FERMI NEWS

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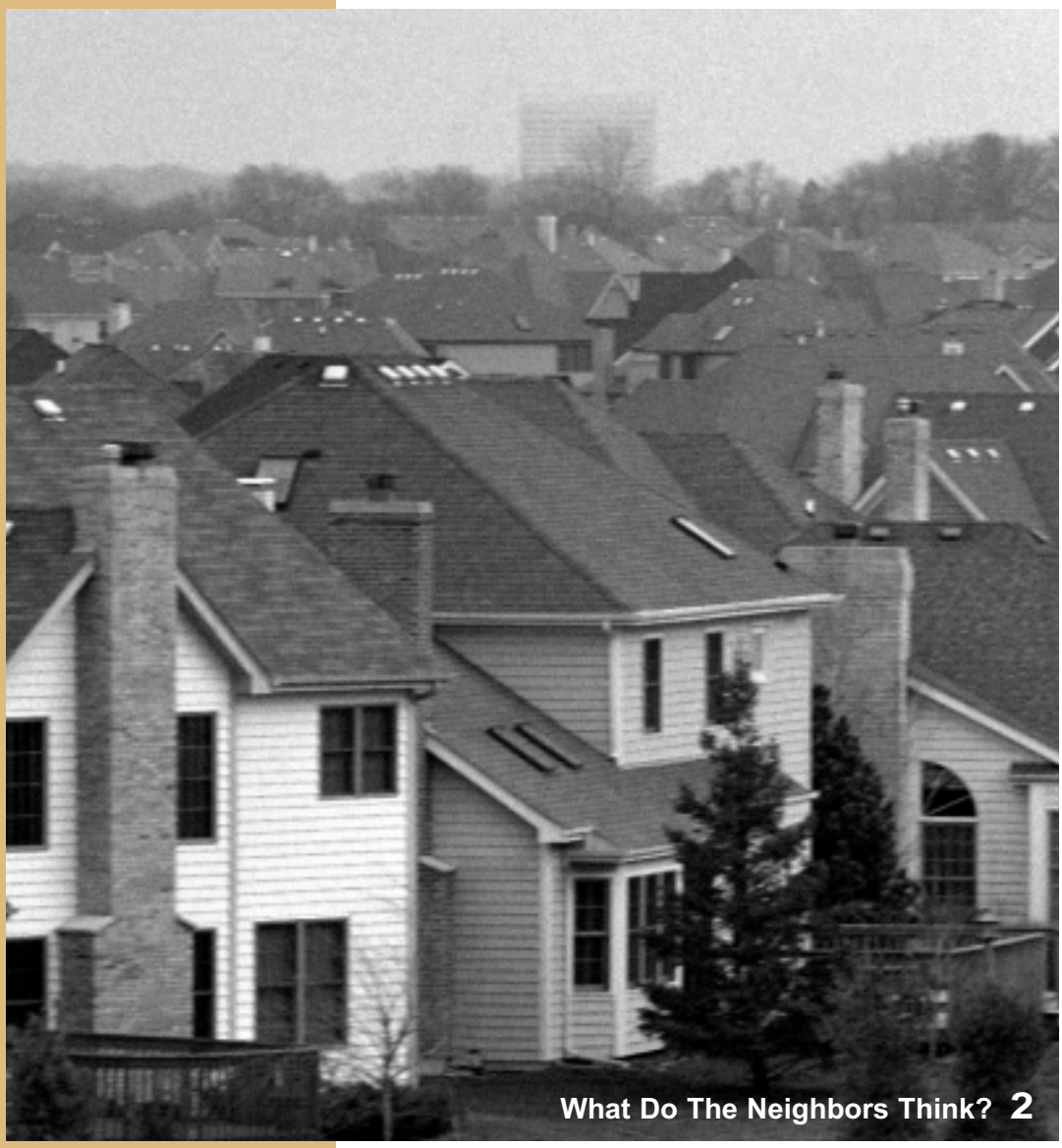

What Do The Neighbors Think? 2

Photo by Fred Ullrich

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INSIDE:

What Do The NEIGHBORS Think?

MORE THAN 1,000 RESPOND TO LAB'S FIRST COMMUNITY SURVEY

by Judy Jackson

"Hello, I'm calling from Northern Illinois University. We are doing a study with people who live in northern Illinois about their opinions of science and the Fermi National Accelerator Laboratory (or Fermilab) located in Batavia. We are not selling anything. My questions will only take a very few minutes and there are no right or wrong answers. We are only interested in people's opinions."

Early last spring, 1,033 of Fermilab's neighbors (about 45 percent of those who picked up the phone) responded to the invitation to tell what they thought about science, about Fermilab and about Fermilab's future. The laboratory's first-ever community survey provided information beyond mere anecdotal evidence about how residents of Kane, DuPage and eastern DeKalb County see the physics laboratory in their midst. The results? Of those who know Fermilab, most have a favorable view of the laboratory and its work. In fact, 98 percent of the respondents who are at least somewhat familiar with Fermilab say the laboratory should either expand operations (50 percent), or maintain operations at their current level (48 percent). In fact, over half (54 percent) of these familiar with Fermilab say they would favor Fermilab expanding beyond its present boundaries. A gratifying 90 percent say they trust Fermilab to do the right thing environmentally; and 81 percent feel Fermilab is open to feedback from community members.

That's good news. However—and it's a big however—those responses come from the people who've heard of Fermilab. Of the total surveyed, fewer than half say they are very or somewhat familiar with Fermilab. Fully 53 percent say that they are not too familiar, or not familiar at all, with the laboratory. That leaves Fermilab, as they say, with an opportunity—a large-sized opportunity—for outreach to the community.

It's a community that appears receptive to hearing from Fermilab. Support for science is strong: 96 percent of those surveyed agree that science and technology advance human knowledge, 91 percent believe that science and technology improve the quality of life, and 82 percent say that scientific research should receive government funding. And, of those who have never visited Fermilab, 86 percent say they would like to, because they want to find out what Fermilab does (34 percent), they are interested (22 percent) or they are curious (11 percent).

Seven hundred sixteen respondents could name something when they were asked what came to mind at the mention of Fermilab. True, 62 of them said "buffalo," but most cited some aspect of science research. In response to a question about the most important aspect of Fermilab, just over half (543) of the respondents named some aspect of the laboratory. Most answers referred to physics, research ("They wrestle with many big questions like the nature of the universe," one well informed respondent said.)

