Physcon 2012: Connecting Worlds through Science and Service

In some sense, planning for the 2012 Sigma Pi Sigma Congress was like packing a parachute for a high-altitude skydiver. Each fold of the fabric and bend of the cords must be done with precaution and purpose. To prepare for the 2012 Congress, each plan was made with effort to anticipate a successful outcome, because when the meeting starts—as when the skydiver steps out of the plane—inertia takes over. Two weeks ago, while the nation watched the elections unfold, the AIP Education staff was in Orlando, FL, busily attending to last-minute preparations. And when participants began to arrive on Wednesday afternoon, the meeting unfolded beautifully, like a well-packed parachute.

The congress, a.k.a. “PhysCon,” claimed its place in history as the largest-ever meeting for physics undergraduates. Of the more than 800 attendees, approximately 80% were students, and as they did for the 2008 Congress at Fermilab, they came by the busloads. A group of more than 30 students and mentors from Abilene Christian University (Abilene, TX) rode on a bus more than 24 hours to get there—and noted that it was well worth the trip. There were several large groups, with MIT’s 41 attendees at the top. About 160 campuses from around the world were represented at this year’s congress, including our newest international chapter from Southeast University in Nanjing, China, whose six students and an advisor flew 13 hours to join with fellow SPS students in the US!
The agenda was packed down to the minute, from the opening gavel to the last award, with world-class plenary talks and challenging workshops. Before the first session even began, participants were introduced to the congress theme, “Connecting Worlds,” with a behind-the-scenes look at the Kennedy Space Center through guided tours by NASA scientists and engineers.” After Sigma Pi Sigma President William DeGraffenreid rapped the gavel to formally open the congress, Astronaut John Grunsfeld took the podium and recounted his adventures as the Hubble Space Telescope repairman. During the next two days, students and mentors learned about topics that will continue to affect their futures, including science policy and budget decisions, career choices, the discovery of exoplanets, and how their roles in service to the world as scientists will affect the futures of others. The meeting closed with the words of Jocelyn Bell Burnell, who challenged us to apply sound logic and science to dispel rumor and myth, using the Mayan’s “end of the world” prediction as her example. Speaker presentations will soon be available through the Congress website.

The once-every-four-year congress is organized by Sigma Pi Sigma, the physics honor society, and the Society of Physics Students (SPS), both administered by AIP's Education Division. A planning committee of students, alumni, faculty, and staff met regularly via teleconference during the past two years to prepare for this event—by far the most successful congress yet. In addition to the work presented by students via posters detailing their research, outreach, and public service, the tradition of highlighting “physics in art” continued with 30 art entries, ranging from more traditional paintings to three-dimensional interpretations of nature.

Twenty chapters sent student reporters to the event, each focusing on a different piece of the congress. Reporting chapters sent at least four students and received $500 to help with travel expenses; the awards were sponsored in part by ACP employees via proceeds from the PhysCon silent auction.

The AIP Governing Board held its fall 2012 meeting at the same venue so that board members had the opportunity to participate in PhysCon. All of the board participants were captivated by the energy and enthusiasm of the students. ASA executive director and AIP Governing Board member Charles Schmid remarked that he was “more than impressed” with the organization of the congress and with the level of work presented by the nearly 200 student poster presenters. Many of the Member Societies contributed significantly to make the congress a huge success. Kudos to APS, AAPT, OSA and the OSA Foundation, and AAS for contributions to the student social events, poster sessions, and awards.
The “Connecting Worlds” theme of this year’s congress carries with it many connotations, and as the congress unfolded, we witnessed countless manifestations of its meaning. From observing young students stand in line with much anticipation just to speak with notable scientist Freeman Dyson to seeing confidence grown in young women as they found a new mentor in Mercedes Richards, the energy and impact of this time and this collection of physics folk were unprecedented. The wake of this event is inevitable—carrying the theme of professional service into the coming years with the energy of those who came, and saw, and connected.

**Publishing Matters**

**On exhibit at PhysCon**

AIP Publishing and Career Network, representing SPS Jobs, took the opportunity afforded by the 2012 Physics Congress of Sigma Pi Sigma to reach an important segment of the physics community—
students, soon to be authoring research articles and/or entering the workforce. AIP Publishing sought to educate the students about the many services offered by AIP, including options for publishing their research within AIP suite of journals and those of our Member Society publishing partners. SPS Job’s aim was to show students the job resources available through AIP so as to be their first stop when they’re ready to join the workforce with their new degree. The traffic in the exhibit was bustling, and students were very receptive to learning about what possibilities AIP has to offer as they become professionals.

**Member Society Spotlight**

**APS letter opposing sequestration is open for signing**

Led by APS student members, students across the physical sciences and engineering are signing a letter urging Congress to avoid devastating 8.2% cuts to science funding scheduled to occur on January 2, 2013. These cuts will mean thousands fewer grants, resulting in reduced opportunities for students across the curricula. The letter accompanies a webinar recently hosted by APS on student science advocacy. Visiting representatives, building relationships with congressional staffers, writing op-eds, and serving in leadership roles have all resulted in positive feedback for students involved in science advocacy. Sometimes all it takes is getting in touch with your representative through a letter to let your voice be heard. Students can sign the letter on APS’s Frontline website.

**Acoustics news sounds off at ASA’s Kansas City meeting**

The latest news and discoveries from the science of sound were featured at the 164th meeting of the Acoustical Society of America (ASA), held October 22–26 in Kansas City, MO. AIP’s media services team helped publicize many of the exciting talks from that event, with topics including taking the bite out of baseball bats, dinosaur-era acoustics possibly returning to Earth’s oceans, using sound to “see” through flames to aid rescuers in burning buildings, and the world’s largest subwoofer created when earthquakes “pump” the ground. Some of the biggest media coverage came from research suggesting that perfect pitch may be more nature than nurture. AIP also conducted a webcast press briefing, highlighting a number of the meeting’s most interesting talks.

**Off the Press**

**Radiations, Fall 2012 issue**

About the cover: Former Astronaut John Grunsfeld, Hubble repair mission specialist and a 2012 PhysCon plenary speaker, is positioned on a foot restraint on the end of the Space Shuttle Atlantis' remote manipulator system, as he participates in the final session to refurbish and upgrade the Hubble Space Telescope. Image courtesy of NASA. The complete issue is available for through the Sigma Pi Sigma website.
Through November 27

- Donations of food may be brought to the lunchroom to advance the efforts of Long Island Cares (Melville)

Thursday, November 29

- Milestone awards presentation (College Park)

December 3–7

- AGU 2012 Fall Meeting (San Francisco, CA)

Through December 10

- Toys for Tots Drive—Donations of new, unwrapped gifts may be placed in the collection bin in the lunchroom (Melville)

Wednesday, December 12

- Staff birthday breakfasts (Melville and College Park)

Thursday, December 13

- Milestone awards presentation and quarterly all-staff update (Melville)
- Holiday party (Melville)

Wednesday, December 19

- Holiday party (College Park)