FERMINEWS

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FERMILAB WELCOMES PARTICIPANTS TO THE 1979 INTERNATIONAL SYMPOSIUM ON LEPTONS AND PHOTONS

This symposium on leptons and photons is the ninth in the series of biennial meetings which began with the 1963 meeting in Cambridge. Sixteen years ago, the excitement in particle physics came from the discovery of meson and baryon resonances and the properties of weak interactions. Nearly all of this work was done at proton accelerators. Electron and photon beams were very cumbersome tools to look for new resonances when compared with pion and kaon beams. On the other hand, elastic electron scattering was essentially the only technique to probe the structure of the nucleon.

Times have changed. Deep inelastic scattering revealed the presence of quark in the nucleus. The neutrino and the muon have replaced the electron as a probe of nucleon structure. Dimuon production in hadron collisions has revealed the constituents of the pion. As you will hear in the week ahead, the proton accelerators have largely taken over the task of the experimental determination of hadron structure. After many years of neutrino experiments at proton accelerators, an electron scattering experiment has provided the most accurate measurement of the weak neutral coupling constant.

The powerful electron accelerators of the past decade have become injectors for still more powerful electron-positron storage rings. The first report of the observation of annihilations in a storage ring to this series of Symposia was made at SLAC in 1967. A dramatic change occurred at the 1975 symposium at SLAC when, for the first time the storage rings provided many of the major discoveries in particle physics. The first session of presentations will be devoted to the presentation of the data obtained from the newest of these rings, PETRA.

In the two years since the meeting in Hamburg a great deal has been learned in theory and experiment. I hope that you will find the new results presented at the symposium stimulating. Furthermore, I hope that you will enjoy this week at our laboratory. On behalf of the Organizing Committee and the Staff of Fermilab, I welcome you to Fermilab.

John Peoples
Chairman, Organizing Committee

... Visitors to Fermilab's Theoretical Physics Department enjoy coffee before attending an afternoon seminar. From the left (standing), Hisakazu Minakata, research associate, Department of Physics, Tokyo Metropolitan University, Japan; Ken-Ichi Shizuya, research associate, Fermilab; Shmuel Elitzur, teaching member, The Hebrew University of Jerusalem, Israel; Kazuo Yamada, professor, Hiroshima University, Japan; Wu-Ki Tung, professor, Department of Physics, Illinois Institute of Technology, Chicago; Harry J. Lipkin, professor, Department of Nuclear Physics, The Weizmann Institute of Science, Rehovot, Israel; Andreas P. Contogouris, professor of physics, McGill University, Montreal, Quebec, Canada; Robert Oakes, professor, Department of Physics, Northwestern University; Mary K. Gaillard, Maitre de Recherche, LAPP, Annecy-le-Vieux, France; Jack Smith, professor, Institute for Theoretical Physics, State University of New York, Stony Brook, on leave at CERN; and Ichiro Ohba, professor, Department of Physics, Waseda University, Tokyo. Sitting is Andrzej Bialas, professor, Institute of Physics, Jagellonian University, Poland...

THEORY AND EXPERIMENT INTERPLAY IN THEORETICAL PHYSICS DEPARTMENT

Fermilab has frequently been described as a United Nations of high energy scientists.

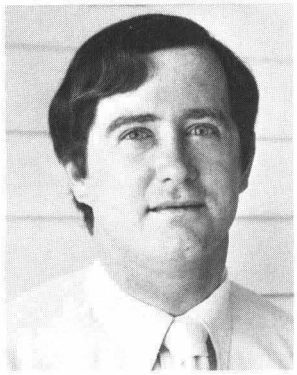
And the place where Chris Quigg works could rightly be called a United Nations within a United Nations. As head of the Theoretical Physics Department at Fermilab, Quigg is in contact daily with scientists from many nations, each man and woman working toward the common goal of achieving a better understanding of matter at its most fundamental level. In the past year alone, from last summer to now, more than 200 scientists have visited the Theoretical Physics Department for periods from only a few days to longer than a year.

