

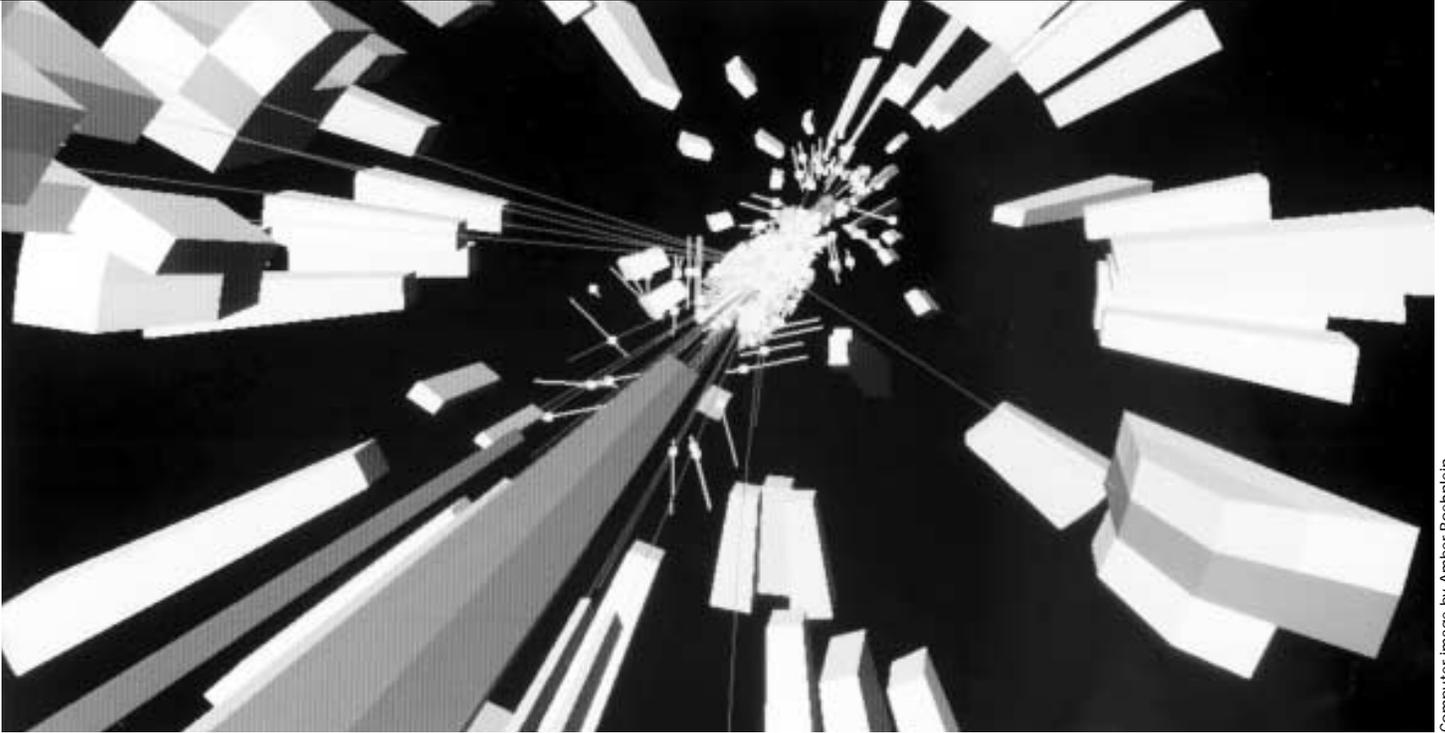
FermiNews

Fermi National Accelerator Laboratory

Volume 21

Friday, May 1, 1998

Number 9



Computer image by Amber Boehnlein

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Collider Run II at the Tevatron, beginning in the year 2000, will create trillions upon trillions of the world's highest energy particle collisions, like this computer simulation of a proton-antiproton collision at the DZero detector.

On the Critical Path

...toward Collider Run II and the physics of the future

High-energy physics, like subcultures the world over, uses a dialect all its own. Moreover, not content with our own vocabulary of inverse picobarns, charge buckets, squarks and gluinos, our field steals other people's phrases. On Broadway, a "show stopper" is a song or scene so fantastic that it brings the audience to its feet and stops the show for prolonged applause. On physics projects, a "showstopper" is an event so catastrophic that it brings the project to its knees and stops the show for prolonged despair.

At Fermilab today, the term "critical path" is on everyone's lips. Does this detector element or that piece of accelerator wizardry lie on the "critical path" to Collider Run II at the

Tevatron? Will late delivery of silicon or balky electronics block progress toward the goal everyone from purchasing agents to theorists is focused on? Because everyone recognizes that the critical path to the high-energy physics of the future goes through Fermilab.

With this issue, *FermiNews* begins "Critical Path," a series of articles on every aspect of Fermilab's progress—from detector upgrades and accelerator commissioning to software codes and electric cables—toward the day, early in the year 2000, when the Laboratory can break out another famous saying from the Fermilab phrase book—those magic words "Beam to Users."



Fabricating the Recycler beam pipe, Chander Sood aligns a bellows and pump preparing for the tack weld...

...then applies the tack weld, which holds the components in place for the permanent weld.



Photos by Reider Hahn



Stacked and ready for installation, permanent magnets destined for the Recycler.

Eco-Physics On The Prairie:

Fermilab's Recycler Will Mean No More Throwaway Antimatter

By Mike Perricone, Office of Public Affairs

When the Recycler kicks in as an integral part of Run II at Fermilab, it will serve high-energy physics in the same way as its ecological definition: re-using a product once regarded as disposable.

The once-disposable product is antimatter; specifically, the antiprotons left over after supplying the Tevatron.

"In the past, we used to just throw that away," said Cons Gattuso, a former Main Control Room crew chief and now Operations Specialist for the Recycler.

Gattuso estimates that between 70 and 80 percent of the beam initially placed into the Tevatron remains at the end of a store, but in a diffuse condition not conducive to promoting particle collisions. In previous runs, it would be aborted, or "dumped" into a graphite target, its useful life ended.

But consider that it takes about a million proton collisions to produce 15 antiprotons; consider that the Recycler will hold 2.5×10^{12} protons; and consider the cost of producing an antiproton.

"When we're in the collider mode, it takes about 80 percent of the Beams Division budget to make antiprotons, because we need all the

CRITICAL PATH

machines short of the Tevatron," said Ralph Pasquinelli, head of the Antiproton Source Department. "The total yearly cost is about \$78 million and we make about 2.5×10^{14} antiprotons a year, or about 3.2×10^6 per dollar. In the Main Injector era, production is expected to triple for the same cost, so antiprotons should go at about 10 million per dollar or 100,000 for a penny.

