

For Immediate Release

Physics Boot Camp Preps U.S. Students for International Physics Olympiad

College Park, MD (May 22, 2009) Nineteen of the country's best and brightest physics students sit in a classroom, gritting their teeth against the screech of Professor Paul Stanley's chalk. He bears down on the chalkboard and offers the teens a challenge.

"You can calculate how long this piece of chalk is by measuring the frequency [pitch] of the squeak," says Stanley. When the chalk snaps a moment later, he explains that the pitch of the ultrasonic sound of the break can be determined from the sizes of the leftover fragments.

These high school students -- who have a penchant for wearing MIT t-shirts -- banter about how they would perform the calculations. They are the U.S. Physics Team and have gathered from across the country to train for the 40th Annual International Physics Olympiad. From May 16 to 26, they are spending thirteen hours a day at the University of Maryland in fast-paced lecture classes and hands-on labs that challenge the depth and breadth of their knowledge of physics.

To make it this far, the team members scored better than 4,000 other students on three exams that tested their knowledge of theoretical physics.

"To do well, you have to be the kind of person who likes sitting up at night with physics textbook just because it's the most fun thing to do," says Andrew Lin, who competed on the U.S. team twice and has been a coach for the team for 9 years.

Five students will be chosen to represent the U.S. in the international competition, in Merida, Yucatan, Mexico from July 12th through the 19th. The U.S. team will compete against teams from around the world to solve three theoretical problems and one experimental problem drawn from a wide range of physics fields. Past problems have included everything from the application of physics to automobile air bags and spacecraft to abstract questions about relativity and mechanics. Last year, the U.S. team won one silver medal and four gold medals..

Their boot camp training for the event includes time in a laboratory. "The experimental side is similar to what they do in their high schools, but we give them something that pushes them a little further," says Warren Turner, head lab coach. Instead of simply measuring the motion of a pendulum, for example, the students develop their own mathematical models to take into account and predict the nuances of the swinging bob.

The week isn't all work. Whether debating if alternative energy schemes inspired by science fiction novels would actually work or wiggling their arms in the "vector dance," the gathering is an opportunity for the teens to get to know each other.

"I get to meet cool people who are interested in the same crazy things that I am," says Joshua Oremán of Harvard Westlake School in North Hollywood, who brought home a gold medal at last year's competition in Iran.

The camp schedule includes a movie night and field trips to the Smithsonian Museum in Washington, DC and to NASA's Goddard Space Laboratory in Greenbelt, MD.

The demographics of the bunch are fairly representative of a slice of the physics community at large. They are a mix of public and private school students and a mix of ethnicities, with about half being of Asian descent. Only three of the students are female.

But when asked whether these students were representative of his colleagues in physics coach David Fallest of North Carolina University shook his head. "These students are special and amazing ... the level of enthusiasm is not what I see in Ph.D students. They're the cream of the crop, interested in every aspect of the subject."

The U.S. Physics Olympiad Program was started in 1986 by AAPT to promote and demonstrate academic excellence. It continues to be supported as a joint initiative between AAPT and AIP. The nine-day International Physics Olympiad brings together pre-university students from more than 60 nations.

LIST OF EVENTS:

May 16-26 — Physics Team students visit University of Maryland for their intensive training camp.

May 26 — Five students chosen as the Traveling Team to represent the US Team at the international competition.

July 11 — Traveling Team arrives in Merida for the international competition.

July 19 — The International Competition's final awards given.

MORE ON THE WEB

Main website of the U.S. Physics Team: <http://www.aapt.org/olympiad2009/>

History of the physics team, including past winners:

<http://www.aapt.org/Contests/olympiad.cfm>

The official website of the International Physics Olympiad:

<http://ipho2009.smf.mx/home>.

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