"They come here to get our reaction to their work and to interact with other scientists here," said Quigg. "They have the opportunity to meet each other and to exchange thoughts. One of the most important things a physicist wants to determine is what other people think is important, what are the good problems, what is considered a waste of time.

"For us at Fermilab, this steady flow of visitors is extremely important. It helps us maintain thinking that is broad and flexible and keeps us from developing a local orthodoxy. Furthermore, it's our obligation as a national laboratory to provide the atmosphere and facilities in which this kind of creative effort is encouraged and sustained. Our post-doctoral physicists, for example, get to meet the people who are in the forefront of high energy physics. This exposes them to a wide variety of scientists and opinions."

Quigg is justifiably proud of his

(Continued on Page 3)



...*Quigg*...

department's intellectual atmosphere and pace. He plans to maintain "a vigorous visitors program," which he says enhances the creative climate of the laboratory and provides service to other experimenters.

Quigg himself prefers to work on problems that have an immediate application. For example, he and his colleagues are developing calculations of photoproduction of charmed particles that will be useful for experiments 203 and 516. A problem can be worked on by a group of people or it can be the responsibility of an individual.

"We would like a person to work on his own problem," said Quigg. "But sometimes a post-doctoral physicist needs help in choosing a problem that will lead to a useful answer in a reasonable amount of time. We also have people working on more formal theories. The ultimate intent, in all instances, is to find an answer that eventually has something to do with reality."

Quigg described his department as "complicated and interconnected." He also said the "range is broad and typical of what you would find in most university departments."

The importance physicists attach to theory can be seen by examining the scientific program of the conference on high energy physics that will be held at Fermilab Aug. 23-29. Theoretical developments will be presented in more than seven of the ten sessions. Speakers include prominent theorists from this country and abroad. The articulate Quigg also is called upon to serve in other ways. For example, Jason Lipchitz, a young student from Brooklyn, N.Y., wanted to know how "you theorize the working of the W particle." The call went out from the Public Information Office to Quigg to help prepare a response.

If someone were to follow Quigg for a day or so, listen to his thoughts carefully and watch chalk boards fill up with esoteric mathematics under his flying hand, then one could not help but firmly believe the powerful truth of a key phrase in his letter to Lipchitz: "The interplay of theory and experiment." That indeed is the frontier in which Fermilab scientists now stand.

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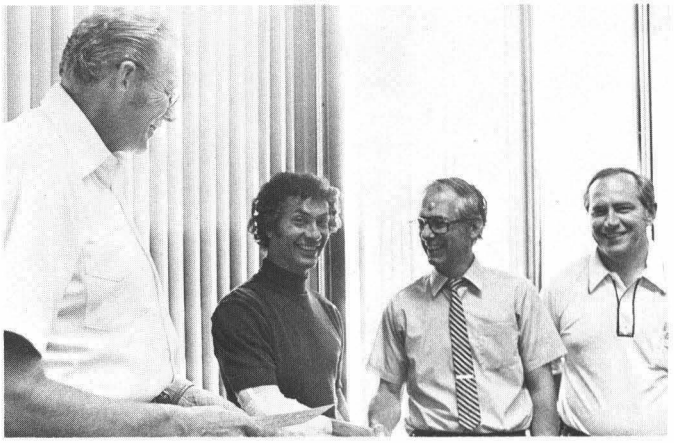

...*(L-R) Bill Riches, Jim Fourmont, Chuck Marofske and Dick Graff*...

FOURMONT COMPLETES COURSE

Jim Fourmont, maintenance electrician in the plant management section, was honored at a recent awards luncheon for having completed his electrical maintenance course.

Bill Riches, plant manager, presented Fourmont with a certificate of completion. Also attending the event were Chuck Marofske, head of the Laboratory Services Section; Dick Graff, electrical supervisor; Jack Morphey, mechanical supervisor; and Denis Bowron, maintenance supervisor.

Other maintenance electricians who had previously completed the course also attended the luncheon. They are Paul Forester, John Kedzierski, Rob Carlton and Harold Scheppman. Those who were unable to attend were Bob Boisdorf, Dale Esser and Ray Gunderman.

