FERMI NEWS

FERMILAB A U.S. DEPARTMENT OF ENERGY LABORATORY

Photo courtesy Jerry Meier, University of Minnesota

Notes from Underground 2

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INSIDE:

NOTES FROM UNDER GROUND

MINOS DEDICATION recognizes legacy of Minnesota miners to today's physics experiments

by Judy Jackson

Neutrinos fly through the earth with the greatest of ease. In the blink of eye, they flit effortlessly through the planet's rocky crust at nearly the speed of light. Not so for the miners of generations past who dug their way, foot by backbreaking, dangerous foot, through the rock of Minnesota's Iron Range.

It was a contrast that emerged vividly in the dedication ceremonies for the MINOS neutrino detector, held July 2, half a mile underground in a cavern of Minnesota's oldest and deepest iron mine in Soudan, Minnesota. Two Minnesota miners' sons reminded the audience at the event of the debt neutrino scientists owe to the men who spent their lives in the underground in search of iron ore.

Congressman James Oberstar, who represents Minnesota's 8th district, home of the MINOS far detector, recalled his father's 26 years in the mines, where miners spent all day working in "drifts," or underground tunnels, so cramped the men could not stand up straight.

"It was not always pleasant underground," Oberstar said in his remarks at the ceremony, "and it was fraught with danger. In the Milford Mine disaster of 1924, thirty-four men lost their lives. My father told me that for a miner the most unforgettable sound was the screams of men from the cage when the cable broke and there was nothing they could do and no place to go. The neutrinos will have an easier trip."

Photo courtesy Jerry Meier, University of Minnesota

More than 150 scientists, government officials, university staff members and guests gathered to hear Congressman Oberstar's inspiring speech: "This mine was once dedicated to the pursuit of iron ore so pure you could weld two pieces of it together. Now this mine is dedicated to the pursuit of pure knowledge."

ON THE WEB:

The Soudan Underground Mine State Park
www.dnr.state.mn.us/state_parks/soudan_underground_mine/

The Soudan Underground Laboratory
www.sudan.umn.edu

The NuMI-MINOS Homepage:
www-numi.fnal.gov

Photo courtesy Ironworld Discovery Center

Dedicated on July 4, 1987, the Iron Man Statue serves as a tribute to the iron ore miners of Northeastern Minnesota who contributed a supply of iron ore that helped win two world wars and supported U.S. industrial development. At 81 feet tall and weighing in at 150 tons, the Iron Man Statue is the third largest free-standing statue in the nation. The Iron Man's shovel alone weighs 400 lbs. and each one of his boots is 220 lbs. – indeed some large shoes to fill.

The image resonated with visitors who had only recently completed their own spine-tingling half-mile journey in Soudan's "cage," the historic mine elevator that takes people and equipment from the surface to Level 27, the site of the spacious MINOS cavern.

Some 160 scientists, government officials, university staff members, contractors and guests assembled in the MINOS cavern to dedicate the experiment's detector, an array of eight-meter octagons of steel and plastic scintillator that will search for interactions of the fundamental particles known as neutrinos. To date, workers have completed the installation of the detector's first "supermodule," comprising 248 of the detector's ultimate 486 layers.

The underground laboratory, which also houses the Soudan 2 nucleon-decay experiment and the Cryogenic Dark Matter Search, is managed by the University of Minnesota.

Oberstar, now serving his fourteenth Congressional term, described to the audience the value miners put on education.

"Theirs was a hard life, to achieve a better life for their children," Oberstar said. "It was a guiding principle that their own children would receive an education. As I was finishing high school, my father sat me down and said 'Son, you have two choices. You can go to college or you can go into the mine. And I don't want any kid of mine working underground.'"

University of Minnesota Regent Anthony Baraga grew up with Oberstar in the mining town of Chisholm, Minnesota. Baraga, also the son of a miner, described his own brief experience underground.

Cover photo:
Let the oscillations begin! The ribbon cutting ceremony was a highlight at the MINOS dedication. Performing the task (from left to right): physicist Earl Peterson, University of Minnesota; Anthony Baraga, Regent of the University of Minnesota; Allen Garber, Minnesota Department of Natural Resources; Fermilab Director Michael Witherell; Congressman James Oberstar; Stan Wojcicki, Stanford University and spokesperson of the MINOS experiment; and Laura Bautz, National Science Foundation.

UNDER GROUND

"As I came down in the lift today," Baraga said, "I was reminded of the day when, as a young man, I took another lift deep into a Minnesota iron mine. I spent the day working in the drift, with the other miners. At the end of the day, I took the lift back up. After I showered, my father met me and asked me how it went. I said it went fine. 'But there's just one thing," I told my father. "I am never going back down there again. I don't care if it means I can't go to college. I don't care what it means. I will never work underground again."

Baraga reminded the audience of the connection between those who dug the deep caverns of Minnesota mines and the physicists who now use those mines for their experiments. Physicists place particle detectors in deep mines in order to use the earth's crust to shield the detectors from the bombardment of cosmic rays at the earth's surface, which would create undesirable "noise" in the experiment.

"It is fitting for us to remember the generations of miners who made this possible," Baraga said."In a very real sense, we are the heirs of those miners."

The Soudan Mine closed for mining operations in 1962. Both Oberstar and Baraga welcomed the new use of the mine for physics research.

"This mine was once dedicated to the pursuit of iron ore so pure you could weld two pieces of it together," Oberstar said. "Now this mine is dedicated to the pursuit of pure knowledge."

