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John Voirin and Bob Bernstein adjust supports for the proton dump of the Sign-Selected Quad Train, E815's beamline.

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The Countdown Continues

GETTING READY TO RUN

Another in a series of stories on preparations for the July 1 start of fixed-target operations

by Leila Belkora, Judy Jackson and Don Sena, Office of Public Affairs, and Glenn Blanford, University of California-Irvine.

Only a month remains before fixed-target experiments will resume at Fermilab. As the days dwindle down to a precious few, experimenters and staff throughout the Laboratory scramble to get ready. The last issue of *FermiNews* reported on countdown activities for the Accelerator and Computing Divisions and the Facilities Engineering Services Section. For this issue the Research Division, the Physics Section and five of the 10 experiments

described their down-to-the-wire preparations. "It's nip and tuck in terms of building the beamlines," said Physics Department Run Coordinator Peter Garbincius. "Everybody's working very hard...but at the very end there's always a crunch."

At ten experimental halls around the lab (eight in the fixed-target area, two in the antiproton source) and at the beamlines that will supply them with high-energy particles, members of the Research Division and the Physics Section are busy installing, testing, repairing, delivering and commissioning

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Experiment 862

E862 spokesman Dave Christian with the experiment's positron spectrometer.

Elmhurst College Breaks The Mold At Fermilab

Earl Swallow leads the undergraduate institution to the energy frontier of particle physics, reaching both science and non-science majors in his quest to expand students' knowledge and appreciation of physics.



Photo by Donald Sena

Earl Swallow, head of the Elmhurst College physics department, stands near a diagram of the Fermilab experimental area with information about Elmhurst graduates who now work at the Laboratory.

by Donald Sena, Office of Public Affairs

Elmhurst College, a small four-year school located in a sleepy part of Chicagoland, doesn't have a high-powered doctoral program in high-energy physics. It doesn't have a huge staff of professors instructing hundreds of physics students, nor teams of researchers engaged in particle physics experiments all over the world.

However, what Elmhurst College does have is Earl Swallow.

Swallow is head of the physics department at Elmhurst, the sole undergraduate-only institution that has a faculty member and students engaged in high-energy physics research at Fermi National Accelerator Laboratory. And while Swallow has been at the forefront of particle physics research during his 20 years as a professor, he still keeps his teaching commitment to both physics and non-physics majors as his top priority.

For those students not planning a life in scientific research, yet still interested in the subject, Swallow enjoys expanding their knowledge of physics, hoping they will retain an appreciation for the field regardless of their career choices—in government, business or other endeavors. For

physics majors, his instruction teaches that particle physics is a fundamental part of the field and not an isolated niche, an impression promoted by some people outside the field, said the professor. Swallow added that Fermilab's proximity to Elmhurst allows him to expand his curriculum and introduce students to the world's foremost particle physics laboratory.

"We do things in which some students work on the experiments with me [at Fermilab] and some just visit. But I think I also bring it back here in terms of being able to discuss the kinds of advanced experimental technology we use," said Swallow. "I give them bits of real data to work on in the particle physics class, and I think that imbues what they're studying as undergraduates with a lot more reality."

He says his mission of teaching at Elmhurst, combined with a desire to stay active in research at Fermilab, forces him to balance time and commitments with great care. It's a juggling act that he has been doing since his earliest days as an assistant professor at Elmhurst.

Looking Back

In the mid-1970s, as a graduate student at Washington University in St. Louis, Swallow participated in a hyperon beta decay experiment, one of the first studies with polarized hyperons at Argonne National Laboratory. Swallow said this experiment was a watershed in his career, not for the physics involved, but because he collaborated for the first time with Roland Winston, then a new assistant professor at the University of Chicago. Swallow and Winston have worked together ever since, including having a hand in one of Fermilab's newest fixed-target experiments set to run this summer. Winston said he enjoys working with Swallow because he is constantly trying to approach new challenges in unconventional ways.

"When I first met him, I quickly discovered that he was extremely bright but also had an independent way of thinking, and that's extremely valuable," said Winston.

In 1976, Swallow was working in a research position at the University of Chicago when he decided that he wanted to teach at a small college, while continuing his high-energy physics

research. He eventually found a job at Elmhurst College and two years later became the physics department chairman. [The department has two full-time professors and several part-time instructors. The college graduates about four or five students each year with physics degrees.]

Soon after joining Elmhurst, Swallow participated in more studies at Argonne, including a sigma minus beta decay experiment with Winston and Tom



Photo by Reidar Hahn

Consolato Gattuso, an operator in the Accelerator Division's Main Control Room and a graduate of Elmhurst College.

Romanowski, then at Argonne and Ohio State University. Swallow said the study produced results that were somewhat surprising. Researchers found significant differences in some of the properties of the decays, specifically in the correlation between the electrons coming out of the beta decays and the spin of the sigma. Swallow said these results, although consistent with other experiments at the time, were at odds with the Standard Model. The limited amount of data, however, caused Winston and Swallow to want to repeat the experiment with

greater accuracy.

