

Students go for gold at physics olympiad

More than 380 high-school students representing 82 countries traveled to Vietnam in July to compete in this year's International Physics Olympiad. Many took time to sightsee in Hanoi and around the countryside. "The experience in Vietnam was great . . . and the Vietnamese [people] were very hospitable," says high-school physics teacher Robert Shurtz, co-academic director of the US team. The US students, who were jointly sponsored by the American Institute of Physics and the American Association of Physics Teachers, also blogged their experiences at <http://aapt-phycsteam.blogspot.com>, telling of encounters with students from other teams and posting photos of their excursion down tourist-favorite Ha Long Bay.

The 39th olympiad, however, was not all fun and games. Medals were at stake for experimentally determining the efficiency of a solar cell and explaining the theory behind the mechanics of a Vietnamese water-powered, rice-pounding mortar. The theory question stumped many of the students and caused angst among their coaches.

The Chinese and Taiwanese teams tied for first place, with each earning five gold medals. China's Longzhi Tan received the highest overall score. Improving on their fifth-place finish from the 2007 contest, the US team tied with India and South Korea for second place, earning four golds and a silver. Claiming gold for the US were Tucker Chan of Princeton, New Jersey; Edward Gan of Silver Spring, Maryland; Joshua Oremán of North Hollywood, California; and Danny Zhu of New York City. Returning contestant Rui Hu of Newark, Delaware, missed gold by 0.2 points and took home a silver medal for the second time.

"I am very proud of the accomplishment and more than a little surprised by it, especially since this is my first year studying physics," says Oremán. Prior to attending the US physics team training camp, Oremán admits that he had never "even entertained notions" of majoring in physics. Now he's considering it. "Competing in the [olympiad] has shown me the richness of the field," he adds.

Hans Jordens, a theoretical physicist at the University of Groningen in the Netherlands, was elected president of the International Physics olympiad at the event. He is the full-time successor to longtime president Waldemar Gorzkowski, who died during last year's Olympiad. This year's competition preceded the Summer Olympics held last month in neighboring China, whose team wore Beijing 2008 T-shirts at the olympiad. Unlike the summer games, "physics is not a spectator sport," says Chan, who views the tournament as an opportunity to build friendships.



The US physics team that competed in the International Physics Olympiad in Vietnam were represented by (front row from left) Rui Hu, Edward Gan, Tucker Chan, Joshua Oremán, and Danny Zhu; their team leaders included (back row from left) Paul Stanley (Beloit College, Wisconsin), Warren Turner (Westfield State College, Massachusetts), and Robert Shurtz (Hawken School, Ohio).

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95 private and public ocean research institutions. Prior to that, she managed society and public affairs programs at the American Geophysical Union for eight years. O'Riordan says that her experiences at AGU familiarized her with AIP's internal management structure and Governing Board. "I wanted to get back to working with associations," she says. "Associations are unique environments, like a grassroots community that scientists build, and then the staff works on programs that provide services back to those scientists."

Among the biggest challenges O'Riordan says she will face is to deliver products and programs to the physics community and the public at a time when journal subscriptions, AIP's primary revenue, are stressed by changing market conditions. "We need to diversify our portfolio," she says, noting that the Physics Resources Center could address budget concerns by further engaging in joint programs with the member societies and by obtaining public and

private grants in a way that does not interfere with fundraising by the societies. O'Riordan also plans to work with the member societies on initiatives to improve diversity in the physics community and to expand AIP's services to scientists outside the US. She would also like to strengthen the ties between the statistical research division and the industrial outreach program by providing workforce and career statistics that AIP's corporate affiliates find valuable. "My impression is that we have great resources and that maybe we can do some more things to help the [industrial] community," she says.

Prioritizing physics programs that often compete for the same resources will require the same thoughtful and measured style of leadership that Stith, a retired army colonel, demonstrated, says O'Riordan. Stith, who says he's "retreading, not retiring," plans to take a few months off before considering other long-term roles. He intends, however, to continue in current roles as ad-

viser and board member for several science organizations and as an advocate for diversity in the physics community. A key to AIP's future success, Stith suggests, will be to continue to build broad coalitions with other scientific organizations; during his tenure, for example, AIP built and led a partnership of 23 other organizations that manage the *Discoveries and Breakthroughs Inside Science* program, which annually produces 144 public information science video features for television.

