FermiNews

October 5, 1990 Vol. XIII, No. 12 Fermi National Accelerator Laboratory

Physicist Michael Riordan to join URA headquarters staff

John S. Toll, President of Universities Research Association, Inc. (URA) announced that Michael Riordan of the Stanford Linear Accelerator Center (SLAC) has been named URA Staff Scientist and Assistant to the President. Riordan will take a leave of absence from his current post as Science Information Officer at SLAC to accept the new position at URA Headquarters, effective December 1, 1990. URA, a consortium of 77 universities in the United States and Canada, is management and operating contractor to the Department of Energy for Fermilab and the SSC Laboratory.

Dr. Toll explained, "We are fortunate that Michael Riordan has agreed to contribute to URA his unique combination of scientific expertise and creative talents during a critical stage of development of both URA laboratories. Fermilab's Tevatron is the world's highest energy particle accelerator and collider; with its planned upgrades, Fermilab will be the likely location for discovery of the "top quark" and other important advances—thereby maintaining its leadership role throughout the coming decade and attracting outstanding scientists from all over the world. It will also provide experience vital for preparation for the SSC."

"The Supercollider, with twenty times the energy of the Tevatron, will be the world's major facility for even higher energy physics as we enter the twenty-first century. The SSC Laboratory will open a new frontier in study of the most fundamental laws of nature, giving invaluable information on the origin of mass, the basic interactions of matter, and the processes that determined the structure of the universe. Michael Riordan will be a tremendous asset in meeting the growing demands placed on URA by the global scope of these laboratories."

Riordan received his Bachelor's and Ph.D. (1973) degrees in physics from the Massachusetts Institute of Technology, remaining at MIT until 1976 as a Research Associate in high-energy physics. Between 1976 and 1983, he served as Editor and Publisher of Cheshire Books in Palo Alto and co-authored *The Solar Home Book* (1977). Returning to high-energy physics in 1985 as a Research Scientist with the University of Rochester, he served as spokesman for SLAC Experiment 141, a beam-dump search for short-lived axions. While there, he completed a book based on the MIT-SLAC inelastic electron scattering experiments that discovered quarks; in 1988 he received the American Institute of Physics Science Writing Award for the book, *The Hunting of the Quark* (1987). He also co-authored with David Schramm of the University of Chicago, a book about dark matter and the structure of the universe, *The Shadows of Creation*. This book will be published in 1991. Riordan has continued his research at SLAC in electron scattering.

Michael Riordan was born December 3, 1946 in Springfield, Massachusetts. He resides in the town of Soquel, near Santa Cruz, California.
—— *URA Press Release*

Village of Plainfield says thanks

Andy Mravca, DOE Batavia Area Office Manager, recently received the following letter from the Plainfield Village Administrator expressing appreciation for the assistance given to the Village by DOE, Fermilab and Lab employees **Rich Kujath, Dave Shemanske, Manual Garcia, Brian Needham, Kenny Parker, Jim Kalina, Fred Torres, Lonnie LaSourd, Bob Hall** and **Bill Stearn**.

Plainfield was devastated by a tornado that struck the Village on Tuesday, August 28.

Dear Mr. Mravca;

The President and Board of Trustees, staff and citizens wish to express our deepest appreciation for your assistance following the tragic tornado last week. Without your help and presence, the cleanup and rebuilding would not be progressing as it is. Your presence here has boosted the morale of all those touched which is essential in the coming months of rebuilding.

Sincerely,
Mark C. Pusinelli
Village Administrator

Fermilab Golf League

News from the country club set

The Fermilab Golf League (144 golfers–does this mean we are gross?) has wrapped up the 1990 season with a most enjoyable year-end tournament and banquet held at the Edgebrook Country Club in Sandwich. This year the prestigious title "Fermilab Champs" belongs to two teams who played to a tie: the Fox Valley Wednesday League and the St. Andrews League.