Fermilab provided that opportunity, bringing the Elmhurst professor to Batavia for the first time.

In the early 1980s, Swallow and Winston joined Yale and Fermilab physicists to repeat the sigma minus beta decay study at a much higher precision level, with Swallow using a sabbatical to work on the experiment.

"That was the first experiment to get results from the 'Energy Saver/Doubler,' which, of course, we are now allowed to call the Tevatron. At that point, we were not allowed to call it the Tevatron" because it ran at about 400 GeV and not 1 TeV, said Swallow.

Previous similar experiments that ran at lower energies yielded only a few hundred events; the Fermilab experiment, E715, yielded about 50,000 decays, allowing researchers to gain a clearer picture of the physics. The final analyses confirmed the Standard Model prediction.

The Move To Kaons

In the late 1980s, Winston and Swallow were approached by Bruce Winstein from the University of

Chicago, who asked if the two professors wanted to join a collaboration studying CP violation in kaon decays. CP violation is the observed difference in the decay of matter and antimatter. The Standard Model has a place for CP violation, and, presently, kaon decays are the only way to see it.

Swallow and Winston eventually joined the CP violation experiment at Fermilab. The research team found results consistent with no or relatively minimal direct CP violation. However, a similar experiment at CERN, the European Laboratory for Particle Physics, found results that argued for substantial direct CP violation. This prompted both groups to study the phenomenon further.

The results "led us to say, 'we have to do this five or six times more accurately,'" said Swallow, "and that has turned out to be a very big challenge."

Continuing Kaons

The result of that challenge is KTeV (Kaons at the Tevatron), a study that is part of the Laboratory's newest program of fixed-target experiments. KTeV comprises two experiments, working in parallel but studying different facets of CP violation. E832 is aiming to repeat the earlier CP violation experiments six times more accurately. Phase II of E799 will study rare kaon decays and provide new high-precision hyperon beta decay data. Swallow said he is involved with both, as the two studies hopefully will bring physicists—and the world—a step closer to understanding the prevalence of matter over antimatter.

"If we should find that direct CP violation in [the] decays in E832...is still compatible with zero at a high precision, then, at that point, one doesn't know whether there is a problem with the Standard Model or the parameters in the Standard Model conspire to give you a small direct CP violation... In that case, further study of the rare decays becomes absolutely crucial," said Swallow.

Swallow said his time allotted to this research is "modulated in big chunks." The professor uses the summer and other long breaks from school to catch up on his experiment. For this reason, he chose not to take responsibility for any single facet of the KTeV experiment.

Swallow said he is not in a position at Elmhurst to take on a large hardware project, so he keeps up with the progress of the experiment and, when he can move back in, tackles a part of the development that needs his attention at that point in the process.

"You are really not situated to do a big building project at a small institution. Between teaching and other duties, you try to keep up with what is going on, so you know what you are doing when you move back in," said the professor.

Swallow said two factors contribute to his ability to stay connected to his projects and have a part in their success. The first is working with "understanding colleagues" like Winston, who accept his unique situation. The other is the advent of the Internet and e-mail, which allow

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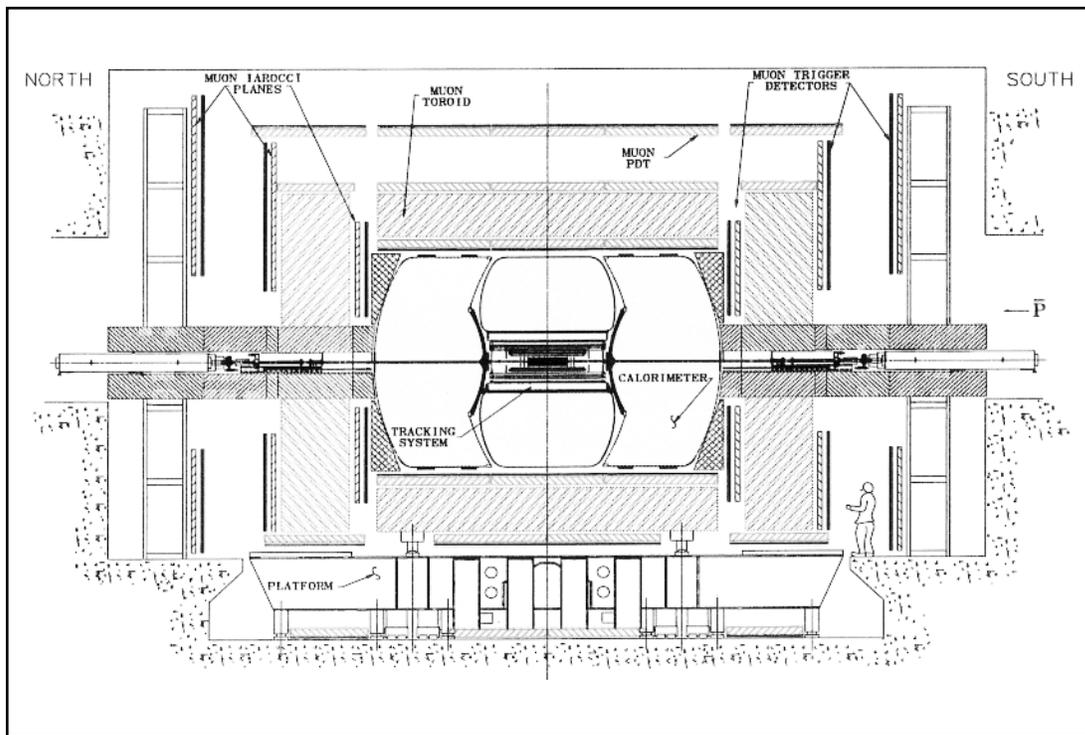
DOE Reviews DZero Upgrade

