

# Ferminews

FERMI NATIONAL ACCELERATOR LABORATORY

## Ellis named head of Theory Department

Director **John Peoples** has appointed **Keith Ellis** head of the Theoretical Physics Department. Keith replaces **Bill Bardeen** who is leaving the Laboratory to head the newly forming Theory Department at the SSC Laboratory. Bill served as head of the Fermilab Theory Department for five years. "Bill has been a superb head of the theory group here and it will certainly be a challenge to do the job as well as he has done," said Keith.

A native of Aberdeen, Scotland, Keith joined the Laboratory in 1984. He has a Ph.D. in physics from the University of Oxford. Prior to joining the Fermilab staff, Keith served on the research staff at Instituto di Fisica in Rome, Italy and as a research fellow at CERN, CALTECH, MIT and Imperial College, London.

**Chris Quigg**, a member of the department who served as its head from 1977 until 1987, is excited about Keith's recent appointment. "I am quite delighted that Keith has agreed to do this. He is a first-rate scientist and one of the most important people in the world for the study of the strong interactions—really the acknowledged expert. He is a person with very high standards and a lot of energy. He will have new ideas and a new vision which will really be very good for us."

There are now approximately 25 members of the theory group. But, according to Keith, there has been some turnover which he views as positive. "It is good that people come here and experience the research environment and then move on to positions of influence elsewhere in the community." Traditionally, particle theory in the US has been done at universities. According to Chris, there is a special opportunity here at Fermilab for theorists who are interested in having a frequent interchange with experiments.

The theory program has existed at Fermilab since the beginning of the Laboratory and became a permanent part of the Laboratory in the early 1970s. Ben Lee, a Stony Brook theorist served as the first head of the Fermilab Theory Department. According to Chris, Ben set out to build a strong theoretical physics department—not just one that concentrated on day-to-day, routine types of problems, but one from which ideas would come. "Since Fermilab was to be the most important Lab in the U.S. in particle

physics, it was our goal to have a theoretical physics department that was matched to that," said Chris.

From its inception, the Theory Department has served as one of the centers of the intellectual life at the Laboratory. A very early contribution made by the department to the scientific community was the introduction of the wine and cheese seminars in the fall of 1972. This Joint Experimental Theoretical Seminar designed for the informal exchange of ideas has now grown from a small gathering of around 20 people to an "almost national" seminar that often bursts the confines of Curia II.

The Fermilab Theory Department is made up of people who are interested in particle physics and try to make sense of the experiments that are done here and elsewhere. Keith described the department as the "intellectual powerhouse of the Laboratory." "We generate some of the ideas which get tested in the experiments. We work out in detail the ramifications of those ideas. We also have a lively interest in advanced computing which is required for our lattice gauge project."

Aside from the experimental link, the Theory Department also has members who are dealing with the more abstract side of theoretical physics. "We have people who work on the more formal aspects of quantum field theory," said Keith. "It is quite important for the rest of us who value the links with the experimental program to have those people around because it is part of the stimulation for us to understand the formal developments and ideas," said Chris. The Theory Department also has a close relationship with the Astrophysics Department. Several times in the past collaborative papers have been written by members of the two groups.

Over the years, theorists have helped steer the agenda of the high-energy physics program by looking ahead and making suggestions for future measurements or machines. One such example was a now famous paper, written by **Estia Eichten**, Fermilab, I. Hinchliffe, Lawrence Berkeley Labo-

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Keith Ellis

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Please send your article submissions or ideas to the Publications Office.