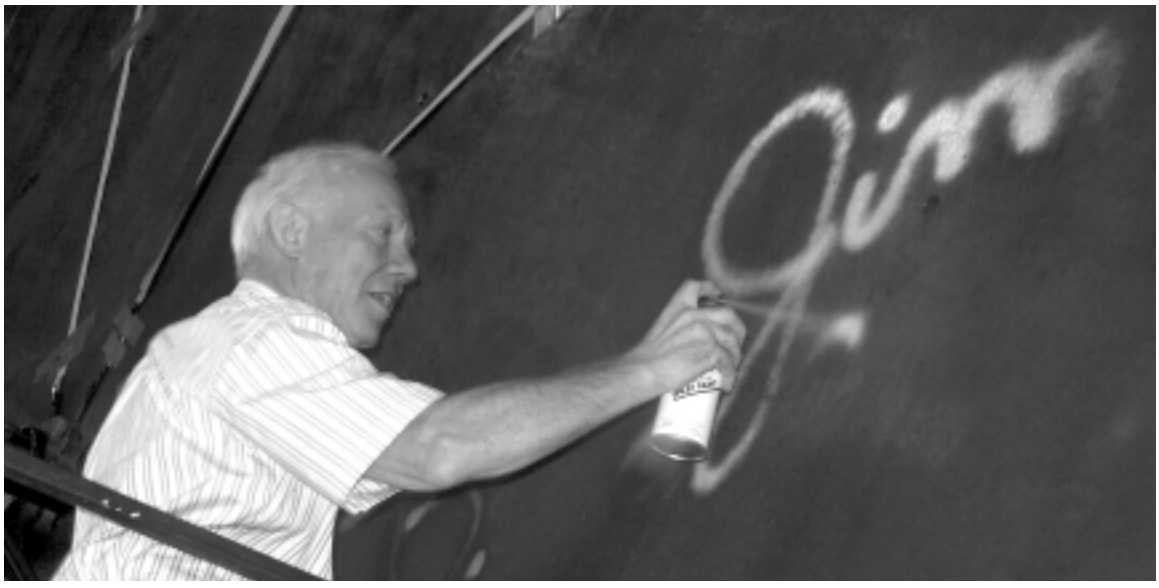
The congressman, whose 26,000-square-mile district, the largest east of the Mississippi, includes many descendants of miners who immigrated to Minnesota from foreign nations, noted the international character of both mine crews and scientific collaborations.

"It is appropriate," Oberstar said, "that where miners of many nations came to mine the deepest reserves of iron ore, now scientists of many nations come together to pursue the deepest origins of the universe. Miners once thought it was impossible to extract ore from deposits so deep in the earth. And it was once thought impossible to discover the neutrino. It took many years, but we have been able to do it."

Other speakers at the dedication included Fermilab Director Michael Witherell, Stanford University physicist and MINOS spokesman Stanley Wojcicki, Laura Bautz of the National Science Foundation, and Commissioner Allen Garber of the Minnesota Department of Natural Resources, which administers the Soudan Mine as a Minnesota state park and a National Historic Landmark. Daily tours give visitors a look at both early mining operations and, now, physics experiments.

Commissioner Garber described the Soudan Mine as an extraordinary piece of the past and a reminder of the contributions of the miners in establishing Minnesota as the nation's leading ore-producing state. He applauded the development of an underground laboratory as a new chapter in Soudan's history.

"As commissioner of the Department of Natural Resources," Garber said, "I have attended many state park dedications. I can tell you that I have never attended one more unique than this one."



Photos courtesy Jerry Meier, University of Minnesota

To celebrate the completion of the first MINOS supermodule, collaboration members and honored guests had the opportunity to autograph its final plate, no. 248. Congressman James Oberstar (above) was one of over fifty people who signed their names on this eight-meter octagon made of steel and plastic scintillator. The full view of the plate is given to the right.


TASS
24/06/02
DJB
248
George B.
CNA
MMA
Dan H.
Monk
HANK
PETE
Amb
LKZ
WHm
DNR
M.R
VR
Resh
Pete
Doug
W.
DAN
DEE
JKN
LISA
JZ
PM
GM
BMJ
ARB
CNA
Pat B.
NSF
AKG
DNR
SW
CLP
Andy
Tom P.
DONNY
CHRISTINA
MIKE
Nancy J
ZUP
HANS

MEASURING UP

Robert H. Lee receives first Ph.D. from US-CMS research

by Mike Perricone

Physics is the science of measurement, and measurement relies on unchanging standards—the inch, the centimeter, the second, the electron volt.

But what if a standard is distorted and unreliable? How can a measurement be accurate?

Graduate student Robert H. Lee of Purdue University confronted that issue in the design and construction of the endcap muon chambers of the Compact Muon Solenoid, the advanced detector destined for the Large Hadron Collider when it begins operation later this decade at CERN, the European Particle Physics Laboratory in Geneva, Switzerland. Fermilab is the host lab and project manager for US-CMS, charged with constructing and delivering major components of the detector to CERN.

"The CMS detector is essentially a large magnet surrounded by muon chambers," said Lee, outlining the problem. "It's a novel experiment in that we're measuring muons in the most forward regions. CMS uses a four-Tesla magnet—a huge magnetic force. The muon chambers located on the ends of the magnet are attached to iron disks. When the magnet turns on, we expect the force to pull the disks in by a couple of centimeters, as well as move them as much as three millimeters in the X and Y planes. The bottom line is—if we don't know where the chambers are, we're not going to do a very good job measuring muons."

To understand the processes taking place at the core of high-energy collisions at the LHC, scientists need to trigger on and measure the tracks of particles escaping the collisions, such as muons, with great precision. Knowing the exact location of all detection devices is imperative. Lee's work was an analysis and simulation of an alignment system to keep track of the location of the iron disks and a number of the muon chambers with periodic measurements. Lee's work resulted in a thesis: "Simulation and Study of the CMS Endcap Muon Alignment Scheme." In May 2002, Lee's Ph.D. became the first generated by research on the US-CMS Project.