by Leila Belkora,
Office of Public Affairs

A DOE committee conducted the first major review, from May 7-9, of the DZero collaboration's efforts to upgrade their detector in time for the resumption of collider physics in 1999. The 13-member panel, made up of high-energy physicists from universities and laboratories not participating in the upgrade, met at Fermilab to address questions such as those posed by chairman and DOE staff member Dan Lehman: "How well defined is the overall upgrade project? Is the design [of upgrade components] adequate to address the physics? Are the costs and schedules as presented realistic?"

The meeting schedule was full. Participants held "working lunches" and attended evening sessions. The rapid-fire agenda included project managers' presentations of cost estimates for upgrading or adding elements such as the solenoid, calorimeter, and data acquisition systems, a review of schedule and funding considerations, a report from project management, and DOE panelists' recommendations to project managers regarding specific problems. On the third day of the meeting, participants met for a "closeout" session. In this final wrap-up, the chairman urged members to have "a really open exchange, so we'll all understand what each one is trying to say."

Almost all DOE panelists began their summary reports on component systems with a ringing endorsement of the scientists and engineers. "The people are really good; they know what they're doing, and they made extensive use of SSC research and development," said Roger Rusack, of the team working on the fiber tracker. However, most groups were frustrated by the dearth of engineering support. A typical comment was that of Henry Lubatti, who reviewed the collaborations working on the preshower detectors and the muon system: "Both groups urgently need a mechanical engineer." In spite of the scarcity of engineers, panelists found that projects were mostly on



Schematic of upgraded DZero detector.

schedule and that "there are no show-stoppers."

Although project managers have only been able to predict the next year's budget for the upgrade in the last two years, panelists encouraged upgrade managers to construct more detailed time schedules. "A refined schedule," suggested panelist Gary Sanders, "will support possible requests for additional manpower and funding." Gunther Haller, reporting on the trigger system, said the Fermilab group should prepare detailed system diagrams, as well, to help refine cost estimates. Several panelists recommended that managers establish more milestones, especially for the first few months of 1999. As the chief project manager, Jim Christenson hastened to respond to the implied criticism: "I think milestones are wonderful," he assured the panel. "We always intended to have them."

Chairman Dan Lehman concluded the closeout session by reiterating one of the main issues: "It's manpower—you told us that's the issue the first day, and we agree." Fermilab participants thanked the DOE panel for their work. Christenson appeared to speak for many when he volunteered, "I for one have profited from this exercise." Fermilab's Deputy Director Ken Stanfield emphasized that the reviews are important to establish a joint sense of commitment. ■

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Griffing Appointed ES&H Head

by Judy Jackson, Office of Public Affairs

William Griffing began his duties as the new head of Fermilab's Environment, Safety and Health Section on April 29, replacing Acting Head Larry Coulson, who resumed, full time, his position as assistant director. Griffing previously managed ES&H functions at the National Renewable Energy Laboratory in Golden, Colorado, where he served for seven years.

Griffing said he welcomes the opportunity to help scientists resolve ES&H issues in a research environment and has taken on the challenge of gaining an in-depth understanding of forefront particle physics research as practiced at Fermilab. He said his goal is to make safety an integral part of ongoing planning and decision making at the Laboratory. The image of ES&H as a set of rules and regulations may still persist at Fermilab, as at other Department of Energy Laboratories, he said.

"Enforcement and control are not the proper approach to safety," Griffing declared. Rather, he hopes that "by the time I leave Fermilab, the image of ES&H will simply be avoiding injury. I care about people. I want to use my skills to help people avoid getting hurt. There is no reason for anyone to get hurt at Fermilab."

Griffing based his decision to come to Fermilab partly on the Laboratory's 1995 participation in the "Necessary and Sufficient" pilot program. Fermilab staff worked with the Department of Energy and others to devise the simplest effective list of ES&H requirements to operate the Laboratory safely. "Not only had Fermilab gone through the process," he said, "but they had modified the contract" to incorporate the N & S provisions. He now continues the process of implementing the new provisions within the Laboratory's existing ES&H bureaucracy.