While only 16 percent of respondents said they did not trust Fermilab to do the right thing environmentally, and 77 percent believed that the research Fermilab conduct is very safe or somewhat safe, a full 22 percent said they would not feel safe buying a home near Fermilab.

Fermilab photos

Fermilab was surrounded by farmland while under construction in 1970 (top). Now the Fermilab site is part of the burgeoning western suburbs of Chicago.

Asked about benefits to the community, **52 percent said "JOBS"**

Photos by Reidar Hahn

When asked about benefits to the community from Fermilab, 652 respondents named something, with "jobs" far in the lead at 52 percent. "Research" came next, with 19 percent, followed by such items as "skilled workers" (10 percent), "education" (5 percent) and "wildlife/parks" (5 percent). As for drawbacks of Fermilab, most respondents did not see many, although the possibility of an accident, the perceived lack of information about what goes on, the closed gates and the amount of land Fermilab occupies did concern relatively small numbers of people.

Not surprisingly, proximity influenced responses. More then 65 percent of residents of southern Kane County said they were very or somewhat familiar with Fermilab, compared to about 50 percent in northern Kane County, about 45 percent in western DuPage and only about 35 percent in DeKalb County. Residents of eastern DeKalb County were included in the survey, because the area has been proposed as one possible site for a possible future linear accelerator.

Most respondents (about 55 percent) receive information about Fermilab through the media, rather than directly from Fermilab and most believe that the media treat Fermilab well.

Respondents answered a number of questions – of critical importance to the laboratory – about the possible future expansion of Fermilab. First they were asked whether, over the next decade, Fermilab should expand operations, reduce operations, maintain operations or close down. Only one percent favored shutting Fermilab down, while 85 percent favored maintaining or expanding operations. Of these who favored expansion, 67 percent gave "advancing scientific research" as the reason. Others mentioned jobs, wildlife, environmental research and help for the community.

"Would you **FAVOR** or **OPPOSE** Fermilab building an **underground tunnel** beyond its present borders?"

Photo by Fred Ullrich

Photo by Reidar Hahn

Ninety percent of those surveyed trust Fermilab to do the right thing environmentally.

Respondents were next asked, if Fermilab were to receive funding for additional projects, would they favor or oppose expansion beyond the current site boundaries. Fifty-three percent favored expansion, 23 percent opposed an extension beyond the borders.

Still more specific was the question "Would you favor or oppose Fermilab building an underground facility that extends beyond its present borders?" Fifty-one percent were in favor, 23 percent opposed, and 20 percent said they would need to know more before deciding. Interestingly, men were much likely to favor underground expansion (61 percent) than women (40 percent). Those who opposed expansion (16 percent) cited the large space Fermilab already occupies and the expansion of business and neighborhoods near Fermilab.

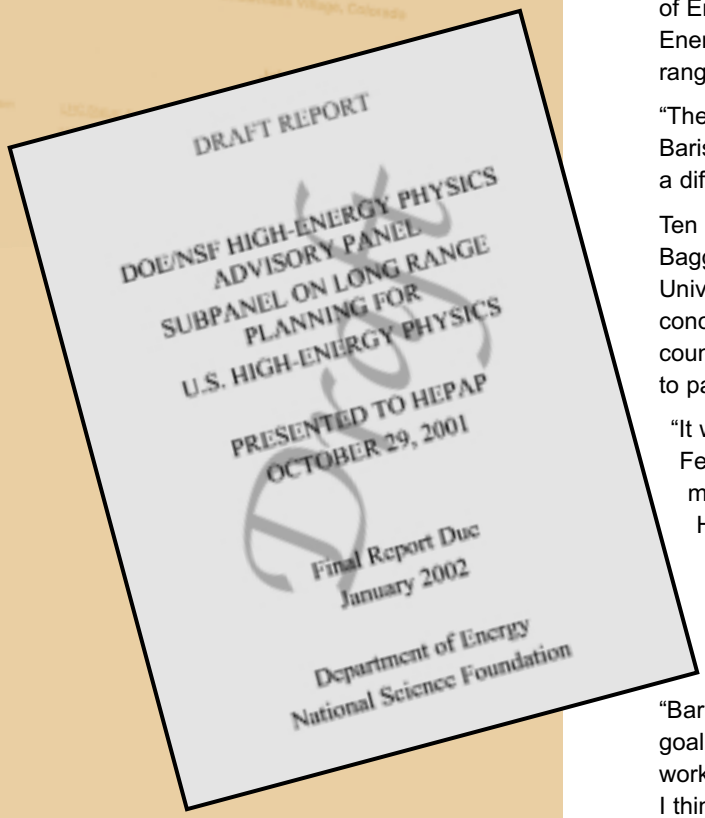
The Public Opinion Laboratory in Northern Illinois University in DeKalb, Illinois carried out the survey, whose $40,000 cost was paid by the Illinois Collaboration for Accelerator Research, a State-of-Illinois funded collaboration of four Illinois universities dedicated to accelerator research and development in northern Illinois.

The survey revealed no strongly negative views of Fermilab. Most of those who know the laboratory appear to feel that Fermilab is a good neighbor with a worthwhile purpose. Nevertheless, with at least half the community in the dark about the laboratory and its unique science mission, it may be time to redouble outreach efforts to those who will share Fermilab's future, the neighbors.

Photo by Reidar Hahn

"What comes to mind when you think of Fermilab?"

The FUTURE, FIRST DRAFT



by Kurt Riesselmann

Last January, when asked whether he would serve as co-chair of a committee to review the central scientific issues for the U.S. High Energy Physics program, Barry Barish said no. He was concerned that the committee would be handed a pre-set agenda.

But Barish changed his mind when he read the charge from the Department of Energy and the National Science Foundation. The letter asked the High Energy Physics Advisory Panel to establish a subpanel to develop a long-range plan for the U.S. High Energy Physics program.

"The charge was an opportunity to plot out the future of the field," said Barish, physics professor at Caltech. "If we could do it well, we could make a difference."

Ten months later, in November, Barish and Jonathan Bagger, physics professor at The Johns Hopkins University and also co-chair, released a draft report conceived by a group of 23 physicists from across the country, with research interests ranging from astrophysics to particle colliders to gravitational phenomena.


Fred Gilman chairs the High Energy Physics Advisory Panel.

"It was a very diverse committee," said John Marriner, Fermilab physicist and member of the subpanel. "Most members were concerned about the diversity of the HEP program, opportunities for students, etcetera."

According to Marriner, it was impossible for any special-interest group to influence decisions without first gaining broad support. It was up to Barish and Bagger to bring the group together and agree upon a set of recommendations.