Vic Kuchler and **Dan Snee** organized the tournament with help from **Larry Allen, Paula Cashin, Michelle Gleason, Pat Liston, Don Rogus** and **Terry Sager.**

Trophies were presented to the following teams:

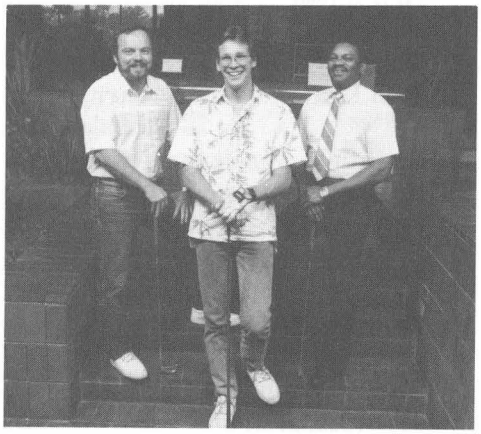
St. Andrews League
First place: **Yasuo Fukui, Bob Johnson, Mike Matulik** and **Pat Liston**. Second place: **Mike Hislop, Steve Holmes, Fred Ullrich** and **Ralph Pasquinelli**. Third place: **Jim Krebs, Jim Harder, Kelly Dixon** and **John Urbin**. Most Points: **Mike Hislop** (29). Low Average: **Yasuo Fukui** (41).

Wednesday Fox Valley League
First Place: **Bob Scherr, Bill Strickland, Al Guthke** and **Marty Solis**. Second Place: **Charlie Briegel, Gene Dentino, Ed Wilmsen** and **Ed West**. Third Place: **Darrell Sigmon, Claudie King, Mark O'Malley** and **Dave Hornback**. Most Points: **Bob Clark** and **Gerry Dyche** tied (33). Low Average: **Mike May** (39).

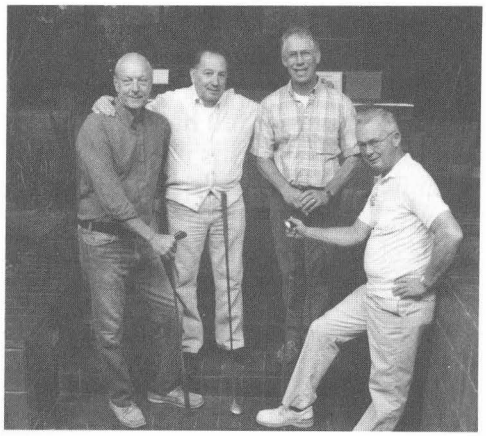
Tuesday Fox Valley League
First Place: **Rudy Banks, Herb Hill, Mary Hill** and **Willie Yang**. Second Place: **Kevin McDonough, Marty Solis, Dave Seifert** and **Gary Smith**. Third Place: **Glenn Federwitz, Steve Baginski, Wayne Johnson** and **Paul Allcorn**. Most Points: **Rudy Banks** (39). Low Average: **Darrell Sigmon** (41).

Prestbury League
First Place: **Bill Booth, Al Baumbaugh, Rich Mahlum** and **Ken Treptow**. Second Place: **Don Flynn, Joe O'Malley, Kevin Martin** and **Gerry Sorensen**. Third Place: **Rick Dixon, Don Arnold, Jim Kerby** and **Bob Andree**. Most Points: **Rich Mahlum, Don Arnold** and **Jim Harder** tied (29). Low Average: **Bill Booth** (40).

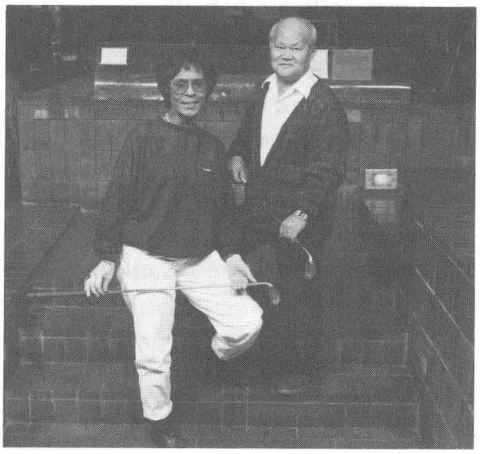
The new Golf League Committee members named to a two-year term are: **Don Arnold, Al Baumbaugh, Ed Crumpley, Mike Mascione, Gary Verseput** and **Mike Ziomek.**
—— *Michelle Gleason*