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*In a yearlong celebration of the Laboratory's 25-year history, Timeline: A Date to Remember has relived some of the most significant events in the quarter century of physics at Fermilab (1967-1992). From the site selection fervor of the 1960s to the record achievements of the past collider run, the monumental human effort that went into making Fermilab the world's preeminent high-energy physics institution has involved countless people from many different walks of life. Engineers and physicists came to build this place, but so did craftsmen and managers, laborers and technicians. In a very short time, the product of their work became the stuff of which legends are made. Chronicled over the years in publications such as Time and Science and broadcast on television shows and radio programs, an almost unimaginable science riveted the world's attention on a parcel of farmland in suburban Batavia.*

## **Timeline: a date to remember**

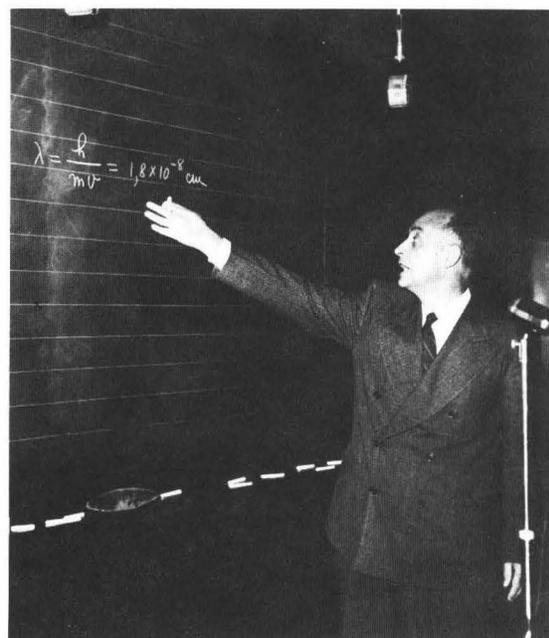
### **December 2, 1942**

The story of Fermilab's successful exploration of the subatomic world parallels the tale of another famous development, one which first brought physics into the international spotlight and one which is as appropriate a place as any to end this historical series. The time was fifty years ago, the world was at war, and Chicago was the staging ground for perhaps the single most influential event of the twentieth century—the controlled release of nuclear energy on December 2, 1942.

The work that brought Nobel prize-winning physicist Enrico Fermi to Chicago began at New York's Columbia University in 1939. It was there that Fermi, leading one of two independent research groups, published results showing that uranium bombarded by neutrons released additional neutrons which might be capable of producing a self-sustaining nuclear chain reaction.

By 1941, the two Columbia groups had merged into one unit to design and build a "pile" of uranium and graphite that would sustain such a chain reaction. The phenomena the group was attempting to understand and harness resulted when neutrons escaping from uranium atoms in a pile of uranium and graphite collided with other uranium atoms in the reactor pile, fissioning the atoms, releasing additional neutrons and also creating energy. The group's tasks were twofold: first it had to understand the fission process, and second it had to build a device capable of generating a self-sustaining, energy-producing chain reaction. In April of 1942, the team left New York for the University of Chicago where it began building the test piles of uranium and graphite that would ultimately lead to the construction of Chicago Pile One, the world's first nuclear reactor.

Once in Chicago, Fermi's group worked around the clock conducting measurements, pressing the uranium pellets and machining the graphite bricks that went into making the subcritical test piles. By the middle of that year, the team had measured the neutron emission from enough subcritical piles to design a pile of critical size, one that was capable of sustaining a chain reaction. CP-1 was called a pile because of its design. Rectangular bars of graphite, used to decelerate the speeding neutrons, had holes drilled in them to accommodate slugs of uranium and uranium oxide fuel. In the final design, the lattice of bars would be stacked like building blocks one on top of another in a somewhat circular, roughly twelve-



*Enrico Fermi was a Nobel-prize winner who was both an enthusiastic teacher and one of the outstanding lecturers at the University of Chicago.*

foot tall and twelve-foot-high mound or pile.

Thirty subcritical piles were built and tested before construction of CP-1 began in November of 1942. For the pile to achieve critical mass—a size where it would produce a self-sustaining chain reaction—Fermi's team pressed 22,000 plugs of uranium oxide, embedding them in bars milled out of 400 tons of graphite. Although the scientists had intended to move their materials to a new laboratory in the Argonne forest southwest of Chicago to construct CP-1, a labor strike threatened to slow down the new lab's construction and forced a change in plans. Because of the urgency imposed by the war, CP-1 would be built at the University of Chicago where the subcritical piles had been tested—in the squash courts under the west stands of Stagg Field.

