

# FermiNews

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Fermi National Accelerator Laboratory

## URA & DOE Sign New 5-year Contract for Fermilab



*Center stage at the URA/DOE contract signing were (l. to r.) Jim Matheson (outgoing URA Vice President/Secretary), Hilary Rauch (Manager, DOE Chicago Operations Office), Harry Woolf (Chairman, URA Board of Trustees), Leon M. Lederman (Director, Fermilab), Andy Mravca (Area Manager, DOE Batavia Area Office), and Ezra Heitowit (incoming URA Vice President/Secretary).*

Every five years, the Universities Research Association (URA) and the Department of Energy (DOE) renegotiate the contract under which URA operates Fermilab for the DOE. Following two full days of 12-hours-per-day formal negotiations between teams from URA and DOE, the most recent contract (the fifth in the Lab's history) was signed at ceremonies held in Wilson Hall on December 30, 1986. The contract runs from January 1, 1987, through December 31, 1992.

Fermilab Associate Director Bruce Chrisman, a member of the URA negotiating team, called the negotiations "successful and cordial" and noted that they resulted in changes in "the personnel appendix, and language and levels of control."

Significant contractual adjustments coming out of the negotiations include new patent policy under which URA can now hold patents for work initiated by Fermilab employees. Fermilab will be issuing new written patent policy which will include royalty sharing with employee inventors. **Continued on page 2**

## VAX Cluster Expands with Addition of VAX 8600, Code Name: Venus

**by Hugh Montgomery**

Over the last year, the Central Computing VAX Cluster at Fermilab was significantly expanded. The expansion began in 1985 when two VAX 8600 computers were installed by the Digital Electronics Corporation (DEC). DEC referred to the VAX 8600 series by the code name Venus. In September 1986, the two 8600s were upgraded to VAX 8650s by Fermilab's Computing Department with the goal of increasing the interactive batch computing capability of the system. The upgrade increased the central processor power of each processor by about a factor of 1.5.

In October 1986, the Central VAX Cluster was once again expanded by the addition of another VAX 8600 "Venus", but this one came from Italy. It was purchased by the Istituto Nazionale di Fisica Nucleare (INFN) and installed at Fermilab as a part of the Central Computing VAX Cluster. Italian collaborations play a

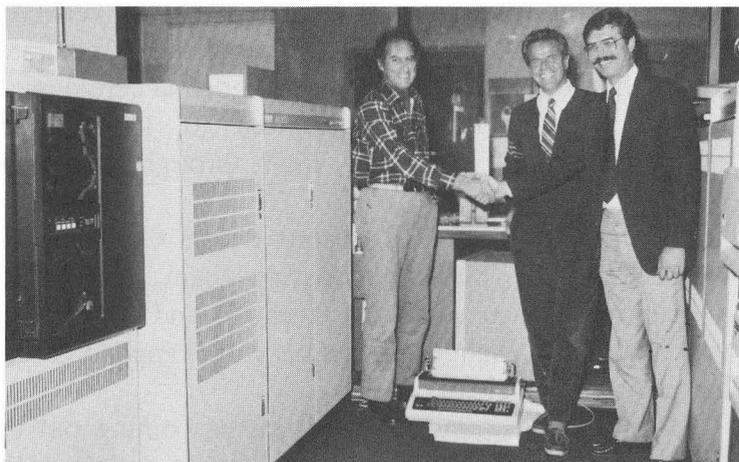
vital role in a number of Fermilab experiments, and the installation of the new 8600 will help to better support the strong participation of the INFN groups in doing high-energy physics research. Currently, INFN is participating in experiments E-741 at the Collider Detector at Fermilab, E-687 located in the new Wide Band Experimental Hall, E-704 in the new Polarized Proton Experimental Hall, and E-760, a fixed-target experiment whose apparatus is located in the Anti-Proton Ring.

With the incorporation of the new 8600 into the Central Computing VAX Cluster, users will have access to shared ancillary, peripheral systems such as disks, tapes, and printers. In addition, the Cluster provides a uniform file base image independent of which CPU is in use. The actual Cluster physically spans the 7th, 8th, and 9th floors of Wilson Hall and is

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### "VAX" continued from page 1

currently composed of two VAX 8650s, one 8600, two 785s, and one 780. Clustered together, these machines provide the computing power of about 20 VAX 780 equivalents. The two 8650s have 44 and 48 megabytes of memory respectively and are becoming an increasingly important part of the computing environment at Fermilab, and the preferred interactive system for many users. The Cluster currently services hundreds of users, with 150-200 logged on in the middle of the afternoon on an average work day.



