

Introduction to the Society of Physics Students

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SIGMA PI SIGMA
The physics honor society

AIP | American Institute of Physics

SPS & Sigma Pi Sigma



SPS is the **Society of Physics Students**, open to all who have an interest in physics and astronomy. SPS Chapters are chartered at two-year and four-year colleges and universities. Founded in 1968



ΣΠΣ is the physics honor society, housed within the Society of Physics Students. Sigma Pi Sigma chapters are restricted to colleges and universities of recognized standing that offer a strong physics or astronomy major. **ΣΠΣ is a life long opportunity to connect to the wider community.**

Founded in 1921

No, really... What is SPS?

SPS: a “chapter based” society

National Initiatives & local impacts

- Professional society *explicitly* designed for students *and mentors*
- Purpose: **help students transform themselves** into members of the professional community
- SPS provides extracurricular professional development and networking opportunities:
 - Effective communication and personal interactions
 - Leadership experience
 - Contact network & connection to member societies
 - Presenting scholarly work at professional meetings and journals
 - Local and national outreach services (connect to your world)

Short list of benefits (\$24/year)

- **Physics Today:** A monthly award-winning publication
- **Scholarships:** SPS Leadership, SPS Future Teacher, Community Colleges, etc.
- **SPS Observer:** A quarterly magazine for undergrad physics and astronomy majors
- **Research and travel grants:** to attend regional and national meetings
- **SPS Summer Internship Program:** 10-week-paid internship program for SPS members
- **PhysCon:** Largest undergraduate conference for physics and astronomy majors
- Free membership* in two AIP Member Societies for up to three years
- Free joint membership in the National Society of Black Physicists (NSBP) or the National Society of Hispanic Physicists (NSHP)
- Eligibility for **outreach** and chapter **research monetary awards**
- **SPS News eNewsletter** (bi-weekly)
- **Careers Toolbox for Physics Students**
- **Professional development** opportunities
- Connection to undergraduate-specific regional **conferences** and **meetings**
- Opportunity to run for the **SPS national council**
- Serve on SPS committees and gain leadership skills
- Participation in lobbying events in Capitol Hill
- Opportunity to apply for free outreach materials and kits (SOCKs)
- Support the Physics community through outreach and community service events
- Access to diversity and inclusion resources/ best practices for your chapter
- **PSISTAR:** SPS entrepreneurship program

Support for presenting at meetings

Career building and networking

SPS Travel Awards

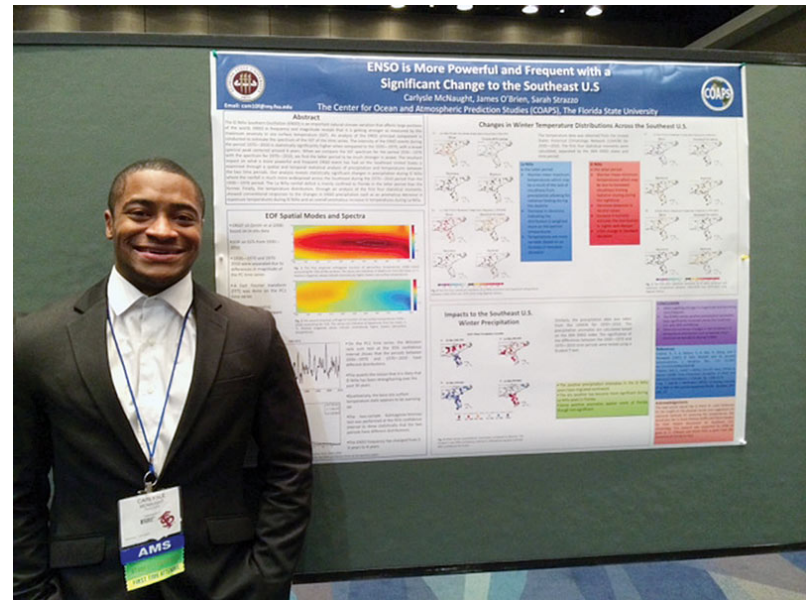
- *Many* \$200 awards made each year
- Awarded to SPS members presenting research at member society meetings
- Awarded to undergraduates on a first-come first-served basis

