FERMINEWS

Fermi National Accelerator Laboratory

Operated by Universities Research Association Inc.
Under Contract with the United States Department of Energy

Vol. 3, No. 9

February 28, 1980

PREP AND INSTRUMENT FACILITIES TEAM UP FOR IMPORTANT MISSION

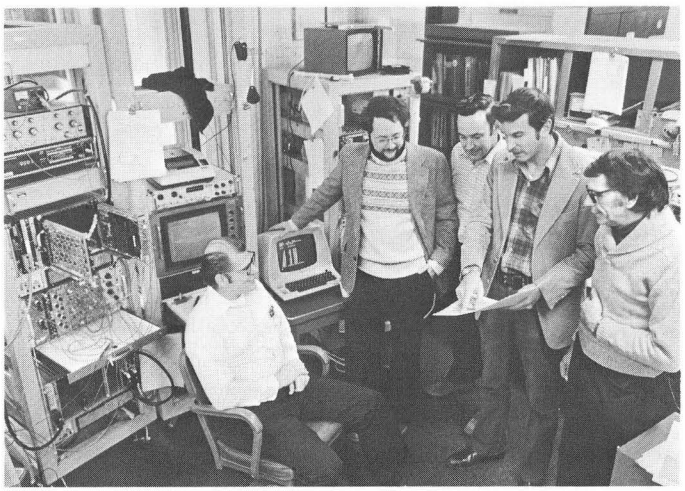
PREP--acronym for physics research equipment pool--and Instrument Facilities have the important assignment of keeping Fermilab experiments running.

That may seem like an exaggerated statement, but look at it this way: PREP contains some 12,000 diverse equipment items. It's a pool of sophisticated electronic gear that researchers, primarily users, can check out and use during the time their experiment is running. At the end of the run, they return the equipment to the pool.

And the experts in Instrument Facilities, a sub-group of the Electronics Support Group, Research Services, are responsible for keeping Laboratory and pool equipment in first-class shape. While it may have been taken for granted by many people, it's those instruments that enable the researchers to know what's going on in their experiments, sort, scale, control and monitor the data flow and in general keep Fermilab's research humming. Malfunctioning equipment is a bane that physicists and engineers don't like to think about.

That's why Art Neubauer, who is in charge of PREP and Instrument Facilities, sets an unrelenting pace. Just follow him around for a short time and listen to the variety of questions he fields and conversations he becomes involved in. An observer will quickly get a feel for the complexity and the extremely high level of performance that must be maintained by the Instrument Facilities staff. They are an elite and proud group, working together and individually on some 200 projects a month.

Because Instrument Facilities clients are Laboratory-wide, the categories of instruments that need repair and their ranges of sophistication are almost unlimited, explained Neubauer. "They include all manner of operational equipment and



...New equipment from manufacturers is evaluated and thoroughly tested here. From left Dave Warner, Charles Nelson, Art Neubauer, Jeff Appel and Jim Simanton. Appel, a Fermilab physicist collaborating on experiment 516, has been working closely with Instrument Facilities...

diagnostic instruments used throughout the accelerator, as well as emergency and safety equipment, visual aids, public address systems, business equipment and many others. They may be one-of-a-kind, extensively modified or one of many versions. Often all technical and operational instructions have been lost and failed parts may be unidentifiable, unavailable or obliterated by use."

On the 14th floor of the Central Laboratory, where Instrument Facilities and PREP are located, the good old ways of doing things are not necessarily gone forever, but with the advent of modern electronics, a new era of troubleshooting and instrument repair has dawned. It's an era in which the computer has become as common and as necessary as the soldering iron. Modern circuitry is so complex and sophisticated that simulated runs possible only with a computer are necessary to find that evasive and misbehaving component in an electronic circuit.

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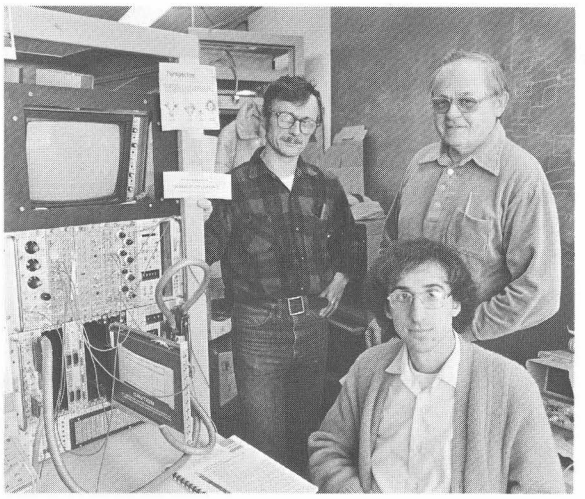

...(L-R) Walter Knopf, Bruce Rockow and Don Fearnley with a typical CAMAC and NIM test stand...