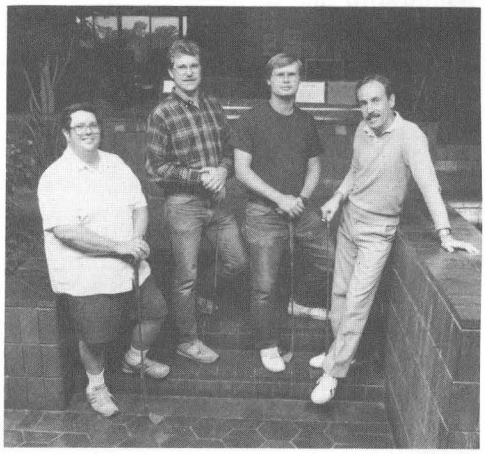
(L.) St. Andrews League first place winners are: (L. to R.) Pat Liston, Mike Matulik, Bob Johnson and (not pictured) Yasuo Fukui.



(R.) Wednesday Fox Valley first place winners are: (L. to R.) Bob Scherr, Marty Solis, Al Guthke and Bill Strickland.



(L.) Tuesday Fox Valley League first place winners are: (L. to R.) Mary Hill, Willie Yang, (not pictured) Rudy Banks and Herb Hill.



(R.) Prestbury League first place winners are: (L. to R.) Al Baumbaugh, Ken Treptow, Rich Mahlum and Bill Booth.

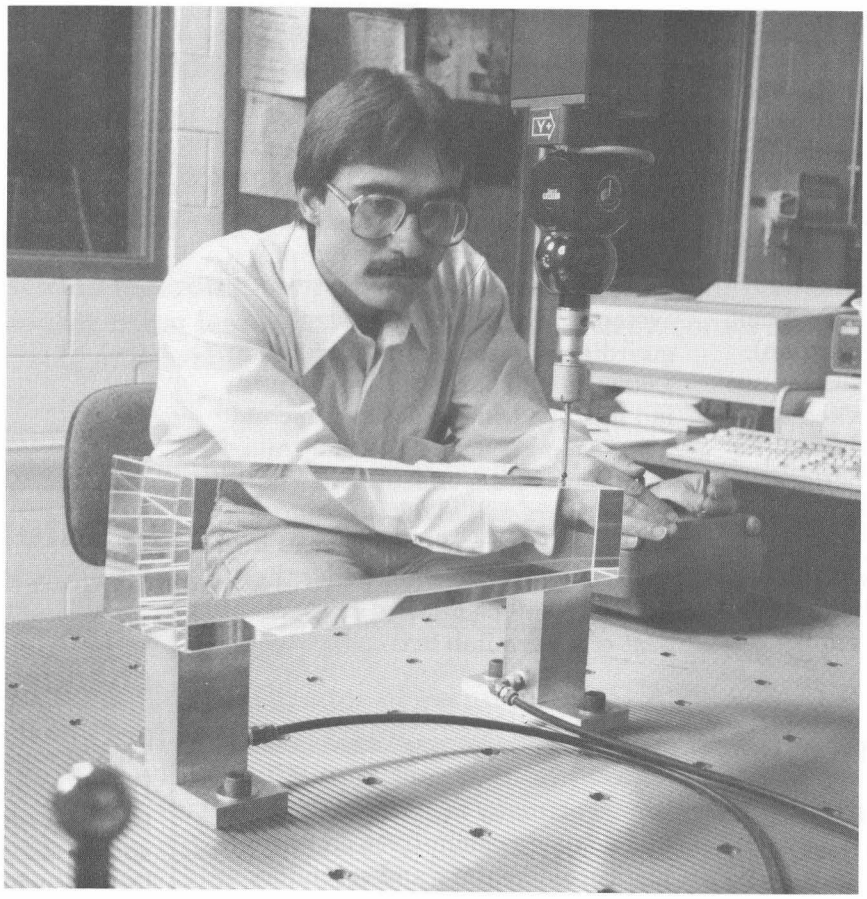
Quality Assurance and Self-control

October is National Quality Month and this year's theme is *The Human Side of Quality: People, Pride, Performance.* While the words "quality assurance" may conjure up visions of paperwork in some minds, they reveal a different image when viewed from the perspective of people, pride and performance.