"Barry and Jon worked quite well together as a team," said Marriner. "Their goal was to obtain consensus among the committee members, and they worked hard at it. The executive summary was very carefully written, and I think it is fair to say that it has unanimous support from the subpanel."

Before writing a single sentence of the report, the subpanel spent six months, including a meeting with 1,500 scientists in Snowmass, to gather input from colleagues in high energy physics and related fields. It listened to representatives from NASA as well as physics organizations. And it asked for advice from people familiar with science policy and budgets.

"Representatives of NSF and DOE were at most of our meetings," said Bagger. "It was very important for them to understand how we reached our conclusions. They were mostly listening."

Photo by Jenny Mullins

Jonathan Bagger and Barry Barish chair the 23-member HEPAP Subpanel on Long Range Planning for U.S. High Energy Physics. On November 14, they presented a draft report in front of 500 people at Fermilab.

Marriner brushed aside any concerns that administrators had too much influence on the content of the draft report.

"DOE people certainly didn't steer the report in any direction," he said, pointing out that DOE personnel initially didn't support one of the four recommendations of the executive summary. "The subpanel also had one private session. But we found that the presence of DOE officials didn't inhibit our discussions."

Since November, physicists have had the opportunity to comment on the draft report. Barish and Bagger have begun to travel around the world to present the recommendations for a long-range plan.

"Our plan is in some sense a joint dream for the field," explained Barish. "The real damper is that the resources are not sufficient. Some programs have been hit very hard, especially here at Fermilab, and it is hard to dream when you are concerned about survival. It is hard to see the opportunities."

Presentations on the draft report at various laboratories, universities and science organizations have provided valuable feedback.

"Some of the things that we intended to say didn't come across," Barish said. "Some things we forgot about. Some good ideas and some improvements have come up."

Marriner agreed that there are instances in which people truly have misunderstood the report or made interpretations beyond the intentions of the subpanel. But among the criticism that the subpanel has received, he saw a positive aspect.

"One has to keep in mind what people are not criticizing," he said. "I think there is a lot of support for the report. People worry more about the implementation of the recommendations."

The subpanel, which is still accepting comments on the draft by email (panel@pha.jhu.edu), will finalize the 92-page report in January and present it on January 28 to the High Energy Physics Advisory Panel, one of six advisory panels of DOE's Office of Science. If HEPAP approves the submitted report, it will forward it to officials at DOE and NSF.

Fred Gilman, chair of HEPAP, is preparing for the work to come.

"We need to carry the message to Congress and the Office of Management and Budget," said Gilman. "We are preparing a brochure to accompany the report that will be visually appealing, something that can be readily understood."

Bagger has already started to focus on the implementation of the report's recommendations.

"Barry and I will not be finished on January 28," he said. "We need to transmit the report to DOE and NSF officials; talk to scientists from other fields; and present the report to our elected officials. We have just taken the first step."

For high energy physics, the future has just begun.

Note: Ferminews will provide detailed coverage when the final report is issued in January 2002.

On the Web:

High Energy Physics Advisory Panel
http://doe-hep.hep.net/hepap_general.html

Subpanel on Long Range Planning for U.S. HEP
http://doe-hep.hep.net/lrp_panel/

The HEPAP "Interactions" Briefing Book
http://www.fnal.gov/pub/forphysicists/hepapbook/

VIEW FROM THE Top

New Lederman Fellow offers first-person description of a high-energy future

by Natalia Kuznetsova

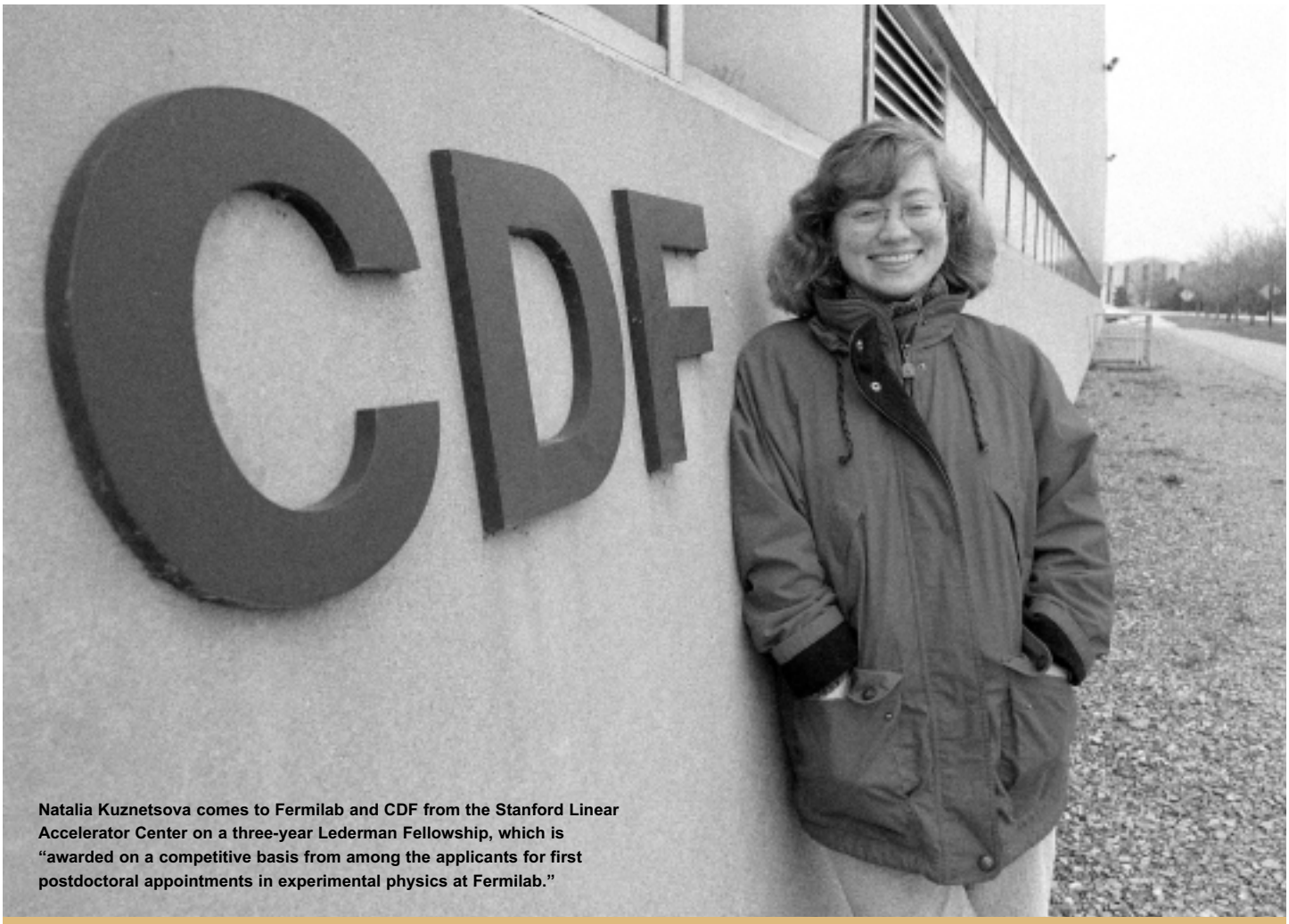
Particle physicists strive for higher and higher energies for the same reason you would want to climb the highest mountain in a mountain range. As you are ascending, you catch glimpses of picturesque canyons and lovely green valleys down below, but the view is obscured by other mountains. Only when you get to the top do you see the full picture—and the view takes your breath away. I have a thrilling feeling that we are getting closer than ever to seeing the pieces of the puzzle called Nature fall together.

