center for the energy frontier, Japan as the host of the ILC, and the US as leading with the LBNE in the intensity frontier, says Howard Haber, a theorist at the University of California, Santa Cruz. Japan also has a strong program in the intensity frontier, including T2HK (Tokai to Hyper Kamiokande), a proposed neutrino experiment with a larger detector but shorter baseline than the LBNE. Says Haber, "The big wildcard is international collaboration. If physicists around the world are amenable to developing a common strategy based on international collaboration, then it should be possible to achieve the major objectives of all three frontiers."

Europe and Japan are largely on board for global collaborations; the roles of China and other possible major players are not yet clear. Not only has Japan shown an interest in hosting a global scientific facility and in internationalizing its science community, but it's clear that financially and in terms of know-how, the ILC would have to be a global effort. "The Japanese government may start contacting other countries later this year," says Hitoshi Murayama, who promotes the ILC from his position as director of the Kavli Institute for the Physics and Mathematics of the Universe in Tokyo. And CERN, which represents Europe on matters of particle physics, earlier this year announced that its medium- and long-term priorities are the upgrades to the LHC and a future accelerator project; the European strategy also explicitly embraces involvement in the ILC and long-baseline neutrino projects outside Europe.

For a long time, the US was the leader in particle physics, says Ian Shipsey of Purdue University. "Today, we are a big player along with other big players; we share leadership. We can't set the course alone. To stay at the cutting edge, we have to be able to participate in science wherever it is."

He lists three arguments for pursuing particle physics: "Particle physics helps draw people to all of science—and our standard of living is based on science and engineering. Particle physics drives accelerator science. And all great societies ask these great questions. It's not a luxury." The challenge, he says, is "to make sure that the government understands that it's good for the US economy and the community for the US to play a role in both onshore and offshore projects."

Toni Feder

Physics Slam on Ice

Kyle Cranmer glided into the ice arena on a sled powered by a fire extinguisher. Sarah Demers had a 900-strong audience singing about particle physics to the tune of "My Favorite Things" from *The Sound of Music*. At the Physics Slam on Ice, six physicists had 10 minutes each to expound on their research or something related to it. A takeoff on poetry slams, the outreach event took place on 2 August at the University of Minnesota during "Snowmass on the Mississippi," at which hundreds of particle physicists gathered to assess their field and its future directions (see the story on page 18).

"The goal was to engage the public about what we do," says Cranmer, a physicist at New York University. "From the outside world, the Large Hadron Collider looks like a big, impersonal machine. In my slam, I didn't try to explain my research but told my story of searching for the Higgs for 14 years—from graduating from college, going to CERN to work on the LHC, about when the LHC exploded, and when my daughter was born. It's not like you turn on a machine and wait. There are ups and downs. I told about the unclean parts of science—people miss out on that."

As part of an arts and sciences working group at Yale University, where she is on the faculty, Demers recently viewed a painting—possibly by Diego Velázquez—of the Virgin Mary as a child. "I was floored," she says. "I asked myself, What am I doing with my life? Fundamental particles are identical. They're cold." In her slam, she says, "I tried to bring people to this point of crisis. How can I compare what I do with how moving this painting is?" Demers asked the audience to imagine the arena was a particle detector. People in certain seats stood up, and the pattern they formed was like the tracks of a particle collision. "We got lucky and got a Higgs candidate!" she says. For her, "The nature of particles saves them in the end. The fact that they don't change means we have access to the beginning of the universe."

The other slammers were Stuart Henderson of Fermilab, Mark Messier of Indiana University, Vladimir Savinov of the University of Pittsburgh, and Tim Tait of the University of California, Irvine. Savinov was the winner, as measured by an "applause-o-meter" (see photo). "He was a firestorm," says Demers. "It was unbelievable. It was fantastic. It was hilarious. He started ranting about penguins. I was practically rolling on the floor laughing."

"I spent the first three-and-a-half minutes being more and more ridiculous, schizophrenic, hyping people up," says Savinov. "Then I jumped to hard science. I went from a global conspiracy to the Big Bang, Nobel laureates, matter and antimatter, *CP* violation." Savinov says he "wanted to tell the audience something new, and make it entertaining." And, he says, "I had never put so much effort into any presentation. Not even my faculty job interviews."

Demers's lyrics and a link to a video of the slam are available in the online version of this story on PHYSICS TODAY's website.

Toni Feder

RICHARD ANDERSON