One of the fibers that is woven most deeply into the fabric of the Laboratory's QA program is that quality assurance is a line responsibility. This means that every employee is responsible to assure the quality of her or his work. In his *Quality Control Handbook*, J.M. Juran discusses this notion, claiming that in order for employees to carry out this line responsibility, they must be in a state of "self-control."

According to Juran, being in a state of self-control is constituted by three criteria. First, employees must have clear knowledge of what they are supposed to do in terms of measurable performance criteria or specifications. Second, they must have clear knowledge of what they actually are doing, i.e., the ability to check their work against those measurable performance criteria or specifications. This provides them with performance feedback. Finally, employees must have the means for regulating what they are doing in the event that they fail to meet these goals. In other words, they must have the authority to actually change the process in a way that will correct the problems.

Juran claims that "If *all* the foregoing parameters have been met, the person is said to be in a state of self-control and can properly be held responsible for any deficiencies in performance. If *any* of the parameters has not been met, the person is not in a state of control, and, to the extent of the deficiency, cannot properly be held responsible."



The interface between QA and experiment is evidenced in precision measurements of one of 2,000 lead glass blocks which compose the cylindrically shaped central electromagnetic calorimeter for E-760. E-760 is studying charmonium states formed in proton-antiproton collisions in the antiproton Accumulator Ring. In the above photograph, measurements are being taken by Rob Reilly (TS/Quality Control).

As many people know, the issue of "responsibility" can be a double-edged sword. On the one hand, if Juran's criteria are met then working on a project and solving the problems associated with that project will probably be challenging and rewarding. This is true whether it involves designing a one-of-a-kind component for an experimental detector, or developing a more efficient system for machining parts. But on the other hand, if employees do not have clear knowledge of what is expected of them, feedback on their performance, and the authority to solve the problems they are responsible for, such projects can be de-motivating or even demoralizing.

While quality assurance is the responsibility of all employees, it is the responsibility of management at all levels to assure that employees are in a state of self-control as defined by Juran. Quality month at Fermilab can help us focus our attention upon this and other ways to improve performance and efficiency. While the words "quality assurance" may conjure up visions of paperwork in some minds, they reveal a different image when viewed from the prospective of people, pride and performance.

—— *Mark Bodnarczuk*

For your information

Fermilab taxi seat belt policy

The following Fermilab taxi seat belt policy was developed to be consistent with both Illinois law and DOE policy concerning Federal employees. It takes effect immediately.

Seat belts shall be worn in Fermilab taxis by the drivers and all passengers except children under the age of 4 (Illinois law makes parents or legal guardians responsible for providing and securing them in a child restraint system. The law further requires children ages 4 or 5 be provided and secured in either a child restraint system or a seat belt by their parent or legal guardian). The availability of seat belts for use by passengers will be checked at a minimum each morning during the daily pre-trip inspection performed by the drivers.

Signs reminding persons of this policy will be placed in the taxis so they are visible to drivers and passengers.

Drivers will not be responsible for enforcing the seat belt law for occupants, but are authorized to make a general announcement to all passengers that seat belt use is required. This is particularly appropriate when the driver personally observes noncompliance.

Children under age 6 will not be allowed as passengers in Fermilab taxis unless accompanied by a parent, guardian or responsible adult. Children under the age of 4 must be provided a child restraint system by their parent or legal guardian and secured in it by them. Likewise, the parent or legal guardian must provide and secure a child 4 or 5 years of age either in a child restraint system or seat belt. Therefore, drivers will allow the temporary installation of such devices in the rear seats. No child under the age of 16 will be allowed in the front seat of a Fermilab taxi.

Drivers may request identification from boarding passengers to determine whether or not they are employees, official visitors or their children, and have the right to refuse transport to any individual who cannot produce proper identification when requested.

Failure to abide by this policy will be dealt with in the same manner as any other violation of Laboratory policy. —— *Dave Carlson*

Wellness Works

Wellness Works, in collaboration with Batavia Parent Network, will present a lecture by internationally acclaimed family psychologist, H. Stephen Glenn titled *Raising Self-Reliant Children in a Self-Indulgent World (Seven Building Blocks for Developing Capable Young People)* on Monday, October 15 in Ramsey Auditorium at 7:00 p.m.