This is happening at Fermilab. I wouldn't miss being here for the world.

I am from Minsk in Belarus, which is a small country west of Russia and east of Poland, and north of Ukraine. I came to the U.S. in 1993, as an undergraduate exchange student at Kenyon College in Ohio. The exchange program was supposed to last only a year, but the college gave me a full scholarship for the following year, so that I could stay and graduate with the class of 1995. I then went on to grad school in California.

I never had any doubts that, at this point in my career, I had to be at Fermilab. Yet when I arrived as a Lederman Fellow, a little over two months ago, I had no idea what I would be working on for the next three years or so. As a Fermilab postdoc, I was free to join any experiment within the Fermilab program; I had 30 days to decide. Should I study neutrinos? The mysterious cold dark matter? The properties of the top quark? Cosmic rays? I came to Fermilab to learn something new and different from what I had studied as a graduate student; but I knew very little about any of these experiments. The more I looked into what they did, the more each one interested me. I was reminded of a feeling I had as a child, when my parents would take me to a toy store for my birthday and tell me I could choose any doll I wanted —but no more than one!

I spent the first month at Fermilab driving all over the site, meeting new people, talking to them about what they did, trying to see whether I could contribute to their projects. This was great fun. It also gave me a chance



Natalia Kuznetsova comes to Fermilab and CDF from the Stanford Linear Accelerator Center on a three-year Lederman Fellowship, which is "awarded on a competitive basis from among the applicants for first postdoctoral appointments in experimental physics at Fermilab."

Photo by Reidar Hahn

Carrying a *HIGH-ENERGY* message to students

Early in October, as part of my Lederman Fellowship responsibilities, I had my first try at giving a tour of Wilson Hall for high school students attending Fermilab's Saturday Morning Physics program. As a Lederman Fellow, I would like to do as much as I can to promote science and science education, and I found Saturday Morning Physics a tremendous opportunity for sharing my excitement about high-energy physics with young students. There was only one problem, however: I had only been at Fermilab for about a month. I was still having trouble finding my own way around—and here I was, describing the history of this laboratory and telling the kids what this building was for and why that building looked the way it did. Needless to say, I was very nervous, so I tried to learn as much as I could about the laboratory by talking to the physicists who had been at Fermilab for some time. That Saturday Morning Physics tour was my first time talking about high energy physics to students of high school age, so despite all my preparation I was occasionally puzzled by some questions from my young audience, such as "When protons and anti-protons collide, do you hear a bang?" or "If you stand in front of the proton beam, will you die??"(!) Overall, the whole experience was just great fun, and I hope the students enjoyed it as much as I did. Later in the month, I went to my alma mater, Kenyon College, a small liberal arts college in central Ohio, and gave a talk about high-energy physics to the students and members of the community. I probably sounded like a salesperson at times, but it was very gratifying to see that the students—especially young women—appeared genuinely interested. I hope to work on developing a program here at Fermilab that would be designed specifically for young girls, to help them see how exciting science can be.

VIEW FROM THE TOP

I wouldn't miss being here for the world.

Photo by Reidar Hahn

The electronics for the CDF trigger: "Many collisions are relatively well-understood processes that can be ignored in favor of something more exciting," Kuznetsova writes, "and the trigger must decide what 'exciting' means."

to learn my way around Fermilab—I was unprepared for how huge it was, much bigger than the laboratory where I worked as a graduate student. I loved the view from the 15th floor of Wilson Hall. The fall landscape, with trees just starting to change color, looked so peaceful and serene, and yet the most dramatic events were happening in the two giant rings down below: particles accelerating to almost the speed of light, moving faster and faster. as they circled around the rings—until finally colliding in tremendous bursts of energy, with new particles born and quickly destroyed in the process.

It was not an easy decision, but at the end I chose to join CDF, one of the two experiments operating at Fermilab's powerful proton-antiproton collider, the Tevatron—the world's highest-energy particle accelerator.

I joined CDF while the experiment was in the midst of commissioning the upgraded detector for Collider Run II, which started last spring. The upgraded detector looks very different from what it was during Run I, lasting from 1992 to 1996, and people have to make sure that the upgraded detector subsystems function properly. A few weeks after I joined CDF, the Tevatron shut down its beams for about seven weeks. This was the last chance for people to have access to the detector and fix problems before it would be closed up again for continuous data taking until 2004 or beyond. My new collaborators worked hectically around the clock, and there was a great deal of excitement in the air.

However, I was not part of that excitement—not yet. My job was to decide what I could do at CDF. One system I found especially intriguing was the trigger, a highly complex electronic structure that decides whether or not a given proton-antiproton collision is particularly interesting from a physics point of view. In Run II, there will be millions of collisions happening each second, and it will be impossible to record every one of them: not only would it require some incredibly fast technology for getting the data out, but the data would fill hundreds of thousands of terabytes (trillions of bytes) of disk space in just one year.

Fortunately, many collisions are relatively well-understood processes that can be ignored in favor of something more exciting, and the trigger must decide what "exciting" means. CDF uses a three-level trigger system, with each level providing a greater degree of filtering than its predecessor. In Run II, the second level trigger, in particular, is designed to identify processes that have never before been accessible in a proton-antiproton environment. It is therefore extremely important to make sure that this trigger is capable of handling the very large number of collisions that are expected when Run II is in full bloom, and I was delighted when I saw an opportunity to contribute to this project.