SPS Reporter Awards

- *Many* \$200 awards made each year
- Awarded to SPS members reporting on professional physics/astronomy meetings
- Awarded to undergraduates on a first-come first-served basis
- Content is published in online and print forums



SPS National Reporters at the AAPT Winter meeting 2012, Ontario California, interview with Brian Green (up) and Carlysle McNaught (below)



SPS Summer Internships

2016 Interns at ACP after Dr. C made a bad joke



Broad community involvement:

- **Outreach**
- **Science Policy**
- **Research**
- **Education**
- **Science Writing**
- **Education**



The Interns, Chillin' with Einstein

SPS Internships are 10 week long summer opportunities for physics and astronomy students based in and around Washington, DC!

Program benefits:

- Travel costs to/from DC
- \$5,700 stipend
- Housing with generous travel stipend
- Future meeting funding
- Professional Development
- Outreach
- Leadership opportunities

www.spsnational.org/programs/internships

SPS Summer Internships

SPS Internships

What they work on: research, outreach, education, and policy

Potential hosts: NIST, NASA, AIP, AAS, AAPT, OSA, APS, and on Capital Hill in the Washington, DC

Students are selected based on scholastic record and potential for future success, evidence of participation in SPS events and activities, and relevant experience

NOT a standard internship!



SPS Observer

- Quarterly magazine for SPS members & advisors
- Builds community, both within SPS & AIP Member Societies
- Develops physics appreciation

Radiations Magazine

- Semi-annual magazine of Sigma Pi Sigma
- Keep people with a physics background connected
- Highlight $\Sigma\Pi\Sigma$ news, meetings, events, & awards

Bi-weekly news briefs



Award for Outstanding Undergraduate Research

- Given to one or more SPS members annually, awards \$500 honorarium for winner and \$500 for the SPS Chapter. **Due March 15**

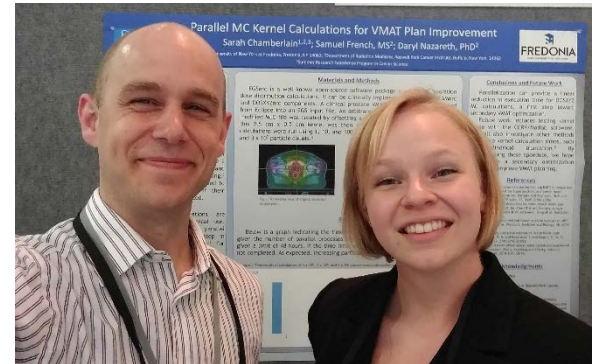
Outstanding Chapter Advisor Award

- Given annually to a chapter advisor who has been nominated by chapter student members. The award is a grant of \$5,000 to be divided three ways: 60% to the Chapter Advisor, 20% to the Chapter, and the remaining 20% to the department. **Due March 15**

Blake Lily Prize

- Given to two or more chapters and/or individuals for feedback from physics outreach programs.

Due June 15



Future Face of Physics Award

- Awarded to chapters for physics outreach designed to promote physics across cultures. \$500 maximum, awarded to several chapters annually. **Due November 15**

Marsh W. White Award

- Awarded to chapters for physics outreach to grades K-12 and the general public. \$500 maximum, awarded to several chapters annually. **Due November 15**

SPS Chapter Research Award

- Awarded to chapters for physics research projects. \$2,000 maximum, awarded to several chapters annually. Formerly known as the Sigma Pi Sigma Undergraduate Research Award. **Due November 15**

SPS Outstanding Chapter Award

- SPS Outstanding Chapter Awards, selected by Zone Councilors and Associate Zone Councilors, are determined by the chapter's involvement in local, zone and national SPS meetings and events. **Due November 15**

The American Institute of Physics (AIP)