Mr. Glenn has written more than 100 papers, articles, books and courses and has produced several television and film programs, including an award-winning educational television series on the family called *Involved.* As a consultant, he has served on many national task forces and advisory committees on juvenile justice, elementary and secondary eduction, training, drug abuse and alcoholism. He has received many national service awards and has been a consultant to the Congressional Select Sub-Committee on Children, Youth and Families and the Senate Select Sub-Committee on Narcotics.

Billed as the *breakthrough program no parent or teacher can afford to ignore,* employees are encouraged to hear this outstanding speaker.
—— *Ruth Christ*

A safety message

Change your clocks; change your batteries

This is your annual safety alert. Please make it a habit to change the batteries in your home smoke alarms and flashlights in October when clocks are set back to standard time.

According to the International Association of Fire Chiefs, about 80% of U.S. homes have at least one smoke detector in place, but as many as half of all smoke detectors are useless because of old or missing batteries.

October 7-13 is Fire Prevention Week! —— *Ron Grosklaus,* Deputy Fire Chief

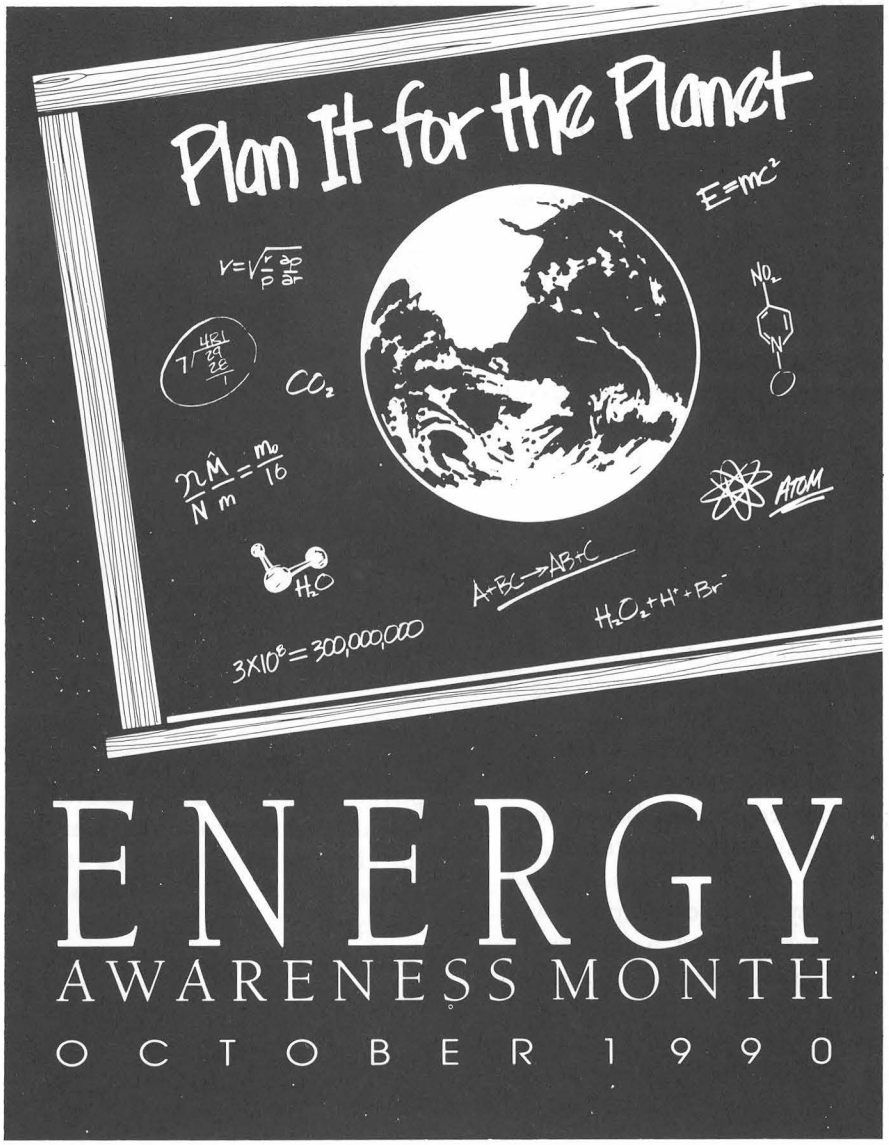
October: Energy Awareness Month

The purpose of American Energy Awareness Month is to raise the level of consciousness of citizens regarding the importance of energy conservation.