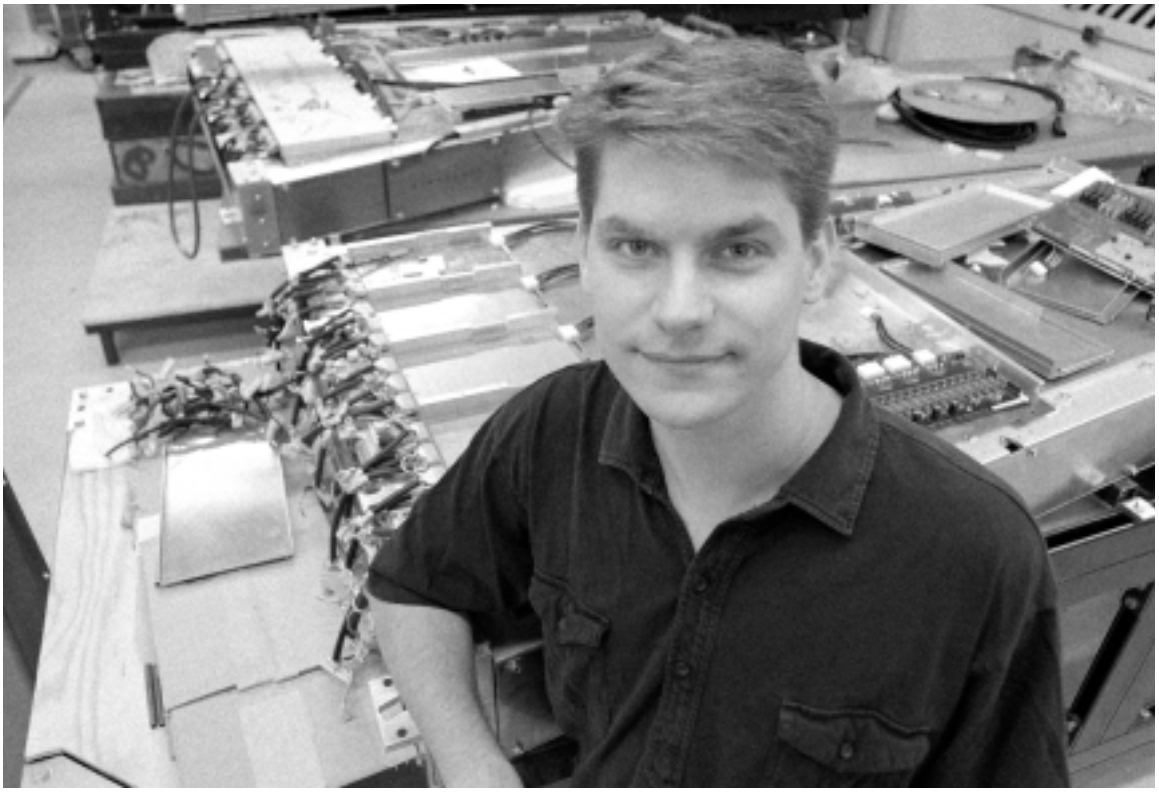
"The first Ph.D. from a new program is a significant milestone for our laboratory," said Fermilab Director Michael Witherell. "It's one more sign that the US-CMS collaboration is already completing large parts of its work in building the detector. We know this step is just the beginning of great things to come, as well as the first of many Ph.D.s to be based on research with CMS. Fermilab and the US-CMS collaboration will take advantage of the great discovery potential of CMS in the years to come. On behalf of the lab, I congratulate Robert Lee."

Using an alignment sensor box, Robert Lee checks a muon chamber before shipment to CERN.

ON THE WEB:

The US-CMS Collaboration:
http://uscms.fnal.gov

The CMS Outreach Pages:
http://cmsdoc.cern.ch/cms/outreach/html/



Photos by Reidar Hahn

Robert Lee is the first graduate student to receive his Ph.D. based on research done for the US-CMS collaboration. He simulated and analyzed the alignment of the CMS muon chambers in the presence of strong magnetic fields.

Lee's thesis focused on three major areas: designing the system and testing out individual components; simulating the entire system in CMS, which involved co-authoring software; and simulating the impact of the alignment system on the physics expected at the detector. Testing the components involved a trip to CERN, where a scale model of the system was built and surveyed with photogrammetry, a process that uses a series of overlapping photographs for precise alignment measurements.

"In the completely assembled CMS detector, of course, photogrammetry will be impossible," Lee said. "All of the muon chambers are embedded between layers of iron. There are no clear lines of sight, so you can't use it. The detector will be put together on the surface, then taken apart, then dropped several hundred feet down the shaft, and reassembled in the tunnel. You expect things to get shifted around in a big move like that. Then when you turn on the magnet, things really get scrambled up."

Lee worked closely with Fermilab physicist Dave Eartly on the CMS project, beginning as a Purdue undergraduate. He offered major thanks for support from US-CMS physicist Kaori Maeshima, member of Lee's thesis committee, and from Hans Wenzel of Fermilab's Computing Division. His major advisor at Purdue, Laszlo J. Gutay, also played a major role in an unusual way: helping convince the U.S. Air Force to wait four years for Lee to report for duty, which he did on July 12.

"It's very unusual for the Air Force to do that, and it's the first time it's ever been done at Purdue," said Lee, who had been commissioned after serving in the Air Force Reserve Officers' Training Corps. "The biggest issue is that no professor can guarantee that you'll get a Ph.D. in a certain amount of time. We had to find a project where it was certainly possible to do it in four years."

Lee is stationed at Wright-Patterson Air Force Base in Dayton, Ohio, conducting research on propulsion systems ranging from conventional combustion to rockets to ion propulsion techniques. His wife, Angela, is a clinical pharmacist, and they'll look forward to settling in Dayton for the next four years, while Lee decides whether to make the Air Force a career.

Lee is the product of a military family. His father was an Army helicopter pilot; Robert grew up in locations ranging from North Carolina to Washington, D.C., to St. Louis, where he graduated from high school. His grandfather, whose family originated in Virginia, was also in the military, and all three generations carry the name Robert. With good reason: their ancestry traces back to General Robert E. Lee.

"Some of our family heirlooms are a tapestry that belonged to him and silverware bearing his initials," Lee said. "I'm certainly proud to be related to someone of the stature of Robert E. Lee. On the other hand, we still have to pay admission to the Lee family museum in Virginia."

