

# FERMILAB NEWS

 Fermi National Accelerator Laboratory

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

Vol. 2, No. 32

August 16, 1979

## INTERNATIONAL HIGH ENERGY PHYSICS SYMPOSIUM TO BE HELD AT FERMILAB

The ninth international biennial Symposium on Photons and Leptons will be held at Fermilab Aug. 23-29.

It is regarded as one of the major conferences on high energy physics of the year. More than 600 scientists from around the world--many of them the top people in their fields--have registered to attend the program. All 11 sessions will be conducted in the Central Laboratory auditorium.

Dr. Leon Lederman, Fermilab director, will deliver the symposium's concluding remarks at noon Aug. 29.

The symposium will open at 9 a.m. on Aug. 23 with a session on electron-positron annihilations above 9 GeV. The next session will begin at 1 p.m. with its speakers examining electron-positron annihilations between 3 and 9 GeV.

Other sessions (the first in the morning, the second in the afternoon):

Aug. 24--Muon scattering and dimuon production; heavy quark bound states.

Aug. 25--Weak interactions; future accelerators. (Dr. Robert R. Wilson, Fermilab director emeritus, is the organizer of the session on future accelerators).

Aug. 27--Nucleon structure; theoretical developments I.

Aug. 28--Photoproduction and low energy electron-positron annihilation; theoretical developments II.

Aug. 29 (morning only)--Measurements of charm particle lifetimes and evidence for charm production in hadron collisions.

In the two years since the last meeting in Hamburg, a great deal has been learned from theoretical developments and experimental results. These new findings will be presented at the symposium by the nearly 50 speakers. Many of the papers will be devoted to the physics of electron-positron storage rings.

\* \* \* \* \*

## HISTORICAL PERSPECTIVE OF SYMPOSIUM

The first symposium of international stature on photon and lepton interactions at high energies was held in 1963 at the Cambridge (Mass.) Electron Accelerator. The symposium was timed to honor the startup of the CEA.

Since that time, the symposium--now regarded as the major international symposium of the year on that subject area--has been held once every two years.

In 1965, it was held at Hamburg, and like its predecessor, timed to coincide with the startup of DESY.

The third symposium in 1967 was held at SLAC during its startup. Others were held at Daresbury, 1969; Cornell, 1971; Bonn, 1973; SLAC, 1975; and Hamburg, 1977.

Fermilab thus becomes the site of the ninth biennial symposium, the first time it has been held here and the first time it has been conducted at a research facility that is exclusively a proton accelerator.



...Organizing Committee members go over details of the upcoming symposium. From the left, Thomas B. Kirk, Charles N. Brown, James E. Pilcher, chairman John Peoples, Helen Peterson, Malcolm Derrick and Richard A. Carrigan...

## A LOOK AT THE SYMPOSIUM

*John Peoples is head of the Fermilab Research Division and chairman of the conference organizing committee. In the following paragraphs, he provides some background about the symposium.*

The results of the experiments done at CERN, DESY, Novosibirsk, SLAC, DCI and Fermilab will be presented by researchers from these laboratories. Included among the DESY experiments will be the experiments done at PETRA, the new electron-positron colliding beam machine that began operation this spring. PETRA is now running at 15.5 GeV, the highest energy achieved by an electron-positron storage ring.

The experimental results are expected to present significant tests of the quark-gluon model of hadrons. During the past decade, a theory of quarks and gluons, called quantum chromodynamics, has emerged which gives a description of the structure of the nucleus.

Theorists have refined their calculations in the past two years to the point where meaningful predictions can be made. At the same time, experimentalists have carried out experiments that can test these predictions. The symposium will be a major confrontation of theory and experiment. Should this confrontation be a celebration of agreement, it would signal an important surge in our understanding of sub-atomic particles. It would be like the development of quantum mechanics that began in the 1920's and culminated in quantum electrodynamics in the 1950's.

As each force--weak, electromagnetic and strong--becomes better understood, the mathematical similarities of these extremely disparate forces has begun to emerge and perhaps point to a common origin. A theory of nature that unifies all the forces has long been a dream of scientists.

