but should encouraged and supported to attend even if not presenting to become introduced to the professional community.

Participate in Tours, Field Trips, and Professional Speakers

One way to introduce students to the professional community is through exposure. Chapters are encouraged to arrange field trips, participate in tours of nearby national labs, industrial companies, hospitals, or other areas where people practice the physical sciences. Bringing speakers to campus (whether physically or virtually) to speak with students is a huge benefit to students that can help connect them to the larger physics and astronomy community.

Connection to Your Local Campus and Community Beyond

In many departments, the SPS chapter serves as a vehicle for recruitment and retention. Your chapter can create a number of activities that provide a sense of community for the physics and astronomy department and those interested in physics and astronomy. Example activities include organizing a physics and astronomy demo fair for local primary and secondary schools, to sending chapter officers to classrooms to recruit new SPS members, to hosting banquets for incoming underclassmen and graduating upperclassmen.

SPS chapters are encouraged to interact with the larger campus community, so that physics and astronomy is not just something done in the physics and astronomy building. Help others get to learn about physics as well! SPS chapters can plan joint fundraising activities with other student organizations, hold picnics for faculty and students, plan career fairs with other STEM departments, etc.





Yearly Calendar for SPS Chapters

There is no standard program for a SPS chapter because each chapter is unique. This calendar provides a guide for activities and programs your chapter may wish to consider throughout the academic year. Not every chapter will choose to engage in every element. Choose those that work best for you!

BEGINNING OF SEMESTER:

- Membership Drive: Participate in Freshman Orientation Program to acquaint freshmen with SPS. Have a booth to encourage bulk registration for national membership
- Visit introductory physics classes
- Put up SPS posters and meeting announcements
- Request the SPS outreach kit (SOCK)
- Plan biweekly meetings for the year

SEPTEMBER:

- Kick-off social (Ex. faculty-student picnic or other get-acquainted event)
- Fundraisers: Sell books donated by faculty, used textbooks, bumper stickers, chapter-designed T-shirts, raffle tickets, car wash, etc.
- Plan for big events and outreach: Marsh W. White Award, Future Faces of Physics Award, and Sigma Pi Sigma Undergraduate Research Award proposals, brainstorm outreach events
- Post fall mailing materials
- Collect dues and fill out group membership forms for discount

OCTOBER:

- Talk by outside lecturer at meeting
- Bad physics movie night
- Attend SPS Zone Meeting or plan to attend regional meeting
- Arrange to attend a national research meeting
- Hold a fundraiser for PhysCon
- Halloween-themed physics and astronomy event
- Check out SPS outreach demos or create your own to upload on the website
- Ask your AZC* and ZC* about the next zone meeting

NOVEMBER:

- Submit chapter proposal for Marsh W. White Award & Future Face of Physics Award
- Submit student proposals for SPS Chapter Research Award
- Host an outside speaker/lecturer at monthly meeting
- Tour of physics/astronomy research laboratory (industrial, government, or academic)
- Submit chapter proposal for Sigma Pi Sigma Chapter Project Award
- Thanksgiving potluck

* AZC/ZC are your associate zone councilor and zone councilor that represent your zone at the SPS level.

DECEMBER:

- Business meeting: Nomination of chapter member as candidate for associate zone councilor
- Program planning for spring social event (set date, budget, etc.)
- Host a year-end party
- Identify a spring tour at a nearby lab or facility

JANUARY:

- Submit student applications for SPS summer internships
- Plan chapter road trip
- Prepare a member outreach event
- Hold fundraising event for spring events

FEBRUARY:

- Arrange a talk by faculty member at monthly meeting
- Host a bad physics movie night
- Submit SPS Scholarship applications
- Apply for SPS and $\Sigma\Pi\Sigma$ service awards

MARCH:

- Talk by outside lecturer at monthly meeting
- Tour of physics or astronomy research laboratory (industrial, government, or academic)
- Sponsor physics department open house
- Business meeting: Cast chapter vote in SPS elections
- Attend SPS zone meeting
- Submit SPS Scholarship and Outstanding Undergraduate Research applications, and Outstanding Chapter Advisor nominations
- Submit research and scholarly reports for publication in JURPA

APRIL:

- Sigma Pi Sigma reception, talk, and induction banquet
- Talk by outside lecturer at monthly meeting
- Business meeting: Election of chapter officers for next academic year, preliminary planning for chapter program for next academic year
- Submit new officers to SPS database
- Business meeting: Nomination of chapter officers for next academic year
- Find a creative way to thank and celebrate your SPS advisor

MAY:

- Large social event: faculty-student picnic and soccer game
- Submit Chapter Report before everyone leaves for the summer and apply for Blake Lilly Prize
- Plan a fall meeting date to start off the new year
- Celebrate graduating seniors
- Develop goals for next year
- Email the new AZC and ZC to introduce your SPS chapter and officers



SAMPLE SPS CHAPTER BYLAWS

students.aip.org/chapter-resources

(Name of Institution) Chapter of the Society of Physics Students

ARTICLE I. NAME

The name of this organization shall be “The (NAME OF INSTITUTION) Chapter of the Society of Physics Students”.

ARTICLE II. OBJECTIVES

The purpose of this Chapter shall be the advancement and diffusion of knowledge of physics and astronomy, the encouragement and diffusion of knowledge of physics and astronomy, the encouragement of interest in physics and astronomy throughout the academic and local communities, and the introduction of students to the professional community.

ARTICLE III. MEMBERSHIP

Section I. Society of Physics and Astronomy Students Membership

Membership in this Society of Physics and Astronomy Students Chapter shall be open to all individuals interested in physics and astronomy.

**Section II. Sigma Pi Sigma Membership

Membership in Sigma Pi Sigma, the physics and astronomy honor society included within this Society of Physics Students Chapter, shall be based upon character and academic and professional attainments and is not restricted to physics and astronomy majors. Election to Sigma Pi Sigma members from among those candidates presented by the Sigma Pi Sigma nominating committee appointed by the chapter Advisor.

Clause 1. For undergraduate students in physics, astronomy, or related fields, the minimum requirements for Sigma Pi Sigma membership within this Chapter shall be as follows:

(A) All members-elect shall have completed at least the equivalent of three semesters (five quarters) of full-time college work.

(B) All members-elect shall have completed at least three semester (five quarters) courses in physics or astronomy, each of at least three credit hours, which may be credited toward a physics major.

(C)*** All members-elect shall rank in the upper one third of their college class.

(D)*** All members-elect shall have attained at least a 3.0 grade point average on a 4.0 system for physics and astronomy courses and for cumulative course grades in all courses.

Clause 2. For graduate students in physics or related fields, all members-elect either (a) shall meet the requirements for undergraduate members-elect, based upon their undergraduate records, or (b) shall have completed at least one year of graduate work, meeting departmental standards for satisfactory progress towards an advanced degree.

Clause 3. For faculty members, research staff members, and other qualified individuals, who are in physics or related fields, election to membership shall be based upon their professional attainments.

ARTICLE IV. OFFICERS

Section I. Chapter Officers

The officers of the Chapter shall be a President, a Vice President, a Secretary, and a Treasurer; succession shall be in accordance with this order. Any two of the last three offices may be combined. These officers shall perform the duties prescribed by these bylaws and by the parliamentary authority adopted by this Chapter.

Section II. Elections

Officers shall be elected at a scheduled meeting in April of each year. Nominations shall be by open nomination at a meeting in the previous month. The election shall be by closed ballot. Officers-elect shall assume their officers immediately following the election and shall hold office for one year or until their successors are duly elected.

Section III. Sigma Pi Sigma Responsibility

Upon the installation of a Sigma Pi Sigma Chapter within the Society of Physics Students Chapter, one of the officers, who is a Sigma Pi Sigma member, and the Chapter Advisor shall be given specific responsibility of the affairs of the Sigma Pi Sigma Chapter.

ARTICLE V. CHAPTER ADVISOR

The Chapter Advisor shall be a faculty member appointed by the Chairman of the Physics and/or Astronomy Department, after consultation with the Chapter Officers. The Chapter Advisor shall provide liaison among the



Chapter, the Physics Department, and the National Office of the Society of Physics Students. The Chapter Advisor will supply counseling to the Chapter, furnish continuity of experience in Chapter operations, and provide long-range perspective to insure departmental interest in and support of the Society of Physics Students. The Chapter Advisor shall assist the Secretary in furnishing the National Office with the required data and shall assist the Treasurer in transmitting fees and dues to the National Office.