Construction of the pile began on November 16, and layer after layer of graphite bricks, some fitted with uranium oxide and some without, were placed on the floor of the squash court in the form of a sphere. Wooden framework supported the underside of the growing pile, and uranium metal plugs were used in the center to maximize the neutron interaction. By the end of the month, the pile was nearing completion and would reach critical mass when the fifty-sixth layer was added.

The Manhattan Engineer District, the War Department's program for harnessing atomic energy, was betting heavily on the successful outcome of the Chicago experiment to advance its weapons development. At about the same time the Chicago

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## “A penny saved is a penny earned”

This might be an old adage, but as a seminar held at Fermilab last month demonstrated, it is still one that is quite applicable to today.

The seminar on personal budgeting and money management was hosted by the Employee Assistance Office and presented by Diane Bedenbaugh, Program Director of the Consumer Credit Counseling Service in Aurora.

During the seminar, Diane stressed that the most important aspect of saving money is always knowing where your money is going.

“Most people have never been taught to budget, or they have tried to do it and have had an experience where it looked like there will be plenty of money at the end of the month, but by the actual end of the month, they don’t know where their money went. For financial freedom, you need to know where that money is going,” Diane said.

The first step in achieving financial freedom is to have a plan and to budget. People need to plan for the future, for major purchases and for periodic expenses, Diane said, and then they need to develop a budget and follow it as closely as possible. In order to do this, it is important to distinguish between wants and needs. “Most Americans are not very good at doing that,” Diane added. “We have been inundated with advertising, and culturally we are then sold a bill of goods about what is important. You really need to take a look at what is a need and what is a want. With the availability of

credit, people have not been able to distinguish between them. That line has become blurred so that it is ‘yes, I can have it now and pay for it later.’ That has gotten people in trouble with credit card debt.”

It is important to set priorities in order to avoid this trap, Diane added. “Anything that is secured, such as your car or your home, has to come first. Your priorities need to be with your home, your car. You need to make sure you can get to work. The credit cards and the consumer debt is secondary.”

To keep track of your finances, Diane suggested keeping a budget book in which you literally record every penny you spend during one month. By doing this, Diane said, you will know exactly where your money goes and then you will be able to target the areas where you need to cut back on spending. This will also let you add items to your budget that you had not considered.

Diane also stressed the importance of saving money. “Another basic tenant of financial management is to pay yourself first. Most Americans are not very good at savings, yet it is probably the most important thing. Even if you can only afford \$5, \$10 a month, whatever it might be, you need to put your own priorities first and think of it as though you are paying yourself just like you are paying Commonwealth Edison or whomever.”

Diane said that the Consumer Credit Counseling Service provides a debt management program for people who are having trouble balancing their finances. Fees range from \$5 to \$20 plus a \$10 initial appointment fee.

## Theory Department continued

ratory, K. Lane, Boston University, and Chris Quigg, Fermilab, that formed the scientific case for the SSC. “By no means does this mean that all the important developments have begun at Fermilab, but certainly a fair share of the most influential work has been done here,” said Chris.

As the head of a department with a distinguished past, Keith is very excited about the future at Fermilab and the challenges ahead. “We are very excited that the

top quark may be discovered here within the next year. We had many people in our group who worked very actively on estimating signals and backgrounds for the top.” “The opportunity to be at a place where our ideas or the ideas of our colleagues are actually put into action and tested is very special,” said Chris.