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US skips "Physics World Cup," holds its own contest

Declaring that the middle of May is "an impossible time for US high schools to participate," US organizers declined to send a team to Croatia to compete at the International Young Physicists'

Tournament earlier this year. Instead, the US Association for Young Physicists Tournaments Inc, formed in 2003 in part to compete in the IYPT, hosted its own international competition over a weekend last February. The USAYPT will begin fundraising “in earnest” this fall to expand on its tournament and its efforts to promote research in high schools, says USAYPT secretary and treasurer Bruce Oldaker.

Even though IYPT statutes allow the host country to choose dates between May and July, the decision to hold the 21st IYPT—billed “The Physics World Cup” by its organizers—so early is a rare one, says IYPT president Gunnar Tibell. “All dates are awkward for some countries,” adds Tibell. “Of course, we are concerned that the Croatian choice was not suitable for the US team, [but] we are also concerned that later dates are impossible for other teams.”

Both the IYPT and the US invitational featured “physics fights,” where students debate a subset of questions from a list that is released about a year prior to the face-offs. Old IYPT questions were used for the US invitational, including investigating pendulum oscillation between charged capacitors. In the final debates, the only non-US participant, an Australian team from the Brisbane Girls Grammar School, edged out Virginia’s all-boys Woodberry Forest School—host of next year’s invitational—to capture first place.

This year’s IYPT was its first since achieving legal status as an international organization. Germany took the top prize in Croatia, while the host country tied with New Zealand for second place. The 2009 IYPT will be held 10–16 July in Tianjin, China, and will be organized by the Nankai University school of physics.

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news notes

Portable bridge. This month in Pearl Harbor, Hawaii, the US Army Corps of Engineers will test a floating bridge it says can be transported by ship, truck, or helicopter. US military and industrial partners worked with the army’s Engineer Research and Development Center in Vicksburg, Mississippi, to design a lightweight causeway system that can be transported in packages of up to four 3-meter long by 6-meter wide modules, which weigh about 2600 kilograms each. The modules are connected by compliant and compressive urethane joints and float on large tubes inflated with air from pressurized, carbon-spun



ARMY CORPS OF ENGINEERS

bottles. In Hawaii eight modules will be used to test a 17 000-kilogram load; the causeway is being designed to support vehicles up to a 65 000-kilogram M1A1 Army tank. In the image, an 8000-kilogram forklift drives along the causeway deployed on a beach near Fort Eustis, Virginia. The bridge system is currently about 10% over its design weight goal, but technical manager Donald Resio thinks the goal will be met in a second R&D cycle. This project was funded by the advanced concept technology demonstration (ACTD) program within the Office of the Secretary of Defense to enable military and humanitarian operations to be carried out in ports and other waterways whose bridges were damaged by unforeseen events (see related article on page 33). JNAM

Revitalizing NOAO. On 7 July David Silva took the job of guiding the National Optical Astronomy Observatory in a period of redefinition. “NOAO had begun to stagnate,” he says. But a 2006 review by NSF “clarified our mission [see PHYSICS

TODAY, December 2006, page 32]. NOAO is the natural focal point for providing open access for the entire US astronomical community to a broad range of world-class optical-IR capabilities. It’s important that we revitalize our core.”

As part of the revitalization, NOAO is “trying to build a national system of the existing 2- and 4-meter telescopes to share capabilities, and we’ve been given a mission by NSF to find ways to feed money into instrumentation for 6–10-meter-class telescopes,” Silva says. Perhaps most significantly, in 2006 NOAO withdrew as the public partner in the Thirty Meter Telescope to instead represent the broader US astronomy community’s participation in both the TMT, where Silva once worked, and the other US-led extremely large telescope in the works, the Giant Magellan Telescope (see the story on page 28).

Earlier he oversaw data management and user support at the European Southern Observatory, and at NOAO in the 1990s he served as project manager during the commissioning of the 3.5-meter WIYN telescope and as a staff astronomer at the US office of the Gemini Observatory. He succeeds Todd Borson, who served as interim director after Jeremy Mould stepped down in April 2007. TF ■



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web watch

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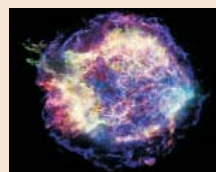
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