Of course, not everything went smoothly for me during those first few weeks. There are some things I am still struggling with, but none of them matter at all when it comes to the main reason I am here at CDF: the physics. CDF, together with the other Tevatron experiment, DZero, functions at the highest energy available anywhere in the world. It is expected that the data set collected during Run II will be about 10-20 times larger than that accumulated during Run I, and the Tevatron energy in Run II will be about 10 percent higher.

It was only six years ago, here at the Tevatron, that the top quark was discovered by analyzing the Run I data. The last quark predicted by the Standard Model—our current best Theory of Everything—was now real. This discovery was yet another triumph in the already glorious 30-year old history of the Standard Model. I find it somewhat ironic that it may well be here in just a few years that the Standard Model will be faced with its most serious challenges. New, unexpected phenomena, a whole world of new particles and interactions, might be just around the corner; but we have to be at the energy frontier to get there. As contributor and student, I am excited and grateful to be part of the search.

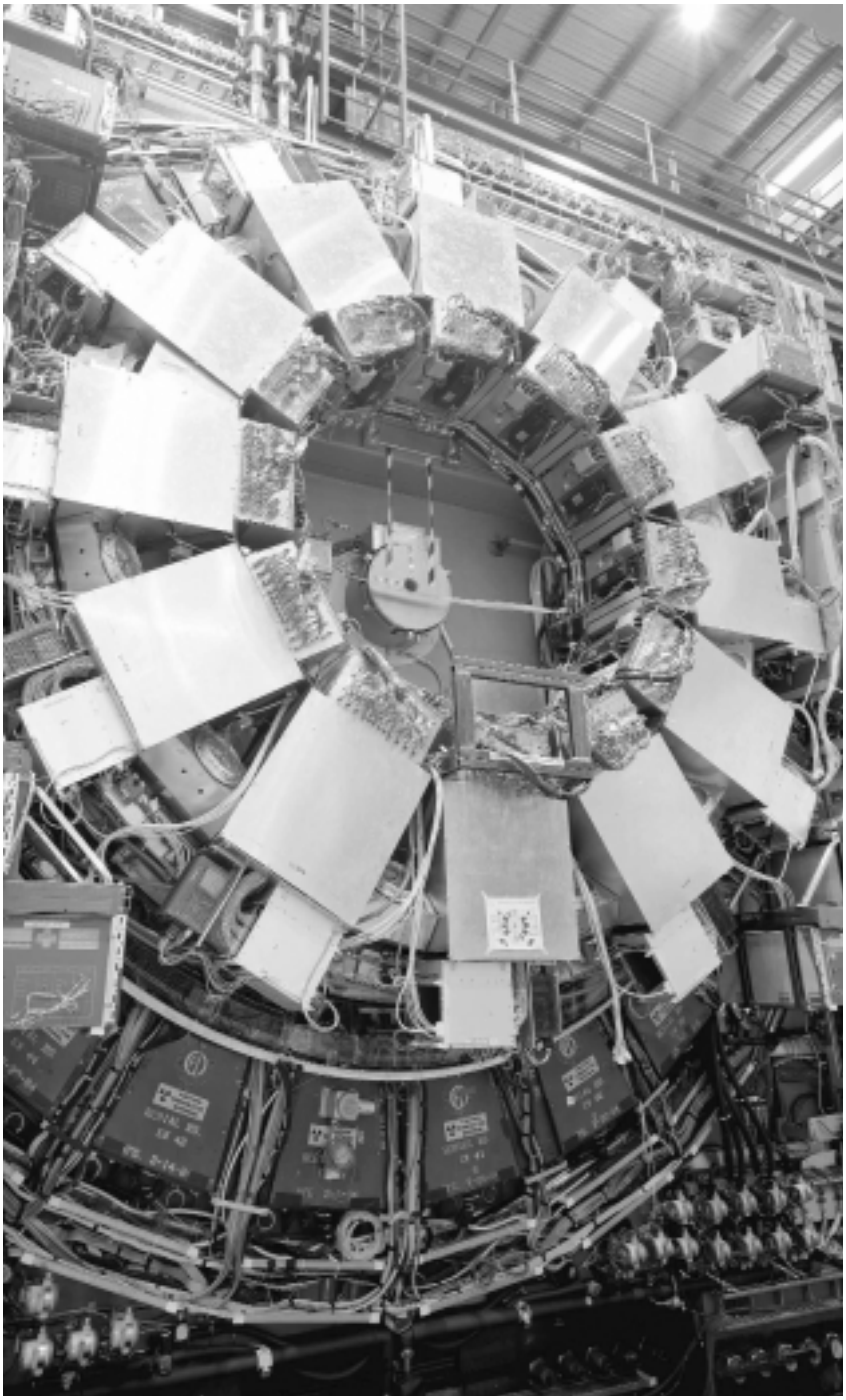


Photo by Reidar Hahn

The upgraded CDF detector just before being rolled into the collision hall in preparation for Run II.

On the Web:

Lederman Fellowships
http://www-ed.fnal.gov/lasso/program_search/show_program_link.lasso?name=Lederman+Fellowships

CDF
http://www-cdf.fnal.gov/

High school physics teacher Len Bugel brings handy presence to MiniBooNE

Just the Right Type

by Mike Perricone

An ideal future designed by Len Bugel would include a fourth type of neutrino and a D-Type Jaguar.

And while a fourth neutrino remains speculative, Bugel might be closer to spotting the particle than he is to owning the car.

D-Type Jaguar

"A D-Type sold at auction recently for just under $2 million," Bugel said. "There were about 80 built for competition. They won the LeMans [24-hour] race three times in a row in the late 1950s. That's the one I'll have if I ever win a lottery. Of course, I don't actually buy lottery tickets. The lottery is a tax on those who are bad at math."

For now, he's satisfied with the D-Type image on his website, to go with photos of three other vintage British sports cars he has at home in Vermont: a 1951 MG-TD, a 1959 MGA (he's driven that one to Fermilab) and a 1969 E-Type Jaguar that's almost refurbished.

The MiniBooNE experiment is another project nearing completion, with the anticipation of recording its first data in 2002. That's where a fourth neutrino might signal its appearance. The compact, short-baseline neutrino experiment, based at Fermilab's 8-GeV Booster accelerator (hence the name), aims at confirming or refuting the evidence for neutrino oscillations claimed by the Liquid Scintillating Neutrino Detector (LSND) experiment at Los Alamos National Laboratory.

