SPS and Sigma Pi Sigma
It’s who we are.
Overview

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

- SPS 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 major.
No, really. What is SPS?

SPS: a “chapter based” society

**National Initiatives, local impact**

- A professional association explicitly designed for students *and* their mentors.
- Purpose: to help students transform themselves into contributing members of the professional community
- SPS provides extracurricular professional development opportunities to develop important skills:
  * effective communication and personal interactions
  * leadership experience
  * establishing a personal network of contact
  * presenting scholarly work in professional meetings and journals
  * outreach services to the campus and local communities.
Students took the lead!

- Sigma Pi Sigma was founded by five undergraduates and four faculty members on the campus of Davidson College (NC) in 1921.
- Next, Marsh White took Sigma Pi Sigma to Penn State (1926)
  [http://www.phys.psu.edu/~rick/sigmapisigma.html](http://www.phys.psu.edu/~rick/sigmapisigma.html)

- In 1930 a newsletter was started.
  - *The Radiations of Sigma Pi Sigma*
    - the organization’s official publication
    - later renamed *Radiations: The Official Publication of Sigma Pi Sigma*
    - Now published and mailed to members biannually
Joining with the American Institution of Physics (AIP)

- In 1951 Sigma Pi Sigma became an affiliated society AIP
- In 1968 Sigma Pi Sigma officially merged with AIP
  - Society of Physics Students (SPS) was born
  - Sigma Pi Sigma became the honor society within the Society of Physics Students.
SPS and ΣΠΣ Governance

SPS National Council

- 18 zones, each zone represented by
  - Zone Councilor (typically faculty)
    - Elected for up to two consecutive, three year terms
  - Associate Zone Councilor (student)
    - Elected annually, with a two year consecutive term limit
    - One AZC elected by peers to serve on Executive Committee

Council 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 (VOTE NOW!)
Why Join SPS?

MANY reasons!

- It only costs $24.00 (less than a single night at the movies!)
- All SPS members receive *Physics Today*, the physics magazine
- As an SPS Undergraduate Member, you get to join one of the AIP member societies (number of society members)
  * American Physical Society (41,000)
  * Optical Society of America (14,000)
  * Acoustical Society of America (7,000)
  * The Society of Rheology (1,600)
  * American Assoc. of Physics Teachers (10,000)
  * American Crystallographic Association (2,000)
  * American Astronomical Society (6,000)
  * American Assoc. of Physicists in Medicine (5,000)
  * AVS: Science & Technology (5,000)
  * American Geophysical Union (34,000)

- Being a part of SPS puts you in the company of scientists of all kinds!
  * SPS connects you with thousands of students, faculty and physics professionals around the globe.
Every chapter has a unique personality!
SPS can provide

**PURPOSE**

- Being part of a group of people with common interest can instill a sense of personal responsibility for “something big”
- Being active in SPS programs can give an immediate “application” for the physics learned in the classroom.
- Being part of SPS provides an immediate connection to the future of physics.
SPS Annual Theme and Slogan

- Theme and slogan adopted by SPS National Council September 2011
- Tied to Congress 2012 through “Connecting Worlds” theme

All SPS art/logos available for use by SPS Chapters
1. Zone Meetings
   • Annually or biannually in all 18 zones
   • Student driven planning committee
2. 2012 Quadrennial Physics Congress
   hosted by Sigma Pi Sigma
   • Every 4 years
   • Student driven planning committee

A demonstration of strength by SPS Staff, and student volunteers from U. Central Florida on pre-con “bag stuffing night”
What is a “congress”?  
A meeting focused on undergraduate physics experience
Notable highlights

- Largest ever: 800+ attendees
  Waiting list ~50
- Largest group: MIT (40)
  Zones present: 18
- NSF support for 40 HBCU students from 18 schools

Attendee Stats:
- 33% Women
- 21% Underrepresented Minority

International Participation First:
Southeast U - China

Participation/Sponsorship from
MS: APS, OSA, AAS, AAPT, AGU,
ASA, AAPM, AVS
2012 Quadrennial Physics Congress
hosted by Sigma Pi Sigma

Notable highlights-2

15 busses
15 NASA tour guides
775 Boxed Lunches

Behind the scenes
tours NASA-KSC

World Class Plenary
speakers

Dr. Jocelyn Bell-Burnell
Dr. Mercedes Richards
Prof. Freeman Dyson
Dr. John Grunsfeld
Dr. John Mather
Dr. John Johnson

Notable Lunchtime
Additions

Dr. Dan Green – Higgs Discovery
Dr. David Saltzberg – “Big Bang Theory”
(TV series)
2012 Quadrennial Physics Congress
hosted by Sigma Pi Sigma

Notable highlights-3

Engaging Workshops

Connecting Scientists & Science Policy
Connecting Diverse Perspectives in Science
Connecting Academia & Industry
Connecting Science & Technology
Connecting Students & Careers
Connecting Physics & the Public

Phenomenal Workshop Leaders
8 Workshop Leaders
6 Workshops
15 Workshop Wizards
2012 Quadrennial Physics Congress
hosted by Sigma Pi Sigma

Notable highlights-4

Exhibit Hall with 60 Exhibits

Breakfast with the Scientists
Notable highlights-2

2 Student Research and Outreach Poster Sessions

189 Posters
48 Poster Judges
11 Award Winners

1 Art Show

20 pieces of art
5 winners
PhysCon2016

- SLAC National Accelerator Laboratory
- San Jose, CA
- Planning for 1200+

West Coast, here we come!
What does SPS do for students?

