

Fermi News

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As the New Year dawned, we asked Fermilab scientists for their **NEW YEAR'S RESOLUTIONS**

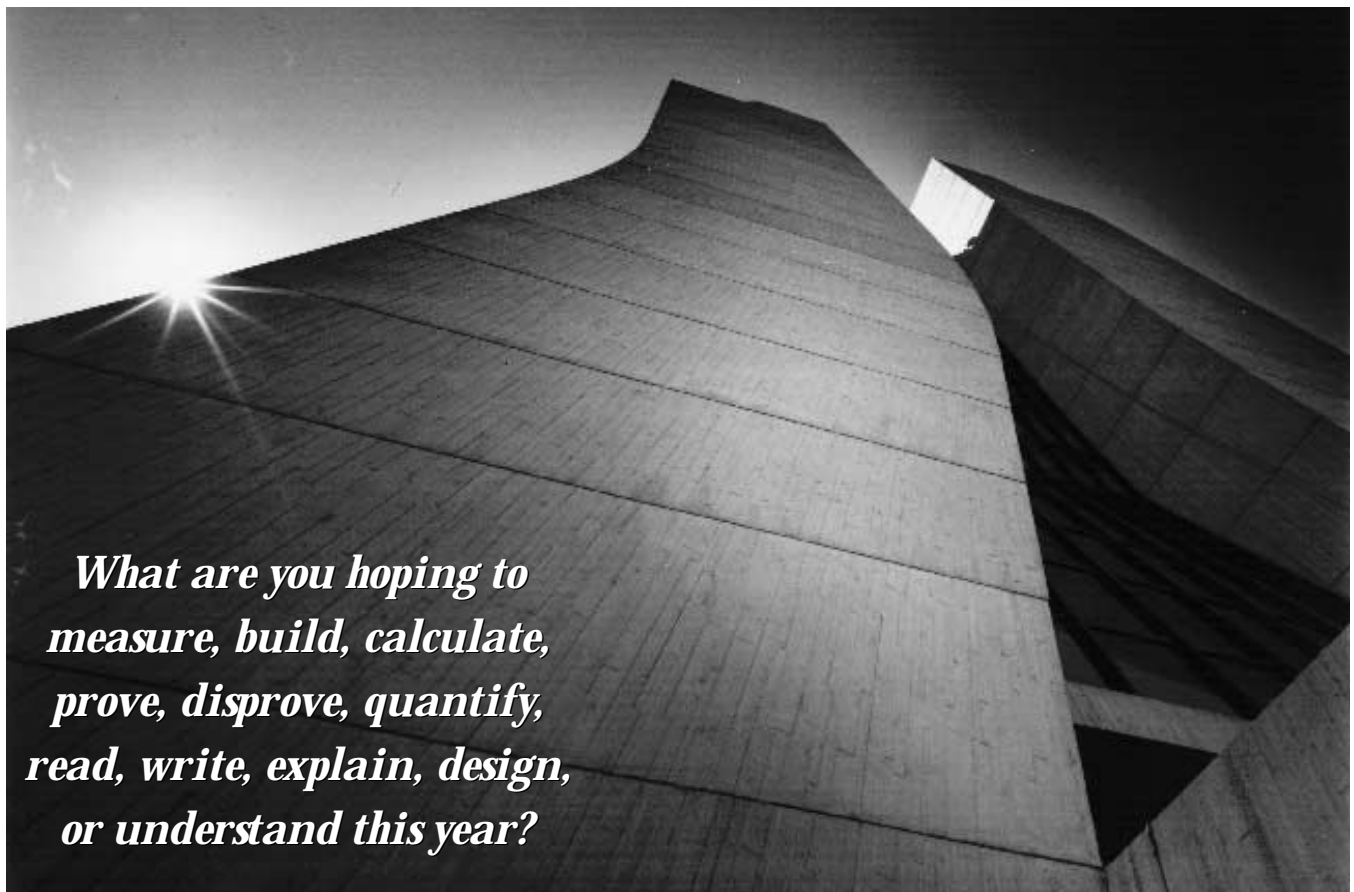


PHOTO BY REIDAR HAHN

What are you hoping to measure, build, calculate, prove, disprove, quantify, read, write, explain, design, or understand this year?

By Leila Belkora,
Office of Public Affairs

I want to complete some analysis on DZero's Run Ib data and prepare for Run II. Right now I'm at the beginning of multiple analyses, and I'm eager to see where they lead.

—Harry Melanson, Research Division
DZero Collaborator

I want to get the fixed-target program going. It's been four years since we shut down in 1992. It's time to run again. My own experiment is one of those getting ready to run. In the first half of 1996, I'll work to get it installed, and in the last half of the year, hopefully I'll be running it.

—Peter Garbincius, Research Division
Fixed-Target Run Coordinator

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ACCELERATOR ARCHAEOLOGY

DIGGING UP 20 YEARS OF WIRING AND ELECTRICAL WORK

by Donald Sena, Office of Public Affairs

An Accelerator Division electrical team made the dangerous discovery in the Booster Ring in early 1995: a stretch of abandoned wire, still hooked up to its power source, sitting in a cable tray with one end exposed and carrying 480 volts.

In 1992, another team doing similar work in the fixed-target area found a live wire in a cable tray, slowly burning itself up on one end.