"I really want to see this result one way or the other," Bugel said. "The Los Alamos signal is very intriguing, and it almost requires that there be a fourth neutrino of some sort if it's confirmed. So we all want to know one way or the other. And if there's that much physics beyond the Standard Model, that would be pretty exciting."

It would also be a gratifying presentation as a modern topic in physics for his high school students back in Vermont, when he returns to the Stratton Mountain School from this second sabbatical year at Fermilab. While Bugel fits easily into the MiniBooNE collaboration as a sort of "long-term part-timer," being a high-school teacher makes him a rarity in the working field of high-energy physics. His niche in the collaboration might normally be filled by a postdoctoral researcher, but his contribution (including his background as a mechanical engineer) adds value that can't be measured by degrees.

"The bottom line is that he's incredibly valuable," said MiniBooNE co-spokesperson Janet Conrad. "He might not match a postdoc's level

On the Web:

MiniBooNE
http://www-boone.fnal.gov/

Len Bugel's home page
http://home.fnal.gov/~bugel/

of sophistication with data analysis. But he's REALLY sophisticated in building things and solving problems, and in handling the everyday tasks of what an experimental physicist actually does. He thinks like a physicist. And he's a mechanical engineer, which is an extremely handy skill to have on an experiment."

Bugel's most recent project involves calculating the stresses on thousands of photomultiplier tubes during the upcoming task of filling the MiniBooNE detector tank with 250,000 gallons of oil. The tank will be filled later in the year, and at lower temperatures, than originally planned. But the greatest concern has grown from the shattering loss of thousands of photomultiplier tubes when fluid was replaced in Japan's Super-K neutrino detector on November 12.

Bugel's calculations compared the pressure in the shockwave, should a tube at the bottom of the MiniBooNE tank implode, to the shockwave pressure in Super-K where the tubes survived within a few meters of the surface.

Bugel's verdict: MiniBooNE is in the clear.

"In our most conservative model, we've got a safety factor of about two," he concluded. "Our tubes are rated to withstand a higher pressure than theirs, so I really don't think we have a problem."

When he arrived at the lab this past summer, Bugel found a project that seemed to be waiting for his hands-on creativity. The collaboration wanted to plan a series of measurements of the magnetic field inside the experiment's horn, which focuses and directs the particle beam for neutrino production. Efforts had produced a probe that could be mounted to cooling ports on the outside of the horn and inserted into the internal electromagnetic field.

"They wanted 300 measurements," Bugel recalled. "But each time, you would have to turn off the power supply and go into the cage to move the probe. That takes 15 minutes. Multiply 300 measurements by 15 minutes, and you've got a big chunk of time. I thought there had to be some simple way of indexing the probe without going into the cage."

What Bugel came up with was a little spring-loaded ball in a collar, with machined detents in the probe placed at one-centimeter intervals, and a plastic rope tied to the end and fed out through the cage. The procedure: take a measurement, pull the rope so the probe moves to the next click, measure, pull to the next click, and so on. Bugel took his design to technician Andy Lathrop and together they made the modification.

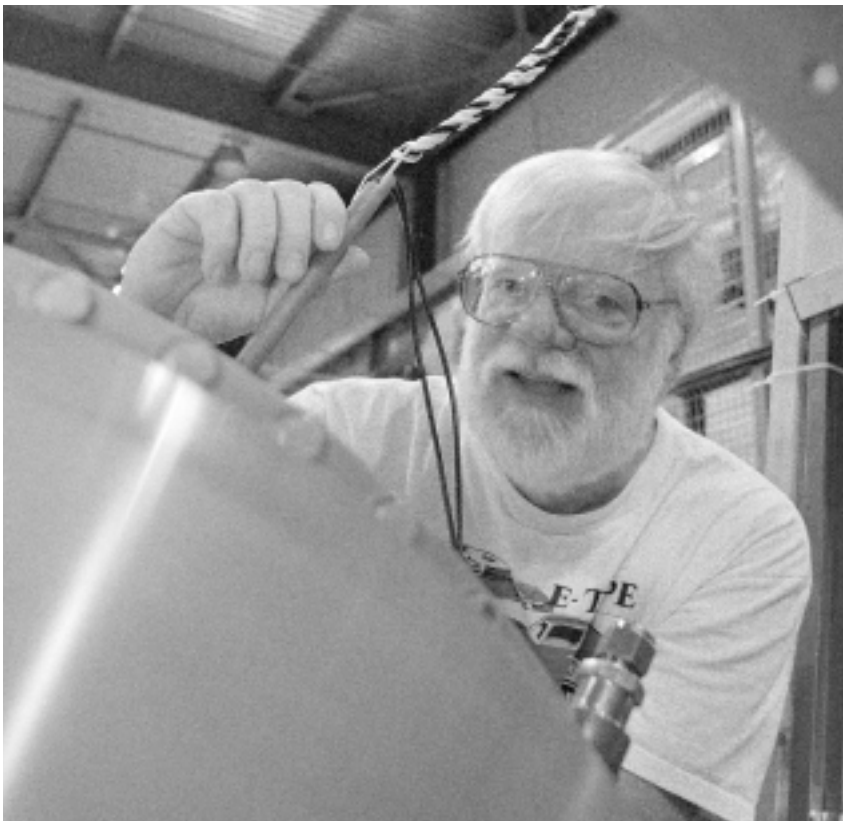


Photo by Reidar Hahn

Len Bugel, working on the MiniBooNE horn, teaches physics at the Stratton Mountain School in Vermont. "My job as a physics teacher is to teach physics, sure, but it's also to let kids know that physics is interesting. Many introductory physics courses do not make physics very interesting."

"This way," Bugel said, "you can get 30 measurements without having to go into the cage. And then, you only have to go in there 10 times to mount the probe in a different hole. I spent a couple of days doing that, but it saved the experiment a couple of weeks of time."

For that improvement, MiniBooNE can thank the legacy of a father who tinkered, out of interest and necessity, as Bugel grew up in the Hudson Valley mill town of Philmont in upstate New York, where his 86-year-old mother still lives.

"My dad had a 10th-grade education but he was very clever," Bugel recalled. "We never had any money, but any time something broke he took it apart and figured out how it worked, and he fixed it. That's what he did, and that's what I learned to do."

Early in his career as a mechanical engineer, Bugel answered a job ad for a physics teacher at a small private school in Vermont, thinking it would be fun to do for a little while. He's now been there almost 30 years. Stratton Mountain School has 100 students in grades nine through 12—all serious snow athletes.