## Ten basic rules of money management:

- **Plan** - Plan for the future, major purchases and periodic expenses.
- **Set Financial Goals** - Determine short-, mid- and long-range financial goals.
- **Know Your Financial Situation** - Determine monthly living expenses, periodic expenses and monthly debt payments. Compare expenditures to monthly net income. Be aware of your total indebtedness.
- **Develop a Realistic Budget** - Follow your budget as closely as possible. Evaluate your budget. Compare actual expenses with planned expenses.
- **Don’t Allow Expenses to Exceed Income** - Avoid paying only the minimum on your charge cards. Don’t charge more every month than you are repaying to your creditors.
- **Save** - Save for periodic expenses, such as car and home maintenance. Save 5 to 10 percent of your net income. Accumulate 3 to 6 months salary in an emergency fund.
- **Pay Your Bills on Time** - Maintain a good credit rating. If you are unable to pay your bills as agreed, contact your creditors and explain your situation.
- **Distinguish the Difference Between Wants and Needs** - Take care of your needs first. Money should be spent for wants only after needs have been met.
- **Use Credit Wisely** - Use credit for safety, convenience and planned purchases. Determine the total you can comfortably afford to purchase on credit. Don’t allow your credit payments to exceed 20 percent of your net income. Avoid borrowing from one creditor to pay another.
- **Keep a Record of Daily Expenditures** - Be aware of where your money is going. Use a spending diary to assist you in identifying areas where adjustments need to be made.

—Courtesy of the *Consumer Credit Counseling Service*

## Medical Office to offer flu shots

Flu shots will be offered to Fermilab employees December 9 at noon in the Medical Office. The program is sponsored by the Visiting Nurse Association and will cost \$8. Employees can pay by cash or personal check payable to VNA. If you are interested in getting a shot, please call Medical at x3232 by December 7.

The Medical Office said most doctors recommend that anyone who is frequently near others who are susceptible to flu, such as young children or older persons, should get a shot to avoid catching the virus. People with many allergies should avoid having a flu shot.

## Nalrec news

The Christmas Dinner Dance is December 18 at the Wilton Manor in Wheaton. It will be a great time, one you won't want to miss. Cocktails will be served from 7 p.m. to 8 p.m. at the cash bar, followed by a sumptuous dinner at 8 p.m. The cost is \$25 per person. Music will be provided by the big band sounds of the Allen Lake Orchestra and a disc jockey. Tickets are available at the Wilson Hall reception desk.

Santa Claus is coming to town on December 13 from 1 p.m. to 4 p.m. Cartoons, punch, cookies, toys and "the works" are on the agenda for all little ones under the age of eight.

Nalrec and Princess Vacations are sponsoring three trips to the Bahamas this winter. Packages include a golf outing, a Super Bowl extravaganza and fun in the sun at prices starting as low as \$329 per person. For further information contact Jesse Guerra at x4305, MS 221.

## CU seeks directors

The Argonne Credit Union is seeking directors for the 1993 Board positions. No experience is necessary—just a sincere desire to become involved. This is a great opportunity to help the entire membership of your credit union. All ACU members in good standing are eligible. To be considered as a candidate, just stop by the Credit Union Office located in Wilson Hall 1 West and request an application packet.

For further information contact Rudy Gebner at 708-252-4752 or Karl Whitten at x2198.

## Sensitive item inventory reminder

Sensitive item inventories that were sent out on October 19, 1992 are due in the Property Office today, December 4, 1992. If you are having any problems or need questions answered, please contact Denise in the Property Office on x3585. We are desperately trying to get these inventories correct and up to date. Thank you in advance for your cooperation. — Denise Bumbar

## NALWO events

All women associated with Fermilab are invited to the annual NALWO Christmas Tea hosted by Nancy Peoples on December 10 from 10 a.m. to noon. Please bring your favorite dessert or appetizer to share. Babysitting will be provided at the playgroup, but call in advance to make reservations. Nancy's home is located at Site 29 and her driveway entrance is the first road going south after you enter the Wilson Street gate at Fermilab. For more information call Selitha Raja at 708-665-5539 or Brenda Kirk at x3440.