Be Part of Something Bigger

- Being part of the SPS national organization makes you part of one of the world's largest scientific organizations
- AIP is a “society of societies”
 - Thousands of scientists, engineers and educators
- AIP Mission
 - serve the sciences of physics and astronomy by serving its Member Societies, individual scientists, students and the general public.
- AIP Member Societies (you can join two for free!):



Acoustical Society
of America



American Association
of Physicists in
Medicine



American
Association of
Physics Teachers



American
Astronomical
Society



American
Crystallographic
Association



American
Physical
Society



AVS: Science &
Technology of
Materials, Interfaces,
& Processing



The Optical
Society



Society of
Rheology



American Meteorological
Society

Support for outreach and public engagement

Inspiring the next generation of physics students

Science Outreach Catalyst Kits (S.O.C.K.'s)

- Designed for SPS Chapters and collegiate physics departments to use in outreach presentations to local elementary, middle, and high school students
- Designed and assembled annually by the SPS national interns and office staff
- Complete with robust lesson plans!





Science & technology jobs presented by the Society of Physics Students & Sigma Pi Sigma

Self-guided support for undergraduate careers & professional development

Knowledge and Skills Assessment

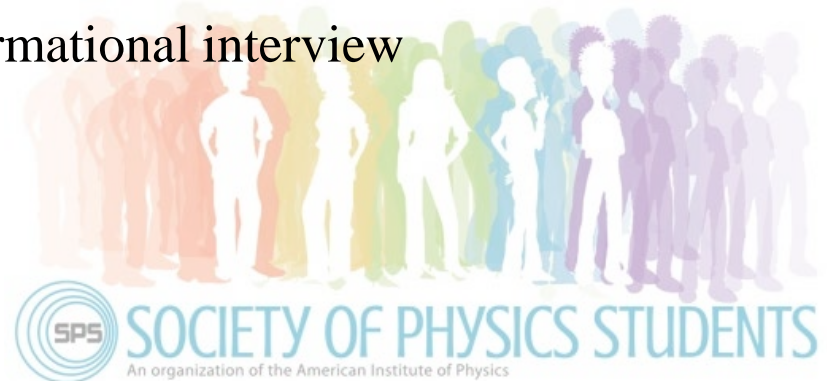
- Articulate your skills and knowledge
- Translate experience, coursework and extracurricular activities to job
- Build a skills-based resume

Making the most of Networking

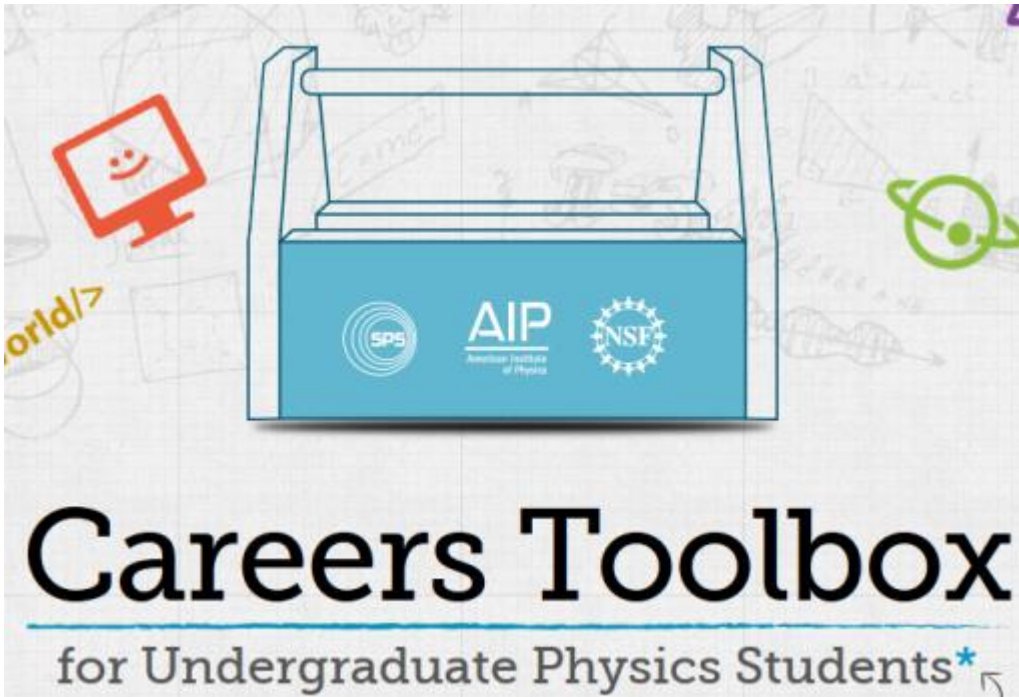
- Learn about networking
- Develop elevator speeches and learn how to deliver them