October is American Energy Awareness Month and a propitious time to remind employees about the Fermilab Employee Energy Conservation Awards Program. This program gives full-time Fermilab employees an opportunity to capitalize on a good idea.

The program offers cash awards ranging from $100 minimum to a $5,000 maximum, based on the benefit value and extent of application of an energy-conservation suggestion. To be eligible for a cash award, suggestions must reflect at least an estimated $250 annual net energy cost savings to the Laboratory. A cash award of 10% of the first year's net cost savings will be made for suggestions producing an estimated annual net savings of up to $10,000. From that level, awards will range upward to a maximum of $5,000 for suggestions producing an annual estimated net savings exceeding $300,000. A key element of the program is that the suggester does not have to wait for implementation of the suggestion in order to receive an award.

All suggestions are evaluated by Fermilab staff members with expertise in the technical area of each suggestion. Their recommendations are reviewed by Energy Conservation Awards Committee members **Don Beatty** (BS), **Kurt Kasules** (TS), **Dennis Theriot**, chairman (DO), **Wayne Nestander** (Const. Eng.), **Bill Riches** (BS), **Tom Jurgens** (AD) and **Age Visser** (RD). Cash awards are approved by Director John Peoples and presented at an awards luncheon.



Ideas related to energy conservation in a specific operation, process, method or practice at Fermilab are encouraged. Suggestions may pertain to any area of the Lab, but the suggestion must fall outside the scope of the suggester's specific job, and must be consistent with the mission and purpose of Fermilab.

Complete information, guidelines and suggestion forms are available from Bill Riches, Energy Management Coordinator, WH4E, MS 211, x3779 or Phyllis Hook, WH4 Crossover, MS 211, x4637. ——*Bill Riches*

The occupants of Wilson Hall have an opportunity during American Energy Awareness Month to go a step beyond awareness to action. The Wilson Hall automated light control system is currently undergoing repairs. Many employees have come to rely on this system to turn off the lights in their office area. It would be energy-wise, if everyone in Wilson Hall could make an effort to turn off their lights before leaving, even after the system is again fully operational. Due to the diverse use of Wilson Hall, no automated system will ever be as efficient as conscientious employees. —— *Kent Collins*, Building Manager, Wilson Hall

A Proclamation

"Energy: Plan It... For the Planet"

Whereas, **Fermilab** has been a leader in the development of innovative methods of energy conservation, particularly in the use of superconductivity to reduce the use of electrical energy; and

Whereas, the wise use of energy and energy-producing resources are the foundations of future economic prosperity for our society and because of recently enhanced concerns about the global impact of energy and waste; and

Whereas, the proper use of coal, water, natural gas, petroleum products, and alternative energy sources comprises a highly complex set of issues that are of paramount importance to every citizen; and

Whereas, consensus regarding proper use is not easily reached; however all involved agree that using less energy, or practicing energy conservation, is most desirable and beneficial; and

Whereas, institutions, government, business, and private citizens alike must cooperate to achieve meaningful savings in both energy use and dollars to ameliorate the burden of rising costs of energy; and

Whereas, such cooperative efforts are beginning to have an impact on our energy-use habits and to demonstrate reduced energy consumption;

Therefore, I, John Peoples Jr., Director of Fermi National Accelerator Laboratory, proclaim **October 1990** as **Energy Awareness Month** at Fermilab, in conjunction with the national observance, because it is important for all citizens to be aware of the necessity of conserving energy for our mutual benefit.

In Witness Whereof, I have hereunto set my hand.
Done at Fermi National Accelerator Laboratory
This First Day of August, in the Year of Our Lord
one thousand nine hundred and ninety.

John Peoples

Director

Cyber retires

Although not an employee, the Cyber System, which has served the experimenters for more than a decade, was officially retired Tuesday, September 4, 1990.