"We will be a customer-service organization," Griffing said of the 95-person ES&H Section, adding that he will consult staff members in all areas of the Laboratory to seek views on how the section can serve Fermilab better. ■



Photo by Reidar Hahn

**" I care about people.
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help people avoid getting
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anyone to get hurt at
Fermilab."**

~ William Griffing

Sitewide Emergency Warning System

How do Fermilab employees know if the weather service has issued a tornado warning, or if an off-site emergency affects Fermilab? By June 30, ES&H's Emergency Management Department expects to implement a new system for issuing such alerts. According to EMD Head Romesh Sood, the Sitewide Emergency Warning System (SEWS) consists of existing communication systems and newly installed Emergency Alert Receivers and Safety Alert Monitor units. Building Managers, Emergency Floor Wardens, or Senior Safety Officers can provide more information on the operation of the SEWS. EMD will conduct tests of the components during the week of May 27, and a full-functional test on Tuesday, June 4, at 10 a.m. The test schedule of system components is as follows: 113 pagers, daily at 9:30 a.m.; outdoor warning siren system, the first Tuesday of each month at 10 a.m.; DZero, CDF, FCC Horns, Emergency Alert Receiver and Safety Alert Monitor, the first Tuesday of July and April; Wilson Hall Horns, Sundays at 3 a.m. in April and October.

The Countdown Continues

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components for the upcoming fixed-target run. The difference between their responsibilities, says Roger Dixon, head of the Research Division, is that the Research Division tends to do the “heavy” work building and commissioning beamlines, while the Physics Section, which is smaller, designs and builds active detector components and electronics. The Research Division also specializes in designing custom electronics for specific applications.

Stephen Pordes, deputy head of the Physics Department, has crossed several major items off his section’s to-do list in recent days. For E831, he said, the Physics Department recently delivered two new wire chambers. “We’ve just delivered the segmented-wire ion chamber for E815 and fixed the last of broken wires in their wire chambers.” At KTeV, Pordes continued, “we are delivering the last digital readout boards for the photomultiplier tubes, we are just finishing the low-voltage power supplies, and we are feverishly fixing the last bases for the photomultiplier tubes themselves, among other projects.” Pordes must now turn his attention to urgent electronics work for E831.

Bruce Baller, associate head of operations for fixed-target in the Research Division, says members of his division are working to fulfill obligations described in Memoranda of Understanding with each of the experiments. “The Research Division will provide a beam, mechanical, electrical and electronic support for detectors,” he says. “My charge is to coordinate these preparations within the division.” An example of Research Division assignments is the chamber gas system: “Experiments use a gas mixture in their detectors,” says Baller. “Argon-ethane is sort of the ‘Fermilab gas.’ In the past, experimenters would assemble their own gas-mixing systems—they might use ethane from bottles out of the stockroom. In the last fixed-target run, the quality of gas from the supplier suffered, and the efficiency of the chambers went to pot; several experiments were off-line for several weeks.” For the upcoming run, says Baller, the mechanical support section is installing standard gas-mixing stations and large ethane tube trailers, which will improve the quality control of the gas.

The Research Division also replaced a leaking vacuum pipe buried 20 feet underground. “A 300-foot section [between the Switchyard and Proton area] was dug up and replaced,” says Baller. “In the last fixed-target

run [four years ago], corrosion caused water to leak into the pipe, forming an ice ball, creating a loss point in the beamline.” Baller pauses and adds, “One tends to forget how many miles of vacuum pipe there are that need to be leak-checked and rebuilt.... It’s fair to say there’s of order 1,000 devices that have to be checked; for radiation safety, there are about 100 items, and we have 40 enclosure interlocks, a system of doors and gates underground, that need to be secured for safety.”

One of the people involved in radiation safety is the Research Division’s Bill Higgins. He explains that his task is to help answer the question, “Is our shielding adequate?” The beam conditions will be different this time, he says, because of higher intensity in the accelerator. “We use information about how thick the soil is, from the Fermilab alignment group, and where the walls are, from architectural drawings,” says Higgins. “If there is not enough shielding, we put a fence up, or request for more soil to be added. Then we ask the alignment group to go out and survey the area again.”

As the countdown to the fixed-target run continues, members of the upgrade staff in all divisions are exhibiting varying levels of confidence and anxiety. At the weekly All-Experimenter’s Meeting on May 20, Director John Peoples seemed reassured by Pordes’ presentation of the Physics Section’s list of remaining job requests. “You can see to the end of the fixed-target preparations then?” asked Peoples, almost rhetorically. “We’ve been seeing that for a while,” rejoined Pordes. Several audience members contributed the unsolicited commentary that “The light at the end of the tunnel is the headlamp of an oncoming train.”

KTeV, The Origins of CP Violation in the Kaon System

In March, FermiNews reported that KTeV experimenters had tested the first crystal installed in the lower left corner of the cesium iodide calorimeter. Since then, members of the KTeV team have been laying the crystal elements row by row, and connecting them to their power supply and read-out electronics. Now, as of May 20, “about half of the array is in,” says Project Manager Greg Bock. The four drift chambers are installed, and have been ‘read out’ to test them. Similarly the trigger and muon counters are in, and being read out. Bock continues, “The transition radiation detectors



John Voirin, foreground, and Don Carpenter, both of the Research Division, drive the neutrino area target train into place.