Informational Interviewing

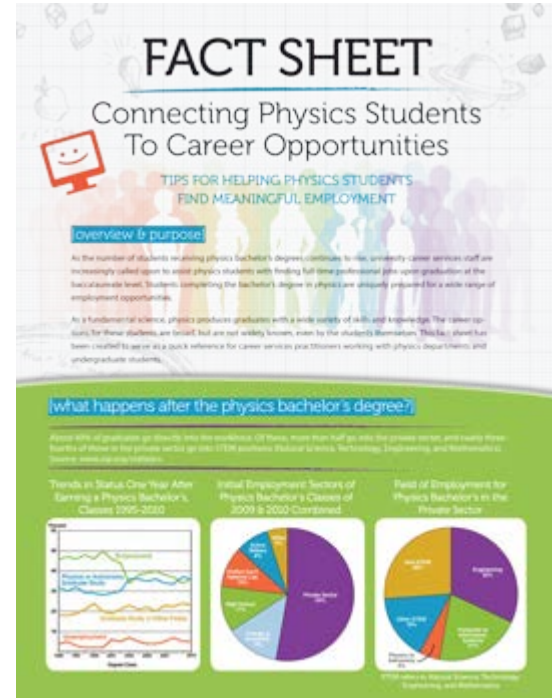
- Learn how to carry out an effective informational interview
- Practice interview strategies



Career resources



<https://www.spsnational.org/careerstoobox>



AIP | GradSchoolShopper.com
Find your future in the
physical sciences and engineering

SPS and SPS Governance

SPS National Council

18 zones, each zone represented by

- Zone Councilor (typically faculty)
 - Elected for three year terms with a two consecutive term limit

Associate Zone Councilor (student)

- Elected annually, with a two year consecutive term limit
- One AZC elected by peers to serve on Executive Committee

Leadership: SPS Executive Committee

- SPS President
- Sigma PI Sigma President
- AZC student representative
- AIP Member at large
- SPS Director
- AIP Executive Director