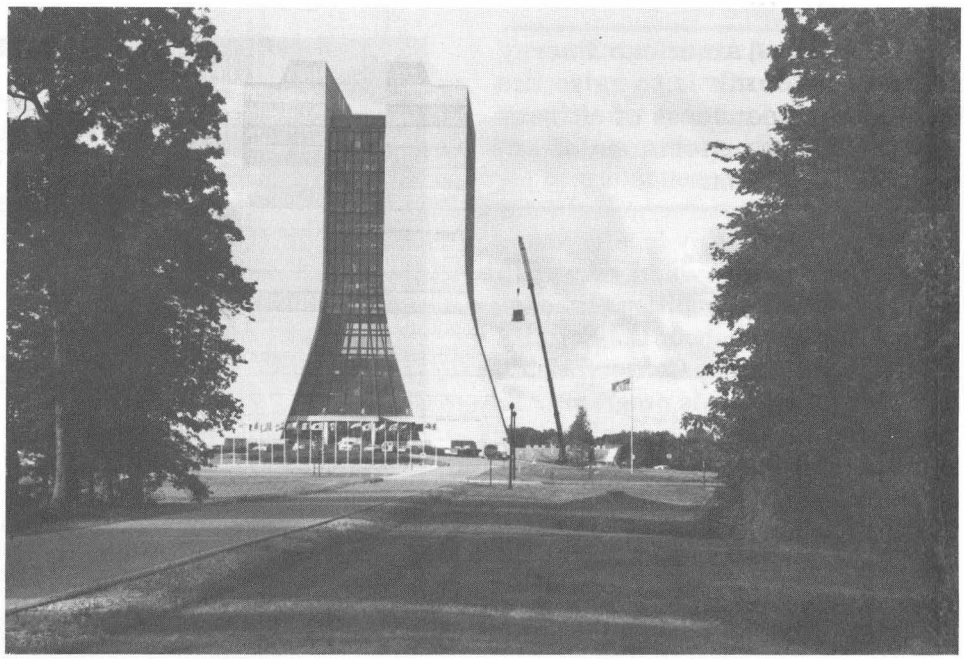
This back-end number cruncher, used primarily by the high-energy physics community to analyze experimental data, was replaced by an Amdahl 5890-600E System, which features newer architecture and increased capacity.

"The Cyber System," said Gene Dentino (CD/Central Computing) "was viewed as the new and emerging technology at the time of installation and it served the Lab beyond its technical life." Around 1984, already cognizant of the need for increased computing capacity, an acquisition committee began researching the next generation.

The new system now in place was selected by the Next Acquisition Committee, who reviewed available technology, defined architecture, developed a request for proposal, went out for solicitation and conducted benchmark tests.

"Two major factors allowed us to make these system changes," said Jack Pfister (CD/Assoc. Head) who served on the committee. "One was the space provided by the new Feynman Computing center, and the other was a change in technology that allowed us to do our computing more effectively using a variety of vendors instead of just one."

Change did not happen rapidly. Since the CDC system had been in place at the Lab for so long, a large effort was required to migrate to other systems. This migration process, which was headed by Judith Nicholls (CD/Access), took more than a year to complete.



Going out in the same style it came in, the Cyber System is lowered by crane out of Wilson Hall. The system was removed from the eighth floor of the Central Laboratory Building on Saturday, September 27, 1990.

"One of the goals of the migration process was to protect the Lab's investment in software, computer generated engineering drawings and physics data," said Judith Nicholls. The other important consideration in the change-over, according to Joel Butler (CD/Assoc. Head), was to make all efforts to minimize any delay for graduate students finishing their research.

The Cyber era

According to Al Brenner in his article *Computing at Fermilab Since the Beginning* which appeared in the December 1984 issue of *Fermilab Report*, "Projections of the Laboratory needs had indicated that by 1978 there would be a need for substantially more computing capabilities at the Laboratory. Plans had already been laid as early as 1975 for an acquisition projected for 1978." In December of 1978, after a competitive acquisition, a CDC system was chosen based upon the current top-of-the-line processor, the CDC Cyber 175.

The system was delivered over a period of two years and began working in 1979. Increments which included additional memory, disks, tape drives, printers and communication gear were added on a continuous basis to satisfy the growing computing requirements of the Laboratory. However, it was becoming apparent that substantially more capacity would be required by the end of 1983.