ARTICLE VI. MEETINGS

Regular meetings shall be held monthly as determined by the officers. Special meetings may be called by the President or Vice-President. There shall be at least six meetings per year.

ARTICLE VII. DUES

Regular meetings shall be held monthly as determined by the officers. Special meetings may be called by the President or Vice-President. There shall be at least six meetings per year.

ARTICLE VIII. PARLIAMENTARY AUTHORITY

The rules contained in the current edition of Robert's Rules of Order Newly Revised shall govern the Chapter in all cases to which they are applicable and in which they are not inconsistent with these bylaws and any special rules of order the Chapter may adopts.

ARTICLE IX. AMENDMENT OF BYLAWS

These bylaws may be amended by a two-thirds vote, provided that the amendment shall have been proposed at least one meeting previous to the time of vote. Such amendments shall conform to the regulations established by the National Constitution of the Society of Physics Students.

*Variations in bylaws, as required to suit local circumstances, are acceptable providing they agree with the spirit of the National Constitution of the Society of Physics Students.

**Article III, Section II and Article IV, Section III must be included by, and only by, institutions eligible to elect members into Sigma Pi Sigma (accredited, four-year institutions offering at least a bachelor's degree in physics or astronomy).

***The requirement in Article III, Section II, Clause I(D) is not a constitutional requirement. However, it is usually easier to obtain a grade point average

from the Recorder's Office than a class rank. Provision should be made to periodically check with the Recorder's Office that the specified GPA also satisfies Article III, Section II, Clause 1(C), which requires members-elect to rank in the upper one third of their college class and which is a minimum requirement specified by the National Constitution.

SEVEN ROLES OF SPS IN THE PHYSICS AND ASTRONOMY COMMUNITY

1. Undergraduate Research as a Teaching Tool

Undergraduate research teaches lessons and fosters skills that course work alone often cannot reach. The mission of undergraduate research is not the research itself; it is the growth in self-confidence and experience for the undergraduate. The product of undergraduate research is not necessarily a publication; it is the transformation of the student from being merely a taker of courses into a contributing member of the professional community.

Through SPS Zone Meetings, the SPS Observer, online journal publications, and various programs, SPS launches students into their professions. creates an entrée into the profession through undergraduate research experience opportunities.

2. Physics Outreach to K-12 Students and the General Public

Until every physicist is taking demonstrations to a local grade school at least once a year and working as colleagues with the teachers there to promote science literacy, the physics and Astronomy community is not doing everything possible to foster the public's appreciation of science. There are over 820 SPS chapters in the United States and internationally. Almost every one of them is near several elementary and secondary schools. SPS can take the lead in physics and Astronomy outreach.

3. Multiple Career Options are Open to Those With a Degree in Physics and astronomy

There is no major that guarantees a student a job. Therefore, students are well-advised to pursue a course of study that maximizes their options. AIP has both anecdotal and statistical evidence that graduates with a Bachelor's degree in physics and astronomy do well in a wide spectrum of careers, and not only in the traditional track that proceeds



through physics and astronomy graduate school. Physics alumni are engineers, computer scientists, insurance actuaries, teachers, managers, patent lawyers, financial analysts, politicians, mathematicians, statisticians, etc. They have made careers in business, chemistry, meteorology, geology, biophysics, medicine, and many other fields. Peruse the SPS Careers Resources featuring profiles of physicists, careers information and statistics, and explore career opportunities. Find out more here: students.aip.org/plan-your-future.

4. Recruitment and Retention Tool for the Department

A student may come to a particular physics department for a pre-engineering program. But once engaged in the active SPS chapter by participating in undergraduate research, attending professional meetings, being involved in physics and astronomy outreach to the local schools, and forming a network of like-minded colleagues, the student may stay with the department to major or minor in physics and astronomy. This is especially true in light of the many career options that are open to someone with a bachelor's degree in physics. In an environment where all academic departments are under pressure to maintain high enrollments, an active SPS chapter provides a definite advantage to the physics and astronomy department.

5. SPS and Sigma Pi Sigma Members are the “Friends of Physics and astronomy” throughout Society

SPS exists to create a sense of community throughout the undergraduate physics world. SPS is the only institutionalized structure that the physics community has for engaging not only the student physicist, but the student friend of physics and astronomy that may major in another field. Sigma Pi Sigma is the only institutionalized structure that the and Astronomy community has for engaging those many persons who have excelled in physics and then go forth into all walks of life, and pursue careers that include but are not limited to those of traditional physics.