These two discoveries are extreme examples from the Laboratory's electrical history, which technicians have uncovered as they remove or replace 20 years worth of old wiring and electronics and install new safety components and labels. Accelerator Division staff designed this important rewiring project to bring the electrical system up to date and up to accepted safety levels. The project will make the accelerator easier to maintain and prevent breakdowns, as well as create a safer work environment, according to Accelerator staff.

The electrical teams completed their sweep of the fixed-target area at the end of 1992, and the Booster Ring power supplies' clean-up is about 85 percent finished, leaving the Booster tunnel as the next area technicians will tackle. The teams dispose of the old radiation-exposed electronics from the tunnels, but they recycle some non-irradiated material.

The Main Ring/Tevatron tunnel and the Antiproton Source have some wire similar to what is being removed in the Booster, according to one Fermilab staff member. There are plans for an Antiproton Source rewiring in the future, but there are no specific plans for any comprehensive wiring overhaul for the Main Ring, which will go off line when the Main Injector begins operating.

Ultimately, the work on the Booster Ring and fixed-target area

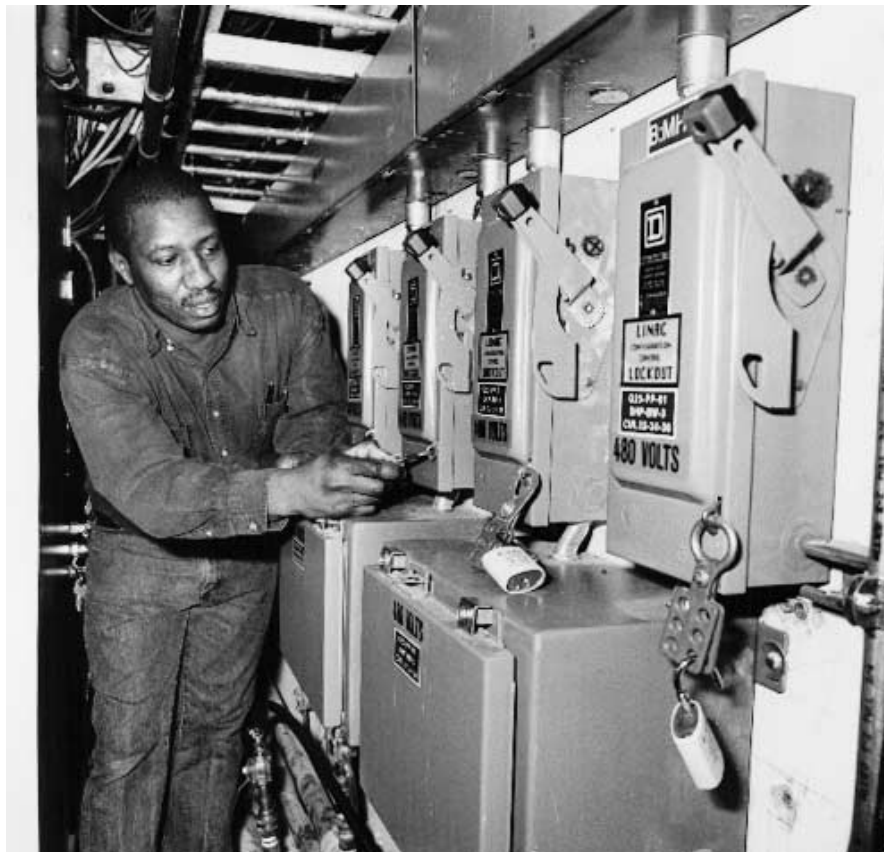


Photo by REIDAR HAHN

Jim Ranson, a technical specialist for the Booster Ring, shows some of the new safety switches installed as part of an electrical overhaul, which included rewiring and labeling.

will ensure the accelerator runs more reliably.

The project "makes sure we have [the most possible] uptime on the machine," said Dave McGinnis, Proton Source department head. "We are finding problems before they actually happen."

THE PROBLEMS IN THE TRENCHES

In anticipation of DOE's 1992 Tiger Team visit, Fermilab staff did an assessment of the electrical systems feeding the accelerators. They surveyed 20 years of wiring and accelerator infrastructure in the power supply areas, beam tunnels and service buildings, and found much of it out of date and still in use.

Jim Ranson, a technical specialist for the power supplies in the Booster

Ring, is his area's "electrical task manager," responsible for making sure the power supply operates efficiently and safely.

"We started looking at the overall Booster, and we said, 'We have problems,'" explained Ranson. Many of the power panels "didn't have any type of protection. They didn't have safety switches, they weren't fused; they were just wired directly into the main power source. It was a mess."

Mike Coburn, an Operations Specialist with the Accelerator Division, led the project in the fixed-target area and found similar causes for concern.

Both electrical teams found miles of old "SO cord," flexible wiring similar to a common extension cord. The insulation around this type of wire tends to break down because of



PHOTO BY REIDAR HAHN

A new safety switch (right) will soon replace the old conductor box on the left. Conduit (metal tube) leads down to the safety switch; the conductor box lacks conduit. The safety switch can be locked out, while the box has no place for a lock.

heat, leaving bare wire exposed. In fact, Coburn said, the insulation can start to break down after just five years, and, in some cases, that type of cable had been carrying electricity two or three times longer. Ranson said electricians can use SO cord for temporary wiring, but it should not be used as a primary source wire. Also, many cable trays were overflowing, leaving no room for future electrical work.