An additional increment was proposed for FY83 to at least double the computing power installed at the time and the dual processor Cyber 875 with three-quarters of a million words of memory was selected. The first of the two Cyber 875 processors was opened to the user community in 1984. In 1988, the Cyber 175s were decommissioned and in 1990 the end of an era was marked with the decommissioning of the Cyber 875.

Cyber retires

Steve Ahlgrim, systems manager for the Cyber System and Tony Zambos, engineer in charge from Control Data Corporation, say a final good-bye and turn off the switch.

Through the years...

For the computing trivia master, the following statistics were supplied by Steve Ahlgrim, systems manager for Cyber:

Cyber Stats (1979-1990)

Number of jobs: **4.4 million**

Number of user tape mounts: **750,000**

Number of different users: **3,200**

Number of files archived: **839,626**

Number of files in online system: **583,386**

Total amount of data: **1.7 terabytes**

Jack Pfister, surrounded by Computing Division staff members, users and contractors, delivers the "eulogy" as the friends of Cyber gather to bid it farewell.

The Lecture Series Presents

Legislating for the Greenhouse Effect

John Maddox, Editor
Nature magazine
Friday, October 19, 1990 at 8:00 p.m.

Of all environmental threats, the prospect of man-made climatic change is one of the most serious. Even though there are major uncertainties in present predictions of the scale and even the character of the possible changes that lie ahead, efforts to reach international agreements on the issue should command general support. However, the *economic stakes are so high that the negotiations will last longer than the time needed to remove the uncertainties of the predictions*! ***Legislating for the Greenhouse Effect*** is the topic of **John Maddox's** lecture in Fermilab's Ramsey Auditorium on **Friday, October 19** at 8:00 p.m.

As a writer and broadcaster, and as Editor of Great Britain's *Nature* magazine, John Maddox has been following the many studies and perspectives presented about the greenhouse effect. He recognizes the need for an international convention to regulate the greenhouse gases, and presents some of the problems that our governments need to address: 1) To what extent should regulation allow for adaptation to climatic change rather than aim at its avoidance? And how (or by whom) will that be decided in a world in which some would profit from global warming, the most likely accompaniment of a significant excess greenhouse effect? 2) How will the interests of the rich and poor nations be balanced? 3) How will compliance with an international convention be policed? Without credible verification procedures, will any convention negotiated survive the Congress of the United States?

Mr. Maddox tells us that a meeting at Geneva in November has been called to consider an outline of an appropriate convention to address international legislation of greenhouse gases. He suggests that the most immediate danger is that there will be an overhasty convention that serves no purpose, and which may even increase the risk of serious contention. A long-term risk, though, is that there will be no convention at all.

Whether or not you attended Dr. Stephen Schneider's September 11 lecture on global warming, John Maddox's talk addressing the legislation issues involved in this serious environmental problem will be of great interest. Admission is $3. Tickets are not refundable. For further information or phone reservations, call 840-ARTS weekdays between 10:00 a.m. and 4:00 p.m. Phone reservations are held for five working days, but will be released for sale if not paid for within that time. All telephone orders the five days immediately preceding a performance must be paid for by credit card.

—— *Tammey Kikta*

Cla$$ified Ad$

Motorized vehicles:

1975 Oldsmobile Wagon, new tires, $600. Call George at x3575.

1985 1/2 Ford Escort, 4-dr, hatchback, 4-spd., sunroof, AM/FM cass., 48,000 mi., good cond., $2,400 o.b.o. Call Chuck Brown at x3202.

Miscellaneous:

1976 Argosy 26 ft. Camping Trailer, asking $2,500. Call Bob Pucci at x2817 or 708-904-0035 after 5 p.m.

Murray 20 in. Lawn Mower, $100. **Sears Craftsman Snow Blower,** 3 hp, electric starter, $250. **A. O. Smith Water Heater,** 40-gallon, $250. **Jenkins Upright Piano,** $350. **Console Humidifiers (2),** 8-gallon output, @ $25. All in good working condition.Call Dan at x4605 or E-mail FNAL::KAPLAN or evenings at 815-756-6558.

Congratulations to:

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The deadline for the Friday, October 19 *FermiNews* is Wednesday, October 10. Please send your article submissions or ideas to the Publications Office.

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