Given the present lack of science appreciation in society, and the uncertain future of public support for basic research and science education, the SPS and Sigma Pi Sigma communities can play a large role in promoting and advocating on behalf of STEM research and support.

6. SPS as an Introduction to the Other Professional Physical Science Societies

SPS members who join as an undergraduate may chose free membership in two of the ten AIP Member Societies. Many of these societies offer resources and benefits that will support them as they pursue professional careers.

7. Training for Leadership

Twenty or thirty years from now, students who are now members of SPS and who are planning careers in traditional physics will be the leaders of the physics and astronomy institutions and the culture of physics and astronomy. Students who are now members of SPS but who go into other fields will similarly be leading the way in their circles of influence. The physics establishment, and the establishments of potential friends of physics and astronomy, will be theirs to shape, for better or worse.

Through SPS activities, the student's professional development, communication skills, leadership qualities, and professional networking are enhanced in ways that cannot be realized in coursework alone. SPS and Sigma Pi Sigma have unique and important roles to fulfill in shaping the culture of physics and its related disciplines.



PART III: SIGMA PI SIGMA(ΣΠΣ), THE PHYSICS AND ASTRONOMY HONORS SOCIETY

Sigma Pi Sigma is the physics and astronomy honors society. Chapters are restricted to colleges and universities of recognized standing that offer a physics and astronomy major and students that are selected to join must meet a high standard of scholarship and outstanding achievement. Sigma Pi Sigma is an excellent source of support for departments and the students. It is highly encouraged to make Sigma Pi Sigma inductees, members, and alumni part of the larger department family by inviting them to talks, including them in departmental ceremonies, and inviting them to interact with or mentor current students. SPS can assist with connecting you to alumni of your chapter.

ΣΠΣ MEMBERSHIP & BENEFITS

Membership is not limited to undergraduates. Graduate students, faculty members, and accomplished scientists from all careers are welcome in Sigma Pi Sigma. While local chapters set standards for prospective members, the minimum national standards specify that undergraduates must be in the upper one-third of their class in general scholarship, have completed at least three semesters or five quarters of full-time college course work, and have completed at least three semesters or five quarter courses in physics that can be credited toward a physics baccalaureate degree. Graduate students are eligible

for induction upon completing one year of study with satisfactory progress. Students who are not physics majors can be elected, provided that they meet the standards and have demonstrated an interest in physics.

A ΣΠΣ chapter is highly encouraged to induct qualified students and faculty members from nearby colleges that do not have a chapter. Physicists and astronomers in industry, government laboratories, and science educators can be elected by chapters on the basis of their professional record.

Lifetime Membership

Induction into Sigma Pi Sigma includes a lifetime membership. An entrance fee for \$54.00 is paid at the time of induction. This fee includes a one-year membership in the Society of Physics Student (SPS), an official ΣΠΣ pin, membership certificate, a lifetime subscription to Radiations magazine, and an official membership card. There are no annual dues to Sigma Pi Sigma or special assessment beyond the original entrance fee. Sigma Pi Sigma members can also purchase regalia, including honor cords, stoles, and tassels, to be worn in commencement ceremonies and other academic events through the SPS Store: students.aip.org/sigma-pi-sigma/induction.



Encouragement

By honoring high achievement in physics and upholding high standards for election into Sigma Pi Sigma, the Society provides an incentive for all physics students to rise to excellence. The society is a source of encouragement to all students who study physics, whatever the ultimate level of performance achieved by the individual. Such encouragement ranges from promoting physics interest and science literacy in the general public, to challenging those who are pondering their potential for earning higher degrees. Sigma Pi Sigma urges its members to demonstrate this encouragement through personal service.

Service

With the recognition of accomplishment comes a responsibility to service at all levels. Nationally, Sigma Pi Sigma members can serve by helping to work for sound national science policies. Locally, Sigma Pi Sigma members can serve in community science education projects and in mentoring individual students. Through our member's personal initiative, members of the local community can learn more about physics and witness the high standards of Sigma Pi Sigma membership. Our colleges, universities, and our Society know that when we become alumni, because we respect the personal struggle for excellence, we will support the generations of students that follow.

When the experience of Sigma Pi Sigma members is placed at the service of others, at any level, then Sigma Pi Sigma touches more lives than may be counted by the number of its members.