All adults and children are welcome to the Holiday Folkdance Party on December 11 from 7:30 p.m. to 11:30 p.m. at the Village Barn. Live music will be provided by the Jutta and Hi-Bukes Band from Chicago. Cost is \$4 for adults and \$1 for children. Donations for snacks are welcome.

A Christmas carol and cookie exchange day will be December 17 at the Users Center. Bring a dozen of your favorite cookies or goodies from 1 p.m. until 4 p.m. Enjoy an informal afternoon of singing carols around the piano and nibbling goodies.

## Playgroup plans activities

The playgroup will sponsor trips to the Discovery Zone on December 16 and January 22. Meet at the playgroup at 9:30 a.m. or join us there at 10 a.m. Cost is \$2.95 per child, adults are free. An optional meal deal is also offered for \$2. We will return to the playgroup by 1 p.m. Call Annamaria at 708-897-7228 for more information.

Upcoming playgroup events include a party for children with Santa at the Village Barn on December 22 and a bus trip to *Disney on Ice* in late January or early February. Watch for a flyer on these events, or call Annamaria or the playgroup at x2034.

## Movie schedule announced

The Fermilab International Film Society presents movies from all over the world. Movies are shown at 8 p.m. Fridays in Ramsey Auditorium.

December 4: *Animated Shorts*, a diversity of international works includes 1982 Academy Award winner *The Fly* from Hungary and 20 commercials produced for European television. From the Chicago Filmmakers collection, 100 minutes.

December 18: *The Unbelievable Truth*, mild-mannered Josh is the nicest mass murderer you've ever met in a sunny black comedy directed by Hal Hartley, U.S., 1990, 90 minutes.

January 8: *Vincent: The Life and Death of Vincent van Gogh*, images from the artist's life-landscapes he loved, canvasses he painted. John Hurt narrates from van Gogh's letters, Paul Box, director, Australia, 1987, 99 minutes.

January 22: *The Cook, the Thief, His Wife & Her Lover*, a shocking, savage fable about corruption and cruelty, power and perversion in the modern world. Peter Greenaway, director, France-Holland, 1989, 126 minutes.

## Annual Reports still available

Copies of the *Fermilab 1991 Annual Report* are still available from the Public Information Office (WH1E) and the Publications Office (WH6NW). If you would like a copy, stop by and pick one up.

## Congratulations to

Scot and Kelley Trombly-Freytag (TS/MTF) on the birth of their daughter Rebecca Lynn. Rebecca was born July 24, 1992 at 2:23 p.m. at Central DuPage Hospital in Winfield. She weighed 7 lbs., 13 oz. and was 20 inches long. Rebecca is the Trombly-Freytag's first child.



## Fermilab presents

### *Amahl & the Night Visitors and We Wish you a Merry Christmas*

Written in 1951, *Amahl's* world premiere performance was televised nationally on NBC's Hallmark Hall of Fame, and was repeated thereafter for 16 Christmases, becoming a beloved holiday classic. David Aiken, of the New York City Opera, played King Melchior in that original cast. This international tour, directed by Mr. Aiken, presents the production complete with soloists, chorus and instrumental ensemble. This heartwarming story in music will be presented at Fermilab's Ramsey Auditorium on Saturday, December 12 at 8 p.m.

The tender Christmas opera tells of a little crippled boy and his mother, and the unbelievable night they were visited by the three kings on their star-guided journey. *Amahl*, a one-act musical, lasts about one hour and will be followed by *Christmas Around The World*. Outstanding arrangements give a new twist on carols from many nations sung and played by the entire ensemble, highlighting some of the brightest new operatic talent. In keeping with the holiday spirit, the audience will be invited to join the cast in singing several Christmas favorites.

Don't miss this timeless holiday classic. Tickets are \$11. For further information or telephone reservations, call 708-840-ARTS weekdays from 9 a.m. to 4 p.m. At other times an answering machine will give you information and a means of placing ticket orders.