Einstein spent much of the last part of his life seeking unsuccessfully to unify electromagnetism and gravity. The evidence that the weak force and electromagnetism have a common basis began to accumulate in the past decade. Theoretical physicists, emboldened by this success, are striving for the grand unification. Many of the theoretical talks will touch upon this subject.

\* \* \* \* \*



*...That's Kris Fillman on the right, after having reached the end of the great bicycle ride. With her is her close friend, Lynne Craver, who also biked the route. Craver is a former laboratory assistant of Fillman and now attends the University of Kentucky...*

### WHAT'S RAGBRAI? ASK KRIS FILLMAN

What did she get out of it?

Kris Fillman answered: "The people. One real reason you go is because of the people. They are all friendly and very interesting. You meet a wide variety of people. And it's one of those things you do that gives you a lot to talk about and good memories."

Fillman--science teacher at Naperville North High School and summer employee with the Fermilab Public Information Office--had recently returned from RAGBRAI-VII-- (Des Moines) Register Annual Great Bike Ride Across Iowa. She and 5,000 other bikers had spent from July 29 through Aug. 4 biking southeast across Iowa from Rock Rapids to Burlington, a distance of 500 miles.

It was Fillman's second adventure in what has become the largest bicycle ride in the world, with an attraction that pulls people to it from all over this country and from other nations. "It's work while you're in it, but fun after you've finished," said Kris.

\* \* \* \* \*

## PRAIRIE QUINTENNIAL CELEBRATION PLANNED

Dr. Robert A. Betz will give a tour of the Fermilab prairie on Sunday, August 26 at 2 p.m. in honor of the 5th anniversary of the beginning of the restoration project.

Visitors coming for the tour should park in the industrial area and proceed on foot to the prairie areas in the center of the Main Ring (a distance of about one mile). Parking and direction signs will be posted. Comfortable shoes and clothing should be worn for the two-hour visit.

Visitors who wish to are invited to bring a lunch for a picnic on the grass in the oak grove in the center of the Main Ring following the tour.

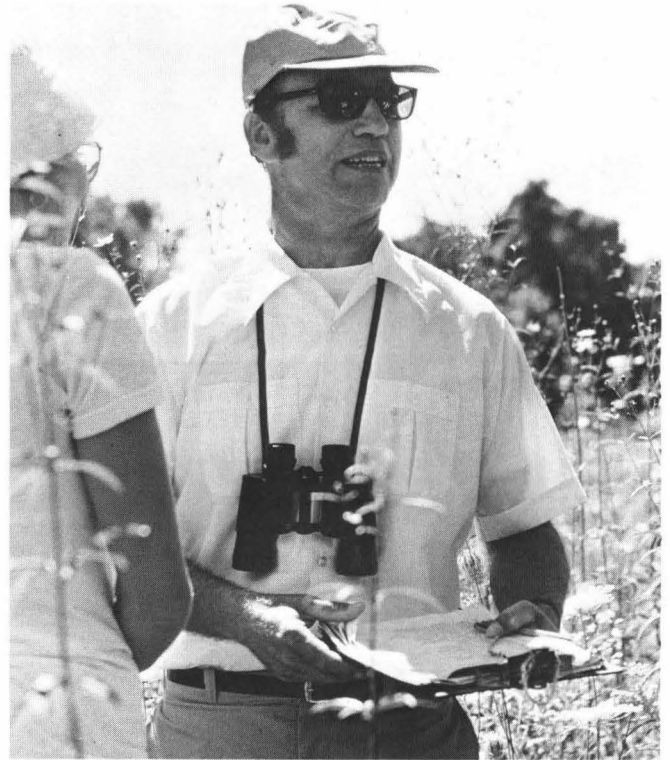
Dr. Betz, a world-renowned prairie expert, has been associated with the Fermilab prairie restoration project since 1975. He was a member of the committee of the Nature Conservancy which made the original proposal to the Laboratory for a restoration of the original prairie on the 660 acres in the center of the Fermilab main accelerator. He is well known for his support of the preservation of the few remaining prairies in the Midwest.

Betz has served as an advisor to the Laboratory and to the committee of volunteers that has harvested and cleaned seeds and assisted with the planning and planting during the past five years. Nearly 100 acres have now been planted at Fermilab. Another 100 acres will be planted in the Fall.