Fellowship

The criterion of Sigma Pi Sigma membership is proven excellence in physics. Sigma Pi Sigma members represent many generations of experience and wisdom that can be focused on the matters that unite us.

In Sigma Pi Sigma, there are no professional boundaries. One finds all professions represented in the Sigma Pi Sigma membership. There are many practicing physicists among Sigma Pi Sigma members, but excellence in physics has opened many career options to our members. Sigma Pi Sigma unites a diverse group of exceptional people who have shared in the culture and traditions of physics. With the common thread of this shared background running through so rich a diversity of generations and professions, Sigma Pi Sigma promotes a spirit of community among its members and encourages them to offer their collective wisdom and perspectives in the service of the larger society.



INDUCTIONS AND THE CEREMONY

Chapters are highly encouraged to highlight the induction of new members by hosting an induction ceremony. The ceremony is an opportunity to honor those that have excelled academically and to bring positive attention to the program and department. The traditions of each chapter are unique, with each school carrying out this important recognition of excellence and department culture in their own way. Inductions can happen any time of year, with most chapters choosing Spring.

To celebrate, most schools invite campus administrators, friends, inductee relatives, and Sigma Pi Sigma Alumni to join in the welcoming of the newest inductees. This sharing of the experience is also a fantastic opportunity to showcase the department and connect with alumni. There are resources for the induction ceremony (including videos, Powerpoint presentations, detailed scripts, and ceremony format suggestions) located here: students.aip.org/sigma-pi-sigma/induction.

The SPS office processes new Sigma Pi Sigma memberships electronically. Once students (or departments) have paid and are registered as new inductees, personalized induction materials are provided to chapter advisors for the induction ceremony. Please allow for 10 full business days for processing to avoid expedited shipping charges. For specific details, visit the virtual green folder: students.aip.org/sigma-pi-sigma/induction.

Who can be invited to join Sigma Pi Sigma?

There are four ways people are invited for academic excellence and/or service.

1. Current undergraduate students who adhere to their chapter's guidelines. For many chapters, this translates to being in the top 1/3 (or higher) of their class AND upholding the four pillars of Sigma Pi Sigma which include service and fellowship.
2. Upon undergraduate graduation in physics or astronomy (the semester they graduate), an undergraduate student may be inducted for either meeting the undergraduate criteria or for excellence in service to the department or field.
3. As a graduate student who has completed at least one semester of course work, meets a 3.0 GPA, AND upholds the four pillars of Sigma Pi Sigma which include service and fellowship.

4. Professionals within the field (physics, astronomy, or closely related disciplines) can be asked to join for upholding the four pillars of Sigma Pi Sigma.

Department Benefits

While membership within Sigma Pi Sigma benefits individual members, chapters help departments develop and maintain a healthy community.

- SPS can connect you with Sigma Pi Sigma members who are alumni, often long after they have graduated from your department.
- Through our Alumni Engagement Program and national membership network, we can work with you with speakers from a broad array of career pathways.
- Sigma Pi Sigma can provide students, faculty, and alumni with community service opportunities that span the globe.
- Membership within Sigma Pi Sigma can be extended to those that serve a department's students, faculty, and local community.
- Your department can honor alumni and those that strengthen your department through Sigma Pi Sigma service awards and honorary membership.
- The National Office can provide resources, advice, and connections to the broader Physical Sciences community.

Ways for Sigma Pi Sigma and SPS to work together:

- Invite Sigma Pi Sigma Alumni to outreach events
- Request guest speakers from your Sigma Pi Sigma alumni
- Talk about the history of your chapter and its members at the beginning of the semester
- Talk about the history of the societies and how SPS came from Sigma Pi Sigma in the 1960's
- Have senior Sigma Pi Sigma members be peer mentors to incoming SPS students

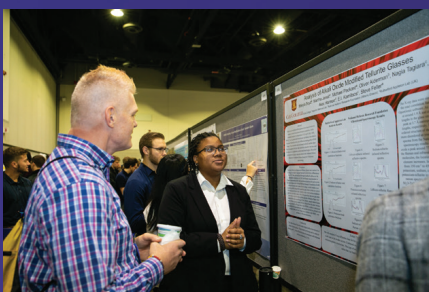


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sigmapisigma.org/congress/2025