To correct the problems, Ranson's team first identified each separate circuit to see what it supplied, tracing each wire to its source. Once they documented and labeled it, they determined if they needed that particular circuit and wire. If not, they shut it down and removed it. If it was an essential component, the team replaced it. They ran the new wire with conduit around it to ensure that no bare wire could ever be exposed and mistakenly send electricity flowing through the metal relay racks. In many cases, workers added safety switches. A safety switch can be locked out so personnel can safely perform maintenance. The electrical team also found many wiring color problems. For instance, a green wire generally identifies a ground. Ranson's crew found green wire

directly connected to a power source.

"No qualified electrician would ever do that," Ranson said.

The result of the rewiring is less wire in the cable trays with major power cables encased in conduit. Coburn did similar work in the early 1990s in the fixed target area, removing or replacing four tons of wire.

"The service buildings are [now] in pretty good shape. The [Switch Yard] tunnels are not perfect, but much better," Coburn said.

Ranson's team also updated numerous power supplies that feed the Booster Ring. For example, electrical experts recently replaced old 400-pound power supplies with more advanced supplies that carry the same amount of electricity but weigh only 60 pounds.

LABELING AND FUSES

The electrical engineers also found insufficient labeling and no fuses on many of the electronics, resulting in a confusing and potentially dangerous environment. Coburn said technicians would open a load center or panel and find 60 circuits with no labels.

"It's hard to be productive in an environment like that," said Coburn. The lack of labels "made [the rewiring project] a long process."

The team labeled just about every component in the Booster Ring and fixed-target area. Workers will benefit

from this job for years to come. Each time the accelerator requires more advanced electronics, workers will easily be able to find the necessary circuits.

People working with the electrical systems "should be able to go and find any circuit in the Booster Ring without any problems, and safely shut it down," said Ranson.

Ranson's team also added fuses throughout the Booster. A fuse is a current limiting device that trips off to prevent a massive circuit overload. If there is an overload and no fuse, "...you've got damage to the power supply..., damage to the wiring and you can burn the building up," Ranson said.

Now, when there is an overload, a fuse trips and electricians can quickly identify and fix the problem safely and efficiently. The result is more critical accelerator "uptime" that McGinnis spoke of earlier.

ELECTRICAL ARCHAEOLOGY

Performing a sort of electrical archaeology, workers have also discovered obsolete versions of accelerator devices and wiring once at the forefront of technology. Some were still working, but others were never removed when workers dismantled them.

Numerous components found during the sweeps were still sitting in the fixed-target beam tunnels, like tools from an ancient civilization uncovered by archaeologists. However, there is one main difference between traditional archaeological finds and the electrical remains in the accelerators: "...we weren't really interested in preserving any of it," Coburn said with a laugh.

The old instrumentation that Coburn found and replaced or removed, and that Ranson will encounter in the Booster tunnel, includes:

- **Loss monitors:** Devices that alert operators that beam is leaving the beam pipe and irradiating the

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PHOTO BY REIDAR HAHN

Jim Ranson points out some of the labeling his team installed as a part of the electrical project.

FESS KEEPS WATER—AND DATA—PUMPING

by Judy Jackson, Office of Public Affairs

Operations Specialist Jim Ziober of the Accelerator's RF Instrumentation Group is a self-confessed data freak. He writes everything down. On March 14, 1995, Ziober made this entry in the Main Ring RF log book:

"Pond Pump VP-1 motor overheated causing short to ground that tripped the 800A Sub Main for the motor control center in the LCW pump room. This caused both M.R. and Tev RF systems to trip off."

Roughly translated, this log entry means that a short circuit occurred in a pump that pumps cooling pond water in the section of the accelerator that gives particles a kick each time they make the circuit of the Main Ring. The problem propagated instantly through the electrical subsystem and caused the loss of circulating beams of protons and antiprotons in the Tevatron. A hot pond pump had brought the world's most powerful particle accelerator to a halt.

Seven months later, on October 16, Ziober made this entry:

"Vertical pond pump P-1 tripped OFF on phase unbalance during weekend. System monitor indicates $\text{O}A$ and $\text{O}C$ current went up to 448A and $\text{O}B$ went down to 3.8A."

Translation: Another electrical problem had knocked the same pump out of commission. But this time the problem didn't spread, and accelerator operations continued as usual. What made the difference?

MORE UPTIME

During the summer accelerator shutdown, Facilities Engineering Services Section electrician Chuck Kenney installed devices called "Advantage" starters, manufactured by the Westinghouse Corporation, on all the pumps at the RF building. Now, if an electrical fault occurred, the device would instantly switch off the faulty pump before the problem



PHOTO BY FRED ULLRICH

Snow remains on the concrete casing of Pond Pump Two, in the foreground, but has melted on Pond Pump One, which is operating. If Pump One malfunctions, a recently installed monitoring device will shut it off. Pump Two, the backup, will take over.

could spread. In the October incident, Pond Pump Two quickly took over for Pond Pump One, and all was well.

Protecting Fermilab's accelerator system against disabling electrical faults is an example of FESS's ongoing effort to keep data flowing to Fermilab experiments. "We're here to try to give the experimenters more uptime," says FESS Operations Manager Phil Neeter.