Fermilab and LHC: A Major Stakeholder

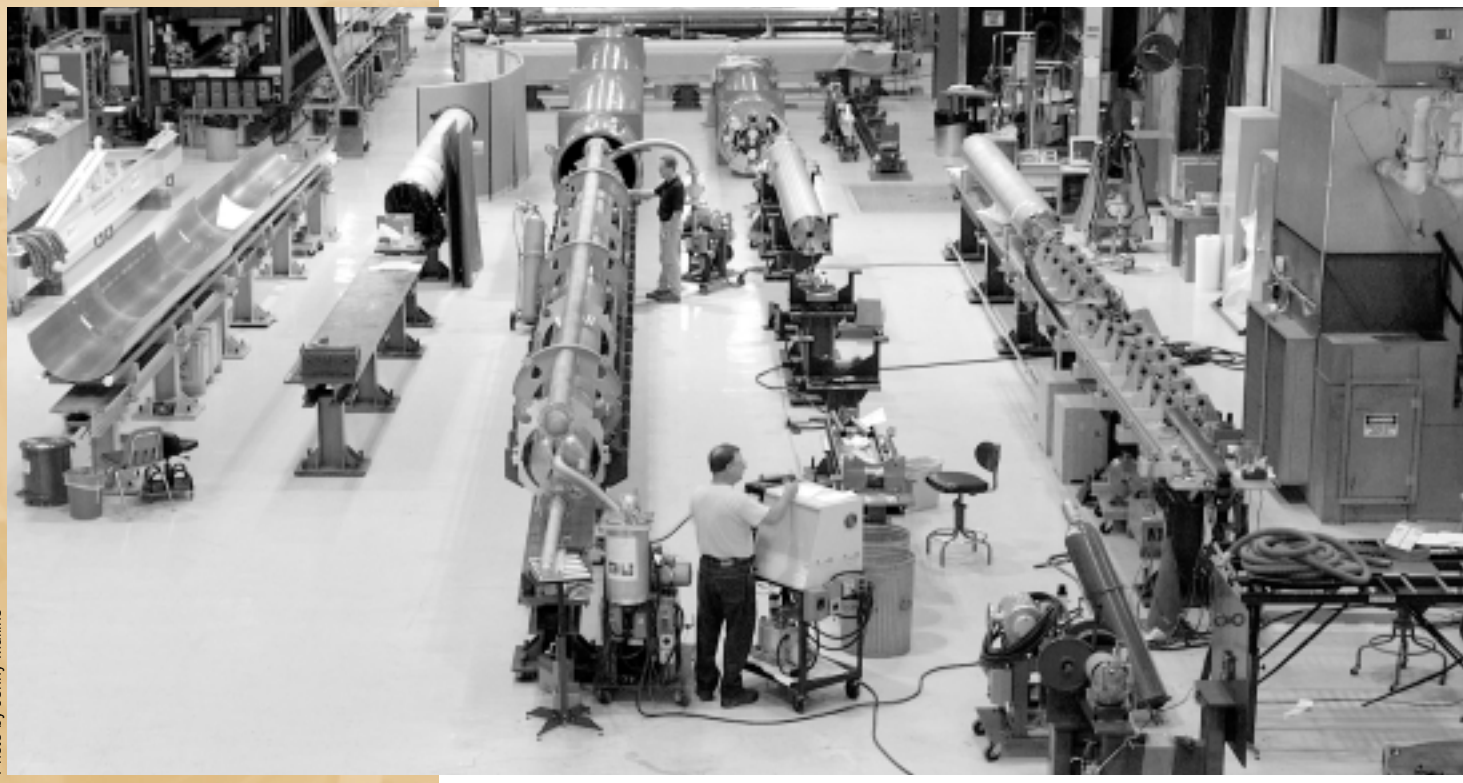


Photo by Jenny Mullins

The magnet test area at Fermilab with the first quadrupole-corrector magnet assembly, consisting of two Fermilab quadrupoles and a CERN correction coil. Denny Gaw (foreground) and Jan Szal perform a leak check before the assembly is inserted into its cryostat vessel.

by Jim Strait
Project Manager, US LHC Accelerator Project

The United States has a $531 million commitment to provide accelerator and detector components for the Large Hadron Collider, which is under construction at CERN, the European Particle Physics Laboratory in Geneva, Switzerland, and which will begin operations later this decade. With a major role in construction of the LHC accelerator and the CMS detector, Fermilab will be positioned for a major role in the emergent physics when LHC begins operating later this decade.

The US LHC Accelerator Project is led by Fermilab and executed by three U.S. national laboratories: Fermilab, Brookhaven National Laboratory (BNL) and Lawrence Berkeley National Laboratory (LBNL). The project focuses on the four interaction regions (IRs) and the radio-frequency straight section of the LHC Accelerator, testing of superconducting cable for the main LHC magnets, and accelerator physics calculations. Fermilab, in collaboration with LBNL and BNL, is responsible for providing CERN with integrated inner triplet magnet systems for the IRs, which focus and bring the two proton beams into collision at the interaction points.

ON THE WEB:

The US LHC Collaboration
www-td.fnal.gov/LHC/USLHC.html

The LHC Project
lhc.web.cern.ch/lhc/general/gen_info.htm

The inner triplet systems consist of high-gradient quadrupoles provided both by Fermilab and KEK, the High Energy Accelerator Research Organization in Japan, correction coils provided by CERN, dipole magnets provided by BNL, cryogenic feedboxes provided by LBNL, and absorbers provided by LBNL to protect the superconducting magnets from collision debris. In addition to building half of the quadrupoles, Fermilab is responsible for the integration of the Fermilab-, KEK- and CERN-provided magnets into three different types of quadrupole-corrector assemblies, insertion of these into cryostats, and the final measurements and tests of these assemblies.

The superconducting quadrupole magnets, which provide final focusing of the LHC beams at the interaction points, are among the most challenging components of the machine. They must provide a field gradient of up to 215 Tesla/meter over a 70 mm aperture. They operate at 1.9 K, under heavy heat load due to secondary particles from beam-beam collisions. The LHC performance depends critically on their field quality. Following an intensive R&D program, in which nine model magnets and one full-scale prototype were built and tested, the inner triplet quadrupoles for the LHC are now in production at Fermilab. Four of the 18 quadrupoles that Fermilab will build are complete and two more are in production. The first KEK- and CERN-provided magnets have arrived at Fermilab.

