

International Physics Olympiad held in Zürich

Students convene in Einstein's college town for fun and physics.

Poppy seeds, a glove, sticky tape, and a loudspeaker attached to a plastic cylinder. Those were the tools that 398 high school students from 84 countries were given to investigate a phase transition. The task was part of the 47th International Physics Olympiad, which took place in Zürich for a week in July.

The loudspeaker made the seeds jump, and below a certain amplitude the seeds spontaneously gathered to one side of a barrier. This may have been "the most entertaining and counterintuitive experiment in years," says Paul Stanley of Beloit College, a longtime coach of the US team. "Add to that, poppy seeds are illegal in some of the participating countries!"

In a second experiment, students investigated electrical conductivity in two dimensions. The three theory questions involved nonlinear circuits, subatomic particle detection at the Large Hadron Collider at CERN, and mechanics; the two-part mechanics question challenged students to figure out the size and position of a metal disk hidden in a wooden cylinder and to consider artificial gravity in a space station.

Chia-Hsuan Lu of Taiwan, who placed 25th, snagged the top mark on the experimental part of the exam. Aleksandr Artemev of Russia, in the fifth spot, earned the best score for the theoretical part. And Chenkai Mao of China ranked number one overall. A total of 47 competitors from 22 countries won gold



THE US TEAM took home two gold and three silver medals this year. The competitors were, from left, Vincent Liu, Jimmy Qin, Abijith Krishnan, Srijon Mukherjee, and Jason Lu.

medals. The US team finished fifth in combined points, behind Russia and the three teams with all golds—China, South Korea, and Taiwan.

Taking home gold medals on the US team were Abijith Krishnan from Scottsdale, Arizona, and Jason Lu of Lincolnshire, Illinois. Earning silvers were Srijon Mukherjee of Noida, Uttar Pradesh, India (as a US citizen he was on the US team); Jimmy Qin of Sanford, Florida; and Vincent Liu of State College, Pennsylvania. The main sponsors of the US team are the American Association of Physics Teachers and the American Institute of Physics. Ahead of the olympiad, the US competitors spent a week training in Latvia with that country's team.

When not doing physics, the competitors went on excursions. They toured CERN, the Paul Scherrer Institute, the

Zürich water works, Mount Rigi, and Liechtenstein, and they engaged in such delights as blowing traditional Alpine horns, milking fake cows, and eating fondue.

This year's olympiad was hosted jointly by Switzerland and Liechtenstein. The organizers put a special emphasis on publicizing the event. Competitors and their activities were featured on YouTube and Facebook and in the local papers. The goal, says Thomas Uehlinger, an engineer at Sensirion in Staefa, Switzerland, who headed the event's academic committee, "is to foster interest in science in the broader community, not only in the best students—they are role models, and they need to be visible."

Next year's International Physics Olympiad will be hosted by Indonesia.

Toni Feder

NEWS NOTES

Physics PhDs. Where do freshly minted physics PhDs work? Do they like their jobs? What do they earn? Three reports put out this year by the Statistical Research Center of the American Institute of Physics (which publishes PHYSICS TODAY) surveyed graduates from US institutions from the combined classes of 2013 and 2014 about those and related issues.

A year after receiving their PhDs, some 47% of graduates had moved into postdoctoral positions, continuing a decline; a decade earlier that proportion was 67%. The next largest group, 38%, had potentially permanent positions, the majority of which were in the private sector. Another 10% were in temporary positions, mostly in academia—as lecturers, visiting professors, and the like.

The remaining 5% were unemployed. Some 22% of new PhD physicists reported feeling underemployed.

The median starting salary for physics PhDs taking potentially permanent private-sector positions was \$99 000; in academia, it was \$57 000. The median starting pay for postdocs was \$66 000 in government labs and \$48 000 in university labs.

Overall, 81% of graduates said they would go for a physics PhD if they had to do it again, 11% said they would get a PhD in a different field, and 8% said they would not get a PhD.

For more details, see the reports *Physics Doctorates Initial Employment*, *Physics Doctorates One Year After Degree*, and *Physics Doctorates: Skills Used and Satisfaction with Employment*. They are available at www.aip.org/statistics/employment/phds.

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THE EXAM QUESTIONS FOR THIS YEAR'S INTERNATIONAL PHYSICS OLYMPIAD CAN BE DOWNLOADED AT
<http://ipho2016.org/ipho2016/exam-and-program>.