As the countdown to the fixed-target run continues, members of the upgrade staff in all divisions are exhibiting varying levels of confidence and anxiety.



Ritabh Lath, user from Rutgers University, checks phototubes on the regenerator at KTeV.

are being installed—eight of nine are in. The beamline is in the final stages of assembly; there are five or six more weeks of work on that.” What’s the overall picture? “We’re getting everything to work,” says Bock.

Experiment 862, The Production of Antihydrogen

Experiment 862 declares itself on schedule for beginning the fixed target run. The goal of the 12-person collaboration, which includes scientists from Fermilab, the University of California at Irvine, and Pennsylvania State University, is to produce and detect atoms of antihydrogen.

The Accelerator Division has finished E862’s requested modifications to the Antiproton Accumulator, including installation of Y-shaped beam pipe in a bend dipole and moving and reinstalling two acceleration cavities. The gas-jet and antiproton source on which E862 depends for its target are up and running.

Members of the collaboration have tuned the positron spectrometer, and it is nearly ready for survey onto the beamline. The accompanying positron detectors are undergoing final

testing and installation. The bend dipoles for the antiproton spectrometer have been installed, and its small wire chambers are undergoing minor maintenance before installation on the beamline.

Experimenters have tested and installed most of the time-of-flight counters they will use. In the counting room, cabling is nearly finished, as is final hookup of the trigger and data acquisition systems. Accelerator Division staff have worked with experimenters to complete accelerator controls work on the foil target wheel and magnet controls. The Computing Division recently delivered a workstation, now being fitted with peripherals and software, for online monitoring. “Since our expected data rate is very low, and our number of channels is small, we haven’t had to worry about constructing a sophisticated system for data acquisition,” said Irvine graduate student Glenn Blanford. “All in all, we are excited to start seeing antihydrogen atoms.”

Experiment 815, NuTeV

Experiment 815 held its Beginning-of-Run party on Saturday, May 18. It might seem like jumping the gun, but the collaboration began running shifts on Monday, May 20, and “we figured we should celebrate while we still had time,” said collaborator Janet Conrad, of Columbia University. E815 asked the Accelerator Division to deliver 150 GeV beam over Memorial Day Weekend. Experimenters planned to use the 150 GeV beam to align E815’s beamline magnets to an accuracy of 30 thousandths of an inch, in preparation for the actual run at 800 GeV.

The 40-member collaboration will use a beam of neutrinos to make precision measurements of neutral current interactions, providing a test of our understanding of aspects of the Standard Model. E815 will also measure the rho parameter, equal to one in the Standard Model. If the experiment finds a deviation from one in this parameter, the finding would suggest new physics beyond the Standard Model.

When the run begins, E815 will use a fast spill of the beam from the accelerator. Because neutrinos interact so rarely, the experiment needs the fast delivery of many particles at once, to distinguish the beam signal from cosmic ray background.

Experiment spokesperson Bob Bernstein of Fermilab said “We’ll be ready by Friday, May 24. Our detector works. We are now surveying things into place and making the final power and water connections.”

“Things are under control,” Conrad agreed, ticking off the list of tasks she and her

Photo by Reidar Hahn

The Countdown Continues

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collaborators had completed in recent weeks. She said that while she always enjoys preparation for a new experimental run, she finds working on E815 especially satisfying. "Our experiment is different from others," she said. "We all get along really well."

E872, Search for Tau Neutrino

Experiment 872 is the direct search for the tau neutrino. Researchers hope to find the particle and better understand its properties. Since the discovery of the top quark, UC Davis Physicist Vittorio Paolone, spokesperson for E872, said news reports often state that scientists have observed all of the fundamental particles in the Standard Model.

"It's just not true," he said. "There is a lot of indirect evidence, but [the tau neutrino] has never been directly observed, like the electron and muon neutrinos."

Byron Lundberg, the other spokesperson for the study, said the experiment's construction proceeded a bit slowly until mid-May, but has progressed at a faster pace since. Because the experiment was approved later than some of the other studies, E872 was forced to wait for resources, including engineering support, technical support and riggers, among other necessities. During the last half of May and early June, workers will be setting up the hardware for the study, including a magnet and tons of steel shielding. The coils for the experimental magnet are presently in California being refurbished.

Despite the amount of work that researchers still need to complete, some components are already in place. Collaborators from Japan recently installed the fiber tracking system for the study, a task that took nearly four weeks. The drift chambers are also installed.

As he watched Paolone pull cable for the data acquisition system recently, Lundberg said it will be a challenge to be ready by early August, and he looks forward to the day the team can turn their attention to taking data.

E868, Search for Antiproton Decay

E868, known as the APEX experiment, is an anomaly for Fermilab. It is neither a fixed-target experiment nor a collider experiment. Although it is grouped with the fixed-target experiments set to begin this summer, E868 has already finished taking data and is in the analysis phase. Further the experiment comprises only 14 researchers, rather than the large collaborations more typical of Fermilab.