Frustration at the frequent failures of a sewage system pump in the Fermilab Village led FESS staff to install the first Advantage starter in 1993. When it solved that problem, they installed 61 more of the devices in pumps and other motors in the Central Utility Building, virtually eliminating "trip events" at CUB. Having satisfied themselves of the devices' efficacy in their own section's systems, FESS offered them to a customer.

"We made the Accelerator Division an offer they couldn't refuse," says FESS Supervisor Dick Graff. If the RF Department would pay for the equipment, at a cost of about \$12,000, FESS would install it at no charge to the Accelerator Division.

Ziober accepted the offer. "I think it paid for itself on that one [October] weekend alone," he says. He adds that monitoring capabilities of the new system allow him to track the health of the motors running RF equipment and make repairs before the motors fail.

Inevitably, despite the best efforts of FESS and the Accelerator Division, the Tevatron sometimes loses beam. Downtime, as they say, happens. But it probably won't be the fault of Pond Pump Number One. FESS and Pond Pump Number Two are here to make sure. □

THE SCIENCE OF DOING BUSINESS

FERMILAB ADOPTS BALDRIGE MANAGEMENT PROGRAM

by Leila Belkora, Office of Public Affairs

Performance measures and methods of assuring quality will be part of a new five-year contract, expected to be effective January 1, 1997, between the Department of Energy and Universities Research Association, Inc. In anticipation, Fermilab has adopted the Baldrige management program for administrative support functions and is implementing it in reports to DOE.

The very idea of performance measures, TQM (Total Quality Management) and other TLAs (Three Letter Acronyms) is enough to make some people shudder, but Bruce Chrisman, Fermilab's Associate Director for Administration, says the Baldrige approach has worked well so far to help Fermilab managers improve their departments and will lead to more meaningful assessments of Fermilab by DOE. The new program "gets us involved with DOE in a constructive way," says Chrisman, "and they [DOE] wind up knowing more about what we do."

THE BALDRIGE PROGRAM

The Baldrige program is a widely respected strategy to help manufacturing and service companies better serve their customers and compete for business. The Baldrige Award, presented annually at the White House by the president, carries great prestige for companies in the manufacturing, service, and small business categories. What are the key elements of the Baldrige program, and how can Fermilab apply them?

The seven facets of management addressed by the plan are:

- Leadership
- Information and Analysis
- Strategic Planning
- Human Resource Development and Management
- Process Management
- Business Results
- Customer Focus and Satisfaction.

Leaders of Fermilab business services focused on the last three of these items in preparing a self-assessment report for DOE in December 1995. The self-assessment reports will form the backdrop for DOE's formal review of business practices at Fermilab in January 1996.

At first, the members of the pilot team say, they found it difficult to see how they could apply the Baldrige style. "Initially, the semantics threw me," recalls Jim Finks, head of Business Services. It was particularly difficult to identify the "customer." However, the team got help from Horine and Associates, a consulting firm that had advised Brookhaven National Laboratory managers when Brookhaven adopted the Baldrige program. DOE representatives also participated in the Baldrige training.

"CHARGE IT"

An example of Baldrige methodology at Fermilab comes from the Procurement Department. Observing their usual procedures under the

Baldrige magnifying glass, team members Joe Collins and Dave Carlson discovered that most of their activity, measured in dollar amounts, was prompted by requests from about 200 large purchasers. Information from a survey of top procurement customers validated a strategy purchasing managers had already considered to shorten the cycle time and cut costs: in the future, the more numerous employees who make small-dollar-amount purchases will be able to use a special credit card to place orders directly with vendors. In the case of payroll administration, self-assessment teams looked at their operations compared to outside companies that could cut checks and perform other services for a fee. The payroll self-assessment team began quantifying their competitiveness in terms of the cost per paycheck, a performance measure that they can track over time and compare objectively with that of outside companies.

Chrisman sees the development of quantitative performance measures as one aspect of improved communication

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How it all stacks up: Joe Collins of the Procurement Department weighs the relative merits of the old-style reports to DOE (on the table) and the new style, which he holds in one hand.

STRETCHING DOLLARS IN ES&H

by Rod Walton, Environmental Protection Group/ES&H Section

"Whatever you have, spend less."

Samuel Johnson

As research budgets tighten and Fermilab departments look for ways to do more with less, the Environmental, Safety and Health Section has vigorously pursued cost-cutting measures.

In July, the Laboratory modified ES&H standards in line with the "Necessary and Sufficient" process. The overriding motto for this process was "adequate protection at the lowest cost," and the result was a less restrictive set of standards for ES&H activities. Implementing the new standards has given impetus for using the budget more efficiently and intelligently. As a result, the ES&H Section has been able to provide services at a much lower cost. For example:

RADIATION BADGE SERVICE: In FY1993, radiation badge costs were approximately \$160,000. In FY1994, ES&H qualified a vendor to provide a new technology that allows badge changes on a quarterly, rather than a monthly, basis. During FY1995, ES&H found a second vendor in the new technology. The result of competitive bidding was a new contract for \$80,000 for the same number of badges processed the year before for \$120,000. Divisions and sections added to the savings by identifying users or employees who don't need badges. Eliminating unneeded badges brought the total cost in FY1995 to about \$70,000.