"To put this in perspective, one gram of antimatter is 6.022×10^{23} antiprotons. At the above yearly production rate it would take 2.4 billion years to produce one gram. Clearly, it's the most expensive substance on the planet!"

Consider further that the Recycler will cost around \$13 million to build; consider that it sits right above the new Main Injector, meaning an additional tunnel did not have to be built (tunneling is a major part of an accelerator's cost); and consider that by using permanent magnets instead of electromagnets for most of the bending and focusing the beam inside, the

Recycler's operation will incur only minimal costs for electrical power.

Add the luster of being the only machine of its kind in the world, and the world's largest use of permanent magnets, and it's easy to understand why the level of optimism over the



Photos by Reidar Hahn

Clamps stand ready to hold the 2800-pound magnets in the Main Injector tunnel.

**"It's certainly
a lot of beam
for your buck."**

~ Cons Gattuso

Information on the Recycler and other accelerators is available at <http://www.fnal.gov/pub/accelerator.html>

potential contribution of this 3,319.4-meter (1.99-mile) ring is, in a word, considerable.

"The way energy costs are going up, you could almost call it a bargain," Gattuso said. "It's certainly a lot of beam for your buck."

During Run II, the Recycler will perform three roles and is expected to double the luminosity of the Tevatron.

It will serve as highly dependable storage for antiprotons; having few electrical parts decreases the chances for inadvertent beam loss. It will receive antiprotons from the Accumulator, ensuring the Accumulator is always working at peak efficiency. And it will act as a receptacle for antiprotons left over at the end of Tevatron stores, "cooling" them (refocusing and reintensifying the beam) and reintegrating them into the Recycler stack, saving time as well as money and effectively doubling the antiproton stacking rate. The Recycler is about seven times the size of the Accumulator, so it can hold many times the number of antiprotons. More antiprotons mean more possible collisions in the Tevatron.

The Recycler project has a money-saving history from its inception. The eighth-largest accelerator ever built, it is also, says Beams Division physicist Gerry Jackson, "by far the cheapest machine ever built, in terms of accelerator per kilometer."

In order to combine research and development with production in parallel, a high risk strategy, the Lab served as general contractor, coordinating the efforts of several companies constructing the components to exacting specifications.

The project survived the loss of 3500 pounds of iron-nickel alloy, which sank to the bottom of the Atlantic in November, 1997

when the merchant ship *Carla* broke up in a gale near the Azores. The alloy, or "compensator," is slotted between the bricks to maintain a constant magnetic field in changing temperatures. Fortunately, earlier shipments had provided enough compensator for most of the magnet construction, and there were only minimal delays.

The first of the 2800-pound permanent strontium-ferrite magnets was installed at location 628 on April 3, locked into its hangers where two wooden magnet mockups had served to "hold space" while operations took place around them. Installing the magnets, above the Main Injector and low conductivity water (LCW) system, and beneath the tunnel's eight-foot ceiling, takes as much creativity as fabricating them.

"It's tight quarters down there," said Jerry Leibfritz of the Beams Division's Mechanical Support Department. "We had to design all sorts of special equipment to install the magnets. We needed a custom-made forklift to get the proper clearances, so we wouldn't hit pipes or anything else overhead. We got the first one installed as a trial run, to make sure our procedures and process would work."

The remaining 343 magnets will be installed by an outside vendor, HRM Construction, which received the contract on April 6. Gattuso expects the Recycler to be completed in September, with 10 to 20 magnets installed in the first full week of work, and eight to 10 a day when the process is at full speed.

"We're limited by tunnel availability, because there are a lot of activities going on and there's only so much space to work with," Gattuso said, over the combined roar of a dehumidifier and air recirculator that stabilize the environment in the tunnel 30 feet below the surface. He also dodged golf carts rolling by with technicians responsible for installing other equipment, and repairing welds in the LCW pipe that began springing leaks last November.

Gattuso, who lives in Glen Ellyn, has his physics degree from nearby Elmhurst College, and was introduced to the Lab in 1984 while at Wheaton North High School, through Saturday Morning Physics with the now-retired Drasko Jovanovic. He worked at the Lab as a summer student, was hired by Operations in 1990, and moved to the Main Injector Department last November.

During Run II, the former Saturday Morning Physics student will direct the Recycler's day-to-day operations.

"It fascinated me back then that a machine could be built with hundreds of thousands of components that would work reliably day after day," he said. "I still feel that way." ■

Dr. Moniz Goes to Washington

By Judy Jackson, Office of Public Affairs

When Ernie Moniz arrived at the Department of Energy in October 1997, most physicists took it as a good sign. They saw Energy Secretary Federico Peña's choice of a scientist—better yet, a physicist!—to the number-three spot at DOE as evidence of the Department's recognition of the science and technology at the agency's heart.

Moniz saw it that way too.

"The fact that the secretary appointed an under secretary who comes from the science community is a straightforward and articulate statement that DOE is fundamentally a science agency," Moniz said. In a recent conversation in Moniz's office in DOE's box-like Forrestal Building headquarters on Washington's Capitol Mall, the under secretary repeatedly emphasized the significance of the Department as a supporter of basic science—and the importance of science in supporting DOE missions. He cited DOE's rank in science funding, near the top of federal agencies with "budgets that drive science and innovation, basic and applied, the budgets that lead to new knowledge and new enabling technologies," pointing out that DOE ranks first in funding for large scientific facilities.



DOE photo

Ernest Moniz, nuclear theorist and DOE under secretary.

Before crossing the Beltway, Moniz, 53, had a distinguished career as a nuclear theorist, most recently serving as physics department head at the Massachusetts Institute of Technology. DOE's Peter Rosen, another nuclear-theorist-turned-public-servant, who now directs the Department's High Energy and Nuclear Physics Program, described Moniz's scientific achievements.

"Ernie is best known among nuclear physicists," Rosen said, "for the isobar-hole model that he and his colleagues developed. It provides the most complete, unified description presently available of the interaction of ions,

nucleons, electrons and photons with nuclei at intermediate energies. He has also provided important insight into the role of quark degrees of freedom in nuclei."

What's a nice nuclear physicist doing in a place like DOE? His Washington career began, Moniz says, "serendipitously," as an unofficial advisor to former Office of Science and Technology Policy Associate Director M.R.C. Greenwood. He helped recruit Fermilab user and Los Alamos physicist Gerry Garvey as OSTP's associate director for physical sciences and engineering. Then, when Greenwood left OSTP in early 1996, Moniz accepted Director Jack Gibbons' invitation to take her place.

At OSTP, Moniz was soon viewed as bringing a new level of credibility and influence to an office sometimes seen as more ceremonial than influential in determining science policy.