APEX is a search for antiproton decay, and ran at the Antiproton Accumulator from April to June in 1995 during Run Ib collider operations. Although the experiment is small, its goals are ambitious: to improve on the sensitivity of previous searches for antiproton decay by a factor of 1,000, and to test a fundamental theorem in high-energy physics that requires that antiparticles (e.g. antiprotons) live just as long as their particle cousins (in this case, protons). Observation of antiproton decays with lifetimes less than their proton counterparts "would be revolutionary," said Steve Geer, the experiment's spokesman and a Fermilab physicist.

Researchers have some preliminary results, and Geer expects to have more results by the end of this year. He said he thought E868 was grouped with the fixed-target run for organizational reasons.

When asked if he enjoys working with the smaller collaboration, Geer smiled and said, "It's fantastic!"

The team includes researchers from Fermilab and the University of Michigan, Pennsylvania State University, UCLA and the University of Nebraska. ■

Experiment 872

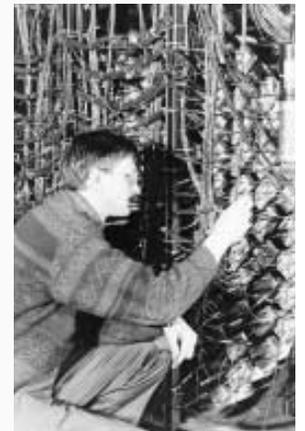


Photo by Reidar Hahn

Vittorio Paolone with the magnet E872 will use. Presently, the magnet's coils are being refurbished in California.

Byron Lundberg said it will be a challenge to be ready by early August, and he looks forward to the day the team can turn its attention to taking data.

Experiment 868



Steve Geer, spokesman for E868 or APEX, with the detector for the antiproton decay experiment.

And We Thought the Top Quark Was Massive!

On Tuesday, May 14th, during his leave from the Army, Tom Reiter, pictured below, caught a 39-inch, 39-pound catfish in the creek between Kidney Pond and Swan Lake. Mark Kujawa, a member of the Fire Systems Maintenance division of FESS, helped Reiter land the fish, while Reiter controlled the pole. Kujawa, an avid fisherman, said that the catfish was definitely “a big fish for around here.”



Laboratory Adopts More Efficient Payroll System

New technology is more flexible, while making paychecks and stubs more informative

by Donald Sena, Office of Public Affairs

Fermilab recently implemented a new human resources payroll system that takes advantage of new software and hardware technologies, resulting in a more efficient pay distribution process.

The new integrated system is less customized than the old method, making it easier for Fermilab to upgrade and alter as needed. Although most employees will not notice the increased speed in the process, they can expect a new paycheck and stub design, as well as some slight differences in calculations of benefits.

Out With The Old...

The old payroll system, called Integrel or ISI, ran off an IBM mainframe and "has seen better days," said Lynne Lazarski, HR systems administrator.

The machine often crashed, resulting in time-consuming delays in the payment process. The ISI also had many customized features, making it harder to adapt to new ideas or correct problems. Lazarski said ISI was also checkered with "bandaids," or repairs that addressed a host of very specific problems and not the system as a whole. Lastly, the Business Office and Laboratory Services wanted to take advantage of new client server technology that has the potential to expand to other functions.

...In With The New

The new software, purchased from Peoplesoft, is an integrated system, allowing Payroll and Personnel staff to work with one database. For example, "applicant tracking" is now integrated with the human resources system. In the past, when a person applied for a job at Fermilab, employees in the Employment Office would enter the applicant's information into the system. If the prospect was hired, Human Resources staff would have to reenter the information into another data base. The new system allows Laboratory workers to save time by updating only one file. The new Peoplesoft software is also less customized, allowing the Lab to upgrade the system as changes are needed and new requirements arise.

"It's a very powerful machine...that definitely saves time," said Lazarski.

A New Look

The new pay stub is easier to read and has more detail in its presentations. Health-plan enrollments, specific charities, after-tax deductions and before-tax deductions all are listed separately. Each employee's home address will also appear on the check.

Along with the new design, employees may see some differences in the actual numbers. For example, some employees' voluntary pension contributions may change slightly because the new software calculates years of service more accurately, using the actual date of service and not just the year of service as the starting point.

Some employees who have Supplemental Life Insurance may find a difference of \$1,000 in their coverage and related deduction amounts, which can be attributed to different methods of rounding. The deduction difference for \$1,000 more in coverage is about 39 cents per month.

Weekly employees received the new checks and stubs with their May 3 pay, and monthly employees' paychecks changed beginning with the May 31 payment.

Payroll and Benefits staff were pleasantly surprised to receive a minimal number of phone calls from weekly employees confused about the changes, and they hope monthly personnel will adjust as smoothly. The payroll upgrade is part of more sweeping reforms in the Business Office and Laboratory Services, which a future *FermiNews* article will address. The payroll staff ask readers to call the Payroll Department at x3046 with any payroll-related questions, or the Benefits Office at x4361 with any queries related to voluntary pension contributions or life insurance deductions. ■



The new design of Fermilab's paychecks and stubs, complete with more detailed information.