INACTIVE WASTE SITE SURVEY: The Tiger Team Corrective Action Plan required the identification and characterization of places where wastes have been stored anywhere on the Laboratory site. This would have cost about \$600,000 if accomplished by an outside consultant. However, ES&H completed the task during the sum-



Photo by REIDAR HAHN

mer by hiring two college students as temporary employees for a total cost of \$24,000.

WASTE MANAGEMENT PRACTICES: As part of compliance with the Laboratory's hazardous waste permit, ES&H routinely negotiates with the State of Illinois (the permit issuer) to promote cost-effectiveness. Establishing a close working relationship with the state regulators allows the Laboratory to "make a case" and implement corrective actions for less money. Aggressively pursuing this strategy has saved an estimated \$100,000 over the last three years.

Careful characterization and separation of wastes before disposal can yield impressive savings. Hazardous and radioactive waste is much more expensive to dispose of than "conventional" waste. In FY1995, ES&H saved approximately \$140,000 for disposal of parts from the "old" Linac, which the Linac Upgrade replaced. ES&H painstakingly separated radioactive parts from nonradioactive

parts and disposed of them separately.

Likewise, separation of the wastes generated from removal of the old Central Utility Building tile field in the center of the Main Ring into hazardous and non-hazardous components resulted in cost savings.

OFFICE PRACTICES: The ES&H Section has used technology to minimize the need for clerical services. Staff who generate documents do the work themselves except for some minor polishing before the documents leave the section. ES&H uses software to produce and track purchase requisitions, make vacation requests, keep a vacation calendar, schedule meetings and transfer documents.

RECYCLING: The Laboratory received about \$7,000 in FY1995 for recycled wastes such as cardboard, paper, glass, etc., and anticipates receiving about \$12,000 in FY1996. Although this is a small amount, it represents actual income, and has the added advantage of preventing pollution. □

New Year's Resolutions

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i plan in 1996 to
(measure) the top cross section, and
content of fake soft lepton tags
(read) cdfnotes 1-3000 as well as
several reviews of modern physics
articles and Howard Georgi's
Weak Interactions

(prove) to myself that i know
what i am doing
(disprove) to myself that i
dont know what i am
doing

(quantify) my level of not
understanding
(explain and write) the above 3
in my thesis

*-David Kestenbaum, Harvard Univ.
CDF Graduate Student*

I'm working for the DZero collaboration, a post-doc at Brown University. I just started here on Jan 1, after getting my Ph.D. on CDF with the University of Rochester. I'm involved in top quark physics, specifically the measurement of its mass. By the end of this year I hope to contribute to a more precise measurement of its mass. It is amazing how many numbers are behind that one mass number. It is almost like putting together a Christmas jigsaw puzzle. Only you don't know what the finished puzzle will look like, how many pieces are in the puzzle, or what the pieces are! Everything must be done in excruciating detail—sometimes I feel more like an accountant putting numbers in the right column than a scientist trying to discover something new!

*-Gordon Watts, Brown University
DZero Collaborator*

[Ed: Fixed-target experiments are scheduled to resume July 1996.]

Among my many expectations for this year, there is one I will share. It is my hope that the Fermilab fixed target program starts on schedule, and that our work achieves physics results by the end of this calendar year.

*-Herman White, Research Division
KTeV Collaborator*

My resolution is to bring the fixed-target run up. Please don't let it be Mechanical Support that holds the fixed-target run up. Let it be computing, for instance.

*-Rich Stanek, Research Division
Head, Mechanical Support Department*



***What are you hoping to
measure, build, calculate,
prove, disprove, quantify,
read, write, explain,
design, or understand
this year?***

Analyze the collider run and get the fixed-target run working. DART comes to mind.

-Joel Butler, Head, Computing Division

[Ed: According to Ruth Pordes of the Computing Division, "DART stands for Data Acquisition Fixed Target, but we couldn't call it DAFT, could we?"]

I'm going to help commission the KTeV beam and experiment. I hope I can stop being KTeV project manager, because I hope KTeV will stop being a project and become an experiment.

*-Greg Bock, Research Division
KTeV Project Manager*

I work for the Research Division on two fixed target experiments: KTeV and SELEX. Even though the two experiments are quite different, I am interested in measuring the same thing in both. Both experiments will have the capability of making the world's best measurements on the rare weak radiative decays of hyperons—neutral hyperons in the case of KTeV and negative hyperons in the

case of SELEX. These types of decays are interesting because predictions for their rate of occurrence and for the asymmetry in the decay have been very far from correct. Very little experimental data exists on these decays and hopefully this year's fixed target run will help clear up the uncertainty in this subject.

-Eric Ramberg, Research Division

This year, with the help of my department, I want the Laboratory to make the migration from VMS to UNIX, smoothly and painlessly. By the end of 1996, I hope we've gone a long way to making that transition. And I will find a new experiment this year.

*-Steve Wolbers, Computing Division
Head, Operating Systems Support*

The High Performance and Parallel Computing group is currently working on the CAP project. The goal of the

CAP project is to help physics users on the "data mining" phase of their search. The data mining process can be defined as a procedure where the user wants to select a small subset of a very large amount of data. This fits very well with the physical search for particles, based on a large amount of data from the detector acquisition systems.