Right Type

Photo by Reidar Hahn

Bugel and Michel Sorel try out the field-measurement mechanism on the MiniBooNE horn.

"The school grew up around a ski racing program," he said. "When I say they're serious, I'm talking about 20-odd alumni who have been Olympic skiers or World Cup competitors. It's a pretty high-powered program. I often hear other teachers bemoaning money spent on athletics, but I deal with kids who are really serious about athletics and I see it as a great motivator. Every kid who's there wants to be there. He may not want to study physics, but he knows he has to do it to stay there—and he finds there's lots of physics in skiing."

Bugel, who built his own house in Vermont ("I installed a photovoltaic system and the house uses no commercial electrical power," he says), teaches conceptual physics to ninth-graders and standard physics to 12th-graders at Stratton Mountain, emulating the Leon Lederman model of beginning the high school science cycle with physics. He was recently cited for his outstanding classroom efforts by the Network of Educators in Science and Technology in Boston, which grew from a summer workshop at MIT for middle school and high school teachers ("It used to be New England Science Teachers, but we outgrew New England, and we wanted to add technology and keep NEST as the acronym," he chuckled). He enlivens his senior class with modern physics topics—relativity, quantum mechanics, cosmic ray measurements—adapted from his Fermilab work.

The lab connection began in the fall of 1993, when Bugel applied to a Department of Energy program called TRAC, a summer research program for high school teachers at national laboratories (TRAC is still running at Fermilab, though no longer as a DOE-wide program). Bugel's application caught the eye of Janet Conrad at Fermilab's NuTeV experiment, and she arranged an eight-week position at NuTeV for the summer of 1994. Bugel built the experiment trigger with a Columbia University grad student, then worked on a cosmic ray data analysis project that turned into a publication on using the NuTeV calorimeter to characterize high-energy cosmic ray muons.

Bugel enjoyed the summer experience so much, he wanted to spend a sabbatical year at Fermilab. He'd been at Stratton Mountain for almost 20 years at the time, and thought he was due for some time off. The school supported him, and so did the lab. Kevin McFarland, a postdoc Bugel had met at NuTeV, suggested to the lab's Directorate that a year-long fellowship for high school teachers was a worthwhile idea. The Directorate agreed, and Bugel returned a year later on the first Fermilab Teacher Fellowship. (Another high school teacher, Robert Sparks of Bradenton, Florida is currently spending a year working on the Sloan Digital Sky Survey.)

"As an educational institution, Fermilab is the most wonderful educational environment I've ever experienced, including universities," Bugel said. "I suppose if you wanted to come here and NOT learn anything, you probably could, but you'd have to work at it."

Still, there might come a summer when he's drawn to a place other than the lab.

"Somebody in the Canary Islands saw my Web page with the D-Type as my dream car," Bugel said. "He emailed me that he owned one, and if I ever got to the Canary Islands I should look him up and we could take it for a drive. That's almost enough to make me want to buy a ticket to the Canary Islands."

LETTER TO THE EDITOR

To *FERMINEWS*

I enjoyed your article about Fermilab's victory in the budget wars. Congratulations! However, your reporting completely ignores the flip side to this success: the continuing and relentless crunch on university groups. It remains to be seen how well high energy physics, which is, after all, an academic endeavor, will do in a future where the traditional partnership between the national labs and strong, independent university groups is abandoned.

Regards,
Stephen Olsen
Honolulu

FERMILAB ARTS SERIES PRESENTS: MARC SMITH'S UPTOWN POETRY SLAM

Including four performance poets, a four piece jazz band, and Marc Smith (The Slampapi)

Saturday, January 26, 2002 at 8 p.m.

Tickets: $18 ($9, ages 18 and under)

"Smith's slam... has the covertly high-minded purpose of reconnecting the American people to poetry... Smith is almost visionary on the need to rescue poetry from its lowly status in the nation's cultural life." — Smithsonian Magazine

Few people can say that they single-handedly created a whole new art form. Marc Smith is one of those people. Since Marc began the poetry slam at the Green Mill in Chicago's Uptown neighborhood, competitive performance poetry has spread throughout the world. Marc Smith's Uptown Poetry Slam — an ensemble of four performance poets, a four-piece jazz band and himself, The Slampapi — is a commanding performance that demonstrates the power and magic of poetry and the spoken word. (Please let our box office know if you wish to participate in the Slam part of the evening.)

FERMILAB LECTURE SERIES PRESENTS:

The Egypt of Cleopatra and the Ptolemaic Dynasty (332-30 BC)

Dr. Robert K. Ritner
Oriental Institute, University of Chicago

Friday, January 18, 2002 at 8:00 p.m.

Tickets: $5

Always a topic of theater, film, and legend, Cleopatra is now the subject of a ground-breaking exhibit at Chicago's Field Museum of Natural History titled "Cleopatra: From History to Myth." Dr. Robert Ritner, who worked extensively with the Field Museum in the preparation of this exhibit, will provide an overview of the political intrigue and complex social forces that dominated Cleopatra's Egypt in his lecture at Fermilab.

GALLERY CHAMBER SERIES

Fermilab is pleased to introduce the Gallery Chamber Series: three classical performances presented in Wilson Hall's 2nd Floor Art Gallery on Sunday afternoons at 2:30 p.m. Tickets are available only as a series for $30 until January 1. After that date, single tickets will be available for $15 per ticket.

Join us for the inaugural concert of the series as harpsichordist David Schrader performs Bach's legendary Goldberg Variations on January 13. The series continues on February 24 with a recital by guitarist Christopher Laughlin performing music of Rodrigo, Roland Dyens, Bach, Paco Pena and Paco de Lucia; and concludes on March 31 with a concert of music for strings and winds, including the Dohnanyi Serenade, with The Champagne Players, led by Walter Preucil, Principal Cellist with the Lyric Opera Orchestra. All performances take place amid the fine art exhibits in the 2nd Floor Art Gallery. Due to the intimate setting, limited seats are available. A perfect gift for that chamber music lover on your Holiday list.

Please note that at this time Wilson Hall is not open to the public during business hours. When coming to these events, only the Pine Street entrance to Fermilab will be open.

