

F E R M I N E W S

F E R M I L A B

A U.S. DEPARTMENT OF ENERGY LABORATORY



Photo by Reidar Hahn

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NEW VIEW OF

Special tour gives neighbors good vibes

by Kurt Riesselmann

It was close to midnight. Batavia resident Iris Ware was thinking of going to bed when a sound like a thunderclap broke the silence, rattling the windows of her house. A few moments later, everything was quiet again.

What was that?

Suspecting that construction activity at neighboring Fermilab might have been responsible and worried about possible damage to the foundation of her house, Ware called Fermilab to get some answers about what was making her windows rattle.

Ware wasn't the only local resident who wondered what was up. On January 16, Fermilab neighbors, who, like Ware, had questions about loud noises from their normally quiet neighbor, had a chance to find out exactly "What was that?" About 60 local residents attended a "Just for Neighbors" Open House at Fermilab, where they heard from managers and construction experts about the NuMI project and its effects on the neighborhood.

Cover:

Miners use a special machine to drill holes into the rock to place explosives for blasting.

The S.A. Healy Company will excavate a total of three shafts, two of which are complete. The third shaft is presently under construction. At 350 feet it will be the deepest of all three shafts.



Photo by Reidar Hahn

Since March 2000, the S.A. Healy Company of Lombard, Illinois, has been carving out an underground system of halls, shafts and tunnels for the Neutrinos at the Main Injector project. Because most of the construction takes place in the dolomite and shale rock beneath the Fermilab site, blasting became the excavation method of choice. So far, S.A. Healy has carried out more than 200 blasts at Fermilab.

The NuMI construction is the first step in building an experiment that will determine whether neutrinos, ghost-like particles zipping through our universe at or near the speed of light, have mass.

At the Open House, neighbors heard from physicist Dixon Bogert, NuMI project manager, and mining expert Chris Laughton, NuMI construction manager. They gave the bad news: It's loud. And they gave the good news: It won't harm your house, drain your well, or crack your foundation.

"We know you hear noise," said Laughton. "But the blasting will not harm nearby structures, either in the neighborhood or at the laboratory itself. We carefully monitor the noise and vibration levels."

NUMI

Dane Tittman knows vibration. Tittman, area manager of the Vibra-Tech company, also explained to neighbors how windows can rattle even when the ground doesn't move.

"The rattling windows are due to air overpressure escaping the tunnels through the shafts," he said. "There is no danger of foundations cracking."

Though neighbors often perceive the rattling windows as a sign of ground motion, Tittman reassured them that this is not the case.

"Our measurements here at Fermilab and in the neighborhood confirm that there are no significant ground vibrations," he told the neighbors. "Ground vibrations travel about 12 to 18 times faster than sound. You would feel them about three to four seconds before the sound."

Like powerful loudspeakers that produce pressure waves and make objects vibrate, the excavation blasts create short, strong pressure waves that travel through air. Depending on the strength of the blast and weather conditions, these pressure waves can travel into nearby residential areas.

Tittman showed plots of sound and ground vibration measurements made at Fermilab and at houses in the neighborhood. He compared the results with the limits recommended by the U.S Bureau of Mines to avoid structural damages to residential buildings.

"Many studies have looked at the impact of blasting on residential structures," Tittman explained. "They studied various types of houses and looked at the effect of blasting on foundations, dry wall, plaster and so forth."

To demonstrate the sensitivity of his monitoring equipment, Tittman showed a plot of the vibration generated by a dog walking around the instruments in a neighbor's back yard.

"Different sources of vibration cause different patterns in the signals," he explained. "Looking at these particular waveforms, I immediately knew they didn't come from blasting."

Ken Bailey, a Fermilab neighbor living near Pine Street, asked Tittman about the impact of the vibrations on water wells.



Neighbors took a close look at rock samples. The deepest shaft of the NuMI project will extend more than 300 feet into the ground.

"Water wells are not affected unless ground vibration intensities exceed speeds of two inches per second peak particle velocity," Tittman said. "The vibrations recorded at Fermilab and in the neighborhood are well below this limit."

As neighbors talked to Fermilab scientists, they also had an introduction to neutrinos and the Main Injector Neutrino Oscillation Search experiment that will be built once the NuMI construction is finished. The experiment will measure whether neutrinos change their identity as they travel through space and matter.

"I come to Fermilab for biking and fishing," one neighbor said. "It's fascinating to find out about the neutrino research that's happening here."

Fortunately, unlike the construction for the neutrino experiment, the neutrinos themselves won't make a sound. □



Photos by Reidar Hahn

In addition to flyers and newspaper articles, an open house provided information to Fermilab neighbors affected by NuMI construction. Physicist Elizabeth Buckley-Geer (left) explained details of the NuMI project.

Further information:

- <http://www.hep.anl.gov/ndk/hypertext/numi.html>
- <http://www.sudan.umn.edu/>

HIGH HOPES for BORING machine

by Kurt Riesselmann

Managers call the time line that determines the lifespan of a project the critical path. The managers of Fermilab's Neutrino at the Main Injector construction project need to navigate two critical paths.

Three hundred and fifty feet underground, those two paths have to meet.

"The excavation of the 350-foot-deep MINOS shaft has high priority," said project coordinator Tom Lackowski of the Facilities Engineering Services Section. "We hope to finish it shortly before the boring machine, in the equally important decay tunnel, reaches the same spot."

Shaft and tunnel will connect to the future underground laboratory of the Main Injector Neutrino Oscillation Search experiment, which will bring light to the question whether neutrinos have mass. Current experiments suggest that neutrinos contribute as much mass to our universe as the combined mass of all stars, and MINOS experimenters are eager to settle the question.

To construct this experiment, physicists rely on the S.A. Healy Company to create a system of underground tunnels and laboratories to house onsite

NuMI/MINOS components. Blasting 6 to 10-foot-thick layers of rock, the MINOS shaft has already reached a depth of 140 feet. The excavation of a 3,000-foot-long tunnel will start in the near future, as soon as assembly of a rock-chewing monster called a tunnel boring machine is complete.