The prairie tour is the first one open to the Fermilab public and the several hundred volunteers who have worked on the project. "We think it is important for everyone to see the Fermilab prairie as it has developed in its first five years through the efforts of many people both inside and outside the Laboratory," said Dave Cosgrove, chairman of the volunteer committee.

"The plantings made in 1975 and 1976 are now mature and flourishing. We have learned many techniques for planting and storing seeds, and the next few years will be even more interesting."

The prairie project will be seeking volunteers again for hand harvesting of prairie seeds from existing remnant prairies in the Chicago area. While sufficient quantities of prairie grass seeds can now be harvested mechanically from the plantings inside the Main Ring, a variety



*...Dr. Robert Betz conducts tour of Illinois prairie...*

of prairie flowers must be interspersed with the grasses to create an authentic mix of prairie plants.

Volunteers should contact Cosgrove at Ext. 4606 for further information about harvesting. The harvesting will take place in October, and the seeds will be planted immediately in 100 acres that have been plowed and disked.

\* \* \* \* \*

### CHANGE IN CAFETERIA HOURS

During the Lepton-Photon Symposium, Aug. 23-29, the Central Laboratory cafeteria will be open for lunch at new hours.

Employees and other persons who are not participants in the symposium are encouraged to eat lunch between 11 a.m. and 12:30 p.m. After 12:30 p.m. on those days, the cafeteria will be closed to non-participants.

On Monday, Aug. 27, no evening meal will be served.

\* \* \* \* \*



### NEW CLOSING DATES FOR STOCKROOM

The two Fermilab stockrooms will close this month to take annual audited inventories.

The Central Laboratory stockroom will close Aug. 27 and 28, while the stockroom at site 38 will close Aug. 29-31.

"To maintain service continuity, one stockroom will make emergency--and I emphasize emergency--issues while while the other undergoes inventory," said Gene Guyer, stores supervisor. Phone Ext. 3808 for additional information. New closing dates were selected to avoid conflict with the August shutdown.

\* \* \* \* \*



*...Visitors study exhibit...*

### EINSTEIN EXHIBIT TO SHOW UNTIL END OF AUGUST

The Einstein Centennial Exhibit and accompanying movie will run through to the end of the month.

The exhibit itself is just beyond the north entrance in the atrium. The movie--"Albert Einstein: Education of a Genius"--is being shown in the 1-West conference room of the Central Laboratory at 11 a.m. and 3 p.m. every day.

Beginning on Aug. 27, it will be shown at noon and at 3 p.m. so employees can more conveniently view the 50-minute film that follows the development of Einstein from his early childhood to his death. It strikes a balance between his scientific contributions and his involvement in timely social and political issues.

The exhibit, though not as broad in scope, does go into more detail on some of the more important aspects of his life.

\* \* \* \* \*

### REMINDER ABOUT BUFFALO CHIP THROWING CONTEST

Oops...

The second annual buffalo chip throwing contest begins this afternoon at 5:15 p.m. with a social event at the Village Barn. An earlier article had an incorrect date.

Trophies will be awarded to the men and women who throw the chips the farthest. Gloves will be available. The Blue Grass Band will provide live music and participants and onlookers can treat themselves to a chili meal.

Additional information may be obtained from Glenn Lee, Ext. 4448

\* \* \* \* \*

NOTE: The Fermilab swimming pool will close at 5 p.m. Aug. 25 (one day only) because of the picnic for participants in the Lepton-Photon Symposium. The picnic will be held at the Village Barn.

\* \* \* \* \*

### "CAT BALLOU"

Presented by Fermilab International  
Film Society

Thursday, Aug. 23  
8:30 p.m.

Central Laboratory  
Auditorium

When Elliott Silverstein, director, put Lee Marvin in the saddle of this western comedy, he created one of the decade's most popular westerns. Marvin rode well enough to win the Academy Award for his dual role as the evil man with no nose and his kindly brother. Jane Fonda also stars.

PG                      Color                      96 minutes                      Adults, \$1.50                      Children, 50 cents