## Free blood pressure checks offered

The Medical Office will be giving free blood pressure checks in the Wilson Hall atrium on Tuesday, December 15 from 11:30 a.m. to 1 p.m. Come for your free check – just for the health of it.

## Benefits notes

### Beware of withholding tax trap

On January 1, 1993 a new federal law will require 20 percent withholding from most cash distributions out of a retirement plan unless that money is rolled over **directly** into an IRA or into another employer's plan. How will this effect Fermilab employees?

Employees who retire or terminate their employment in 1993 or later and elect cash distributions from their retirement annuities to the extent permitted under the pension plan and supplemental retirement accounts, will have to pay the 20 percent withholding. In addition, active employees eligible to elect cash withdrawals from supplemental retirement accounts will also be affected by the 20 percent withholding. To avoid having 20 percent withheld from your distribution, you must have a **properly** executed rollover to an IRA or to another employer's pension plan. This means that you must not receive the distribution. The distribution must transfer directly from one fund custodian to another fund custodian.

If you do receive the funds, all or part of the withholding may be refunded to you when you file your income tax return for the year of the withdrawal. It depends upon your individual tax situation. Before making a cash withdrawal you should seek counsel from your own tax advisor.

Retirement benefits paid to you as lifetime annuity income, as a series of substantially equal payments over a period of ten or more years, or as required minimum distributions, are not affected by this new law.

Why did Congress pass this law? While the government has the withheld funds in its possession, that money is to be used to pay for unemployment benefit extensions passed by Congress.

The November 1992 issue of *The Participant*, TIAA-CREF's quarterly newsletter which is mailed to participant's homes, had a very good article detailing the impact of the new law on TIAA-CREF participants. A copy of the article is available from the Benefits Office. – Paula Cashin



## Milestones

### Employees honored for 10 years of service

Associate Director Dennis Theriot presented 10-year service awards to 25 Fermilab employees at a luncheon held October 14 at Chez Leon. The recipients were (Row 1, l to r) Al Moretti, Dave DuPuis, Fritz Lange, Dave Jakubek, Martin Valenzuela. (Row 2, l to r) Lauren Curry, Dennis Theriot, Robert Vargo, Jean Poore. (Row 3, l to r) Gary Coppola, John Cade, Raimundo Fonseca, Jon Sheley, Sue Grommes, David Christian. (Row 4, l to r) Bryan MacKinnon, Rich Farritor, Mike Coburn, Llyod Shepard. (Row 5, l to r) Jim Briggs, Wes Mueller, Mark Knapp, Tom Pawlak, H.L. Stephen and Dean Connolly.

### Stanfield and Kephart elected to APS fellowship

The American Physical Society recently announced the election of Deputy Director **Ken Stanfield** and **Robert Kephart** (RD/Col. Det. Dept.) to the rank of Fellow. Election to fellowship in the APS is limited to no more than one half of one percent of the membership in each division of the APS. Only one in 200 of the division members can become fellows in any one year. Ken and Bob are members of the Division of Particle and Fields.

Ken was elected to fellowship "for contributions to the success of the U.S. High-Energy Physics program as an experimental physicist and as a leader and manager of the Fermilab research program for 15 years." Bob was noted for his "leading role in the building, operation and physics of the CDF Detector." Ken and Bob will be honored at the next APS Division of Particles and Fields business meeting to be held in Washington, D.C. in April 1993. At this



Ken Stanfield



Robert Kephart

meeting, each newly-elected Fellow will be presented with a Fellowship Certificate. Their election to Fellow will also be noted in the March 1993 *APS Bulletin*.

Also elected into Fellowship at the November meeting was James E. Griffin, a long-time Fermilab employee. He retired June 28, 1991 from the Accelerator Division.

## College lab named after ESL teacher

Foreign language students at North Central College in Naperville can now supplement their foreign language classes with tapes, videos and computer programs in a new language laboratory, thanks to a \$100,000 gift from the late Roberta I. Myers, Fermilab's former English as a Second Language teacher and 1963 graduate of North Central.

