

Tree skirts protect KEK's pines from bugs; *symmetry* causes high demand for Einstein bears; a new physics center brings CERN closer to the United States; particle detector slows down physics teacher; Hollywood stars should check their John Ellis number; celebrating Einstein's legacy; letters.

Komomaki

Every winter, pine trees on the KEK campus in Tsukuba, Japan, get a treat. Komomaki (woven-straw blankets) are wrapped around the pines a few feet above the ground. During cold weather, Matsukemushi, the larvae of the pine moth *Dendrolimus spectabilis*, creep into the Komomaki. Snug in their blankets, the Matsukemushi leave the pines unharmed. At the end of winter, the Komomaki, now infested with bugs, are taken out of the trees and burned. In Japan, burning Komomaki are a symbol of new spring.

Youhei Morita, KEK

Photo: Youhei Morita, KEK





Photo: Deborah Guzman Meyer

Einstein bear

In honor of the World Year of Physics, *symmetry* featured an Albert Einstein teddy bear on the cover of the February issue. Since then, we have received a steady stream of phone calls and email. Everyone and their mothers (mine included) just had to know where they could get their paws on that adorable Albert Einstein bear.

A Fermilab scientist* lent the bear to us for the photo shoot, completely unaware that the cuddly creature would be turned into a teddy diva overnight. Not realizing what a stir this furry fellow would cause, I did some detective work of my own to learn more of the bear's history. My findings may disappoint you, however, because the bear is no longer manufactured.

Known as "Albeart Einstein," this VIB (Very Important Bear) was manufactured by the North American Bear Company from 1987 to 1995. Albeart comes from a long line of VIBs that include William Shakesbear, Bearlyn Monroe and Humphrey Beargart. Because Albeart Einstein was not a limited edition, I cannot tell you exactly how many bears NABCO manufactured. But I must confess there is now one less Albeart Einstein available on eBay. Even I couldn't resist getting my

paws on one of the bears, and I knew that it would be the perfect gift for my mother. Happy Birthday, Mom!

Elizabeth Clements

** The Fermilab scientist's name has been purposely omitted for the protection of the Albeart Einstein bear, which remains safely locked in an office.*

Fermilab's "CMS branch office"

The CMS (Compact Muon Solenoid) detector at CERN, in Geneva, Switzerland, and the new CMS offices at Fermilab are separated only by the amount of time it takes light to travel between the two places. On Wilson Hall's 11th floor at Fermilab, computer screens run live footage of CMS taken by cameras at CERN, alternating with animations of how the detectors are assembled.

"The goal in designing this floor was to create an open area for human interaction, formal and informal meetings, and spontaneous communication," says Kaori Maeshima of Fermilab's Particle Physics Division and CMS Department. The open crossover area, with bright yellow chairs, clear

fish tank coffee tables, and high stools at the Internet bar, has a fresh, welcoming look for visitors as well as locals.

For an experiment with over 2000 people involved, creating bases around the world helps personalize the work. Of course, CMS scientists occasionally have to travel to Switzerland. "We're offering French classes for the CMS people who visit CERN," says Hans Wenzel of Fermilab's Computing Division and CMS Department. "When you visit CERN, it's quite amazing how much the French language is used. Knowing the language opens up a completely different world sometimes, for work and other things, such as visiting small local markets."

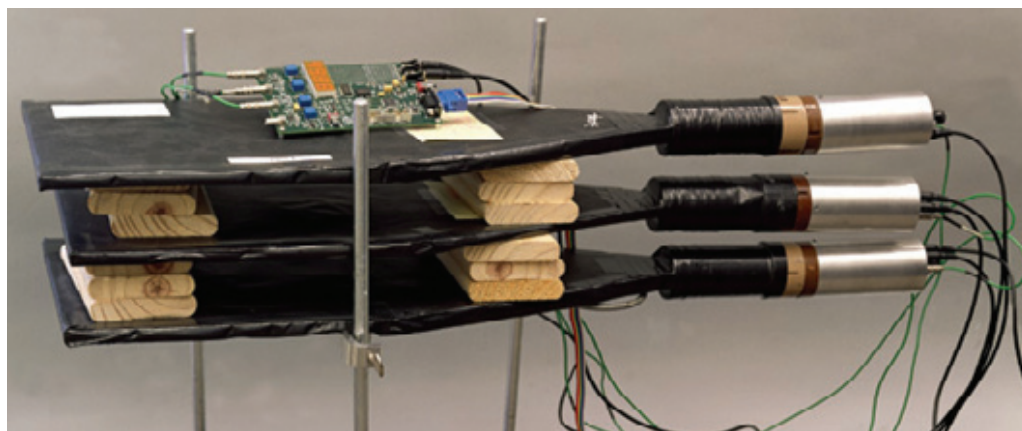
The only aspect that the design team (of physicists) seemed to approach too hastily was the naming of one of the conference rooms. While other Fermilab conference rooms have intriguing names and designs (such as "Black Hole" and "Hornets' Nest"), the CMS floor offers a plain "Round Table." Perhaps it could have been "*La Table Ronde*."

Lisa Zyga

Photo: Reidar Hahn, Fermilab



Photo: Reidar Hahn, Fermilab



What's in the box?

In January 2000, Tom Jordan had just finished up a conference in San Diego, where he had presented one of the new cosmic ray detectors to QuarkNet teachers. (Today, these detectors are found in more than 200 high school physics classrooms across the United States.) Jordan, of Fermilab's Education Office, drove to the San Diego airport, preparing to take a red-eye flight back to Chicago.

Jordan passed through the metal detector as easily as he had in Chicago before the flight out. But when the box with the cosmic ray detector passed through the x-ray machine on the conveyor belt, the image aroused the security guard's suspicions.

"I thought for a minute about how to explain what it was," says Jordan. "So I said it was a device that detects subatomic particles that move through our atmosphere." Jordan showed the guard the two scintillating plastic counters, phototubes and readout electronics. "Then the guard called up her supervisor on the phone and told him that 'some guy wants to know if he can bring his atmosphere protector on the plane.' But I wasn't going to correct her because I wanted to get home."

Lisa Zyga

3.4 degrees of John Ellis

How is John Ellis, physicist at CERN, similar to Rod Steiger, actor from such films as *On*

the Waterfront and *The Pawnbroker*?

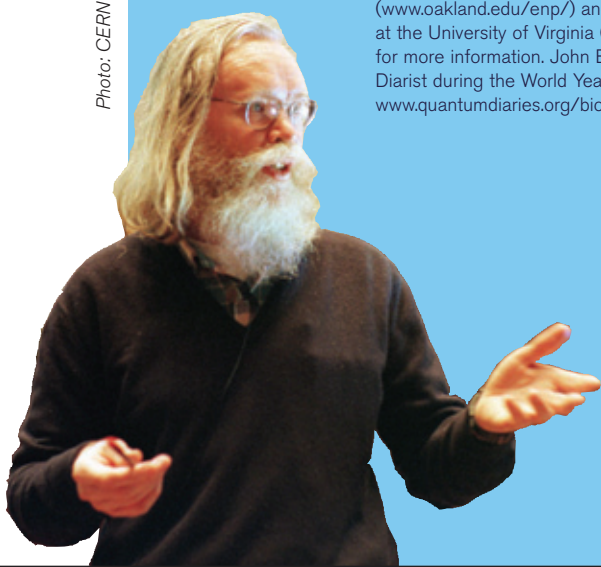
Maybe you've played the movie trivia game revolving around "Kevin Bacon numbers," which connects actors via movies they have appeared in together, or heard of "Erdős numbers" in mathematics which use co-authorship of research papers for the same purpose.

The *Oracle of Bacon* website has found the "best" center of the movie world, and it isn't Kevin Bacon. The best connected actor, who can be linked to all other actors in the shortest average number of movies, is Rod Steiger, followed closely by Christopher Lee and Dennis Hopper. For these three actors, it takes an average of about 2.7 movies to link to any other actor in Hollywood, and it never takes more than 8.

Who is the analog in theoretical High Energy Physics? In SPIRES there are over 50,000 distinct authors, but the best connected is John Ellis. The average "Ellis number" is about 3.4, with no author being more than 10 papers away from John Ellis. Following close behind are Vernon Barger of the University of Wisconsin, Madison, and Keith Olive of the University of Minnesota with average numbers of 3.6. The average

See the *Erdős Number Project* at Oakland University (www.oakland.edu/enp/) and the *Oracle of Bacon* at the University of Virginia (www.cs.virginia.edu/oracle/) for more information. John Ellis (left) is a Quantum Diarist during the World Year of Physics: www.quantumdiaries.org/bios/john_ellis.html

Photo: CERN



connectedness of the top 50 cited HEP theorists is about 4.

As in Hollywood, being well-connected doesn't make you good or bad at what you do, but it is interesting that these folks seem to have spread their collaboration around more than others. Ellis, especially, is notable for the number of papers he has published (over 400, with over 200 different co-authors), on diverse topics within the field, so it is perhaps not surprising that he should head this list.

Travis Brooks, SLAC

Einstein and the violin

"I often think about music. I day-dream about music. I see my life in the form of music."

Albert Einstein

Fans of classical music are in for a special treat during the World Year of Physics. In celebration of Albert Einstein's

scientific achievements and his love of violin music, Oxford University physicist Brian Foster (above left) and acclaimed violinist Jack Liebeck are em-

barking on a world tour, giving lectures and concerts.

In their *Superstrings* program, Foster describes Einstein's groundbreaking contributions to modern physics and presents the latest efforts to explain the structure of the universe in terms of superstring theory; Liebeck demonstrates superstring concepts on his violin, and he performs pieces by J.S. Bach as well as music specifically written for the World Year of Physics by composers Emily Hall and Anna Meredith. In a second program of the tour, Liebeck—who has played in concertos with many of the world's leading orchestras including the London Philharmonic—performs recitals accompanied by leading pianists.

From Europe to Asia to North America, the tour covers almost every continent. In the United States, the tour will make stops at Fermilab, Jefferson Lab, and Stanford Linear Accelerator Center, as well as numerous universities. Information on tour dates is at www.jackliebeck.com/superstrings.htm

Kurt Riesselmann



Photo: Richard Lea-Hair

Letters

Running vs. trotting

I noticed a small inaccuracy in the March 2005 article "X-ray Blaze on an Invisible World." Horse people among your readers will instantly recognize that the horse in the photograph "*Sallie Gardner*" is running, not trotting. There are horses that race at the trot, but that breed of horse is called Standardbred, not Thoroughbred, and they pull a sulky; they are not ridden.

To resolve the inaccuracy in the article, you need to change only the references to trotting in a few places.

When those changes are made, horse people will continue reading without stopping to argue.

Sandra P. Arthur, Cincinnati, Ohio

Heather Rock Woods responds: Indeed the image does show a horse galloping, not trotting. However, Stanford and Muybridge's first photographs were actually taken of horses trotting (pulling a sulky, with its wheels rolling over wires to activate the cameras). We did not have access to those images for this article. Much controversy and many urban myths surround the story of Stanford and Muybridge. Readers who want to know more are urged to consult *Muybridge: Man in Motion* by Robert Bartlett Haas, Muybridge's biographer.

**Letters can be submitted via
letters@symmetrymagazine.org**