All Fermilab Arts and Lecture Series programs (except the Gallery Chamber Series) begin at 8 p.m. in Wilson Hall's Ramsey Auditorium. For more information call (630)-840-ARTS, Fax to (630)-840-5501, email audweb@fnal.gov, or see the website at http://www.fnal.gov/culture/arts_series.shtml

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, DECEMBER 19

All Seating by 12 noon
Salmon Wellington with Roasted Red Pepper Sauce
Broccoli and Cherry Tomato Salad
Pear Upside Down Gingerbread Cake

DINNER
THURSDAY, DECEMBER 20

Chestnut Soup with Cognac Cream
Roasted Whole Duck with Orange Sauce
Braised Red Radishes
Wild Rice, Green Onions, Currants and Almonds
Xmas Salad — Spinach with Pomegranate
Xmas Pudding with Assortment of Cookies

LUNCH
WEDNESDAY, DECEMBER 26

Closed

DINNER
THURSDAY, DECEMBER 27

Closed

FERMI NEWS

FERMILAB
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The deadline for the Friday, January 11, 2002, issue is Wednesday, January 2, 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

■ '97 Jeep Grand Cherokee Ltd., 4WD, V8, 32K miles; loaded, excellent condition, well maintained, $14,900. Call Phyllis, x2522 or 630-585-0907.

■ '94 Mercury Villager "Nautica" minivan, white, auto., ABS, airbag, 3 doors, 7 leather seats, power steering, power windows, power seats, power locks, front and rear AC, roof rack, AM/FM/cassette/CD, runs great, very good condition, 102K mi, $7,500 See more http://tdserver1.fnal.gov/montanet/car/car.htm email montanet@fnal.gov x6486 or x4234.

■ '89 Plymouth Horizon, 4-dr hatchback with fold-down rear seat. Always reliable and solid Southern car. Second owner. Good gas mileage. Automatic & cruise. 96K miles. $1300 obo. Call 708-645-1168 or x6342.

■ (4) P215/60R14 raised-white-letter tires on 5-lug Ford factory aluminum mag wheels. Fits Ford Ranger. $125 for all 4. Call Mark Shoun at x2085, pager #0511 or email shoun@fnal.gov.

■ Snowboard Package: "Marker, Mfg. Germany", bindings, step-in boots men's size 9, board 141 cm, paid $350 asking $100. Call AJ x6896 or 630-690-1560.

■ 19″ Magnavox Color TV/VCR combo; cable ready. Eight years old, like new - $125. SWEBER@FNAL.GOV.

■ 16 HP lawn tractor with 42″ mower deck. Wards industrial/commercial, Briggs 16hp twin-cyl engine. Dependable, good running tractor, 11 years old. $300 call Ed Dijak X6300, home 630-665-6674, or dijak@fnal.gov.

■ Hypertech computer enhancement for fullsize truck or S10, Blazer, '96 or '97 only. Call Chuck, x3556, x3557.

■ No. 1 coffee filters for 1-cup maker, 6 boxes of 100 (600 total) all for $5, 15 cinder blocks & wood for shelves $5, quart storage jars with snap lid $2 each, Toledo electronic scale $50. Greg x4606 or 630-557-2523.

■ Coffee machine filter (Krups) $10, portable radio/CD/cassette player $20, kids' bicycles: 16″ $10 and 20″ $15, email montanet@fnal.gov, call x6486 or x4234.

■ Brinks fireproof home safe. Dual locking system, combination and key. 1 cu. ft. capacity, model 5061/5060/1060. Brand new, still in the box. Asking $75. Call 630-859-8596 or email pritchard@fnal.gov

WANTED

■ Ride Share

I am in need of a ride to and from work. My work hours are 8:30-5 (can be a little flexible). I reside near the corner of Eola Rd. and Hafenrichter Rd. in the new Homestead subdivision in Aurora. This is 3 mi. S of Rt. 34 and 5 mi. W of Rt. 59. I work at the corner of Hubbard Ave. and Kirk Rd., 1/2 mile north of Fermilab. I can be reached at work, 630-406-5900 or at home after 6 PM at 630-978-4119. Ask for Bryon Guyer.

■ Volleyball Players

Co-ed volleyball league is looking for additional female players. Games are Monday evenings at 6:30 and 7:30 p.m. Fermilab gym membership is required. Please contact Elizabeth Gallas, eggs@fnal.gov.

CHRISTMAS TREES

■ Marmion Abbey, Aurora. Jolly tree hunters are welcome to come and chop down their own Christmas tree. Open everyday including Sunday from 9:00 a.m. to dusk. Tree prices $20, $25, and $30. Call 630-897-3011 for a recorded message.

MILESTONES

AWARDED

■ Paul Kesich (ID 08465N, ES&H-EPG PERMIT & MONITOR), with a Fermilab Employee Performance Recognition Award, for his work in ground water monitoring on the Fermilab site.

BREAKTHROUGH ACHIEVED

■ NuMI project: After excavating 2,800 feet, the Tunnel Boring Machine broke through to the existing access shaft for the MINOS experiment hall.

RETIRING

■ Carolyn Hines, ID 47, BS-FM-CO-Telecommunications, December 31, 2001

■ Kenneth Mitchell, ID 9372, TD-Machine Shop, December 31, 2001

■ Jackie Smith, ID 7130, PPD-Technical Centers, December 31, 2001

■ Ronald Williams, ID 3128, PPD-Mechanical Dept., December 31, 2001.

■ Carol Magnuson, ID 5596, BS-MA-Purchasing Dept., December 31, 2001.

■ Clara Morton, ID 2439, BS-MA-SU Communications, December. 31, 2001.

■ Raymond Hanft, ID 617, TD-Headquarters, December 28, 2001.

■ George Robertson, ID 11822, DO-Directorate, January 4, 2002

CALENDAR

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

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 both beginners and advanced students.

NALWO cordially invites Fermilab women to the annual Holiday Tea at Site 29; December 18, 2001 from 10am - noon. Please see details at http://www.fnal.gov/orgs/nalwo/holiday/T01.html or call Sue, x5059, for more information.

DANCING

Folk dances continue in Geneva; Scottish country dances, in Glen Ellyn

The folk dance groups sponsored by Fermilab have found new off-site meeting places: International Folk Dancing is now held from 7:30 to 10 p.m. every Thursday at the Geneva American Legion Post, located at the corner of Second Street and James Street in downtown Geneva. The Silk and Thistle Scottish Country Dance group has found a new home in Glen Ellyn. They dance from 7:30 to 10 p.m. every Tuesday at the Park District's Main Street Recreation Center, located at the southwest corner of Hill and Main, just south of downtown Glen Ellyn. For more information or directions, call (630) 584-0825 or (630) 840-8194 or e-mail folkdance@fnal.gov.

TRAVEL OFFICE CLOSED

The Travel Office will be closed the following dates: December 24, 2001; December 25, 2001; December 31, 2001; January 1, 2002.

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