*-Ricardo Haas Pecanha, Computing Division
High Performance and Parallel Computing*

We've been looking at document management systems for two years, to find the best one for the Computing Division. Now we have purchased one that's really cool, and in 1996 I want to implement it, to make the best use of its features.

-Dave Ritchie, Computing Division

I'm hoping that one or more observing projects will get off the ground. We have a project to observe clusters of galaxies to learn about the distribution and amount of dark matter. Also, we are now preparing a proposal to observe the Coma cluster of galaxies at optical wavelengths, using

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Accelerator Archaeology

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area around it. More advanced loss monitors have replaced them.

■ **Paint-Can Detectors:** Similar to loss monitors, but made out of paint cans filled with scintillator oil.

■ **SWIC cabling:** Coburn's team found layers of this type of wiring, which led to a device in the beam pipe used to determine where particles were.

■ **Magnet leads:** Heavy-duty 1 1/4-inch cable that carried the bulk current from the supply to the magnets. Over the years, Accelerator staff reconfigured the beam line and moved or removed magnets, but these leads stayed in the cable trays, taking up valuable room.

***...the rewired
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A SAFER ENVIRONMENT

In the short term, the rewired areas are much safer and more efficient, so workers can identify a problem, find it and fix it faster with less risk. In the long term, electricians will be able to install new equipment much faster because of the presence of labels and room in the cable trays.

"I feel safer...and I feel safer for the people that work around me..." Ranson said. □

New Year's Resolutions

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the ARC 3.5 meter-diameter telescope at Apache Point in New Mexico. I also hope to help get the Sloan Digital Sky Survey started in 1996. You should talk to Steve Kent. I bet he has a long list of things he wants to do in 1996.

*—Josh Frieman, Research Division
Theoretical Astrophysics*

I would like to see the Sloan Digital Sky Survey begin collecting actual data this year. This will require the following to happen:

- The mirrors for the 2.5 meter telescope are delivered and installed by summer.

- The imaging camera is finished and installed.

- The data acquisition system that was developed at Fermilab by the Online Systems Group and the Experimental Astrophysics Group is delivered and works.

- The data processing software and systems developed by the same people plus other institutions on the project actually work.

I would like to see the Experimental Astrophysics Group accumulated set of imaging data from the Fermilab Drift Scan Camera and the Apache Point 3.5 meter telescope analyzed to the point where we can count galaxies around the sky and measure by how much the universe is out of balance.

*—Steve Kent, Research Division
Experimental Astrophysics*

I'll be working on projects started with collaborators in 1995, including astrophysical applications of the statistics of extreme gravitational lensing events and weak gravitational lensing due to gravitational waves. I will also collaborate with Mike Turner to develop a fast and accurate algorithm to calculate the scalar contribution (i.e., density perturbations) to the cosmic microwave background.

I also hope to get a faculty position sometime soon!

*—Yun Wang, Research Division
Theoretical Astrophysics*

In 1996 I plan to study the $f_0(980)$ resonance. This is the lowest energy state with vacuum quantum numbers in the hadron spectrum. E791 was the first collaboration to see it coming from Ds, in the last run as E691. At the FOCUS collaboration I plan to help improve the Silicon Vertex Detector.

*—Eduardo Cantoral, E791
Universidad Autonoma de Puebla, Mexico*

I would like to have some new home-designed, home-built superconducting magnets tested before the end of 1996.

—Peter Limon, Head, Technical Support Section

I want to get back to an experiment and do some physics.

*—Peter Kasper, Research Division
Head, Operations Department*

In 1996, we will start factory production of permanent magnets to build an antiproton storage ring that will be operational by 1997. This storage ring is essentially a low-cost antimatter bottle made from refrigerator magnets. The ring will allow the Fermilab Tevatron Collider to achieve the intensity of collisions—but not yet the energy—originally planned for the Superconducting Super Collider in Dallas.

*—Bill Foster, Research Division
CDF collaborator*

1996 will be the year of peak activity in construction of the Main Injector. By year's end, the impending reality of having a new accelerator at Fermilab should have hit us. The project completion will be close enough that we will start to see it, smell it and taste it. As 1997 arrives, I look forward to contemplating life beyond the Main Injector project.

*—Steve Holmes, Accelerator Division
Main Injector Project Manager*

[Ed: The Main Injector Project is scheduled for completion in early 1999.]

Get fixed-target on. Pump resources into the Main Injector as much as possible. That's it.

—Dave Finley, Head, Accelerator Division

GIGAGAGGLE



PHOTO BY REIDAR HAHN

As neighboring ponds and lakes freeze, more and more geese spend winter nights on the warm waters of Fermilab's Swan Lake, part of the accelerator's cooling-water system. The geese fly off to forage during the day and make a dramatic and deafening return, en masse, at dusk. A late fall bird count estimated the Fermilab goose population at 11,000, which would actually put them only in the kilogaggle range.

ACCELERATOR UPDATE

JAN. 2-JAN. 8

This period saw the accelerator involved in colliding beam physics, antiproton stacking and machine studies. After Accelerator staff performed various maintenance tasks needed to get the machine running after the holiday shutdown, beam was circulating in the Tevatron by 4:52 p.m. on Jan. 2; tune-up followed. On Jan. 3, the evening shift performed a proton-only store prior to shot set-up. At 7:52 p.m., the first collisions since the shutdown took place with an initial luminosity of 0.36×10^{31} . From 8 a.m. Jan. 5 to 8 a.m. Jan. 8, there were 50.75 hours

of collisions in the 72 hours. During this time, the machine achieved an initial luminosity of 1.1×10^{31} . The Jan. 8 owl shift minded the latest store and stacked antiprotons for the entire shift; no downtime was accrued during this period.