Chez Léon

M E N U

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
Dietary Restrictions
Contact Tita, x3524

Wednesday Lunch June 5

Wild Rice, Pork and
Wax Bean Salad
with Cherries
and Honey Vinaigrette
Fruit Tart

Thursday Dinner June 6

Fettuccine with
Portobello Mushrooms,
Spinach and Pine Nuts
Shrimp Scampi
Walnut Risotto
with Roasted Asparagus
Cold Lemon Soufflé
with Raspberry Sauce

Wednesday Lunch June 12

Danish Open Sandwiches
Cucumber Dill Salad
Pear Almond Strudel

Thursday Dinner June 13

Grilled Onion Salad
with Mixed Greens
and Goat Cheese
Butterflied Leg of Lamb
with Rosemary
Vegetable of the Season
Lemon Blueberry
Shortcake

Elmhurst College

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him to stay in touch with ever-growing collaborations.

Although it is quite time-consuming, Swallow said he continues with the teaching-research balance at the small school because he can involve undergraduates in his work at Fermilab. In some of the earlier CP violation experiments, Elmhurst students helped build and test the lead glass monitoring and calibration system. Anthony Kowalczyk, one of the students who worked on the lead glass, went on to get a Ph.D. in physics at Case Western Reserve University. More recently, Michael Callahan, one of Swallow's students, worked with a Fermilab postdoc on the monitoring system for the cesium iodide calorimeter that experimenters will use in the KTeV study.

CALENDAR

JUNE 2

The Fermilab Barnstormers Radio Control Model Club will host a 1/4 scale fun fly on Sunday, June 2, 1996. Flying begins at 9 a.m. and continues through the late afternoon. Some of the best radio control pilots in the midwest will bring their large-scale models to perform amazing aero-antics. Refreshments will be available. For further information, please contact Rich Mahlum, x4316.

JUNE 12

Wellness Works Committee presents Fermilab's annual Health Fair Wednesday, June 12, 10 a.m.-2 p.m., Wilson Hall Atrium. Experience a chair massage, get your eyeglasses adjusted, and learn about low-fat cooking. Area health-care centers and businesses will present information, demonstrations, and screenings and give away prizes. You must have your supervisor's permission to attend. Demonstrations include yoga, Tai Chi, and bio-feedback; screenings include blood pressure and blood sugar, pulmonary function, body fat assessment, and depression and panic disorder.

JUNE 13

Fermilab Lecture Series presents "From Simplicity to Complexity". If the fundamental description of the universe is simple, why is the world around us so complex? And is it really as complex as it appears? Nobel laureate Murray Gell-Mann will examine these and other questions on the subject of complexity. Gell-Mann, author of *The Quark and the Jaguar*, won the Nobel Prize in physics for his work on the theory of elementary particles. His recent research at the Santa Fe Institute focuses on complex adaptive systems. Tickets \$5. 8 p.m. Ramsey Auditorium, call (708) 840-ARTS for information and reservations.

A few Elmhurst College graduates have moved on to important work at Fermilab. Stan Orr, leader of the Power Systems Group; James Volk, a staff physicist and Kenneth Hartman, an experimental area operator, all work in the Research Division and all did their undergraduate work at Elmhurst College.

Consolato Gattuso, an Accelerator operator and another Elmhurst graduate, said Swallow taught nearly all of his upper level courses.

"Some of my fondest memories of Elmhurst College involve work on the particle accelerator with Dr. Swallow," said Gattuso. "The thrill of being able to use what we learned in class in a hands-on environment...was what Dr. Earl Swallow was all about. He was able to help us understand, and put to use, the material that we learned—and for that I'm grateful." ■

LAB NOTES

FERMILAB ARTS & CRAFTS SHOW

Artists participating in the Fermilab Arts & Crafts Show must bring their work, ready for placement, to the 2nd floor gallery before 10 a.m., June 3. Artwork must be picked up from the gallery on July 1 between 10 a.m. and 4 p.m. Information and entry forms are available at the front atrium desk. Mail entry forms to MS 105.

SUMMER BASKETBALL LEAGUE

Fermilab summer basketball league begins June 20. Games at the gymnasium, Thursday, 5:30 p.m. Captains' meeting, May 29, at noon in the Wilson Hall Atrium. Rosters are due at this time. For more information contact Denise Bumbar, denise@fnal.gov or the Recreation Office, x2548, Jeanm@fnal.gov. Must be a current facility member.

CHILDREN'S SWIMMING LESSONS

Fermilab offers children's swim lessons Monday, Wednesday, Friday. Beginners 10:45-11:30 a.m. Intermediate 10-10:45 a.m. Beginners must be 42" tall or five years old. Session I, June 10-July 12; Session II, July 15-August 16. Applications in the Recreation Office, WH15W. First come, first served.