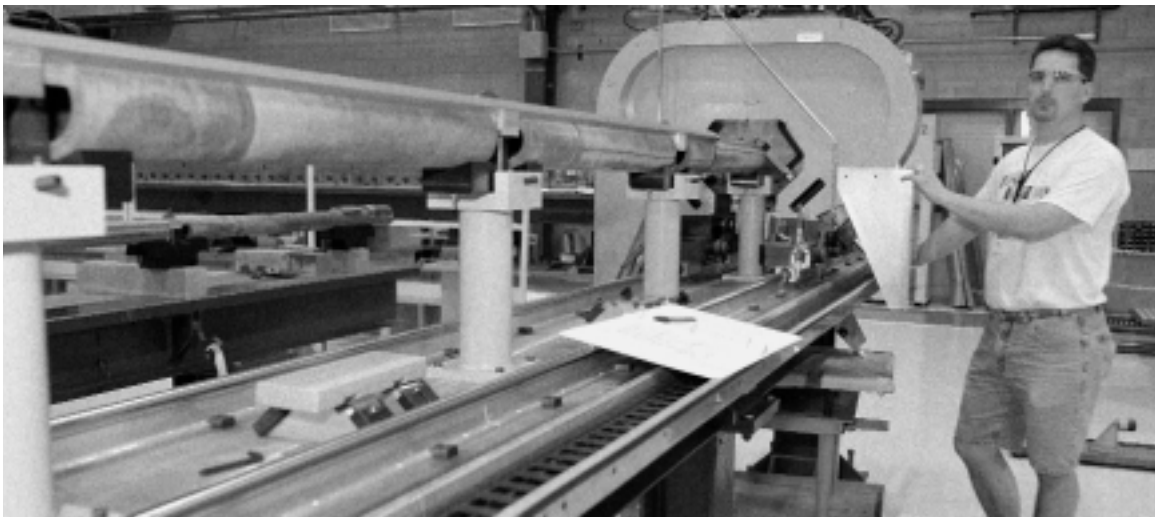
The first quadrupole-corrector assembly, consisting of two Fermilab quadrupoles with a CERN correction coil, is being readied for insertion into its cryostat and will be tested by the end of the summer. Production and testing of the quadrupoles will continue for the next two and one-half years, and all inner triplet quadrupoles will be delivered to CERN for installation in LHC by the end of 2004. The US LHC Accelerator Project is more than 75 percent complete and is proceeding on schedule.

The development, construction and testing of these very challenging magnets for LHC helps to ensure that Fermilab and the US High Energy Physics program remain at the cutting edge of superconducting magnet technology. Our work with CERN (and KEK) on the construction of the LHC accelerator is an important step forward in international collaboration in large science projects, which will be crucial for the construction of future large accelerator facilities.

We are now preparing to extend this collaboration into the commissioning and operational periods of the LHC and are beginning work with CERN to increase the luminosity of the LHC in order to extend its scientific reach. The US LHC Accelerator Research Program, which will be carried out by the same three US national laboratories under Fermilab's leadership, will focus on the commissioning of the LHC, accelerator physics experiments and calculations, R&D for quadrupoles of even higher performance than those now under construction for the inner triplet systems, and the development of advanced beam instrumentation and diagnostics.

The US LHC Accelerator Research Program will further develop the US laboratories' capabilities, so that the US can be the leader in the next generation of hadron colliders; it will serve as a vehicle for US accelerator specialists to pursue their research; and it will train future generations of physicists on some of the most advanced problems in accelerator physics.

Using a stretched-wire field measurement system, Steve Gould verifies the magnetic alignment of a quadrupole magnet.



Photos by Reidar Hahn

To steer particles moving at nearly the speed of light, physicists rely on magnets manufactured with extreme precision. Here Fermilab technician Wayne Schewe measures the size of a magnet coil to few-micron accuracy.

PROFILE IN

PHYSICS

Dee Hahn

by Kurt Riesselmann

Joining the laboratory as a technician in 1984, Dee Hahn has been an integral part of the Collider Detector at Fermilab almost since its very beginning.

"I was up in the cable trays pulling cables," Hahn said recalling her early days at Fermilab. She remembered as well the night in 1985 when she came to the CDF control room at 2 a.m. to celebrate the first collisions ever observed by the CDF detector.

"I even brought my two kids to the party," she said with a smile. "The experiment was very small, maybe one hundred and fifty people. Everybody knew everybody."

Today, the CDF collaboration embraces more than 600 people, and it is hard to keep track of all the names and faces of its members. But if you don't know Dee Hahn, you might as well not be a member of the CDF collaboration.

"Everybody knows who Dee is," said Nigel Lockyer, a physicist at the University of Pennsylvania and cospokesman of the CDF collaboration. "These days, she is responsible for the shift schedule, and the entire collaboration runs shifts. She also provides the radiation safety training. I actually had training this morning together with twelve other people."

Although Hahn "still likes to get her hands dirty," her main job these days is to coordinate work at CDF and to keep employees and users safe. Only technicians and scientists with valid training credentials are allowed to enter the collision hall to carry out repairs or upgrade equipment when the accelerator, usually running 24/7, is temporarily shut down.

"Anybody working on the detector needs radiation worker training," explains Hahn. "I keep track of people's records and provide some of the training, which is usually valid for two years."

Lockyer appreciates the way Hahn keeps the collaboration on track.

ON THE WEB:

CDF homepage:
www-cdf.fnal.gov

Safety and training at CDF:
www-cdf.fnal.gov/cdfwelcome2.html

Dee Hahn, standing next to her husband Steve, is an integral part of the 600-member CDF collaboration.

"Everybody knows who Dee is." — Nigel Lockyer, CDF Cospokesman

"She's very professional when it comes to safety issues, and she enforces rules with an iron fist," he said, indicating that you may get an earful if things are not right. "If you step on the wrong side, she'll let you know."

Hahn confirmed her stern approach and the lack of patience she displays when people don't listen.

"I come down really hard on them when they violate regulations or they don't consider safety as important," she said.

Nevertheless, people think of "Deedee," as she's often called, as a pleasant and helpful person.

"She cares for all of the CDF people," said physicist Arnd Meyer, who frequently interacts with Hahn in his current role as one of three CDF operations managers. "She's very fair when dealing with people, whether you are graduate student or professor. She listens and tries to help when people have problems—including private ones. Despite the increasing size of the collaboration, she's handling things at a very personal level.

"She supports CDF with a lot of pep, despite the constant influx of new people who probably repeat the same mistakes everybody else has made before. And she often brings food for the people working shifts in the control room."

Hahn and her husband Steve, a CDF physicist, seem to be the only permanent players in the ever-changing teams of scientists working in the control room. Shift members inform them every time they access the collision hall, even if it is on a weekend or in the middle of the night. And the Hahns often visit CDF on weekends to check how things are going, especially when new crew members are on duty or an access takes place.

There are many other occasions when Dee Hahn goes beyond duty, helping collaboration members as much as she can. Also, she buys birthday cards and organizes parties, helps people find housing and used cars, and promotes English classes to foreign physicists.

"I enjoy working with people from all over the world," said Hahn, who studied to become a teacher and took classes to teach English as a second language. "Sometimes young physicists come here with a piece of paper written by their advisors and read: 'Hello Dee Hahn. My name is…' I really sympathize with them."