Roberta worked at Fermilab for nearly ten years until her death in November 1991. As Fermilab's ESL teacher, she touched the lives of countless people around the world whose stay at Fermilab was enhanced by her patient instruction and devotion to education.

The Roberta I. Myers Language Resource Center features a state-of-the-art console and control center and provides a variety of study materials to aid students in their foreign language classes.



R. Myers (top, r) with ESL students

## In Memoriam

Stephen Dachwat, a member of the Accelerator Division, passed away Sunday, November 22, 1992 after a lengthy illness.

Stephen joined the Laboratory in June 1978. For the last eight years he worked in the Cryogenics Systems Group.

Services for Stephen were private. He is survived by two sons.

## Pierce stars in local play

**Rick Pierce** of the Research Division/Instrumentation group is starring as Artie in the Albright Theatre Company's presentation of *The House of Blue Leaves*.

This will be Rick's first show in eight years. Rick has been involved in theatre since he was nine-years-old and at one time owned his own theatre company.

The play will be held at the Batavia Government Center, 101 N. Island Drive in Batavia, December 4, 5, 11, 12, 13, 18 and 19. The play begins at 8 p.m. each Friday and Saturday night. The Sunday matinee show begins at 2 p.m.

## For your safety: Tips for Winter Driving

- \* Test brakes, battery, exhaust system; add anti-freeze, winter-weight oil.
- \* Install snow tires on drive wheels.
- \* Carry sand, salt, shovel, chains, snow-scraper, blanket, booster cables and flashlight.
- \* If you skid, do not brake—take your foot off the accelerator and turn your car in the direction that you want the front wheels to go.
- \* If you get stuck, pour sand, salt or gravel around the drive wheels to give them something to grab onto.
- \* Use low gears when traveling on slick surfaces (especially hills) to give added traction.
- \* If weather and visibility are truly hazardous, stay home.

—Parlay International

## Timeline continued

team was nearing critical mass, the Manhattan Engineer District began negotiations to build production-scale plants based on the Chicago pile at Hanford, Washington and at Oak Ridge, Tennessee. Success at Chicago was imperative to ensure a quick end to the war.

On December 1, Fermi ordered that the fifty-seventh layer be added to the pile to bring it to just above the critical stage. That night, the cadmium rods that prohibited the pile from reacting were locked in place in preparation for the next day's measurements. At mid-morning, Fermi initiated the experiment by instructing George Weil to manually slide the last cadmium control rod about halfway out. The neutron intensity in the pile rose and then leveled off. Fermi made some calculations and instructed Weil to slide the rod six inches. Again, the neutron intensity rose and leveled off at exactly

the point Fermi had predicted. The experiment proceeded this way for several more attempts until the measurement instruments were no longer in their operating range. The pile, however, was still subcritical.

After breaking for lunch, the crew returned in the afternoon to resume their trial. The morning session proved that Fermi could predict the reaction of the pile, both how fast the neutron intensity would increase and at what point it would level off. The afternoon's measurements would determine how far the control rod needed to be removed before the pile would become self-sustaining.

At 2 p.m., Fermi reinitiated the series of measurements. He began with the control rod set to the position where it had been in the morning, made some measurements and moved it to where it had been just before lunch. Predictably, the measurements climbed and then leveled off. After moving

the rod out another six inches and accurately forecasting another leveling off of the neutron intensity, Fermi directed Weil to pull the control rod out another twelve inches. This time, as Fermi had calculated, the count did not level off; instead, it began to rise at a constantly increasing rate.

At 3:36 p.m. in an athletic building-turned-laboratory on Chicago's lakefront, 42 scientists witnessed Enrico Fermi initiate the first self-sustaining nuclear chain reaction. The secret event was short-lived, lasting only seventeen minutes before Fermi ordered the control rod reinserted, but nonetheless it marked a significant moment in the history of world events. It was here that Fermi had proven atomic energy could be harnessed, and it was here in Chicago that the world first entered the atomic age.