*Standing next to the new machine, which is located on the 9th floor crossover in Wilson Hall, are (l. to r.) Gian-Paolo Bellini (Milan), Giorgio Bellettini (Pisa), and Ken Stanfield, Head of the Research Division.*

The Laboratory is preparing for an exciting time of discovery as TEVATRON beams are collided together in the center of the CDF detector and collided with fixed targets, providing beam for a record 16 fixed-target experiments. As we move into this phase of operation, the on-line and off-line computing needs of the Laboratory will increase. The addition of the Italian Venus to the Central Computing VAX Cluster will help do world-class high-energy physics at Fermilab.

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### Academic Lecture Series

Dan Green, Head of the Physics Department, will give an introduction to general relativity entitled "Gravity for Beginners," converging linearized solutions, point solutions and cosmological solutions of the field equations. This entry in the Academic Lecture Series will be held from 1:00 to 2:30 p.m. in Curia II on January 19, 21, 26 & 28, 1987.

### "Contract" continued from page 1

Travel policy was restructured as a result of recent Congressional actions imposing new limits on per diem rates and maximum hotel rates.

"Overall," said Chrisman, "from the Lab's point of view, the structure of the new contract is now better and easier to work with. We're pleased that this process was completed so expeditiously, and gratified with the smoothness of the negotiations."

The URA negotiators were Maurice Glicksman (URA, who chaired the team), Jim Matheson, Ken Shirley, Ezra Heitowit (all URA), John Softcheck, Chuck Marofske, and Chrisman (all Fermilab). In addition, many Fermilab staffers had "significant input into formulation of URA positions." The DOE was represented by Chuck Frazier (chairman), Al DeBenedictis, Norm Hansen, John Albrecht, and Ping Sheng (all DOE Chicago Operation Office), and Jim Miller (DOE Batavia Area Office at Fermilab). Tom Hotchkins sat in for DOE in an advisory capacity.

### Extracurricular Activities

#### NALREC BASKETBALL TRIP

NALREC is planning a trip to the Chicago Stadium on Tuesday, January 20, for the 7:30 p.m. basketball game pitting the Milwaukee Bucs against the Chicago Bulls. The \$19 charge includes choice mezzanine seats, refreshments, sandwiches, and a Michael Jordan mini poster. The bus leaves Wilson Hall at 6:00 p.m. sharp.

For tickets call Joe Morgan, ext. 4181, Rose Callaghan, ext. 4445, or Ed Justice, ext. 4553/4.

#### FILM SOCIETY PRESENTS

The Fermilab International Film Society will present *The Trial*, Orson Welles' version of Franz Kafka's story of a man hounded by a faceless state for an unspecified crime.

The film will be shown at 8 p.m. on Friday, January 23, 1987, in Ramsey Auditorium. Tickets are available at the door and are \$2.00 for adults, \$.50 for children.

#### Summer Housing Deadlines

The deadline for receipt of reservations for summer on-site housing is Monday, March 2, 1987. Housing assignments will be made in April, and responses will be mailed April 10, 1987. The starting date for summer occupancy is June 1. For further information, please contact the Housing Office on ext. 3777.

## Live from Fermilab, It's: "Late Night with Leon Lederman"

On January 30, 1987, at 7:30 p.m., in Curia II, the Friends of Fermilab Association will present a special membership event, "Late Night with Leon Lederman," an evening of discourse which Fermilab's Director characterizes as "Being a set of random commentaries on the challenges of doing research, of teaching science, of directing laboratories, small and humongous, of the role of serendipity in scientific discovery and of the outstanding problems facing modern society and also Warrenville, Illinois."

"Some comments will no doubt be made about some of the great scientists, movers and shakers I have known such as Leucippus, Copernicus, Newton, Roentgen, Rutherford, Einstein, and Stanka Jovanovic. Towards the end of the evening there will be a short answer quiz covering the last six chapters of the Brothers Karamazov."

A reception with refreshment and music will follow the presentation. To RSVP and for membership information, please call Diana Smailus at ext. 3092, by January 23, 1986, between 9:00 a.m. and 1:00 p.m.

Number of pencils David Letterman tosses over his shoulder during an average show: 4  
- from *Harper's Index*

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### In the Library

The Fermilab Library is receiving the Paris edition of the *Daily International Herald Tribune*, "The Global Newspaper," on a trial basis.

The four lectures in the series "Signal Processing for Radiation Detectors" by V. Radeka of Brookhaven National Laboratory are now available for viewing on video cassette in the Library.

The Letters section of the December 1986 issue of *Physics Today* features divergent views on the Superconducting Super Collider.

The December 5, 1986, issue of *News & Comment* contains the article "Accelerator Labs Face Austere Year" by Mark Crawford.

"Probing the Structure of the Universe from Quarks to Cosmology" by Edward W. Kolb and Chris Quigg is the featured article in the December 1986 issue of *The Physics Teacher*.