Photos by Reidar Hahn

Dee Hahn, a frequent visitor to the CDF control room.

From early age her two children, Chad and Kylie, have also been exposed to the international atmosphere at Fermilab. The kids spent their early years at the Fermilab day care facility. As they grew older, Hahn and other parents had the idea of providing day camps for employees' children during summertime, a program still going on.

Although none of her children plans to become a physicist, growing up at Fermilab may have motivated her son to study International Relations. And Dee Hahn is proud of it.

"We are really a Fermilab family," she said with a big smile.

BUFFALO and BIKERS RIGHT of WAY

Photos by Reidar Hahn

New rules expand Fermilab access for pedestrians, bikers and buffalo viewers– but caution is always the rule

by Mike Perricone

Fermilab visitors may now go where the buffalo roam.

Beginning May 23, visitors have been able to request buffalo viewing passes, continuing the expansion of public access to the laboratory. With the pass, unescorted visitors are permitted to drive to the buffalo pasture to view the herd of about 60 buffalo, including more than 20 young animals born this spring. Driving is restricted to selected roads leading to and from the buffalo pasture.

Visitors must use the Pine Street entrance to obtain the buffalo viewing pass, and access is granted from 6 a.m. to 8 p.m., seven days a week. There is no fee. Viewing the buffalo would have required a strenuous mile-long hike for pedestrian visitors. The new policy allows everybody, including families with small children, to easily get to the pasture where the young buffalo run around under the watchful eyes of "Mom and Dad Buffalo."

"We have issued more than 400 buffalo passes," said Bill Flaherty, Fermilab's head of security. "The general adage holds true that good weather, weekends and holidays bring out bigger numbers."

ON THE WEB:

Recreation at Fermilab
www.fnal.gov/pub/visiting/recreation/

From hiking and biking to walking and jogging, from bird-watching and fishing to following nature trails searching for butterflies, Fermilab's neighbors have a long history of enjoying the natural beauty of the site's 6,800 acres. Adhering to U.S. Department of Energy Policy, the site was closed for recreational use following the terrorist attacks of Sept. 11, 2001. In the following months, the lab and DOE worked together to find ways to offer limited site access for Fermilab's neighbors.

In March 2001, pedestrians and bicyclists were readmitted to the site. Pedestrians and bicyclists are allowed to enter the lab from either the main west entrance (Pine Street off Kirk Road) or the east side (Batavia Road off Rte. 59), and proceed without obtaining identity badges or visitors' passes. However, visitors may not enter any laboratory buildings, except the Leon Lederman Science Education Center, without obtaining identity badges or visitors' passes. The evolving policy has brought the welcome sight of neighbors once again enjoying the lab's natural attractions, though a casual observer might think the number of visitors doesn't yet match the levels before the shutdown.

"We can't say where we stand in that regard compared to pre-9/11 days," Flaherty said. "My personal experience at being out here late afternoons and on weekend days is that we are getting a good turnout, but not quite pre-9/11 levels."

Fermilab neighbors frequently come to the lab for fishing. Right now, residents need to park their cars at the gate and walk to the ponds.

With tens of miles of quiet roads and bike paths Fermilab is a popular destination for bicyclists in the Chicago area.

As welcome as the visitors are, there appears to be some need for a period of adjustment. One bicyclist, who has commuted through the site for years, was happy to regain access but a little disappointed with his reception.

"Thank you for reopening the Fermi property to bikers. It sure makes my commute to Geneva easier," wrote Rich Scott of Naperville, who has resumed commuting by bike to the business he owns with his wife, the Great Harvest Bread Shop in Geneva.

Scott's daily route through the site combines stretches on the lab's bike path and roadways, and the ride has sometimes been more adventuresome than he'd like.

"Most of the drivers have been, let's say, less than courteous," Scott said. "The unwillingness of drivers to share the road does puzzle me as there is not much traffic and the speed limit is low. However, I've been buzzed and yelled at numerous times…I can take the verbal abuse, it's the driving close that bugs me."

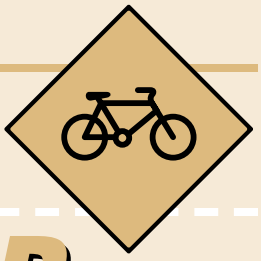
Flaherty acknowledged that motorists have complained about encountering bicyclists.

"Some drivers comment on how hazardous it is, even if the cyclists are adhering to rules of the road," Flaherty said. "Many bicyclists don't follow the rules, by riding abreast or by not obeying traffic control signs. There is not much middle ground on this question."

Still, by following the Illinois Rules of the Road—for motorists, pedestrians and bicyclists—there is room for everyone. And to help out, we're publishing the rules of the road on the next page.

Enjoy the site—and be careful out there.

ILLINOIS
RULES OF THE ROAD



SHARING THE ROAD

DRIVERS OF CARS AND TRUCKS SHARE THE ROAD WITH OTHERS. THEY MUST KNOW THE LAWS THAT APPLY TO OTHER ROADWAY USERS, INCLUDING PEDESTRIANS AND BICYCLISTS:

Photo by Jenny Mullins

According to Illinois road rules, bicyclists have a choice of traveling on either sidewalks, bike paths or roads, unless otherwise posted.

ON THE WEB:

The complete Illinois Rules of the Road:
www.sos.state.il.us/publications/rr/rrtoc.html

Walking and biking in the Chicago area:
www.catsmpo.com/bikeped/

PEDESTRIANS

Without a vehicle or protective equipment, pedestrians are the roadway user most at risk in traffic. Drivers and pedestrians are *both responsible* for traffic safety. A simple rule is that drivers should always be prepared to yield the right of- way to pedestrians. Important laws and safety tips pedestrians should know are:

- TRAFFIC SIGNALS, WALKLIGHTS and CROSSINGS: Pedestrians must yield the right-of-way to drivers by obeying traffic signals, observing walk lights and using crosswalks.
- CROSSING A ROAD: When crossing at any place other than a marked or unmarked crosswalk, pedestrians must give the right-of-way to drivers. This includes between closely spaced *intersections* where traffic signals are in operation.
- ROADWAYS: Pedestrians must not walk on a roadway *unless there is no sidewalk or shoulder* next to it. Under these conditions, pedestrians should always walk as close to the outside edge of the road as possible. In two-way traffic, pedestrians should walk facing oncoming traffic.
- JOGGERS and WALKERS: Joggers and walkers should use jogging paths when provided. On public roads, joggers should try to select wide roads with good shoulders. They should face oncoming traffic and remember to look and listen for cars. At night or anytime visibility is poor, joggers and walkers should be in well-lighted areas and wear reflective clothing.
- MOVING VEHICLES: Pedestrians must not run or walk into the path of a moving vehicle.
- EMERGENCY VEHICLES: Pedestrians should *always yield to emergency and police vehicles using sirens and or flashing lights.*
- GATES and BARRIERS: Pedestrians must always obey railroad and bridge gates and other barriers.