—Brian Charles

# Cold weather saavy prevents mishaps

Many people think they know how to deal with cold weather and the hazards that it creates. But accident statistics at Fermilab have shown that during the winter months there is an increased accident frequency rate.

We must all recognize these hazards and take special precautions to protect ourselves and others during these dangerous months. It is important that we keep in mind that winters can be safe, comfortable and fun if you know how to guard against cold weather hazards.

Here are some tips on things you should know:

## Dress Warmly:

- Use several layers of clothing rather than one.
- Outer layer of clothes should be hooded, wind and waterproof.
- Use mittens - they are warmer than gloves.
- Wear proper boots for protection and comfort.
- Wear sunglasses for winter glare.

## Slip & Fall Hazards:

- Be alert to slipping and tripping hazards on walkways and in work areas caused by snow and ice.
- Use salt or sand to tame ice. Where possible, locate these materials near all doorways and walkways. (Salt can be obtained from Roads and Grounds.)

- Clean walks, steps, stairs and all danger spots first. Loading docks, work areas, etc., must always be made safe.
- Employees should stay on approved walkways to keep from slipping or falling in areas where snow has not been removed.
- Overshoes or boots are recommended to be worn.

## Carbon Monoxide:

- Carbon monoxide is an odorless, tasteless gas which cannot be seen. Gasoline and diesel engines, etc., must be vented into open air so deadly carbon monoxide fumes can be dissipated. Check exhaust lines for pinhole leaks.

## Watch out for Icicles:

- Keep overhanging snow, ice and icicles off of roofs and eaves over doorways, work areas and walkways throughout the winter. Rope off hazardous areas and post danger signs so someone does not get injured while the area is being cleared.
- Persons doing the cleaning must protect themselves and pedestrians in the area.

## Portable Heaters

- Check for frayed cords or broken filaments. Keep them away from curtains and furniture.

— Ron Ward, Safety Coordinator

## Know before you go

Information on emergency closings at the Laboratory and other nearby facilities and schools during the winter can be heard on the following stations:

WMAQ 670 AM • WGN 720 AM • WBBM 780 AM

WLS 890 AM • WLS 94.7 FM • WBBM 96 FM

WUSN 99FM • FOX TV Channel 32

You can also obtain closing information about specific facilities by calling the Emergency Closing Center Hotline at 1-900-407-SNOW. To obtain information on Fermilab, dial 1-900-407-SNOW (1-900-407-7669) and then enter Fermilab's main phone number, 708-840-3000. The call costs \$.95 per minute and requires a touch-tone phone.

## Classified ads

**1981 Toyota Corolla**, auto., A/C, some rust, very reliable, many new parts, 125K miles, \$800 o.b.o. Call x8599 or 708-406-1865.

**1982 Volvo**, beige. New Aquatread tires, new brakes and calipers, new exhaust sys., new belts, 102K miles. Ready for another 100K, \$2,900 o.b.o. Call Joy at x8209 or 708-729-3453.

0.45 carat **Marquis-cut diamond ring** with accompanying gold ring. Appraised at \$1,600. Will sell for \$700. Call Mike at 708-879-6095.

For sale: **Pool table**, great condition, \$400; **antique radio cabinet**, \$125; 1945 **Coke machine**, needs work, \$200; 1940 **Mills juke box**, needs work, \$250. Call Mike Carson at 312-772-8787, 24 hours a day.

Canon AE1 **35mm camera** w/50mm lens, 80-200mm telephoto (Macro) lens, and Vivitar flash unit, only \$100. Call x3103 or 708-553-7644.

**House for rent:** 3BR, living and dining room, kitchen, full basement and attic, 2 car garage, \$600/mo plus utilities. Call T.J. at x4777.

**Roomate wanted:** 4 BR house in Nprville. \$325 + utilities + \$325 sec. dep. Avail. immed. Call Leslie at 708-778-6067 or FNALD::GROER.