CLASSIFIEDS

FOR SALE

■ Townhouse in Fox Valley area, Springlake Townhomes: 2 BR, 1-1/2 Bath, 3-level, finished basement, utility room, storage area, end unit w/ lake view and deck, Naperville district #204, 12 yrs old, newer water heater and furnace; dishwasher, stove, refrigerator included. \$82,900. Call (708) 978-7044.

■ 1988 Toyota Camry. Very good mechanical condition and very clean, a/c, AM/FM radio, tape deck, pwr. steering, windows, locks and brakes. 111k miles, \$4900. Call 879-5178 or x4361.

■ Two table lamps \$50, sewing machine cabinet \$50, secretarial chair \$20. Call Rich at x3880 or 690-1691.

■ 1982 Kawasaki Driffter 440 cc. snowmobile. Hot grips, fresh carb., complete new ignition, needs fine tuning. 1974 Scorpion Super Stinger 440cc. snowmobile, fresh carb., new fuel system, spare belt for drive, needs tune-up. Both ran winter of 95-96 and low miles. \$400 o.b.o. Possible delivery. Call Matt Sokol, (708) 972-9901.

■ Aluminum sliding patio door (8 ft.) - Thermopane and all hardware, \$40 o.b.o. 3 x 4' "This End Up" table and 4 chairs in excellent condition, \$150 o.b.o. Call Tom x5768 or Marge x3800.

■ Channel Master Ultra-Hi UHF/VHF-FM tv antenna. Designed for fringe area reception. 10 feet long, 2 months old, never been unfolded and used. Comes in box with instructions and hardware. \$80 value, it's yours for \$60. Call Rob at x3401 or (708) 513-9422 or email: atkinson@fnlib.fnal.gov.

■ House in Warrenville, 2-story, 3 bedrooms, 2 baths, spacious living and family rooms, dining room, European kitchen, 2-car garage, on a cul-de-sac 1/3 acre lot, fully fenced backyard, mature trees, professional landscaping, 5 miles from Wilson Hall. Call Alex, x3873 or 393-6774 or contact bogacz@calvin.fnal.gov.

■ Two custom-made Rowe loveseats. Excellent condition. Asking \$500 o.b.o. Call Linda (708)252-8806 or (708)362-2057.

■ 1986 Honda Prelude Si, red, 5 speed manual transmission, air, pwr.all, sunroof, AM/FM/cassette/equalizer. Ex.cond. \$5000. Contact x4136, barb@fnalv.fnal.gov, or (708) 365-5275.

FREE

Male Persian cat, 2 years old. Neutered and front declawed. Very gentle. House cat, has never been outside. Call Sharon or Frank, (708) 896-0128.

FOR RENT

3 bedroom apartment w/garage, 5 miles from Fermilab. \$700/month. Call Alan at x4044 or (708) 851-4829, evenings.

WANTED

Good home for a cat. Cat, named Doppler, is 3 years old, has pure white fur, and is deaf. He is neutered, but not YET de-clawed, but we are willing to do so at the new owner's request. We need to find a new home for him due to a pregnancy in the household. Contact Oliver Kiemschies at x4977 or email at ollie@adcalc.fnal.gov.

MILESTONES

RETIRED

William Byrd, on May 31, 1996. He started at Fermilab on September 14, 1970. Byrd worked for the Facilities Engineering Services' Electrical Maintenance Group as an Electrician IV.

John W. Caffey, on May 31, 1996. He started at Fermilab on September 22, 1969. Caffey worked for the Research Division's Mechanical Support Group as a Technical Specialist.

David Dewitt, on May 31, 1996. He started at Fermilab on November 1, 1971. Dewitt worked for the Business Services Section's Accounting Group as an Accounting Supervisor.

James Fritz, on May 31, 1996. He started at Fermilab on May 21, 1979. Fritz worked for the Accelerator Division's Mechanical Support Group as an Engineer II.

Stanka Jovanovic, on June 1, 1996. She started at Fermilab on October 2, 1989. Jovanovic worked for the Laboratory Services Section's Education Office as the Education Center Manager.

John Purcell, on May 31, 1996. He started at Fermilab on May 5, 1980. Purcell worked for the Facilities Engineering Services as an Executive Assistant.

Alan Riddiford, on May 21, 1996. He started at Fermilab on May 5, 1980. Riddiford worked for the Accelerator Division's Headquarters Staff as an Engineer and Physicist II.

LETTER TO THE EDITOR

I enjoyed your article on the "Take Your Daughters and Sons to Work Day" at Fermilab (*FermiNews*, May 17, 1996), and I was especially pleased to see the picture of John Foster, one of the Education Office Docents. I do need to correct your caption. John and all of our Docents (we currently have 15) are not volunteers. They are paid, part-time Fermilab employees who facilitate student field trips and other program-based activities for the Education Office. Thanks for recognizing John and his colleagues. They do an excellent job of increasing scientific literacy and providing a positive Fermilab image to the general public.

David Abler
Fermilab Education Office

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

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

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