BICYCLISTS

On most roadways, bicyclists have the same rights and responsibilities as other roadway users. Bicyclists are prohibited on limited-access highways, expressways and certain other marked roadways. You may obtain the “Bicycle Rules of the Road” at your local driver services facility. The following laws and safety tips should be kept in mind:

- Bicyclists travel *in the same direction as vehicles.*
- Drivers must yield the right-of-way to a bicyclist just as they would to another vehicle.
- When traveling slower than traffic, bicyclists should ride as near the right edge of the roadway as conditions permit. However, certain hazards, such as rough surfaces or drainage grates, may require moving toward the center of the lane.
- Bicyclists may make *unexpected moves.* Give them plenty of room and be prepared to stop quickly.
- Bicyclists are often hard to see in traffic. Almost any type of crash will result in injury or death to the bicyclist.
- The most dangerous hours are during times of poor visibility.
- If a driver is turning right when a bicyclist is on the roadway, pass the bicyclist before reaching the turn or wait until the bicyclist has passed the corner, then turn. Remember to signal your turn.
- To turn left, a bicyclist may choose to turn as a vehicle does. If there is a left turn lane, the bicyclist should ride on the right edge of the turn lane. The bicyclist may also choose a pedestrian-type, box left turn, in which he or she will proceed through the intersection and then cross the roadway in the new direction.

CALENDAR

Website for Fermilab events: http://www.fnal.gov/faw/events.html

FOLK DANCING

The international and Scottish dance groups sponsored by Fermilab will continue to dance in their air-conditioned community locations throughout the summer and will celebrate Independence Day with a special party.

International folk dancing is held from 7:30 to 10 p.m., Thursdays, at the American Legion Post, 22 S. Second St. in Geneva.'Silk and Thistle' Scottish country dancing meets from 7:30 to 10 p.m. Tuesdays at the Main St. Recreation Center at the southwest corner of Hill and Main Streets in Glen Ellyn. Both locations offer wood floors, air-conditioning, and ample parking. Newcomers are welcome at both groups at any time and many dances are fully taught. Contributions towards the cost of the room are requested but not obligatory.

NALWO

NALWO invites women and their families to a concert at Chicago's outdoor music festival near Lake Michigan, RAVINIA 2002 on Sat. July 20, leaving Fermilab at 5:30 p.m.Please register for the bus at x5059 or mendel@fnal.gov;for more info see www.fnal.gov/orgs/nalwo/ravinia.htm.

MEET SCIENTISTS AT SCIENCE CENTER

The popular Ask-a-Scientist program takes place **every Saturday from 1 to 3 p.m.** at Fermilab's Lederman Science Center. Scientists will meet visitors to answer questions ranging from "What is dark matter?" to "How do you accelerate a particle close to the speed of light?" The Science Center with its hands-on science displays is open Monday through Friday from 9 a.m. to 4 p.m. and every Saturday from 9 a.m. to 3 p.m. Visitors must use the Pine Street entrance.

ARTS SERIES

AUGUST 10—GEORGE WINSTON

8 p.m. Tickets - $23 ($12 for ages 18 and under)

"Winston is the undisputed master of contemporary solo piano, and his lyrical style is often imitated but never duplicated." —Dirty Linen

Celebrated pianist/composer and Windham Hill flagship artist George Winston closes out the summer series at Fermilab. In 1998, Winston celebrated his 25th anniversary as a recording artist. His first album, "Ballads and Blues," was released in 1972 and later picked up by Windham Hill Records. Among his most memorable albums include "Autumn," "December," "Winter Into Spring," and "Summer." "Autumn," which recently celebrated its 20th anniversary, almost single-handedly launched Winston, Windham Hill Records, and the genre of contemporary adult instrumental music. Inspired by blues, rock, R&B, and jazz, Winston began playing organ and electric piano in 1967. He switched to acoustic piano in 1971 after hearing recordings by some of the legendary swing pianists, specifically Fats Waller and Teddy Wilson.

For tickets or information call 630-840-ARTS, or go to: www.fnal.gov/culture/.

MILESTONES

BORN:

■ To Elizabeth Kershisnik (ID 11964) and Tim Draper: a boy, Emrys Michael, on May 7, 2002.

HONORED

■ In June 2002, Don Cossairt became a Fellow of the Health Physics Society. The nomination was made by peers at other DOE accelerator laboratories. The designation, currently applied to about two percent of the membership of HPS, is in recognition of outstanding contributions to the profession of Health Physics.

Lunch served from 11:30 a.m. to 1 p.m. $10/person

Dinner served at 7 p.m. $23/person

Chez Léon MENU

For reservations, call x4512
Cakes for Special Occasions
Dietary Restrictions
Contact Tita, x3524
http://www.fnal.gov/faw/events/menus.html

Lunch
Wednesday, July 24
Grilled Fajita Salad
Cumin Seasoned Corn
Coffee Ice Cream with Fudge Brownies and Kahlua Chocolate Sauce

Dinner
Thursday, July 25
Shrimp Salad with Chipotle Dressing
Barbecued Pork Ribs
Glazed Greens with Bacon
Roasted Potatoes with Garlic and Rosemary
Chocolate Pecan Tart

Lunch
Wednesday, July 31
Assortment of Stuffed Summer Vegetables
Plum Marzipan Tart

Dinner
Thursday, August 1
Summer Greens and Herbs with Roasted Beets and Hazelnuts
Veal Saltimbocca
Orzo with Arugula, Pinenuts and Asiago Cheese
Profiteroles Pontresina

FERMI NEWS

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The deadline for the Friday, Aug 9, 2002, issue is Tuesday, July 30, 2002.
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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CLASSIFIEDS

FOR SALE

■ '02 Audi A4 Quattro 1.8T, 11K miles, silver w/black, manual, load w/Xenon Lights, Sports Package, in-dash CD changer, heated seats. $29K o.b.o. Email: jeremys@fnal.gov or call x8317

■ '01 Ford Focus ZX3, 5spd, 21K highway mi, a/c, cruise, CD premium sound, sporty blue, like new, garage kept, one original owner, all maintenance records and warranty, $9,499/o.b.o ($1,000 below kbb.com). Call Michael 840-2191 (day) or 630-305-8131 (evening).