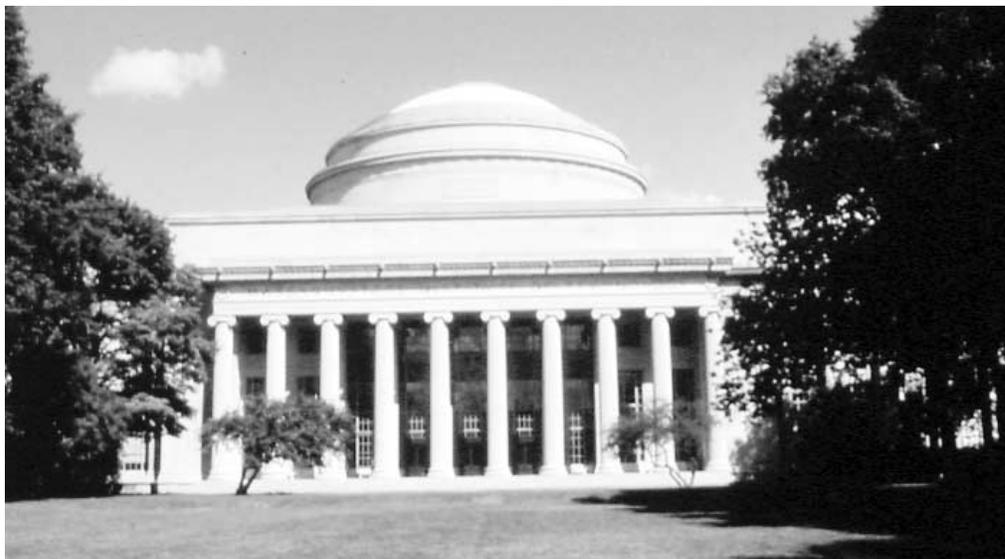
"Ernie's special talent is that he immediately understands the fiscal implications of policy choices," said Garvey, who has since returned to physics research. "Everyone's policy papers read well, but the budget implications are just not grasped by many policy makers. Ernie also has an excellent political sense. He does not always go along with the party line and will speak up even if he know his message is one they don't want to hear. But once a decision is made, he will go about implementing it, often more effectively than its initial supporters."

At the end of his term, in January, 1997, Moniz headed back to MIT where Nobel laureate and Fermilab user Jerome Friedman was holding the fort as

From MIT to DOE

"Ernie has always been a good public citizen. He was an active and successful nuclear theorist, but he has a strong sense of helping the country. He is astute and thoughtful, and he has excellent judgment. He has the ability to get quickly into a system and try to improve it. Ernie will do good for DOE."

—MIT physicist and Nobel laureate
Jerome Friedman



MIT photo

department head—"the second time around for Jerry"—in Moniz's absence.

"I went back to MIT and thought that's what I would be happily doing, when, in March, the Secretary called and asked me to come down and have a chat," Moniz recalled.

He said Peña's commitment to DOE's science mission and the opportunity to serve in a line organization where he could get things accomplished in the Department "that has been my research home for twenty years" convinced him to repack his car and return to Washington.

DOE's Rosen was among those who welcomed him.

"I think that Ernie brings the energy and vision of an accomplished theoretical physicist to the leadership of the Department at a time when sentiments in support of science seem to be on the upswing," Rosen said. "There is an opportunity for the science programs of DOE, including the ones in Energy Research, to make real progress. Ernie has the judgment and ability to turn that ability into reality.

After five months at DOE, Moniz said he sees progress in the integration of science and technology across Department program offices, partly through the work of the R&D Council that he chairs. From these efforts, Moniz says, DOE is developing a set of initiatives in areas such as clean power technology and greatly increased computing capability, particularly in simulation technology. In these and other areas, Moniz said, "the ball is rolling well."

DOE Does Matter

"One way I like to look at the panorama of DOE-supported science is to take the conventional picture of the structure of matter: solids and complex molecules, and molecules, and atoms, and nuclei, and protons, and quarks; you heat 'em up and get a plasma of electrons and protons, or a plasma of quarks and gluons: the whole hierarchy of matter. When we talk about DOE science, we are talking about designing, supporting and advancing the tools that provide the structure of information over this incredible range of matter from the most fundamental particle to the important collective phenomena involving living and nonliving matter."

~ Ernie Moniz

One area that will need more work, Moniz said, is "this issue of the integration of the national laboratories into a system."

Moniz said he believes program-dedicated laboratories such as Fermilab, SLAC and Jefferson Lab have clear missions that they are pursuing effectively, in support of "a lot of science."

But with regard to multiprogram labs, Moniz said, "I think there is another issue: program management as opposed to contract management. What are the missions of the laboratory system or of the individual laboratories? To what extent does one want to be prescriptive in defining their missions, versus better articulation of DOE corporate missions? One perfectly reasonable view is that we need to do

a much better job here in Forrestal of articulating and prioritizing corporate missions and goals, and then the multiprogram laboratories act as the business units to move them forward as their capabilities best match up against these corporate missions.

"There is an entirely different point of view, which I think many lab directors would like to advance, in which they are, roughly speaking, independent institutions. Obviously, we cannot afford to have the extreme case, in which the laboratories are not well tied to the Department's missions. But nor do we want to go to the other extreme, where the Department is overly prescriptive in funding and direction, because that would certainly stifle the creativity in the contributions of the laboratories. I think it's a question of tuning a little. We've begun the dialogue with the lab directors, and I think it's a dialogue that will continue." ■

"He immediately understands the fiscal implications of policy choices."