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And it's an era in which the service specialist can reasonably be thought of as an expert who is capable--when the need arises--of preparing ingenious computer programs in his search for that proverbial needle in the haystack. For example, only a computer can pour in all the impulses necessary in a reasonably short time to check out the many circuits in today's instruments. Doing this by old-fashioned ways or by hand would be too time-consuming, fatiguing and prone to error.

Going up to the 14th floor is like entering another dimension. For through those doors come some of the most advanced instruments in the world. Jim Simanton, head of the Electronics Support Group, likes to talk about his people generating "specifications for beyond-the-state-of-the-art circuitry."

It's necessary to meet future needs, he explains. "The recent and projected trend of high energy experiments that constitute PREP's clients has been toward very large experiments with customized electronics that utilize the increasingly dense, high-resolution, hybridized circuitry representative of the new generation high energy physics systems," Simanton said.

Because of their extensive and up-to-date knowledge of electronics, the Instrument Facilities staff provides PREP's clients with a valuable consulting service. "We advise experimenters about equipment that would be most suitable for their increasingly complex experiments," said Neubauer. "We like to think of this as an engineering consultant service that almost always results in substantially redesigned instrumentation. By working closely with our clients, we have added overlooked necessities, eliminated inadequate selections and substituted more efficient, more available or equal but less expensive modules. Overall, of course, the aim of PREP is to best meet experimenters' needs."

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PREP AND INSTRUMENT FACILITIES STAFF

Here are the other people who round out PREP and Instrument Facilities.

Perry Gillespie and John Kleczewski--they work on all general instrumentation.

Robert Horbus--he repairs the many closed circuit television systems, working on such items as scan converters, monitors and modulators.

Edward A. Vandermeulen, Donald J. Fearnley and Bruce Rockow--they work primarily with pool equipment, including fast and digital electronics.

Graciela Finstrom--she is responsible for miscellaneous PREP equipment.

David L. Warner--a jack of all trades who also is in charge of evaluating and testing new equipment.

Walter Knopf, an engineer--he not only works on a variety of equipment that includes microprocessors, but also he is involved in software implementation.

Michael V. James and Stephen Shepherd--they repair those all-important oscilloscopes as well as hard copy units, graphic displays, computer terminals and other electronic gear.

Charles O. Andrle--he primarily is involved in administration and serves as an assistant to Arthur W. Neubauer, who is in charge of PREP and Instrument Facilities.

Cherie Smith--she has the mission of keeping records, entering transactions into the data base systems and helps in the issue and exchange of PREP equipment.

Charles Nelson, high energy physicist is the PREP's liaison with Fermilab's operating experiments. He also coordinates external technical development to assure new products meet experimenters' needs.

...In oscilloscope repair facility are (l-r) Robert Horbus, Art Neubauer, Steve Sheperd and Mike James...

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Because of PREP's complexity, "we maintain a custom, computer inventory control system characterized by a large and accurate data-base with versatile entry and access capability," said Neubauer.

This present data base soon will be replaced by a newer and more flexible one that will keep track of spare parts used to repair the Laboratory's electronic equipment. It may even be used to record the repair history of equipment. In addition, the new data base will enable the staff to use bar codes to label the equipment. David Carlson is developing this new PREP data base management system.

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...In foreground of PREP office is Cherie Smith. From left behind her are Charles Andrle (seated), Ed Vandermeulen and John Kleczewski...

...The Canadian Brass...

CANADIAN BRASS TO PERFORM AT FERMILAB

The Canadian Brass will give a concert at Fermilab March 18.

It's an encore performance for the group whose appearance here last year left the audience with a vivid impression of their talent. Their second concert will begin at 8 p.m. in the Central Laboratory auditorium.

The price of a reserved seat is $6.00. Reservations may be made by calling Ext. 3124. Their first performance sold out quickly.

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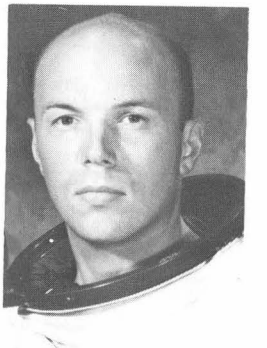
ASTRONAUT TO TALK ABOUT SPACE SHUTTLE

Dr. Story Musgrave, American astronaut with the National Aeronautics and Space Administration, will speak March 5 at Fermilab.



...Musgrave...