## The Rainmaker at Fermilab

Florida's highly acclaimed Asolo State Theater will warm Ramsey Auditorium on Saturday, January 24, 1987, at 8 p.m. with "a gem of the American theater," N. Richard Nash's *The Rainmaker*. This romantic comedy first met with success on Broadway in 1953, and has since become popular in its film adaptation with Katharine Hepburn and Burt Lancaster, its musical adaptation titled *110 in the Shade*, and most recently in the Home Box Office adaptation with Tuesday Weld.

The setting for *The Rainmaker* is a ranch house in the Southwest during a severe drought. H.C. Curry is worried not only about the lack of rain, but also about the lack of suitors for his "plain, serious-minded daughter," Lizzie. Father and brothers have tried many schemes to entice available men, all to no avail.

Enter Starbuck, "a larger-than-life, fast-talking con man" who not only promises rain (for cash in advance, of course), but works his own special magic on the down-hearted Lizzie, instilling in her a new sense of self-confidence and belief in lasting love.

The Asolo State Theater has received rave reviews in its over 20 years of successful touring. Proclaimed the State Theater of Florida in 1965, the Asolo Theater has been committed to "bringing the excitement of live theater" to audiences throughout the United States. The Asolo has also been featured on Public Television's *Theater in America*.

Admission to the Fermilab Arts Series presentation of the Asolo State Theater is \$11.00. For reservations or further information, phone ext. 3353 between 10:00 a.m. and noon or 1:00 p.m. and 4:00 p.m. Phone reservations are held for five days awaiting payment.

- Tammy Kikta

## Congratulations to:



## Lab, Warrenville Set Cooperative Agreement on Effluent Management

In the days before Fermilab, the Village as we know it was the Village of Weston.

Weston operated an oxidation pond as a means of sewage disposal and a 190 ft.-deep well with a 300,000-gallon reservoir for its potable water supply. When the Village of Weston became the Fermilab Village, we continued to operate the sewage disposal system and the potable water system.

In the meantime, new Lab buildings were erected and houses were moved in (Aspen East, Sauk Circle, etc.), as the population increased.

The Illinois Environmental Protection Agency set more stringent standards state-wide on biological oxygen demands and suspended solids which could be discharged from the site in the effluent from the oxidation pond. It was also noted by Facility Operations personnel that water tables were dropping and that the well capacity (draw-down) was deteriorating. It became evident that more sophisticated, expensive equipment would have to be added to both the sewer and water systems, or another alternative would have to be found.

In 1983, Chuck Anderson of Fermilab Facilities Management began negotiating with the City of Warrenville with an eye toward their taking the Village sewage and also supplying the Village with potable water from their system. Mrs. Vivian Lund, Mayor of Warrenville, and Mr. Dennis Posluszny, Director of Public Works for Warrenville, were very helpful and instrumental in making the project possible. Anderson designated Jack Mills as Project Engineer and feasibility studies and cost estimates were prepared for sewage and water lines from the Fermilab Village to the Warrenville city limits, where the Fermilab lines were to be tied into the Warrenville utility systems.

Contact had to be made with the EJ&E Railroad to cross their right-of-way by installing casings under their tracks. We also contacted Commonwealth Edison and several large natural gas, crude oil, and lpg pipeline companies who had lines which had to be crossed with our new sewage and water pipes.

Bidding documents were then prepared by Mills with a great deal of help from Susan Fichtel. The bids came in under our estimates and construction (by Reliable Excavating) began in November 1986, with Jack Morphey (Facility Operations) as Field Superintendent.

Sewage began flowing to the Warrenville system on December 22, 1986. The water system construction has

been completed and pressure tested, and is now being chlorinated. It is anticipated that the water system will be turned on during the 2nd or 3rd week in January.

Village residents and Lab employees will be given ample notice as to what to do when the new water supply is turned on.

It is anticipated that the fees charged by Warrenville will be more than offset by savings on power costs, operational and maintenance costs, and chlorination and testing costs that will be eliminated by the completion of this project.

- Jack Mills

### Keep an Eye on Turner in '87

Michael Turner of the Theoretical Astrophysics Group was noted as one of the "87 People to Watch" in the *Style* section of the January 7, 1987, issue of the *Chicago Tribune*.

The article acknowledges "Michael Turner, 34, astrophysicist. Creationists hate guys like Turner. But he's on the cutting edge of science, so his role as co-leader of Fermilab's group investigating the Big Bang theory assumes a greater importance with the start-up of Fermi's collider--the world's most powerful particle accelerator. Considering the Big Bang occurred billions of years ago, consumer applications of knowledge gained by Turner's efforts should be zippity quick--say, 50 years or so."

### Next Research Division Seminars

On January 20, 1987, R. Ruchti will speak on "Active Target Development for E-687."

On January 27, 1987, J. Butler will discuss "Survey of Photoproduction."

These Research Division Seminars are held in Curia II at 11:00 a.m.

Chances that a working American has worked at a McDonald's : **1 in 15** - from *Harper's Index*

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