~ Los Alamos physicist Gerry Garvey

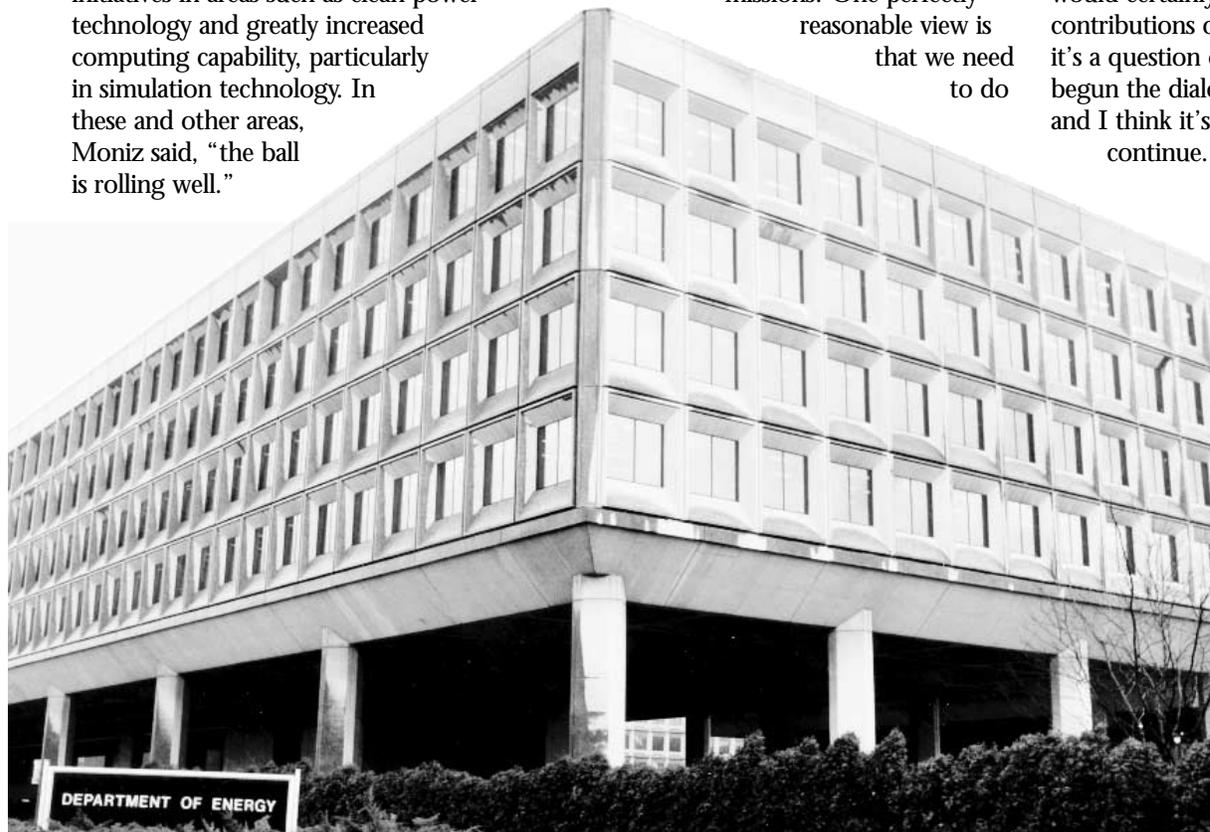


Photo by Reidar Hahn

The Little Collaboration That Could

What does it take to do a high-energy physics experiment today?

With this issue, *FermiNews* begins a series of articles on MiniBooNE, a proposal hoping to become a Fermilab experiment, to give *FermiNews* readers an inside look at the life of an experiment—and the experimenters—starting right from the beginning.

by Sharon Butler, Office of Public Affairs

In the 30-minute daily commute between Santa Fe and Los Alamos, physicists Bill Louis and Hywel White regularly find some quiet time away from telephones and intruders. There in the car, as Louis says, “you can say things you wouldn’t say in polite company.”

“We have a bug in the car that we switch off,” White adds.

Memory is hazy, but it must have been during one of those commutes in the fall of 1996, with the bug turned off, when White’s blood pressure mounted.

In their Liquid Scintillator Neutrino Detector (LSND) experiment at Los Alamos National Laboratory, they had found a signal they believed to be evidence of neutrino oscillation, but to confirm the signal, and to measure the oscillation parameters more precisely, they needed a wider energy range and a bigger sample of events than they could generate with the Los Alamos 800-MeV proton beam.

At Los Alamos, they could get only “six gold-plated events per year,” says Louis. At Fermilab, using the 8-GeV Booster, they could get 1,000. But a review committee had

heavily discouraged them from submitting a letter of intent. “These distinguished people told us to forget it; Fermilab will never pay any attention to you; just stay home and watch your knitting,” White remembers.

The story might have ended there, with White fuming in the foothills of the Jemez Mountains of New Mexico, but these self-described “southwestern cowboys” had met resistance and skepticism before. “We’re nothing if not stubborn,” says White, and so the story had just begun.

Wanted: heavy hitters

Politics came first, and in their daily commute, Louis and White began conspiring to find “heavy hitters” to join their collaboration—for the cowboys “to be really accepted [in the high-energy and nuclear-physics community],” White says.

“You need a critical mass to do an experiment like this,” Louis adds. They also needed another strong group besides the Los Alamos team; otherwise “people would be suspicious.”

They targeted Columbia and Cincinnati universities, both of which were already involved in a neutrino experiment at Fermilab called NuTeV, or Neutrinos at the Tevatron. NuTeV cospokesperson Mike Shaevitz, from Columbia, and Janet Conrad, also from Columbia, had already been contemplating an experimental test of the LSND signal using Fermilab’s Booster. For Shaevitz, the LSND signal was an “important result” and “maybe one of the first hints of neutrino mass.”

At every conference, Louis says, they’d see their NuTeV colleagues, mention the MiniBooNE idea, and say, well, certainly, if we had groups from NuTeV join, then the experiment would have a good chance of succeeding. “That would plant an idea in their heads,” Louis says. “Then we would see them again, they’d ask a few questions and they’d ask people about us.” (“There are no secrets in the high-energy physics community,” White says. “Only in the car can you turn the bug off. Everywhere else, it’s like standing on stage.”)

In January 1997, Columbia officially joined the collaboration and, as White says, gave it “respectability.” The two groups merged their experimental ideas. Conrad became cospokesperson of the collaboration, along with Louis. Cincinnati soon followed.



Photo by Jenny Mullins

At a collaboration meeting at Fermilab, in teleconference with colleagues in Los Alamos, cospokesperson Janet Conrad, of Columbia University, Phil Martin, of Fermilab, HongJoo Kim, Seoul National University, and Hywel White, of Los Alamos National Laboratory, listen to a presentation on beam dynamics in the Booster.

A 100-page letter of intent; 200 pages for a proposal

The collaboration—now including not only Los Alamos National Laboratory and Columbia University, but also the University of California at Riverside, the University of Cincinnati, Embry Riddle Aeronautical University, Louisiana State University and Louisiana Tech University—filed a letter of intent with Fermilab in May 1997.

This was no “letter,” however; it was a 100-page document detailing many aspects of the experiment—its beam, its detector, the signal the collaborators were looking for and the backgrounds, the projected measurements and sensitivities, and a possible future upgrade to a second detector. Letters of intent used to be “real letters,” Conrad says. “They’d say things like ‘Dear Director, If you will build us a beam, we will build you a detector. Love, The Experimenters.’”

The proposal to the Physics Advisory Committee, which makes recommendations on experiments to the Fermilab director, was even longer: 200 pages. “The next time, we’re going for *War-and-Peace* level,” Conrad jokes.

“The ante keeps going up,” she says, happy that the MiniBooNE collaboration got its proposal in before another collaboration recently filed one in color. (“Fermilab machines don’t collate color copies,” she explains.)

Both the letter of intent and the proposal were well received.

The PAC was full of praise, in writing:

- “The MiniBooNE collaboration has persuaded the PAC that their experiment would have the sensitivity to definitively confirm or rule out the LSND signal.”
- “The collaboration has done an excellent job of addressing the backgrounds that will limit this experiment.”
- “The level of technical detail in the proposal is impressive, and many design issues are well thought out.”

The words were so encouraging “you wanted to frame them and send them home to Mom,” Conrad says.

Then came the letter: “The PAC did not recommend Stage I approval, a recommendation which establishes the scientific case for the proposal, because our tradition requires that the PAC defer this recommendation until at least one meeting after the PAC hears the proposal for the first time.”

The collaborators weren’t aware of this policy, and their hearts sank.

The letter also contained the expected cautionary words about Fermilab’s budget:

“...Funding for High Energy Physics has risen more slowly than the rate at which inflation has eroded the purchasing power of our budget.” Director John Peoples suggested that the collaborators search for funding.

Conrad called every high-energy and nuclear physics office at DOE and the National Science Foundation. “I began to feel like a telemarketer,” she says. The response she kept hearing: Get approval first.

Meanwhile, someone suggested raising money by raffling off neutrino events. Imagine an oscillation event named in your honor.

Approval first

Meanwhile, the collaboration remained convinced that, as Conrad puts it, “exciting physics comes in small packages.” Small experiments are relatively inexpensive—MiniBooNE will cost less than \$10 million (“\$9.95,” says White) for the beam and the detector, including contingency and escalation. And they can answer some hot questions in physics in a relatively short time. MiniBooNE could have results by 2002.

And that, White and Louis are convinced, will be just the beginning. The possibilities open up, and now they leave the bug on: a second detector to measure the oscillation parameters, studies of charge-parity violation in leptons, studies to see if the lepton sector looks like the quark sector, a whole new, and complete, program in neutrino physics at Fermilab...

But first they have to get approval from the PAC on May 15. ■

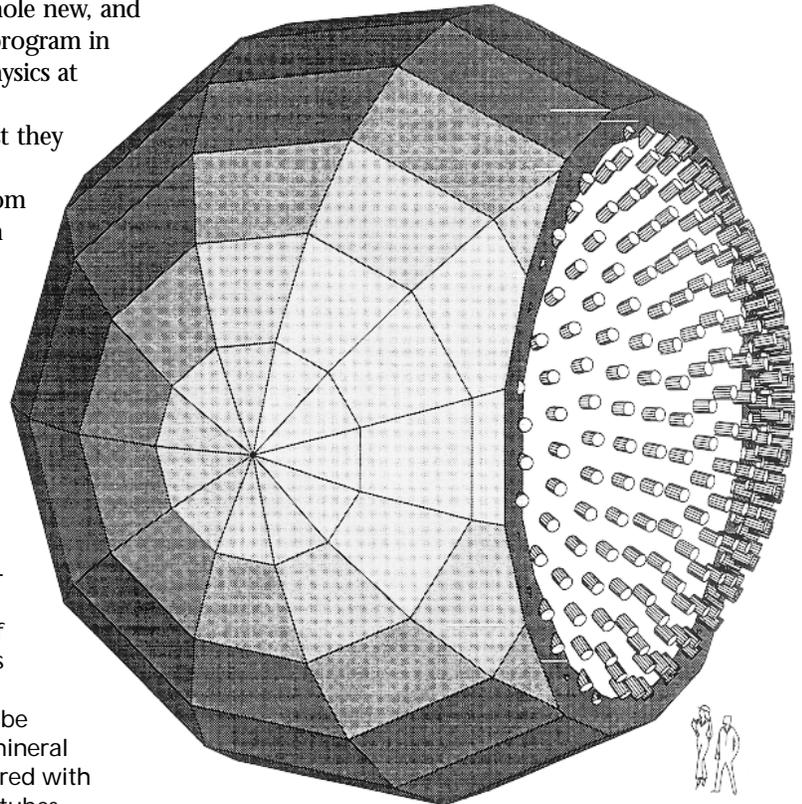
A computer-generated schematic of MiniBooNE’s proposed detector, to be filled with mineral oil and covered with 1,220 phototubes.



Photo by Jenny Mullins

Cospokesperson Bill Louis speaks at a collaboration meeting.

Information on the MiniBooNE experiment is available at <http://www.neutrino.lanl.gov/BooNE/>.



Search Committee Formed for Director Search

by Sharon Butler, Office of Public Affairs

With the appointment of a search committee, the scouting for candidates for Fermilab's next director has begun in earnest.

Fermilab Director John Peoples Jr. has announced his intention to step down on June 30, 1999. Universities Research Association, Inc., which oversees the operation of Fermilab, has formed a director's search committee composed of scientists from Fermilab and from universities and research facilities around the country. The committee met for the first time in March.

URA has charged the committee with leading a "broad search" for the "best-qualified" person to lead Fermilab as its director for at least the next five years, and possibly for 10 years or more. URA asked the committee to take into account "the expected research agenda and needs of high-energy physics, and closely allied disciplines, during the first decade of the 21st century and beyond," with "due attention to future possible major facility initiatives at Fermilab or elsewhere."

By October 5, 1998, the committee will submit the names of at least three candidates for director.

The search will not be limited by national borders. Since scientists from around the world use the facilities at Fermilab, URA instructed the committee to seek input from a "broad cross-section of the high-energy physics community"—including scientists overseas, as well as Fermilab staff and the current and former directors of Fermilab.

URA also encouraged the committee to seek candidates from demographic groups (e.g., women and minorities) that are underrepresented in the scientific disciplines.

The criteria URA specified for the director include:

- demonstration and/or capability of visionary leadership and effective building of consensus, domestically and internationally;
- high level of management skills and successful management experience, particularly in scientific laboratories and universities;
- an understanding and appreciation of the environmental, safety and health responsibilities involved in the management and operation of a large facility like Fermilab; and
- excellent human relations and communication skills.

At its next meeting at Fermilab on May 28-29, according to George Trilling, the committee chair, the committee will seek "input from people representing different aspects of the Fermilab community, including management, users, staff and individual scientists."

"The selection of the next Fermilab director is of major importance not only to the Fermilab community but to the whole international scientific enterprise," Trilling said.

The committee welcomes nominations from anyone in the high-energy physics community, or any opinions on potential candidates for the position, to ensure that no qualified candidate is overlooked. Ezra Heitowit, vice president of URA, serves as the committee secretary. He will receive the nominations and any other communications and pass them on to the committee. He can be reached through the "Fermilab Director Search" Web page or by mail (URA, 1111 19th Street, N.W., Suite 400, Washington, D.C. 20036). ■



Photo by Bob Palmer

George Trilling,
Physicist, Berkeley Laboratory
Chair of the Search Committee

Members of the Search Committee

Persis S. Drell,
Cornell University

Jerome I. Friedman,
Massachusetts Institute
of Technology

S. James Gates,
University of Maryland

David Gerdes,
Johns Hopkins University

William Happer,
Princeton University

Stephen D. Holmes,
Fermilab

Hugh E. Montgomery,
Fermilab

Roberto Peccei,
University of California-Los Angeles

Charles Y. Prescott,
Stanford Linear
Accelerator Center

Regina Rameika,
Fermilab

Heidi M. Schellman,
Northwestern University

Melvyn J. Shochet,
University of Chicago

Maury Tigner,
Cornell University

J. Anthony Tyson,
Bell Laboratories

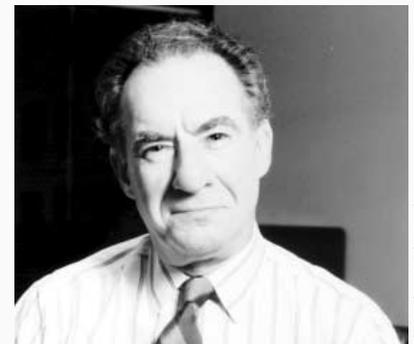


Photo by Reider Hahn

Ezra Heitowit,
Vice President of URA
Search Committee Secretary

Information on the search committee is available at
http://www.fnal.gov/directorate/ura/dirsearch/director_search.html

Shooting for Safety

by Sharon Butler, Office of Public Affairs

For the last 10 years, Fermilab's Lost Workday Case Rate has been hovering around 3.1. That means that about three in every 100 workers at Fermilab—or a total of about 66 employees or contractors—are injured on the job each year, seriously enough that they either miss work or can't do their normal jobs.

The figure is not bad compared with the rate in industry. The average for all private industry in 1996, the last year for which the Occupational Safety and Health Administration has complete data, was 3.4.

But the average for all of DOE in the period 1992–1996 was only 1.8. For DOE's R&D contractors during the same period, it was 1.5; for DOE's construction contractors, 2.5.

And, of course, world-class companies like DuPont pride themselves on having Lost Workday Case Rates falling below 1.0.

Clearly, Fermilab's statistics signal a need for change in work habits. Somehow, Fermilab must learn more respect for safety precautions—especially in light of the Department of Energy's new initiative, "zero tolerance" for serious accidents.

One problem, according to David Nevin, head of the Facilities and Engineering Services Section, is that people think they are "untouchable," although it's only luck that has kept them out of trouble. Luck also makes workers complacent. "One day," he said, "that snake will jump up and bite them."

"My philosophy is: There are risks and dangers; we've got to identify the risks and eliminate the dangers."

As impassioned as Nevin is about the importance of safety, he found that his message wasn't reaching the people on the job in FESS. So earlier this month, the FESS Safety Council organized a party with the theme "Shooting for Safety." It was a lunchtime affair with a free buffet lunch and games of basketball. Prizes were raffled, (the cool safety glasses were the hottest ticket), and perhaps most important, each worker took a pledge to "conduct

work and operations in a safe and environmentally sound manner." Now they carry that pledge in their wallets, on laminated ID cards.

Nevin said he wanted to mark the day when FESS employees and contractors vowed to change their safety habits. "We don't often give away a free lunch," he said.

Lab management also announced goals for the Lost Workday Case Rate: down to 2.1 by the end of 1998, or no more than 45 serious work injuries; 1.6 by the end of 1999, or no more than 34 serious injuries; and 0.8, or no more than 17 serious injuries total, by the end of 2000.

"No injuries, serious or not, are acceptable," added Bill Griffing, head of the Environmental, Safety and Health Section. "We have to set our sights on zero injuries if we hope to drive the numbers down." ■

Jori Nelson shoots for safety at the recent FESS event.

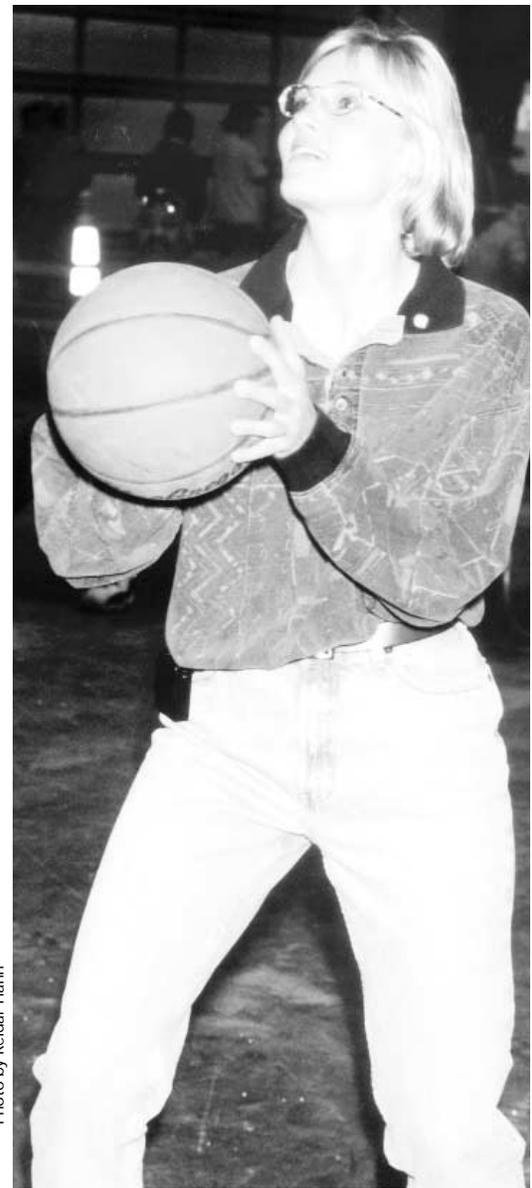
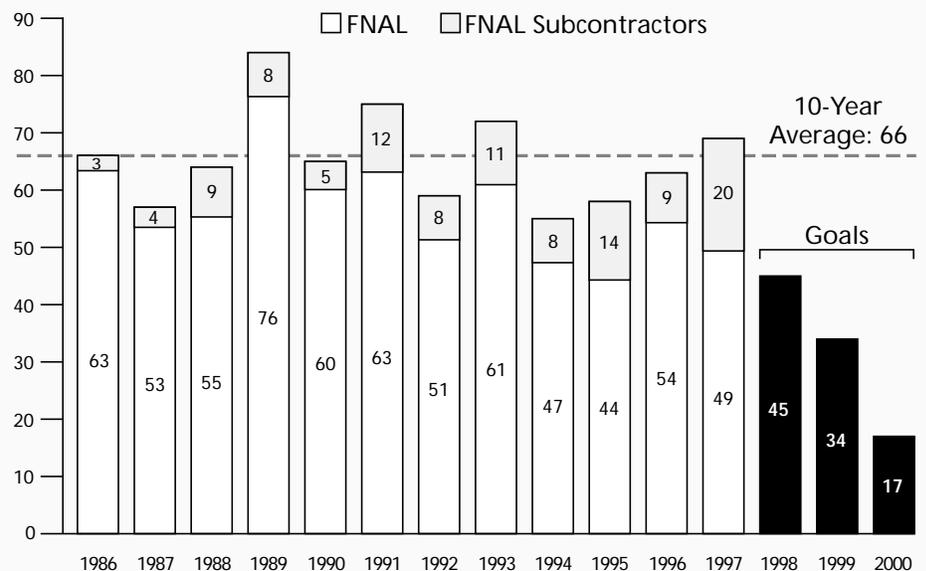


Photo by Reidar Hahn

Number of Workers Seriously Injured Each Year



Van Vreede Wants Lab Services In Tune With Customers' Needs

By Mike Perricone, Office of Public Affairs

Hiring and firing, breakfast and lunch, library books and employee benefits, medical services and scientific publications, human resources and visual media—they're all in a day's work for the head of the Laboratory Services Section.

"It is quite a diversity of responsibilities," said Kay Van Vreede, her office taking shape around her as metal partitions were being added, moved and removed during her fourth day on the job on the 15th floor of Wilson Hall.

"The common thread is that they're all services to everyone else in the Lab," she continued. "My first goal is to meet everyone in our section, and then get to know all our customers—which is everybody in the Lab.

"It's very important for a service function to be in tune with what its customers need. We want to work closely with our customers, to make sure we're providing the right services in the right way."

Heading Laboratory Services has been a "one-man job" for 30 years. Chuck Marofske was the only person to hold the post from the Lab's earliest days until his recent retirement.

Van Vreede succeeds Marofske with 12 years of experience at Montgomery Ward, which she joined after earning a Masters Degree in Public Administration from the University of Wisconsin. She reached the level of Corporate Personnel Manager at Ward's, then worked for 10 years with Molex, Inc., a high-tech manufacturer of interconnect products with headquarters in Lisle and plants around the world.

Van Vreede was Regional Human Resources Manager for Molex plants in Canada, Mexico, Brazil, South Africa and India, as well as for several U.S. locations, and for international Molex employees based in Lisle. Her responsibilities took in virtually all employee needs for the growing installations of an expanding corporation, literally beginning from the ground up with a plant in Guadalajara, Mexico: she shepherded its growth from zero to 2,000 employees, with the responsibility for all those employees' needs.

While the Lab's international science environment carries many similarities to international manufacturing, Van Vreede also sees strong parallels to her work in a variety of positions at Montgomery Ward, where budget-consciousness had a high priority.

"Working within a budget here should be very similar to what I did at Ward's," she said. "I worked with different administrative centers across the nation, involving all their operations from cafeteria services to medical services, similar to the responsibilities here."

Noting that the section has a history of strong management providing good services to the Lab, Van Vreede nevertheless emphasized that "it's important for me to get out and learn whether our group is meeting everyone's needs." She wants to stay in close contact with the issues and the people around her.

"I'd like to see team-building and teamwork within the Lab Services Section itself," she said. "I can be coach or cheerleader, whatever it takes to build a team. That's something very important to me."

Van Vreede and her husband, Greg Wojciechowski, live in Clarendon Hills with their two children, Michael, 7, and Amy, 11. Wojciechowski, an attorney at Argonne National Lab, formerly worked at Fermilab and inspired Van Vreede's interest in someday joining the Lab herself.

"He always spoke very highly of Fermilab, of its culture and mission," she said. "I always told him that if I ever made a switch, Fermilab was the one place I was interested in working. So when I heard about the opening, I decided I was interested in pursuing it. The intellectual and creative environment is very appealing to me." ■

" My first goal is to meet everyone in our section, and then get to know all our customers—which is everybody in the Lab."

Kay Van Vreede opens the door to new opportunities and challenges as head of the Laboratory Services Section.



Photo by Jenny Mullins

MILESTONES

BORN

■ The first baby bison of the season in Fermilab's herd, April 24, 1998.

NAMED

■ Pat Colestock and John Marriner as Fellows of the Division of Physics of Beams of the American Physical Society.

■ Kam-Biu Luk, Ronald J. Madaras, Robert L. McCarthy, Frank S. Merritt, John R. O'Fallon, Joseph G. Polchinski, Andris Skuja, Arkady Vainshtein, Hendrick J. Weerts and Hugh H. Williams as Fellows of the Division of Particles and Fields of the American Physical Society.

RETIRING

■ Gale Pewitt, I.D. #9418, on June 12, 1998 from the Technical Division. His last work day was April 30.

■ Mariann Nelson, I.D. #4131, on May 1, 1998 from the TD-Engineering & Fabrication Department. Her last day of work was April 30.

WELCOMED

■ Hundreds of sons and daughters, who spent April 23 at Fermilab learning what their parents do all day.



Photo by Reidar Hahn

LAB NOTES

The CY1997 Interim Report to the Director on the Fermilab Environment

is now available on the Web: http://www-esh.fnal.gov/Envir_Reports/97EnvRepInterim.htm.

Summer Recreation

Pool opens Memorial Day weekend, May 23. Membership information, hours, costs and applications are on the Recreation web page (<http://fnalpubs.fnal.gov/benedept/recreation/recreation.html>) or the Recreation Office WH15NW.

For information on Children's Swimming Lessons, Summer Basketball League, Softball League, and Summer Doubles Tennis League, consult the Recreation office web page at (<http://fnalpubs.fnal.gov/benedept/recreation/recreation.html>) or drop by the Recreation Office WH15NW.

Volunteer Opportunity

Pavel and Lucy de Barbaro invite volunteers to celebrate Earth Day by helping clean up a section of Rt 56 along the southern edge of Fermilab.

Volunteers will meet on Saturday, May 9, (rain date May 10) at 10 am at the entrance to the Butterfield subdivision on Rt. 56 across from Fermilab. IDOT will provide safety vests and orange garbage bags and will collect the bags afterward.

For more info, or to help us organize this event, please call Lucy at x3266 (978-1002). This volunteer clean-up is not a Fermilab-sponsored event.

FermiNews Essay Contest Last call for entries!

Deadline May 5, 1998

As announced in the last issue, *FermiNews* will award a bottle of Dom Pérignon as the first prize, and Congressman Vern Ehlers will award an American flag flown over the U.S. Capitol as the second prize for the best essays of 500 words or less to address the question "Why should the U.S. remain a world leader in high-energy physics?"

Submit essays by e-mail (ferminews@fnal.gov); snail mail (*FermiNews*, MS 206, Fermilab, P.O. Box 500, Batavia, IL 60510);

fax (630-840-8780); or in person (Wilson Hall, 1 East.)

For more information, call the Fermilab Office of Public Affairs at 630-840-3351, or see the Essay Contest page on the World Wide Web: <http://www.fnal.gov/pub/essay/contest.html>



Chez Léon

MENU

Lunch served from
11:30 a.m. to 1 p.m.
\$8/person
Dinner served at 7 p.m.
\$20/person

For reservations, call x4512
Cakes for Special Occasions
Dietary Restrictions
Contact Tita, x3524

Lunch Wednesday May 6

Spicy Roast Beef
with White and
Black Bean Ragout
Coffee Ice Cream Sundaes with
Hazelnut Hot Fudge Sauce

Dinner Thursday May 7

Shellfish in Coconut Broth
Grilled Filet Mignon
Corn and Pepper Sauté
Potato Fonseca
Chocolate Bourbon
Pecan Tart

Lunch Wednesday May 13

Lebanese Platter
Kebab, Hummus,
Tabbouleh, Eggplant
with Pita
Baklava

Dinner Thursday May 14

Goat Cheese Soufflé
with Thyme
Mango Jerk Tuna
with Couscous
Almond Cake
with Citrus Syrup

CLASSIFIEDS

FOR SALE

- '95 Dodge Neon Hi-Line, 50K miles, A/C, 5-speed. Good reliable transportation w/plenty of interior room. \$7,000. Call x2394 or e-mail crawford@fnal.gov.
- '92 Eagle Summit DL (a.k.a. Mitsubishi RVR) 4 dr wagon, 1.8 L 4 cyl., 5-speed manual, cloth seats, PS, PB, air, pwr mirrors, rear wiper & defrost, AM/FM, luggage rack, 104K miles, \$4,200. Call Walt, x3893.
- '88 Mazda RX-7 GXL, manual, white exterior, blue leather interior. Just 77K miles, well maintained, full service manual included, \$5,300. Call Matt, x3461.
- '87 Porsche 944; red exterior, beige interior, automatic transmission, just serviced, only 58K miles. Asking \$8,000 obo. Call Griff, x8069 or griffing@fnal.gov.
- Nordic Track exercise ski machine, hardly ever used \$450 obo; Ski's - Atomic Arc 195, Salomon 547 Sport Bindings, size 12 US or 13 EU Trappeur 2000 boots also have poles, ski & boot bag. Best offer. Call Terry, x4572 or e mail skweres@fnal.gov.
- Nordic Trak ski machine w/electronic monitors \$500; HEPA room filtration unit \$250. Call x4850.
- Cannon Starwriter 30 personal word processor, excellent print quality, MS DOS compatible, numerous fonts, prints special characters & borders, etc., seldom used, still in box \$150; Amana Radarange microwave oven, good condition, \$50; Recliner, brown, fair condition, \$25. Contact Paul, x2560, (847) 289-1019 or olderr@fnal.gov.

RENT

Looking for a room to rent from mid May till mid August as a summer intern in Fermilab. If you have a room near Fermilab for sublease for this period, please contact Echo Qiu. (815)-753-1247 (9am -11pm) or e mail: e2159@ceet.niu.edu.

LETTER TO THE EDITOR

I found Meher Antia's article "Matter, Antimatter, and Why are We Here?" to be the best of its type ever done in *FermiNews*. The author fully captured the wonder and excitement of science; something not often found in science writing. It reads like an exciting mystery novel and helps explain the need to understand the amazing incongruities of physics. Well done!

Robert Trendler

CALENDAR

MAY 2

Fermilab Arts Series presents Paula Robison, flute and Eliot Fisk, guitar, \$19. Performance begins at 8 p.m., Ramsey Auditorium, Wilson Hall. For reservations or more information, call 630 840-ARTS.

MAY 8

Fermilab Lecture Series presents: Dr. Siegfried S. Hecker, Former Director Los Alamos National Lab, *From Russia with Love: A Scientist's Journey through the End of the Cold War*: Ramsey Auditorium, 8 p.m., admission \$5. Call (630) 840-ARTS for tickets.

MAY 15

Fermilab International Film Society presents: *The 5,000 Fingers of Dr. T.*, Dir: Roy Roland, USA (1953). Admission \$4, in Ramsey Auditorium, Wilson Hall at 8 p.m.

MAY 20

Wellness Works presents: Health & Fitness Day.

ONGOING

NALWO coffee mornings, Thursdays, 10 a.m. in the Users' Center, call Selitha Raja, (630) 305-7769. In the Village Barn, international folk dancing, Thursdays, 7:30-10 p.m., call Mady, (630) 584-0825; Scottish country dancing Tuesdays, 7-9:30 p.m., call Doug, x8194.

Conversational English classes, 9-11:30 a.m., Thursdays, in the Users' Center.

Je suis française. J'enseigne le français. Peggy-Henriette Ploquin. (630) 682-9048. <http://www.fnal.gov/faw/events.html>

SPECIAL EVENT

MAY 8

The Computing Division hosts an Open House at the Feynman Computing Center from 2:30 until 6:30 p.m. Division staff will be on hand to demonstrate and explain the wide variety of services, activities and projects underway.

Tours of the building will be given and many departments will have demonstration stations set up covering everything from electronic system development to computers, networks, data handling, building and facilities management, software and databases, the World Wide Web and video conferencing.

You'll have hands-on opportunities to try out some of the latest computing and network technologies.

Look inside a detector yet to be built and peek in on an experiment at the South Pole, all at the Feynman Center.

A food concession will be available. Limited transportation will be provided.

Information on the openhouse is available at <http://www.fnal.gov/cd/openhouse/>



FermiNews
Fermi National Accelerator Laboratory

Published by the
Fermilab
Office of Public Affairs
MS 206
P.O. Box 500
Batavia, IL 60510
630-840-3351
ferminews@fnal.gov

*Fermilab is operated by
Universities Research
Association, Inc.,
under contract with the
U.S. Department of Energy.*

The deadline for the Friday, May 15, 1998, issue of *FermiNews* is Tuesday, May 5.

Please send your article submissions, classified advertisements and ideas to the Public Affairs Office, MS 206 or e-mail ferminews@fnal.gov.

FermiNews welcomes letters from readers. Please include your name and daytime phone number.

☆ U.S. GOVERNMENT
PRINTING OFFICE:
1998-646-054/81003