His topic will be on "The Opportunities and Potential for Space Science and Exploration, 1980 - 2000." The talk is free and open to the public and will be held in the Central Laboratory auditorium at 4 p.m. His appearance here is presented by the Fermilab Physics Colloquium Committee.

Musgrave has been with NASA since 1967. He has a medical degree from Columbia University and is nearing completion of his doctorate in physiology and biophysics at the University of Kentucky.

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EARNED INCOME CREDIT FORMS AVAILABLE

Do you expect your adjusted gross income (including your spouse's income, if married) to be less than $10,000 for this year?

Will you have a dependent child living with you full-time this year?

If your answer is yes to both these questions, you may want to complete an Earned Income Credit Advance Payment Certificate (W-5). Employees eligible for the earned income credit can now elect to have advances of their credit added to their paycheck each period.

To get Earned Income Credit in advance, a W-5 form must be completed and returned to Payroll. A new W-5 form must be filed annually in order to obtain this credit. Forms are available in the Records Office (CL15E).

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CALL FOR SUMMER HOUSING RESERVATIONS

The Fermilab Housing Office is now accepting reservations for summer on-site housing.

The deadline for receipt of these reservations is March 28. Housing assignments for experimenters here for the summer will be made in early April. Responses will be mailed April 17. Quarters may be occupied the week of May 29. Additional questions should be asked at the Housing Office, Ext. 3777.

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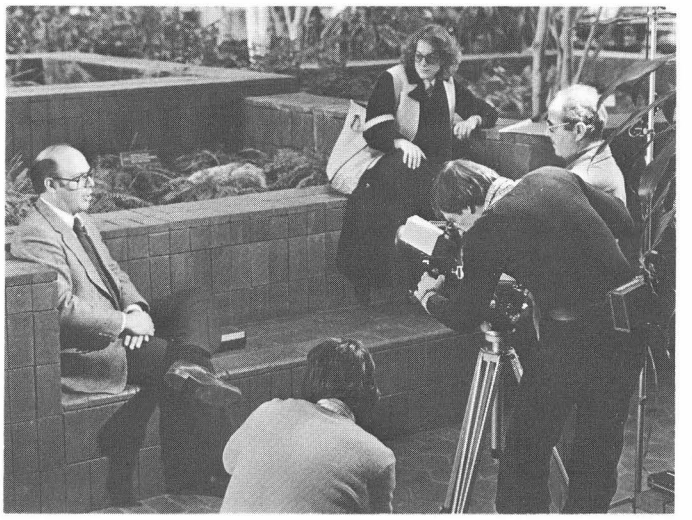
CHEZ LEON MENUS - For Reservations
Call X3646 (For 2 weeks only)

Tuesday, March 4, 7:00 p.m.-$8.00
- Hors d'oeuvre - assorted
- Monkfish Florentine
- Surf and Turf
- Duchess Potato
- Fermi flaming spinach salad
- Fresh Strawberry Vacherin

Wednesday, March 5 - No Luncheon

Thursday, March 6, 7:00 p.m.-$8.00
- Assorted Hors d'oeuvre
- Seafood Cocktail
- Lamb Rack Dijohn
- Fresh Cauliflower-Avocado Sauce
- Rice Pilaf
- Caesar Salad
- Cherries Jubilee Flambé



...Bruce L. Chrisman, Fermilab's business officer, is interviewed in Central Laboratory by film crew from television channel 5, Chicago. The interview about gasohol will be aired during "On Q" March 1 at 6 p.m. and March 2 at 10:30 pm

FERMILAB PART OF TV SPECIAL

Fermilab will be one of the segments on National Geographic's hour-long documentary "The Invisible World" that will be aired over local stations at 7 p.m. March 3.

In the portion devoted to taking the viewers deep into the atom, the documentary shows a Fermilab technician scrutinizing frame after frame of film in search of a quark. Also shown will be the Main Ring and the 15-foot bubble chamber. The television special is devoted to capturing that part of the everyday world the unaided eye is unable to see and appreciate.

A year in the making, the documentary was produced by the National Geographic Society and WQED in Pittsburgh with a grant from the Gulf Oil Corporation.

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CREDIT UNION TO HOLD ANNUAL MEETING

The Argonne Credit Union, which also serves Fermilab, will hold its 30th annual meeting March 19.

It will begin at 5:30 p.m. with a social hour in the Argonne Cafeteria, Building 213. From a slate of 16 candidates, members will elect a Board of Directors for 1980.

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FERMINEWS is published weekly by the Public Information Office of the Fermi National Accelerator Laboratory — P.O. Box 500 — Batavia, Illinois 60510 — Phone: 312-840-3351. ☆ U.S. GOVERNMENT PRINTING OFFICE: 1980—651-139/37