■ **Selected accesses to beam enclosures:** On Jan. 3, Fermilab staff made accesses to the Main Ring tunnel, DZero detector area and CDF detector area. Accelerator staff discovered a bad kicker magnet in the Main Ring. Also, some downtime occurred on Jan. 5 due to a Booster injection device that required repair.

The Science of Doing Business *continued from page 5*

tion with DOE. In the past, Fermilab presented DOE with voluminous reports that focused primarily on Fermilab's adherence to the rules of operation. In contrast, the recent self-assessment report took more effort to prepare, but was shorter and included more information in the form of graphs, to help both Fermilab and DOE get to the heart of the matter.

LAB REACTION

Finks and Chrisman predict that the Baldrige program will be brought to bear on more Fermilab departments, or even to the Laboratory as a whole. Not all managers will be pleased with the plan. Ruth Christ, assistant personnel manager and team leader for the group that examined salary administration, found the Baldrige paradigm awkward and time-consuming. The area of salary administration, she feels, had the least-concrete output or service to talk about, and as a result, "it's hard to compare against 'best practices.'"

Nevertheless, performance measures are here to stay. Many who have had experience with the Baldrige plan are enthusiastic about how it worked for them. Pam Noyes in the Office of Public Affairs worked for a software-documentation group at Texas Instruments in a corporate division that won the coveted Baldrige Award in 1992, and says that when she was first approached by senior management to adopt the Baldrige style for her data management department, it just seemed like more paperwork. Things changed when she found a way to shorten the turnaround time for producing documentation: "Once I found a way to make the department more efficient, and created a way to measure that improvement and saw the results were positive, the enthusiasm snowballed. I think the reason the process works so well is that not only does it force you to analyze and create new processes, but because you create a measurement at the same time, you can see the benefits of your innovation." □

1995 FEECAP AWARDS

The Fermilab Employee Energy Conservation Awards Program announced cash awards for successful suggestions among those evaluated in FY1995. At an awards presentation held on December 13 in Wilson Hall, Director John Peoples distributed the awards. The winners were Mark Obrycki from the Research Division, who received a cash award of \$274, and Dennis Fashimpaur from the Accelerator Division, who received a cash award of \$898. Both awards were 10 percent of the estimated cost savings resulting from their suggestions.

Obrycki's suggestion involved lighting control for Site 49 Barns I and II. The committee estimated the suggestion would save 69 MWH per year of electrical energy and \$2,736 per year in net cost. Fashimpaur's suggestion involved lighting control for the Main Ring Zero and Service Buildings. The committee estimated the suggestion would save 234 MWH per year of electrical energy and \$8,976 per year in net cost.

The FEECAP committee evaluated 30 suggestions and completed 19 of them by the end of the fiscal year. □



Mark Obrycki (left) from the Research Division and Dennis Fashimpaur from the Accelerator Division receive their Fermilab Employee Energy Conservation Awards from Director John Peoples (right).

Photo by REIDAR HAHN

FERMILAB CALENDAR

JAN. 19

The Heartland Blood Center blood drive is scheduled for Friday, January 19, from 9 a.m. to 2 p.m. in the ES&H Training Center located on the ground floor of Wilson Hall.

JAN. 20

Fermilab Arts Series presents the Palladian Ensemble, playing music of Vivaldi, Gabrielli, Cavalli, Uccellini and others. Tickets \$15. 8 p.m., Ramsey Auditorium. Call (708) 840-ARTS for information and reservations.

JAN. 21

The Fermilab Folk Club is sponsoring additional barn dances in the months of January, February, March and April, to showcase some of the area's finest callers. The extra dances will be held on the third Sunday of the month from 2 to 5 p.m. Regular barn dances are on the second Sunday of the month from 7 to 10 p.m. For more information, contact Lynn Garren (x2061; garren@fnal.gov) or Dave Harding (harding@fnal.gov).

JAN. 25

Deputies Dean and Mary Beth Sloggett from the Kane County Sherriff's Dept. will be presenting a Brown Bag Seminar on "Gangs" in One West from noon to 1 p.m.

FEB. 1

Everyone is invited to join the fitness incentive program in which participants climb stairs in an effort to reach the top of Mt. Everest. You have 60 working days to complete the program. Registration must be made by February 1 and completed log sheets turned in by April 30. You can find the Climb Mt. Everest packets in the Recreation Office, WH15W or the Medical Office, WH1W. If you have any questions, contact the Recreation Office, x2548 or x5427.

FEB. 4

Fermilab Arts Series, in conjunction with the Northern Illinois School of Music, announces its second season of concerts by its quartet

in residence, The Arianna Quartet. 2 p.m., Ramsey Auditorium. No advance purchase is necessary. Tickets are available at the door 45 minutes prior to the concert for \$5.