Support and Encouragement!

- Scholarships
- Community outreach programs
- Awards for student research
- Grants for presenting at professional meetings
- Recognition of outstanding faculty advisors
- Summer internship programs
Encouraging students to continue their study of physics

- **SPS Leadership Scholarships**
  - One award of up to $5,000 scholarship and multiple $2,000 scholarships awarded annually.
  - Based on academic performance and leadership in SPS and Sigma Pi Sigma.

- **Herbert Levy Memorial Scholarship**
  - One $2,000 scholarship awarded annually.
  - Given to a financially needy student to attain a quality physics education.

- **Peggy Dixon Two-Year College Scholarship**
  - One $2,000 scholarship given annually.
  - Given to a highly qualified and motivated student to support their transfer from a two year college

- **SPS Future Teacher Scholarship**
  - One $2,000 scholarship given annually.
  - Presented to students participating in a teacher education program and planning to pursue a career in teaching.
Awards for Outreach/Public Engagement

Inspiring the next generation of physics students

❖ **Marsh W. White Awards**
  * Multiple awards of up to $300 given annually.
  * Awards to SPS chapters “to support projects designed to promote interest in physics among students and the general public.”

❖ **The Blake Lilly Prize**
  * SPS chapters and individuals receive a set of the three-volume *Feynman Lectures on Physics*, one of Blake Lilly’s most prized possessions.
Support for outreach and public engagement

Inspiring the next generation of physics students

- **Science Outreach Catalyst Kits (S.O.C.K.’s)**
  - Assembled annually by the SPS national interns and office staff.
  - designed for SPS Chapters and collegiate physics departments to use in outreach presentations to local elementary, middle, and high school students.
  - Complete with robust lesson plans!
Support for Undergraduate Research

Encouraging physics students to participate in meaningful undergraduate research

- **Sigma Pi Sigma Undergraduate Research Award**
  - Multiple prizes of $2,000 awarded to SPS Chapters

- **Outstanding Student Awards for Undergraduate Research**
  - Awarded to multiple undergraduates for their outstanding research in the field of physics.
  - Awarded $500 for the selected individual, $500 for the SPS Chapter, and an all expense paid trip to the International Conference of Physics Students (ICPS).
Support for presenting at meetings

Building confidence and networking

- **SPS Travel Awards**
  - Multiple $200 grants to help SPS students travel to a national meeting of a science society.

- **SPS Reporter Awards**
  - Multiple grants to individuals or chapters that agree to attend a professional meeting and write an article about their experience for our publications.

SPS National Reporters at the AAPT Winter meeting 2012, Ontario California, interview with Brian Green (right)
Outstanding Chapter Advisor Award

Commending those who inspire the best

- **Outstanding Chapter Advisor Award**
  - One annual award given, consisting of a citation of the recipient's distinctive service and a $5,000 prize
    - 60% to the chapter advisor
    - 20% to the recipient’s chapter
    - 20% to the recipient’s institution

- The purpose of the award is to recognize the extraordinary efforts of one SPS Chapter advisor annually.
Broadening career aspirations

**SPS Internships**

- Internships are nine week, broad-based learning opportunities for undergraduate physics majors in the areas of scientific research, outreach and policy.
  - Interns receive stipend, travel allowance and housing.
  - Interns are placed in organizations such as NIST, NASA, AIP, AAS, AAPT and APS, in the Washington, DC, area.
- Students are selected based on scholastic record and potential for future success, evidence of participation in SPS events and activities, and evidence of experience in either science outreach/policy, or in science research.
Supporting Diversity in Physics

Future Faces of Physics

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

- SPS can be the first line in reshaping the face of physics
- Future Faces of Physics Program
  - Development of a unique “kit” available for zones or chapters
  - Future Faces of Physics Physpardy (Jeopardy-style game)
SPS Service to the physics community.

Adopt-a-Physicist

- Connects high school physics students to physics graduates
- Hosted twice a year
- Typical session:
  * 50 teachers
  * 70 classes
  * 150 physicists
Connecting with Constituents

- **Email**
  - SPS membership no more than biweekly
  - Sigma Pi Sigma membership no more than quarterly
  - New analysis & tracking process

- **“Snail Mail”**
  - 4-6 main mailings over the year

- **Web Presence**
  - SPS home page
  - Sigma Pi Sigma home page
  - SPS Jobs

**Web Presence (cont’d)**

- PhysCon
- JURP
- The Nucleus
- The SPS Observer

**Social Networking**

- Facebook Page
- Facebook groups (SPS & ΣΠΣ)
- Twitter Accounts
- LinkedIn group
- Google+
Great reading material!

Publications

- The 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 ΣΠΣ news, meetings, events, & awards
Physics for all
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