Among those present who had already completed their mechanical maintenance courses were Fred Randazzo, Chris Sigwards, Chip Key, Ike Sykes and Tom Powell.

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EINSTEIN FILM TIME CHANGE

The movie--"Albert Einstein: Education of a Genius"-- will be shown at noon and at 3 p.m. beginning Aug. 27 and continuing through to the end of the month.

Up to Aug. 27, the movie will run at 11 a.m. and 3 p.m. The time was changed to make it more convenient for Fermilab employees to see the film. The movie is part of the Einstein Centennial Exhibit, which is now in the atrium lobby of the Central Laboratory.

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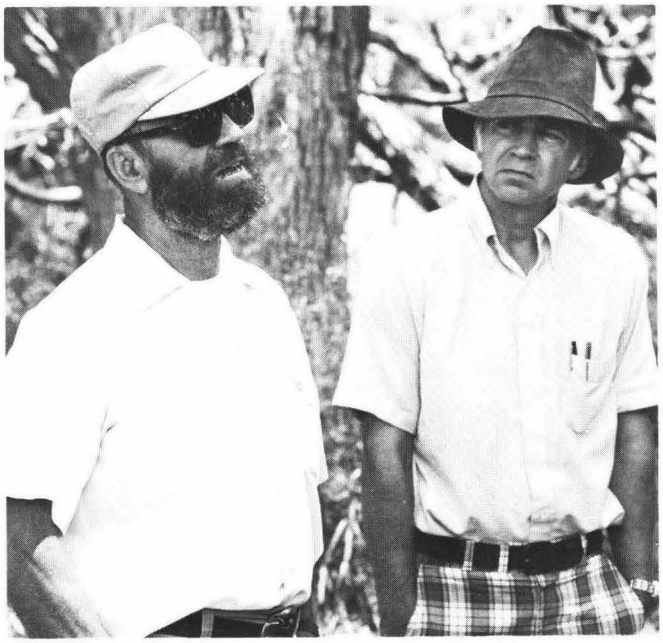

...Dr. Robert A. Betz (left) and John R. Paulk, head of site services...

GED PREPARATION COURSE PROPOSED

Fermilab wants to determine if there is enough interest to offer a course that prepares persons for the general educational development (GED) examination.

Classes will meet three times a week for an hour, either during noon or after working hours--depending on the preference of those who have enrolled. Classes will run 12 to 14 weeks beginning this fall.

Persons who are interested have been asked to contact Ruth Christ in personnel, CL6E, Ext. 3324.

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REMINDER ABOUT STOCKROOM CLOSING

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 the other undergoes inventory," said Gene Guyer, stores supervisor.

...(L-R) Vladimir Kolganov (see story), Tony Donaldson, Rene Donaldson and Phil Livdahl, acting deputy director of Fermilab...

NEW COMMITTEE MEMBERS GET TASTE OF PRAIRIE

Standing shoulder-high at times in the prairie flora growing inside the Main Ring, new members of the Fermilab Prairie Restoration Committee got a first-hand feel for what's ahead of them.

Leading them and incumbent committee members on a tour of the site was Dr. Robert A. Betz, a world-famous prairie expert who has been associated with the prairie restoration project since 1975. This was a prelude for the public tour that will be conducted Aug. 26 at 2 p.m. in honor of the fifth anniversary of the project.

Among those accompanying Dr. Betz was Anthony R. Donaldson, an electrical engineer with the Neutrino Department and outgoing committee chairman. He had served as chairman since the project's inception. Accompanying Donaldson was his wife, M. Rene, senior editor with technical publications at Fermilab. She has worked as hard as her husband in bringing the project along and who, some say, certainly has earned the unofficial title of co-chairman.

Also there was Vladimir Kolganov, a guest of the Donaldsons. A physicist with ITEP, Moscow, he is deeply interested in the ecology of Russia. He is a collaborator in experiment #180 at Fermilab.

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