FEB. 10

Fermilab Art Series presents the Joshua Redman Quartet. Redman, a jazz saxaphonist, will appear with Peter Martin, piano; Chris Thomas, bass; and Brian Blade, drums. 8 p.m. Tickets \$18. Ramsey Auditorium. Call (708) 840-ARTS for reservations and more information.

FEB. 24

Fermilab Arts Series presents Altan, playing with a distinctive style that combines the melodic quality of Irish tunes with the power and drive of Scottish music. Tickets \$15. 8 p.m., Ramsey Auditorium. Call (708) 840-ARTS for information and reservations.

LAB NOTE

URA SCHOLARSHIPS

Candidates for Universities Research Association (URA) scholarships are reminded that applications are due March 1. URA awards a number of scholarships to regular, full-time Fermilab employees' children who are currently high school seniors and who will begin a four-year college degree program next fall. Applications are available from, and should be returned to, Personnel, WH 15SE, Mail Station 124.

Scholarships are awarded on the basis of S.A.T scores. The maximum amount of the scholarship is \$3,000 for tuition and fees and is renewable for four years if the student progresses in good academic standing. Applicants will be notified regarding the scholarships in early April.



Lunch served from 11:30 a.m. to 1 p.m. - \$8.00/person
Dinner served at 7 p.m. - \$20.00/person

For reservations call x4512
Dietary Restrictions - Contact Tita, x3524

WEDNESDAY, JANUARY 24

Seafood Cannelloni
Boston Lettuce with Sun-Dried
Tomato Vinaigrette
Profiteroles

THURSDAY, JANUARY 25

Garlic and Onion Cream Soup
Beef Tenderloin and
Red Onion Kabobs
Bulgar Pilaf with Pine Nuts
Apple Raisin Strudel with
Calvados Cream

MILESTONES

RETIRED: Edward Norton Jr., ID #2307, on January 5, 1996. He began work at Fermilab on January 16, 1974, working as the Senior Technical Aide for the Accelerator Cryogenics Group.

RETIRING: John A. Dinkel, ID #141, March 1, 1996. He started at Fermilab April 1, 1968 and worked as an engineer with the Accelerator EE Support Group.

DIED: Anthony "Tony" Rader, on January 3. He worked at Fermilab from 1970 to 1989, serving as a senior mechanical technician in the Accelerator Division, where he helped install the landmark cryogenic system for the Tevatron. "The Cryo Group was a close-knit group," says former AD Head Rich Orr, "and Tony was one of the people who knit it together and made the Tevatron a success.

LETTERS TO THE EDITOR

In each issue, FermiNews assures readers that we welcome letters. At last, readers responded! Keep those cards and letters coming.—Ed.

Where is Harpers Index???
The Ferminews seems so lifeless now, what about stuff for the normal person???? What happen to the recycling articles????

-Denise Bumbar, Computing Division

I just received my Fermi news-letter for January 5th. It looks great! I love the new look. You all are working very hard at that newsletter and it shows.

*-Linda (looking for more snow tomorrow) Ware
CEBAF Public Information Officer
Newport News, VA*

CLASSIFIEDS

FOR SALE

■ Lazy Boy sofa and love seat, each with 2 recliner sections, less than 4 years old. \$800 or best offer takes both. Call Phil at x3953 or (708) 466-9601.

■ 3 bedroom house, full bath upstairs, half bath downstairs. Wood burning fireplace. Raised deck with full canvas awning, two mature trees. Three ceiling fans, A/C and furnace 5 years old. New stove, dishwasher, disposal. Washer and dryer negotiable. Call owners in evening at (708) 393-6236 or leave message. Asking \$109,000; negotiable.

■ 1990 Buick Skylark, 78,000 miles, new tires and muffler, excellent shape, second owner, \$6,400. Call Scott at (815) 824-2036

■ Baby Yellow Nape Parrots, hatched 11/27/95, incubator hatched and hand fed. These are one of the BEST talking birds. Personality plus, \$800 each. Call Edie at x3711 or (815) 496-9434.

■ Ethan Allen sofa bed with green upholstery, good, condition, \$200 or best offer. Call Ray at x3233 or (815)758-0977.

■ Olympic Games tickets for Atlanta Summer Games. July 20, 21 and 24, 1996. Will sell at cost. Call Ed at x2887.

■ 1990 Mitsubishi Eclipse GSX, all wheel drive, 16 valve dual overhead cam intercooled turbo, 5 speed, AC, cruise, FM/AM cassette, 68,202 miles. New: 1KA battery, brakes, timing belts, Pirelli P7000 205/55ZR16. Must see (no rust) and test drive; \$9513. Call Bob x3769, (708) 879-6355, or FLORA@ADMMAIL.FNAL.GOV.

■ Woman's ski jacket (pink with blue trim), bibs (pink), bibs (blue), all size Large. Good condition. \$25 each or best offer. Call Marilyn at x8447 or (708) 406-1530 in evening.

FOR RENT

■ Sublet in Batavia, 2-BR on 3rd floor of nice building, laundry room, \$639 + 1 month deposit. Call Marilyn at x8447 or (708) 406-1530 in evening.

WANTED

■ Radios: Pre-1950, parts, test equipment, tubes or radio literature. Call Dennis at x4190 or evenings at (815) 786-8083.

The deadline for the Friday, February 9 issue of FermiNews is Tuesday, January 30.

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

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

FermiNews

Fermi National Accelerator Laboratory

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