"When assembled, the TBM will be about 250 feet long," said John Sollo, construction coordinator of the NuMI project. "We will assemble it in the underground target hall, which is close to being done. Once in place, the TBM will mine about 80 to 90 feet in a normal work day."

"However," Sollo cautioned, "there is a lot of unknown when you work underground."

At present, the NuMI construction is a couple of months behind schedule, project managers say. If there are no additional delays, miners will connect the MINOS shaft and the decay tunnel sometime in summer. S.A. Healy expects to finish the entire excavation of the NuMI project before the end of the year.

Lackowski is looking forward to reaching that goal.

"Once the excavation is complete," he said, "it will be a normal physics project—only the first elevator stop will be much lower." □



Photo by Reidar Hahn

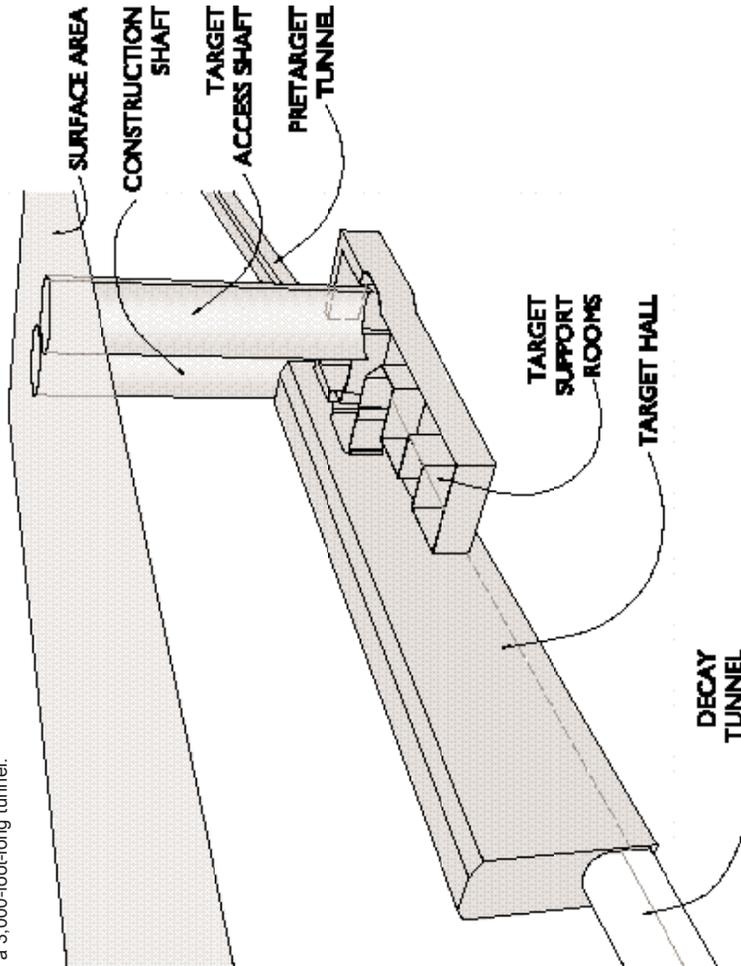
John Sollo, NuMI construction coordinator, inspects the drill head of the tunnel boring machine. Instead of explosives, miners will use the TBM to excavate a 3,000-foot-long tunnel.

Additional information on the web:

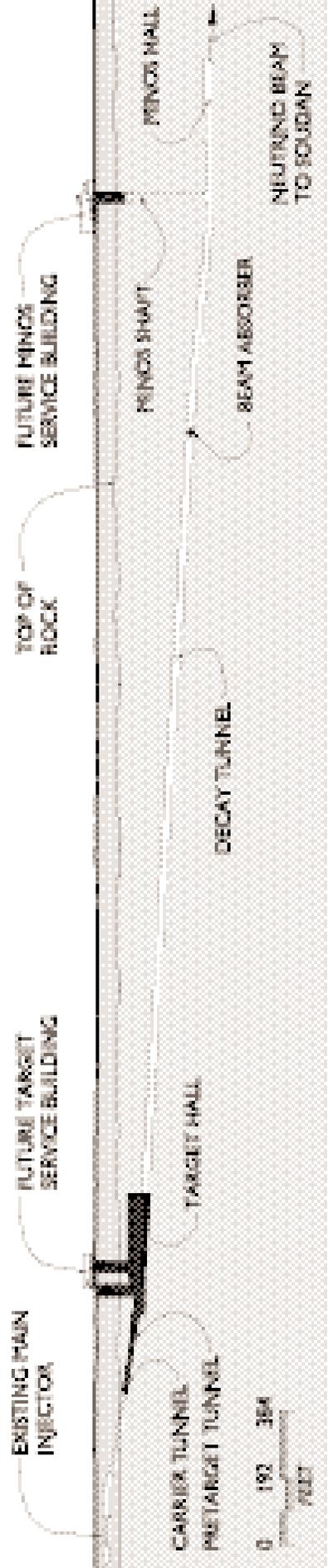
<http://www-fess.fnal.gov/engineering/NuMI/start.htm>

MILESTONES OF THE NUMI CONSTRUCTION

Excavation of two 160-foot-deep shafts and the 225-foot-long target hall is complete. Inside the hall, construction workers will assemble a tunnel boring machine, which will be used to mine a 3,000-foot-long tunnel.



- June 1997:**
NuMI project receives funding from U.S. Congress
- Oct. 1999:**
Bids requested for underground construction
- March 2000:**
S.A. Healy starts \$30.5 million NuMI construction project
- May 2000:**
First blast at target access shaft
- June 2000:**
First blast at construction shaft
- July 2000:**
Target access shaft and construction shaft complete
- July 2000:**
First blast at target hall
- Dec. 2000:**
First blast at MINOS access shaft
- Jan. 2001:**
Excavation of target hall and support rooms complete
- Feb. 2001:**
Assembly of tunnel boring machine for decay tunnel



The NuMI project has made a lot of progress. Areas in black are completely excavated. The next construction phase consists of blasting the MINOS shaft to a depth of 350 feet and drilling the decay tunnel. Both tasks should be complete in summer of 2001.

Fermi Stamp: A Chain Reaction

by Mike Perricone

Maury Goodman didn't hold out much hope for the official stamp of approval from the U.S. Postal Service in commemorating either research at Fermilab, or the 100th anniversary of Enrico Fermi's birth.



Laura Fermi spoke during dedication day ceremonies at Fermilab in 1974.

"There have been a number of postage stamps honoring Nobel Prize winners, and 20 or 30 years ago the idea would have been perfect," said Goodman, a Fermilab user from Argonne National Laboratory and a lifelong stamp collector. "But the Postal Service has become more interested in stamps for Marilyn Monroe and Bugs Bunny, so we knew we had a bit of a battle on our hands. The USPS has become more market oriented. But that's OK, too."

Sure enough, the 2001 series of commemorative stamps from the Postal Service includes an actress (Lucille Ball) and cartoon characters (Peanuts and Looney Tunes). But the USPS will also issue a stamp in Chicago on September 30, 2001 commemorating the 100th anniversary of Fermi's birth (actually September 29, 1901 in Rome, Italy).

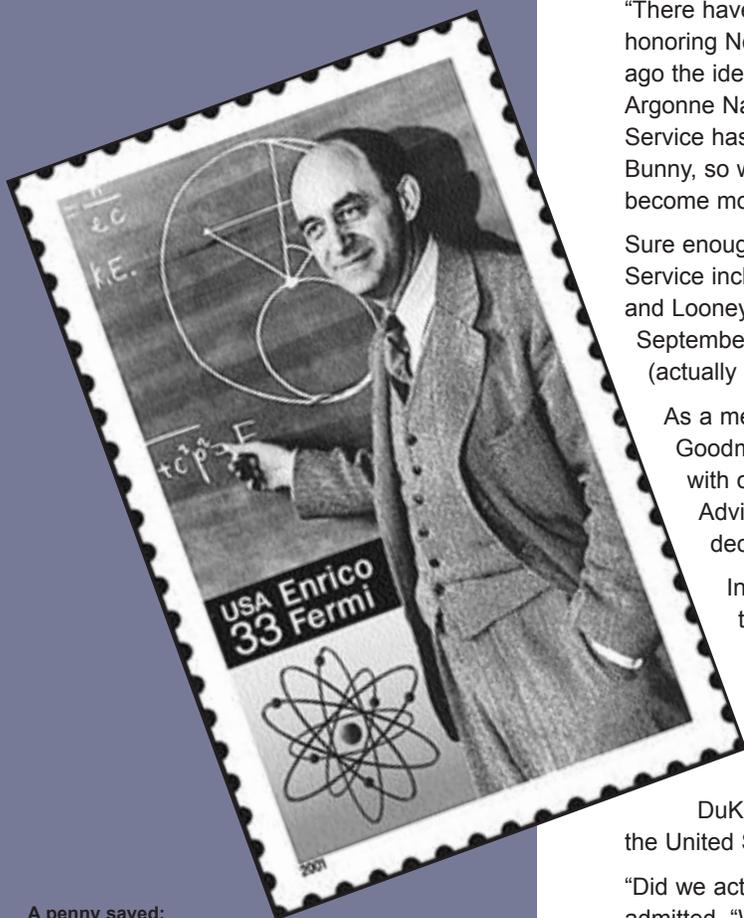
As a member of Fermilab's Users Executive Committee in 1998, Goodman helped launch the idea of the stamp as an outreach effort—with or without the expectation of an approval from the Citizen's Stamp Advisory Committee, which considers submissions and makes the decision for the Postal Service.

Initially aiming at recognizing the new Main Injector at Fermilab, the campaign settled on Fermi's 100th anniversary as a more specific date and a more tangible goal. The campaign grew with additional endorsements from Universities Research Association, Inc., which operates Fermilab under contract with the U.S.

Department of Energy; from the lab's neighboring cities of West Chicago, Warrenville, Batavia and Aurora; from the DuKane Valley Council; and with support from individuals across the United States and from 15 other nations.

"Did we actually have an effect on the decision? I don't know," Goodman admitted. "We did what we did, and we had fun with it."

The citation accompanying the stamp describes Fermi as "one of the preeminent physicists of the atomic age." He won the 1938 Nobel Prize in Physics for the discovery of nuclear reactions brought about by slow neutrons. In 1942, he directed the first controlled and self-sustaining man-made nuclear



A penny saved:

The Enrico Fermi stamp will be updated to the new first-class rate of 34 cents for its September 30, 2001 issue.



Illinois Senator Charles Percy (left) joined founding director Robert Wilson for a tour of the lab following the 1974 ceremonies.

chain reaction with the Manhattan Project, the U.S. effort to build the first atomic bomb. The stamp art includes a colorized black-and-white photograph of Fermi taken in 1948 and a model of the carbon atom. Graphite, a form of carbon, was used to slow down the neutrons in the first nuclear reactor.

Fermi, who worked and taught at the University of Chicago, knew Robert Wilson, Fermilab's founding director, as a colleague on the Manhattan Project. But Fermi, who died in 1954, never saw Fermilab, or knew of its creation. The U.S. Atomic Energy Commission selected the site for the National Accelerator Laboratory in 1966, and Wilson was appointed director in 1967.

The laboratory took on Fermi's name in 1974, with efforts dating back to 1967 and the introduction of a bill in Congress by Rep. Frank Annunzio of Illinois proposing the name change. Fermilab archivist Adrienne Kolb, who has closely tracked the rechristening process, noted AEC Chairman Glenn T. Seaborg's plan in April 1969 to name the 200 BeV accelerator after Fermi, affirmed by a letter from President Richard Nixon. Sen. John Pastore of Rhode Island took up the cause of naming the entire laboratory after Fermi.

It was Pastore who engaged in the memorable exchange with Wilson during hearings of the Joint Congressional Committee on Atomic Energy in 1969, asking Wilson the value of the accelerator to national defense. Wilson replied: "...it has nothing to do directly with defending our country, except to make it worth defending."

The wind-blown decorative flags and pennants were plastered against the sky for the dedication ceremonies at the lab on Saturday, May 11, 1974.



Dixie Lee Ray (center), then chair of the U.S. Atomic Energy Commission, viewed the main control room with Fermilab physicist Paul Reardon (left) and deputy director Ned Goldwasser.

Fermi's widow, Laura Fermi, who had fled Fascist Italy with her husband in 1939, withstood the prairie gusts at the podium and compared particle accelerators to the great pyramids of Egypt: "Both were tangible victories of men over the brute power of nature."

Wilson, as he did so often, defined the moment with his words.

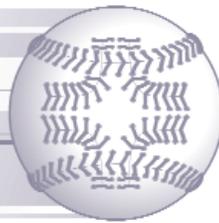
"We are deeply honored to have the name of Fermi attached to our laboratory," he said. Then he spoke directly to Laura Fermi: "Laura, I pledge in your name that we will do our best to make this a laboratory worthy of the name of Enrico Fermi." □

For more information:

- http://www.fnal.gov/orgs/fermilab_users_org/stamp.html
- <http://www.usps.gov>

Fermilab Photos

LINE DRIVE



Fermilab Series of Linear Collider Double-Headers

Linear Collider Series Could Go The Distance

by Mike Perricone

Pitching high and tight. Breaking up a double play. Barreling into the plate. When the stakes are high, baseball is a contact sport—but so is high-energy physics.

Playing up a baseball theme, “LINE DRIVE: A Fermilab Series of Linear Collider Double-Headers” drew a standing-room-only crowd of more than 200 to Wilson Hall’s 1 West conference room for opening day on January 18. And especially during the extra innings for questions and answers, there were pointed lessons about the stakes and the level of competition.

“From the standpoint of opening up the debate, I’d say it was a success,” said physicist Hugh Montgomery of Fermilab’s Particle Physics Division, the series organizer. “The discussion was energetic.”

Fermilab Director Michael Witherell made the first pitch by describing himself as “the old has-been lobbing the ball to home plate.” But he made it clear that a pennant is at stake in choosing the next-generation machine to follow the Large Hadron Collider being built at CERN, the European Particle Physics laboratory. And he pointed to a critical road trip to Snowmass, Colorado in July, concurrent with a meeting of the subpanel of the High Energy Physics Advisory Panel.

“The U.S. High Energy Physics community is facing the first of a number of decision points on the question of building a linear collider in the U.S.,” Witherell said. “This is just the first step in a long process. But the first-level decision must be reached this year to be included in the report by the upcoming HEPAP subpanel. This year in the U.S., there will be a broad look at physics issues in the community, culminating at Snowmass. The HEPAP subpanel will be preparing a plan for the future of the field in the U.S.”



Paul Grannis: “We know enough to make the choice now.”

Photo by Reidar Hahn





Photo by Reidar Hahn

Packed and jammed: Wilson Hall's 1 West conference room was standing-room-only for the opening LINE DRIVE session on January 18. Also in the back row: Video cameras recorded the talk for access by physicists around the world. See the video at: <http://www-visualmedia.fnal.gov>

Witherell reiterated that the Linear Collider workshop at Fermilab in October had included the announcement of a worldwide panel to evaluate technical proposals using a common framework such as luminosity. He emphasized that the European and Japanese HEP communities had already reached the first decision point of a willingness to explore a linear collider.

For example, the German laboratory, DESY, will make a proposal on its superconducting TESLA concept in March, for presentation to the German governmental agency funding scientific research. Witherell cautioned that the U.S. community "would not be able to mount a greater scale of R&D until a decision about the physics potential is made."

The decision process on a possible electron-positron linear collider, Witherell explained, hinged on two issues: the machine's physics discovery potential, and the feasibility of building the accelerator with at least one of two technological approaches, either "warm" or superconducting.

Physicist Paul Grannis, of the DZero collaboration and the State University of New York at Stony Brook, made the case for a linear collider, and then came the questions—hard and fast.

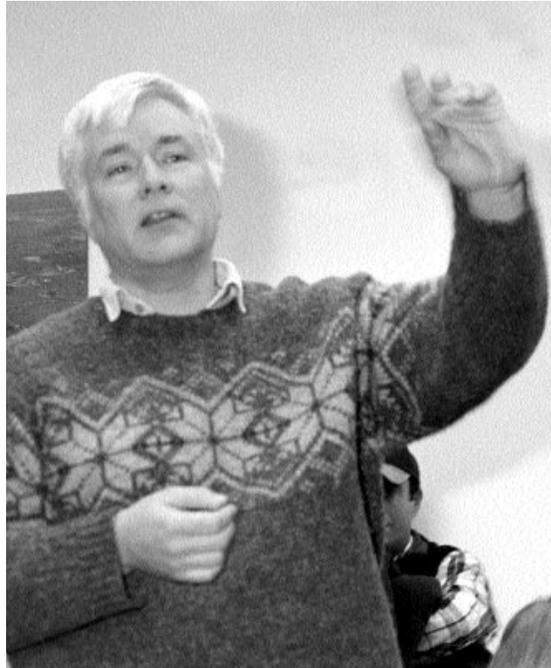
Stressing throughout that the cost of a linear collider required an international approach, Grannis described a "staged" linear collider

beginning operations at an energy level of 500 GeV. Such a machine would be about 26 kilometers long, essentially encompassing two LINACs, each about 10 km in length, joined at a slight angle at the collision point. While initial estimates reached \$5.1 billion in a 1999 Department of Energy review, Grannis said estimates since then have decreased about 30 percent to around \$3.7 billion. These costs reflect the cost of an accelerator in current dollars, before inflation, contingency and cost of detectors.

Grannis said a 500 GeV machine would do "an excellent job" of profiling the Higgs particle, including accurate measurements of mass and width, and of branching ratios of all dominant decay modes. It would show Higgs self-couplings, and show whether or not the Higgs was a Standard Model particle or a supersymmetry particle. He enumerated linear collider contributions in viewing substantial portions of the SUSY spectrum, in studying the top quark, and in observing measurable effects of electroweak symmetry breaking.

He made clear his feelings that the case for a linear collider was independent of future LHC findings, and that a 500 GeV machine was an "inevitable" decision for the high-energy physics community.

LINE DRIVE A *Fermilab Series* of Linear Collider Double-Headers



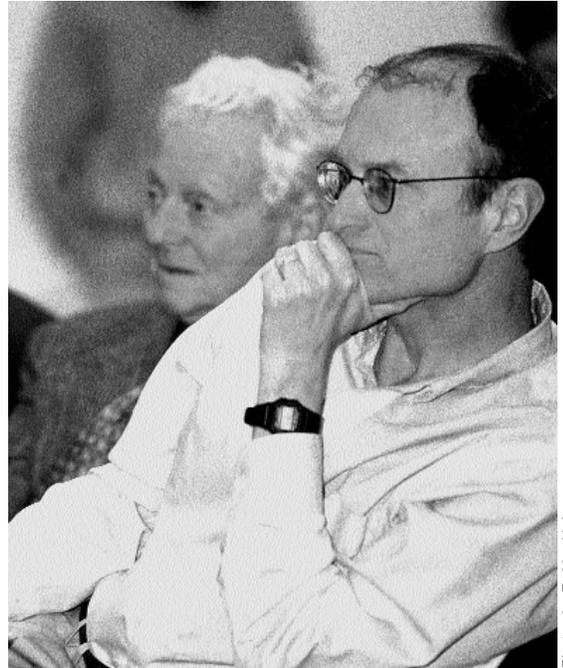
Chris Hill: “The [linear collider] is a narrow-band precision measurement machine, needing well-defined targets.”

“The physics case for the linear collider with a first stage at approximately 500 GeV is very strong,” he concluded. “We need a linear collider to study electroweak symmetry breaking in any scenario. We know enough to make the choice now.”

But as renowned former Baltimore Orioles manager Earl Weaver once said, you can’t hold the ball and run out the clock in baseball. The other guys have to get their at-bats. And the other guys took some hard swings.

Fermilab theorist Chris Hill questioned what he called “the implicit notion” that the case for a Very Large Hadron Collider depended on results from LHC, but a linear collider did not.

“I think we have that backwards,” Hill said. “VLHC is a wide-band discovery machine at the energy frontier. The [linear collider] is a narrow-band precision measurement machine, needing well-defined targets. Building an LC with nothing



Photos by Reidar Hahn

Michael Withereff: The U.S. HEP community “would not be able to mount a greater scale of R&D until a decision is made.”

specific to study would be a disaster. At 500 GeV, very interesting things may be out of reach. When we know we have the Higgs and supersymmetric or new strongly interacting particles within range, and a theory to accommodate them, then an LC may be desirable for precision measurements.”

Hill described VLHC as offering a program, rather than a project, involved in setting long term evolutionary goals for the 21st century. He said VLHC offers the possibility of seeing the whole spectrum of new physics, and the detailed mechanisms of flavor physics, CP violation and mass generation.

Hill continued: “Would we rather see a small part of the new spectrum measured with ultra-high precision? Or would we rather see a wide array of new particle states each measured to within a few percent?”

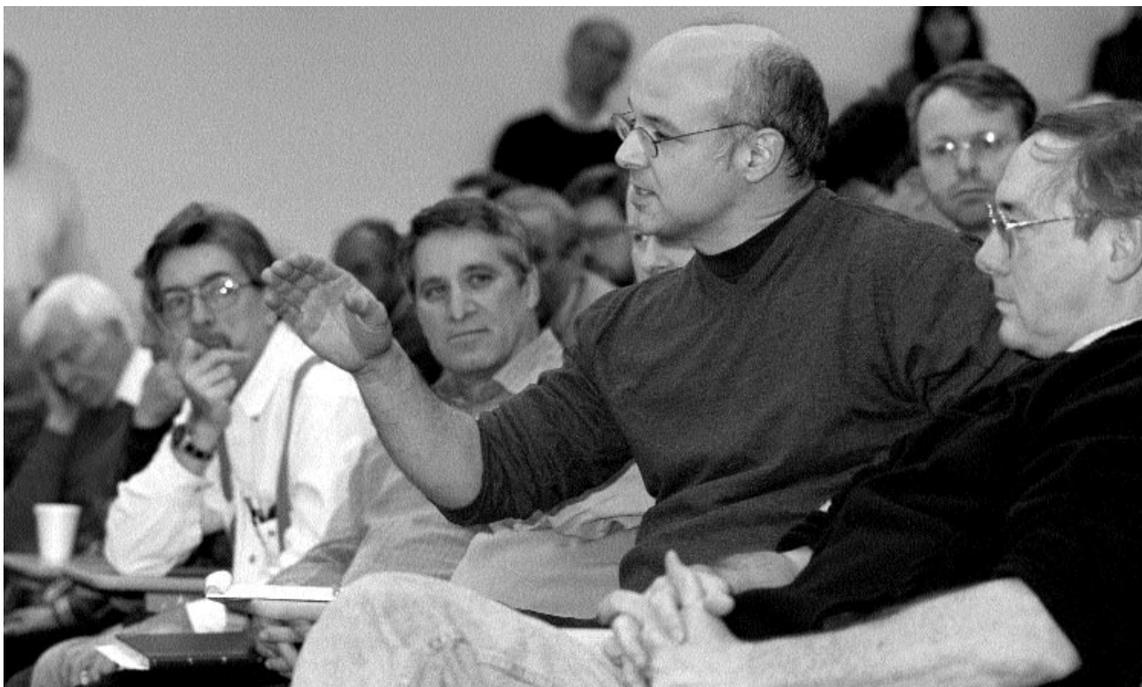


Photo by Reidar Hahn

Dan Amidei: "I think what many people want is to get beyond the predictable physics argument, and have the strategic issues enumerated and discussed somewhere besides the hallways and the [HEPAP] subpanel."

Dan Amidei of CDF and the University of Michigan, a former chairman of the lab's Users Executive Committee, noted that the LC case hinged on indirect indications of a "light" Higgs (less than 200 GeV), and that since the evidence was not air tight, it was important not to overemphasize the physics rationale at the expense of strategic issues.

"If the Higgs is light, the physics argument is clear, and [LC] could be a great opportunity," Amidei said. "But what we do about the IF is complicated by a number of obvious strategic and political issues about the future of the field. I think what many people want is to get beyond the predictable physics argument, and have the strategic issues enumerated and discussed somewhere besides the hallways and the [HEPAP] subpanel."

The "physics potential" of a machine should not be confused with a "potential discovery guarantee," said Avi Yagil of CDF. He stressed the importance of basic knowledge as an ongoing journey.

"The issue which we as a community must understand—and explain to the public—is that we are engaged in an exploration," Yagil said. "It is hard to justify 'gambling of billions of dollars' as some will describe a plan to build any new machine. On the other hand, a mission to explore a big portion of our universe may be looked upon differently."

The "Line Drive" series continued on January 25 with presentations by Steve Holmes, Fermilab's associate director for accelerators, on the

parameters of the next-generation linear collider; and by theorist Andreas Kronfeld on Higgs physics at the machine. Kronfeld, along with Slawek Tkaczyk of CDF, has spent more than a year studying the physics of a linear collider. "Line Drive" follows the "Tunnel Visions" and "Circle Line" series of the last year. They were overviews of machine options, and Holmes admitted "Line Drive" represented a closer focus.

"The way the worldwide community is proceeding, we have to make a decision on this machine first," Holmes stated. "Does the physics potential make it work pursuing? If Germany goes ahead with TESLA, how should we react if we're invited to be partners? We must generate an opinion."

Future two-part presentations in "Line Drive" are scheduled biweekly well into the spring, with the goal of matching a technical talk with a physics talk whenever possible as the lab seeks a clear-cut direction for the next step.

"Our search is not too dissimilar from space exploration," Yagil said. "One can make no promises of findings, and that is part of the excitement and wonder."

This one could come down to the last at-bat. □

For more information:

<http://www-lc.fnal.gov/Linedrive>

For the streaming video of LINE DRIVE:

<http://www-visualmedia.fnal.gov>

SVX

Comincia

by Judy Jackson

Light snow from a low January sky. Jittery italiano-americano buzz inside the blue metal building housing SiDet, the high-high-high-tech workshop hard by the old bubble chamber out in Fermilab's back forty. The Who's Who of CDF and SVX assembled outside the clean-room glass. All eyes on a rectangular pink package parked on a trolley inside.

Today's the day SVX hits the road.

The stiff pink package, made of housing insulation, holds the Silicon Vertex Detector for the Collider Detector at Fermilab. The SVX represents five intense years of painstaking, intricate work by a dedicated cadre of incredibly skilled technicians, engineers and physicists. Scores of nights and weekends are wrapped up inside that peppermint pink Owens-Corning insulation. Depending

on how you add it up, the SVX has cost upwards of 20 million dollars, or a hundred thousand dollars a pound, give or take.

No one wants to drop it.

In the parking lot outside waits a flatbed truck. Fermilab rigger Mike Mascione sits at the controls of a 15-ton crane, waiting to lift the SVX from its trolley onto the truck as soon as it emerges from the building.

Engineer Stefano Moccia, from Frascati, sticks his head out a side door to make sure that everything's ready in the parking lot.

"Cominciamo a rullare, eh?" he calls to Francesco Palmonari, who is choreographing the outdoor phase of the operation.

"Let's roll." □

Moving day for SVX, CDF's new \$20 million Silicon Vertex detector. On the morning of January 16 it left its birthplace at the SiDet laboratory for a new home at the heart of the CDF detector, where it will play a key role in Collider Run II at the Tevatron.



Photo by Reidar Hahn

nullare,



Color commentary from the CDF crowd:

"It has its own nitrogen atmosphere in there, and its own heater. Also a radio and a cappuccino machine." Crane operator Mike Mascione gently picked up the package and set it down on the truck bed with the grace of a dancer hitting his marks.



Photos by Reidar Hahn

Water to the ropes, Part II. This only looks like a flagrant safety violation, not to mention a harebrained idea. In fact, applying the principles that built the pyramids, CDF physicists calculated that if each one applied 30 pounds of force via the ropes, they could smooth out the braking pattern of the SVX delivery truck.

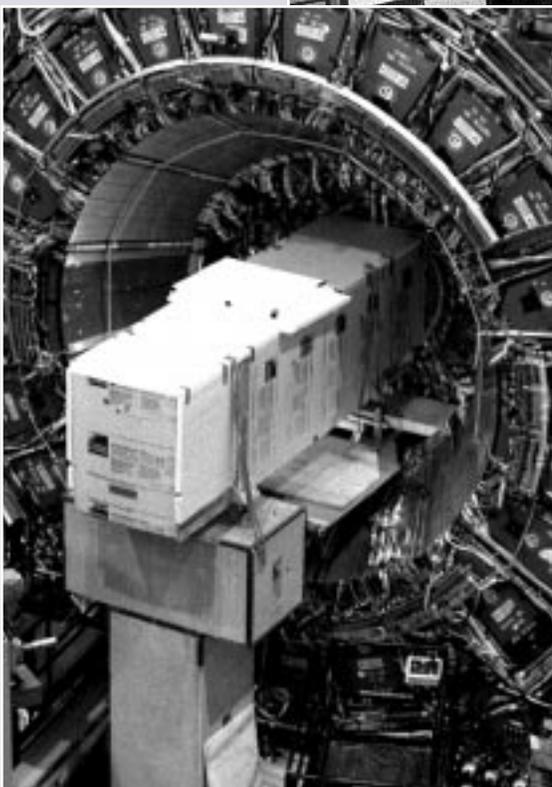
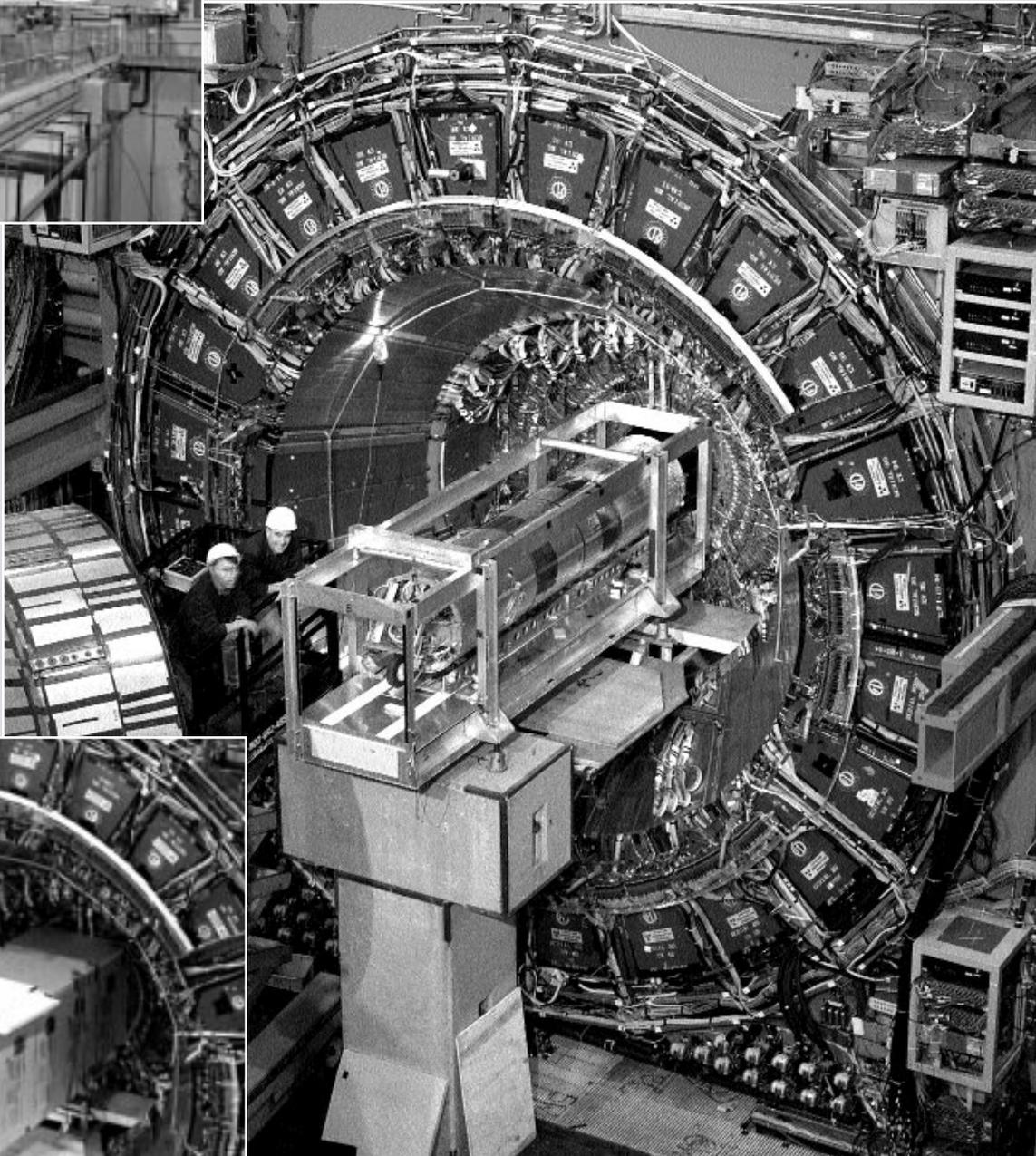


The silicon convoy. At a crawl, dodging potholes, the convoy bearing SVX traversed the two miles from SiDet to BZero, the CDF assembly hall. SiDet manager Joe Incandela led the way on foot for the last few yards.



SVX aloft. CDF's crane picked up the package and swung it across the high-bay assembly hall to the waiting detector.

Silicon implant. Still in its protective cover, SVX nuzzled up against the CDF detector, where workers aligned it for insertion.



Home at last. SVX takes its place at the heart of CDF, ready for Collider Run II at the Tevatron.

For more information:
<http://www-cdf.fnal.gov>

Photos by Reidar Hahn

CALENDAR

FEBRUARY 17

Fermilab Arts Series Presents:

Maynard Ferguson and his Big Bop

Nouveau Band - \$25/\$13 ages 18 and under

Jazz legend, internationally renowned big band leader and one of the world's greatest trumpet players, Maynard Ferguson is bringing his nine piece Big Bop Nouveau Band to Fermilab's Ramsey Auditorium.

For tickets or further information, call our box office at 630/840.ARTS weekdays between 9 and 4. For more information, check our web page -

www.fnal.gov/culture.



Web site for Fermilab events: <http://www.fnal.gov/faw/events.html>

International Women's Day Celebration

March 10, 2001—sponsored by NALWO and organized by Fermilab's Russian Women. Children wanted to perform! Please see www.fnal.gov/orgs/nalwo/irina.html for details.

ONGOING NALWO

Free English classes in the Users' Center for FNAL guests, visitors and their spouses. The schedule is: Monday and Friday, 9:30 a.m. - 11:00 a.m. Separate classes for beginners and advanced students.

DANCING

International folk dancing, Thursdays, 7:30-10 p.m., Village Barn, newcomers always welcome. Scottish country dancing, Tuesdays, 7:30 - 10 p.m., Village Barn, newcomers always welcome. For information on either dancing group, call Mady, 630-584-0825 or Doug, x8194, or e-mail folkdance@fnal.gov.

The Fermilab Barn Dance series, featuring traditional square and contra dances in the Fermilab Village barn, presents barn dances on Sunday, February 11 from 6:30 to 9:30 p.m. with music by Sligo Creek and calling by Tom Senior and on Sunday, February 18 from 2 to 5 p.m. with music by Howard Strong & Co. and calling by Paul Ford. Admission is \$5 for adults, \$2 for age 12-18, and free for under 12 years old. Come with a partner or without; bring the family or not. For more information contact Dave Harding (x2971, harding@fnal.gov) or Lynn Garren (x2061, garren@fnal.gov) or check the webpage at <http://www.fnal.gov/orgs/folkclub/>.

ASK A SCIENTIST

Fermilab scientists are available to answer your questions about what goes on at the lab, or the world of science in general. Sundays, 1:30 p.m. to 3:30 p.m., in the Wilson Hall cafeteria. Bring your family, bring your friends, bring your curiosity!

MILESTONES

Employee Recognition Award

Presented by Fermilab Director Michael Witherell, on Jan. 16, 2001, to Mike Church (ID 07480N, BD-BS-Tevatron Department): the Fermilab Employee Performance Recognition Award, citing the success of the Tevatron upgrade project led by Church in producing 36x36 collider beam operation. Said Witherell:

"Many people contributed an enormous amount. This is to recognize that Mike Church played a big and particular role in leading the Tevatron effort to achieve 36x36 collider beam operation. This award also is in recognition of the work that is going to be done in the next few months, in anticipation of great things in the future as well."

Up and Running

The website for Snowmass 2001 conference, June 30-July 21 at Snowmass, Colorado. <http://www.snowmass2001.org/>

Retiring

Jim Hoover, ID 1617 PPD-Engineering & Tech. Teams, March 8. Last day of work was Jan 5.

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
[HTTP://WWW.FNAL.GOV/FAW/EVENTS/MENUS.HTML](http://www.fnal.gov/faw/events/menus.html)

LUNCH WEDNESDAY, FEBRUARY 7

*Oriental Grilled Flank Steak
Steamed Jasmine Rice
Pea Pods and Mushrooms
Orange, Grape and Lichee Nut Coupe*

DINNER THURSDAY, FEBRUARY 8

*Carrot, Coriander and Chive Soup
Shrimp Curry
Steamed Rice
Saute of Pea Pods and Red Pepper
Mango Mousse*

LUNCH WEDNESDAY, FEBRUARY 14

*Crab and Red Pepper Tart
Valentine Salad
Chocolate Heart
with Raspberry Sauce*

DINNER THURSDAY, FEBRUARY 15

Booked

F E R M I N E W S

F E R M I L A B
A U.S. DEPARTMENT OF ENERGY LABORATORY

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The deadline for the Friday, February 16, 2001, issue is Tuesday, February 6, 2001. Please send classified ads and story ideas by mail to the Public Affairs Office, MS 206, Fermilab, P.O. Box 500, Batavia, IL 60510, or by e-mail to ferminews@fnal.gov. Letters from readers are welcome. Please include your name and daytime phone number.

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OPEN HOUSE

Fermilab's Education Office and the Friends of Fermilab invite you to an open house at the Lederman Science Center on Sunday February 11, 2001. Bring your family anytime between 1 p.m. and 4 p.m. to explore hands-on science exhibits, peer into microscopes, enjoy a sampling of activities from Science Adventures for Children, investigate computer software, and meet prominent scientists. We'll answer your questions, help you select science toys, guide your explorations, and tell you about Fermilab's many educational programs. For more information, please call 630-840-8258.

$e^+ e^-$ Ring study to complement the VLHC study

Fermilab is doing a five-month feasibility study of a post-LHC hadron collider ("VLHC"), which would be sited in a large (240 km circumference) tunnel. An attractive addition to this plan would include an $e^+ e^-$ ring, with a cm energy in the range of 100 to perhaps 400 GeV. The physics would be limited to low mass higgs, large sample Z0 physics, and possibly a study of physics around the t-bar threshold.

A workshop to study the luminosity and energy reach of such a machine and its physics interest is planned for three

days, starting March 9, 2001 at the Illinois Institute of Technology in Chicago. The goal will be to prepare a short document in time to be useful at Snowmass.

If you are interested in helping, please contact:

Alvin Tollestrup, alvin@fnal.gov

Gerry Dugan, gfd1@cornell.edu

Jim Norem, norem@hep.anl.gov

CLASSIFIEDS

FOR SALE

■ '94 Nissan Pathfinder, 63K, 4wd, dark green, great condition. \$12,000 obo. Rich x3454.

■ '85 Honda GOLDWING Anniversary Limited Edition. New tires, breaks, air shocks. 67k, fully equipped with trailer and too many "Markland" accessories to list. \$4,8509. Call Roger 630-859-3789, or treend@fnal.gov.

■ 1 pair of kids Sorrel snow boots, black w/black faux fur-lined liner, size 1. Homak gun cabinet, accessory drawers, accommodates 16 guns, tumbler-style locking mechanism 21"wide x 22"deep x 55" tall, \$325. croggers@fnal.gov.

■ Winchester 7mm model 70 stainless steel barrel bolt action, walnut stock. Leupold scope 3x9 varixIII w/lens covers (nice new leather strap, hardcase, and 1 box 160 gr. partition gold bullets included). Very nice gun, \$1,300 invested, asking \$1,100. Rick x3133 or page 266-4330.

■ Office Furniture by Steelcase: desk - 60" x 30", table - 60" x 30", table overhead shelf unit with two doors and task light, two drawer filing cabinet, two drawer lateral file cabinet, Xerox multifunction copier with sorter. All putty (beige) painted steel with woodgrain Formica tops, all in excellent shape and good working condition. Incredibly priced at \$150 for ALL!! Contact Nelson @ X 4622 or NCHESTER@FNAL.GOV.

TOWNHOUSE FOR SALE

■ Warrenville townhouse for sale by owner, 3 bedroom, 1-1/2 bath, 1 car garage. Newly remodeled kitchen with new appliances. Wheaton/Warrenville school district. Located in Thornwild Subdivision, off Butterfield Rd, 1 mile east of Rt. 59. \$123,500. By appointment only 630-665-3269. E-mail: terribleTe@aol.com.

WANTED

■ Cross country skis + boots, sizes 11 and/or 9. ronen@fnal.gov 630-886-5348

FURNITURE REFINISHING

■ Repairs and restorations, pick-up and delivery available. 815-695-5460

GOLF LEAGUE

Pebble Beach is too far away. Bliss Creek is just minutes from here. The Tuesday Bliss Creek golf league will be starting in April. We have openings for individuals or foursomes (but they're going fast). Golfers of all abilities are welcome. If interested, please contact Dean Sorensen (deans@fnal.gov, x-8230), Pat Sorensen (psorensen@fnal.gov, x-3811) or Don Arnold (arnold@fnal.gov, x-2871).

HELP WANTED

■ Chez Leon is looking for a Food Service Attendant to work on an as needed basis for lunch on Wednesday, 8 a.m.- 2:30 p.m. and dinner Thursday, 5 p.m.- 10 p.m. For information contact Marge at 630-840-5810.

http://www.fnal.gov/directorate/public_affairs/ferminews/



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