■ '01 Mercedes-Benz SLK320, 16K miles, silver w/black leather, auto, loaded w/Xenon Lights, heated seats, CD changer, wood wheel, dash and shifter. $41,995 o.b.o. Email: jeremys@fnal.gov or call x8317.

■ '00 Honda Accord EX, 4dr. sedan, signet silver, leather, 34K miles, automatic, CD, air, moon roof, cruise control, new brakes, $16,500. billk@fnal.gov, x4173.

■ '97 Ford Escort LX, 4 door, 5 speed manual trans, AC, AM/FM radio and cassette, green color, excellent condition. 65K miles, $3,500 o.b.o. Call Jing at x5531 or email jingw@fnal.gov.

■ '93 Nissan Pathfinder, 4x4, automatic, Loaded! Power windows, leather heated seats. Must see! $8,000 o.b.o. Call Marcela 630-781-1098.

■ '93 Ford Escort LX 5 dr. Wagon, teal, 95K miles, automatic, air conditioning, new brakes, good condition, $2,800 o.b.o. klyukhin@fnal.gov, 630-262-3292.

■ '91 Pontiac 6000 LE, 4dr Sedan, light blue, 85K miles, V6, auto, tilt PS, PB, AC, cruise cntrl., pwr. windows & locks. Must experience to appreciate. $2,800. Call Arnold at pager 630-218-4375 or email agermain@fnal.gov

■ '91 Ford Escort LX, 2dr Hatchback, strawberry red, 130k miles, auto, tilt PS, PB, AC, sport pkg., driveline & suspension recently overhauled, new radiator, and lots more. Complete maintenance history available. Must drive to appreciate. $1,800. Call Arnold at pager 630-218-4375 or email agermain@fnal.gov.

■ '89 Honda Civic SI, red, 5-speed, hatchback w/moonroof, good condition, low mileage, new tires. $2,500. Please contact mtolian@fnal.gov or x6549.

■ MGA 58 Roadster, ground up restoration, better than new, $42K invested, asking $21K. Lots of extra parts. Call 630-584-5247 after 5 p.m.

■ BF Goodrich Euro T/A 205/40 R16. Set of 4 with wheels. Will fit most Honda's & Toyota's with a 4 bolt pattern. The retail value of 1 tire is $96. I am selling tires and wheels for $600 o.b.o. Contact Robert at x3525 for details. View photos at: www.geocities.com/extrano_obscura/wheels

■ Couch, off-white, hide-a-bed: $75. Solid maple full size bed with mattress and box spring: $250. Twin captain's bed w/storage drawers, white Euro design: $150. Desk and chair, white Euro design: $75. Futon couch: $100. Computer desk w/hutch and writing desk: $100. Oak coffee table: $30. Cedar chest: $80. Combination desk/drawing board w/book shelves light wood, Euro design: $50. Twin size futons: $40 each. Call x2568 or 630-232-8214.

■ Dresser, white: $20. Metal shelve units: $10 each or 2 for $15. Call x4606 or 630-557-2523.

■ Cappacio Brothers solid oak desk with computer return: 68″ long desk and L-shaped return, built in file drawers and pull out keyboard drawer, houses CPU below and has cutouts to hide peripheral wiring, photo available. $450. Call 630-833-7208.

■ Excavating dirt/gravel, trenching, mowing, handyman & other small jobs done. Excavator rental: $150/day or $75/half-day. Steve: 815-726-0442 or leave message.

HOUSES:

■ For rent in Batavia: 2 bdrm, 1 bath, garage and basement, washer and dryer. Nice yard on quiet street, 1 block from elementary school and park. $1,000 (no pets-no smoking). Available July 15th. x2568 or 630-232-8214.

■ For rent in Warrenville-Summerlakes: 3 BR, 1 bath, 1 car att. garage. Fenced yard, fireplace, washer/dryer, refrigerator, dishwasher, and stove. $1,150 month. Call 630 393-4843.

■ For sale by owner: 2 acre farmette, 1-1/2 miles west of Somonauk, Somonauk School District, house with out buildings, mature trees, new roof, siding, kitchen, porch and pine trim throughout house. $225,000. 815-498-2134.

WANTED:

■ Wanted to buy or adopt: pekingese or shih tzu. Mix o.k. as long as peke as shih tzu is dominant breed. Prefer 1-3 years old. 708-645-1168.

BIBLE STUDY

■ Bible Study begins August 7 at 12 noon in the Huddle/Cross Over Gallery. We will be starting a new series, studying Heaven. All are welcome to join us. For more information call Jeff Ruffin x4432.

LABNOTE

GROUNDBREAKING

July 8, 2002, marked the kickoff for another Utility Incentive Project with ComEd. A new mile-long utility corridor with lines for natural gas, domestic water, industrial cooling water and sanitary will run from near CDF around the Tevatron ring to DZero. Groundbreaking were (from left) Jim Boyanchek, representing the project design firm Patrick Engineering; Jed Brown, Fermilab Associate Director; Jane Monhart, Manager of the DOE Fermi Area Office; and Dave Nevin, Head of FESS.

LETTER TO THE EDITOR

To *FERMINEWS*:

It's my nature to stay out of the limelight and not draw much attention to myself. I've always opted to let the people doing the real work—technicians, designers, drafters, welders, procurement people and the like—take credit where it's due. I do find it humiliating though that the news source for the place where I've spent 25 years working on nearly every big project can't seem to get my name spelled right—it's not really a complicated name—most recently on page 13 of the June 14 issue (vol. 25, no. 10, "Changing of the Guard"), but also just last year in the Engineering issue (vol. 24, no. 5, May 4, 2001). In a place where common names are far from common, I would think that your writers would have gotten over assuming they know them all without checking first. —Tom Nicol

FERMINEWS apologizes for misspelling Tom Nicol's name. —The Editors

http://www.fnal.gov/pub/ferminews/

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