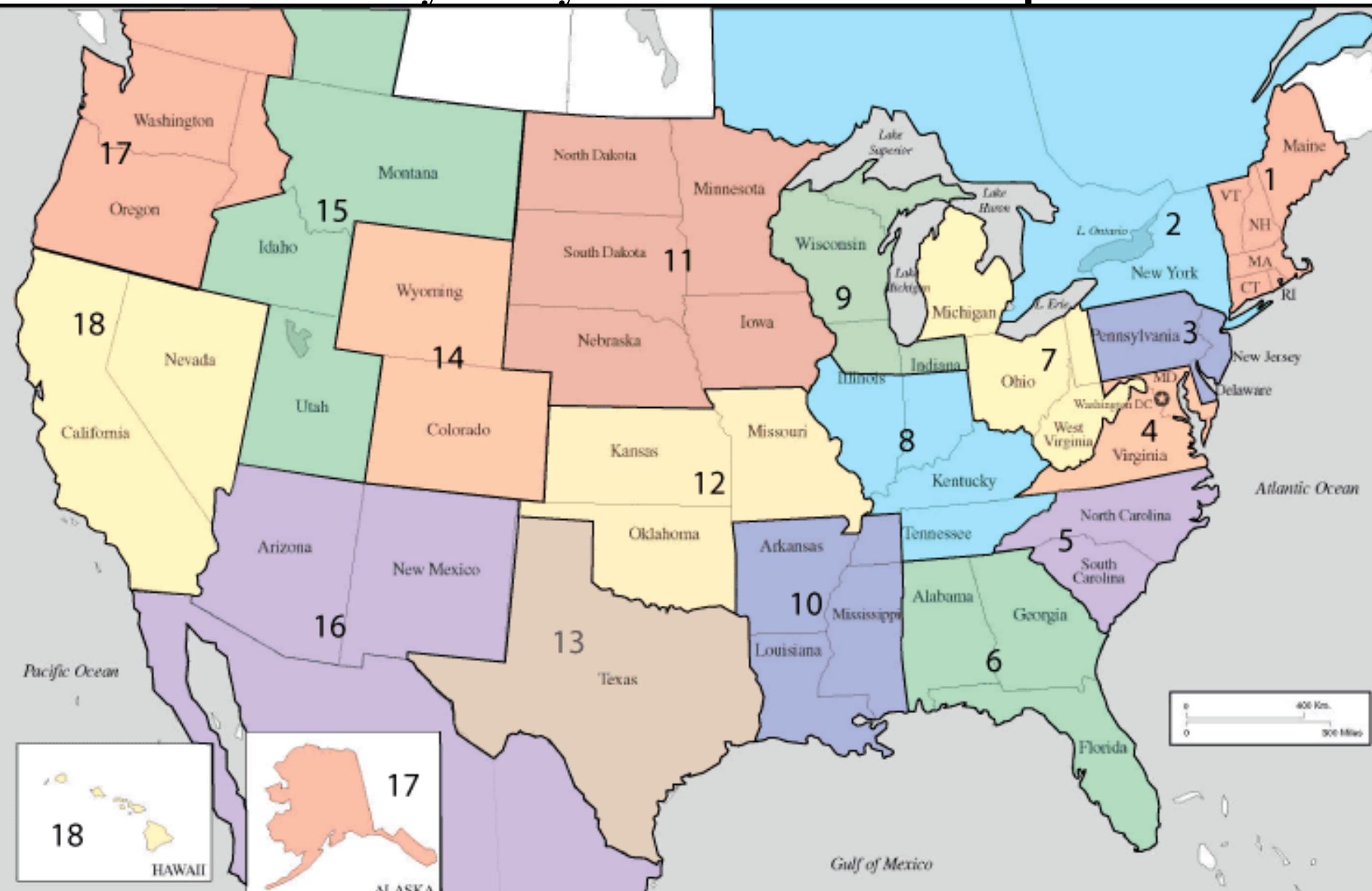
Elections in the spring of each year



Meets as a council in Washington, DC

- Committees on student led issues
- National experience leading an organization
- Meet leaders in the field
- Make a difference your community


Society of Physics Students Zone Map



 18 - China (not to scale)

 18 - Singapore(not to scale)

 6 - Puerto Rico(not to scale)

 4 - Egypt(not to scale)

2019 Physics Congress (PhysCon)

November 14 - 17, 2019

Providence, RI

Largest conference for undergraduates in Physics and Astronomy in the world!

Recent themes have been:

2016 - Unifying Fields: Science Driving Innovation

2012 - Connecting Worlds through Science and Service



PhysCon is a conference for undergrads and put on by undergrads and $\Sigma\Pi\Sigma$



In 2016 we hosted ~1200 attendees.
2019 will be larger!

YOU are the Society of Physics Students

SPS National supports local chapter initiatives, local chapter needs, local chapter concerns, and mentors

Each chapter is vastly different than each other and that's fantastic!

“You know, the most amazing thing happened to me tonight. I was coming here, on the way to the lecture, and I came in through the parking lot. And you won't believe what happened. I saw a car with the license plate ARW 357. Can you imagine? Of all the millions of license plates in the state, what was the chance that I would see that particular one tonight? Amazing!” R. Feynman



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics