FERMINEWS

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...Gell-Mann...

...Schwinger...

...Lamb...

...Dirac...

(Source: McGraw-Hill Modern Men of Science)

HISTORY OF PARTICLE PHYSICS SYMPOSIUM TO BE HELD HERE

The International Symposium on the History of Particle Physics will be held at Fermilab May 28-31.

The symposium will focus on the roots of elementary particle physics, primarily in the area of cosmic rays and quantum field theory in the 1930's and 1940's before the era of the great accelerators. For additional information contact Lillian Hoddeson or May West, Ext. 4548.

The principal speakers in the order of their appearance in the program will be Prof. P.A.M.Dirac, Florida State University, who won the Nobel Prize in 1933 for his discovery of new approaches to atomic theory;

Gilberto Bernardini, Scuola Normale Superiore, Pisa, Italy, a central figure in the Italian cosmic ray school;

Victor Weisskopf, Massachusetts Institute of Technology, theoretical physicist and former Director-General of CERN;

Carl D. Anderson, San Marino, Calif., Nobel Prize in 1936 for the discovery of the positron;

Satio Hayakawa, Nagoya University, Japan, leading Japanese expert on cosmic rays and former associate of Hideki Yukawa and the late Sin-itiro Tomonaga, both Nobel Prize winners;

Robert Serber, Columbia University, nuclear theorist and former member of the school of Oppenheimer;

Bruno Rossi, MIT, leading cosmic ray experimentalist;

Willis E. Lamb Jr., University of Arizona, Nobel Prize in 1955 for measurement of the Lamb shift in atomic energy levels;

Julian S. Schwinger, University of California-Los Angeles, Nobel Prize in 1965 for research in quantum electrodynamics; and

Murray Gell-Mann, CERN, Nobel Prize in 1969 for his study of subatomic particles.

An important aspect of this symposium will be round table discussions in which eminent historians will have the opportunity to discuss major issues with the speakers.

Chairing the round table discussions will be Spencer Weart, director of the Center for History of Physics, American Institute of Physics, and Roger H. Stuewer, Tate Laboratory of Physics, School of Physics and Astronomy, University of

(Continued on Page 2)

PARTICLE PHYSICS SYMPOSIUM
(Continued from Page 1)

Minnesota.

Discussants will include Don F. Moyer, Evanston, Ill.; Silvan S. Schweber, Department of Physics, Brandeis University; Robert W. Seidel, History of Engineering Program, Texas Technical University, Lubbock, Texas; Dudley Shapere, Rockville, Md.,; Charles Weiner, School of Humanities and Social Science, MIT; and Takehiko Takabayasi, Department of Physics, Nagoya University, Japan.

An earlier symposium on the history of nuclear physics was held at the University of Minnesota in May 1977. That symposium dealt with nuclear physics of the 1930's. This coming symposium will pick up where that one left off.

Laurie M. Brown, physicist and historian at Northwestern University, and Lillian H. Hoddeson of the Institute for Theoretical Physics at the University of California-Santa Barbara and historian at Fermilab, are the principal organizers. Other members of the Organizing Committee include Leon M. Lederman, Fermilab director; Robert R. Wilson, Fermilab director emeritus; Hans A. Bethe, Cornell University, Nobel Prize in 1967 for his work on energy production of stars; and Stuewer and Weart, both discussants.

Last year the University of Minnesota Press published the proceedings of that first symposium in a hard cover book, "Nuclear Physics in Retrospect." It was edited by Stuewer, the principal organizer of the Minnesota symposium and the chairman of one of the roundtable discussions in the 1980 symposium.

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GENERAL RELATIVITY NEXT COLLOQUIUM TOPIC

Dr. John Stachel of the Institute for Advanced Study at Princeton University will speak about "Genesis of General Relativity" at the physics colloquium April 2.

The session will begin at 4 p.m. in the Central Laboratory auditorium. The weekly lectures are presented by the Fermilab Physics Colloquium Committee.

In his talk, Stachel will describe Einstein's search for a unified theory of gravitation and matter.

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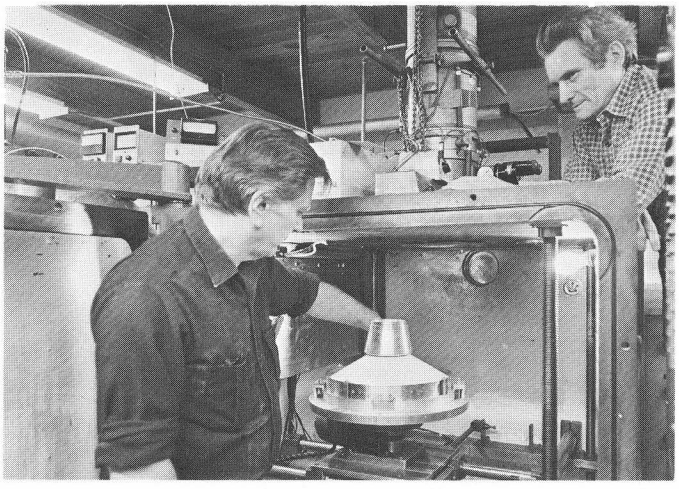

...Don Szarzynski (left), instrument maker, and Ted Johnson, instrument welder, check gas barrier being welded for the Linac. Metal box containing gas barrier is part of electron beam welder. Photograph was taken in the electron beam room, which is connected to Lab 1 in Village...

ELECTRON BEAM WELDER CAN DO ASTONISHING THINGS

Fermilab's first electron beam welder has considerably advanced the craft of welding here and is doing things that would have to be called "remarkable"!

Luke Hardy, machine shop foreman, obtained the welder from the Argonne National Laboratory through the surplus equipment program. The welder produces speeding electrons; when the electrons strike metal, they immediately give off energy in the form of heat. This produces a molten area that solidifies into a weld. Welding is done under vacuum. The amount of heat and the depth of heating can be controlled.

The electron beam is able to reach deep into nearly inaccessible areas to make a weld, explained Hardy. This would be difficult or impossible to do with conventional welding equipment. Also, some materials are difficult to weld in the atmosphere. Welding them together in a vacuum leads to superior welds, obviously an ideal use for the electron beam welder, said Hardy.

"We wanted to upgrade our ability to do the highly technical things the Laboratory expected of us," he said. "That's why the beam welder is such an outstanding addition. I'm certainly enthusiastic about it. It will help us keep up with the demand for our services."

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SUPERCONDUCTING MAGNET FOR ENERGY STORAGE HOLDS PROMISE

It would take a superconducting magnet about the size of the University of Wisconsin's football stadium to do the job, but it could be done, Dr. Roger W. Boom of the university told an audience at Fermilab.

They had come to hear him talk about energy storage using superconducting techniques. He took many of them into a new dimension of thought, one that has enormous promise for energy production and consumption in the coming years. Boom was the guest of the Fermilab Physics Colloquium Committee.

That gigantic superconducting magnet could be used to store energy that would serve the entire state of Wisconsin. Colossal magnets such as these also could be constructed in other states, considerably increasing the efficient use of energy at the national level. Constructed deep underground and cooled to superconducting temperatures by liquid helium, a magnet would be used by a utility to store energy at night and on weekends--the lower use periods. This stored energy would then be fed into the electric network during peak demands, usually in the afternoons and early evenings.

A superconductive energy storage system could be operated with an efficiency as high as 95 percent, said Boom, far higher than more traditional methods of energy storage. In many instances, superconducting magnet energy storage can be used by utilities that can't use other kinds of storage, Boom also said.

This approach is best for weekly storage, has excellent response to load changes and has less environmental impact than other techniques, he continued. Among other advantages, it improves the efficient use of existing power plants; it minimizes the need for new power plants; it reduces the use of peaking generators, thus saving oil and gas; and it greatly improves the economics of solar and wind generation by storing their excess outputs.

In the audience was Fred Mills, associate head of the Colliding Beams Group. Boom reminded the audience that some of the technology that Boom and his associates are using in their present research on these magnets dates back to 1974 when the Mills team worked at Fermilab on these concepts.

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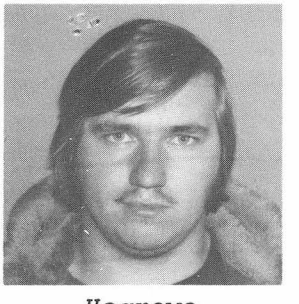
SPECIAL ANNOUNCEMENT

Tom Groves, Assistant Director, will be leaving the Directorate and going over to the Energy Saver to work with Rich Orr, effective April 1, 1980. Taiji Yamanouchi has been named Assistant Director of Program Planning and the Directors Office. Norman Gelfand, Roy Rubinstein, Ken Shafer and Mark Hibbard will be working with him.

The Program Planning and Acquisition Group receives proposals from prospective users, prepares presentations to the Program Advisory Committee and is charged with the day to day programming of accepted experiments. The Director praised Tom Groves for his six years of very successful leadership in the Director's Office and the Planning Group.

WILLIAM HOGREWE DIES



...Hogrewe...

William Hogrewe, a technician with Internal Target and Safety Group of the Accelerator Division, died March 23.

He had been with Fermilab since November of last year, coming here from the Northrup Corporation in Rolling Meadows, Ill. There he had been a production technician, conducting an environmental test of electronic countermeasure equipment.

Born Feb. 20, 1955, he was a graduate of Elgin High School and of the technician program at DeVry Institute of Technology, