

Seestrom Is First Woman to Lead Los Alamos Physics

Susan Seestrom took the reins of Los Alamos National Laboratory's physics division on 21 November. She succeeds John McClelland and Don Rej, who served consecutively as interim directors after Peter Barnes stepped down in October 1999. Seestrom is the first woman to hold the job.

A lab insider, Seestrom first came to Los Alamos in the late 1970s to conduct research for her PhD in nuclear physics, which she earned from the University of Minnesota in 1981. She's been there ever since. Her recent research has focused on developing new sources of ultracold neutrons. She has served in various management roles, most recently as acting deputy director of the physics division.



SEESTROM

Research in the physics division is sometimes described as covering three plasmas—thermonuclear, quark-gluon, and blood, for magnetic and inertial confinement fusion, high-energy research, and biological physics, respectively. The division has about 350 scientists and technicians. Roughly 60% of its \$60 million annual budget goes to weapons research. As one of three US weapons labs, Los Alamos plays a key role in science-based stockpile stewardship, the Department of Energy's program for maintaining nuclear weapons since test explosions were banned in 1992.

"We had a well-defined role in the days of underground testing," says Seestrom. "When that went away, our role became less clear. I want to define a clear stewardship role for the division, so that we have an organization that is really synergistic with the mission of the lab." She also wants to improve technology transfer from the division to industry.

Researchers at the lab see Seestrom as a beacon for an upswing in morale. They tick off a list of recent woes: the espionage charges against physicist Wen Ho Lee; the missing hard drives with nuclear secrets; the fire; a cut last year in flexible research funding. "The lab has been through a

rough time of it in the last 18 months or so," says Richard Hughes, who heads the physics division's quantum information research team and served on the selection committee for Seestrom. "These things send a message to people in the outside world to look before thinking of Los Alamos. The big worries are the low morale of people here, and the ability to attract the best people from outside. I think Susan has what it takes to do both."

"She's a good scientist. She knows the laboratory really well. She's a good leader," agrees physicist Jane Nordholt. "I'm really happy that women are getting into management more at the lab."

"It's clear that there's a sense of a glass ceiling in the troops," says Seestrom. "Many women whom I've never met have sent me notes. Without having done anything, my being here makes a difference to them—subtle cultural things sometimes get in the way of women succeeding. I hope to set a model that you don't have to just have a job—you can have a life."

"During the deliberations, it really didn't come up that she is a woman," says Michelle Espy, a Los Alamos physicist who served on the selection committee. "But afterwards, I went into the conference room where photos of previous directors hang"—Robert Rathbun Wilson, who headed the division during the Manhattan Project, Jay Keyworth, science adviser to President Reagan, and Los Alamos's current director, John Browne, among others—"and I thought, Wow, Sue's picture will go here!"

TONI FEDER

CERN Energetically Probes the Arts

Giant spinning tops, table tennis, and antimatter on stage have all graced the halls of CERN recently as part of the lab's stepped-up effort to combat the public's declining interest in physics. "After the end of World War I, it was clear that physics was the main interesting area. There's much clearer competition between the sciences these days," says Hans Hoffmann, a CERN scientist who is involved in outreach activities. The lab's public outreach is off to a flying start with a physics teaching conference and an art exhibition.

The culmination of months of outreach activities, this past November's "Physics on Stage" conference for high-school physics teachers attracted 450 teachers from 22 European countries to CERN. The teachers exchanged teaching tools, bringing



GIANT SPINNING TOP by artist Jerome Basserode gets finishing touches by a CERN technician.

remote-controlled robots, a play on antimatter, a display of the physics of table tennis, and a demonstration of chaos theory using a water wheel. The conference also served as a forum for physics education issues: Discussion centered on the public perception that physics is too complicated and expensive, the decline of high-school enrollments in the sciences, and the shortage of physics teachers.

"When the economy is good, students don't go into teaching, particularly physics teaching," says Brenda Jennison, who trains physics teachers at the University of Cambridge. "Physics on Stage" was the first in an annual education series; this year 14- to 18-year-olds will be invited to the lab for a conference that looks at "Life in the Universe."

And over the past year 10 artists have spent time at CERN collecting ideas for particle-physics-inspired computer animation, etching, painting, video, and sculpture. The "Signatures of the Invisible" exhibition—so named because of the signatures left by subatomic events—includes three large metal spinning tops, a "sculpture machine" consisting of thousands of needles attached to nylon threads, and a 23-centimeter-thick painting that portrays both the Large Electron-Positron accelerator's doors and the nearby Jura mountains. The "Signatures" exhibition opens in London on 1 March and will appear in Europe, Japan, the US, and possibly Australia before closing in 2004.

The exhibition is about having people realize that there is intellectual value in things they don't understand, says Maurice Jacob, a theoretical physicist at CERN and one of the project's initiators. Says Grace Adam, project coordinator at the London Institute, the principal sponsor of the exhibition, "The art is not an explanation of the science; the artists feel

this very strongly. It is two groups of people exchanging ideas."

Does the collaboration help scientists in their own work? "In terms of describing nature, I don't think it helps that much," says CERN scientist Michael Doser, who is teaming up with "Signatures" sculptor Monica Sand to make particle collisions visible to the naked eye with light-emitting scintillators. "The real effect is a nimbleness of mind that gets developed by having your assumptions questioned."

LYNLEY HARGREAVES

NEWS NOTES

Proceedings online. "Our goal in creating eConf is to completely displace print publishers of [physics] conference proceedings," says eConf cofounder Michael Peskin, a physicist at the Stanford Linear Accelerator Center, which launched the Web site this past October (see <http://www.slac.stanford.edu/econf>). The idea is to get conference proceedings—starting with high-energy physics—online quickly and cheaply, to archive them long-term, and to link them to broader, searchable publications databases, such as SLAC's SPIRES and the electronic preprint archives at Los Alamos National Laboratory. A handful of such online archives already exist, but they are neither linked nor easily searched, says Peskin. Meanwhile, publishers of print proceedings, whose earnings eConf could eat into, are keeping close watch. The American Institute of Physics, for example, which puts out proceedings

from some 50 conferences each year, foresees a continuing role for print proceedings, but also plans to start posting them electronically later this year.

State Department fellowship. The American Institute of Physics and the Department of State are creating a new science fellowship allowing a physical scientist or engineer to spend a year working on the science and technology aspects of foreign policy issues. The selected fellow will provide scientific expertise to the department while "learning firsthand how scientific and technical knowledge can contribute to the nation's foreign policy," the announcement said. Norman Neureiter, science and technology adviser to the secretary of state, said the department's regional bureaus, which cover specific geographical areas, are weak on science, and that's where he hopes to assign the AIP fellow. The range of problems faced by the bureaus includes everything from mad cow disease in Europe to cybersecurity in Asia, he said. The idea for the fellowship originated with the AIP governing board more than a year ago, when concerns were expressed about the lack of scientific expertise within the State Department, said James Stith, director of AIP's Physics Resources Center. Fellowship applicants must be US citizens, have a PhD or equivalent research experience in physics or a related field, and belong to one of AIP's member societies. The fellowship has an annual stipend of \$49 000. Applications are due 15 April. More information can be found at <http://www.aip.org/mgr/sdf.html>. ■



Web Watch

<http://www.its.caltech.edu/~atomic/snowcrystals>

From Caltech physicist Kenneth Libbrecht comes **Snow Crystals**, a Web page devoted to exploring the physics behind the nature of snow crystals and why they form such a variety of shapes.



<http://www.med.harvard.edu/chge/review.html>

Published by Harvard Medical School's Center for Health and the Global Environment, **The Quarterly Review** provides expert-written nontechnical summaries of the most important recent scientific findings about changes to the global environment and their potential consequences for human health.



<http://www.solgel.com>

The Sol-Gel Gateway provides a Web portal to the world of those colloidal systems known as sols and gels. Put together by Michel Prasad of Corning's European Research Center, the site is updated monthly with contributions from the site's editorial board as well as from sol-gel researchers worldwide.



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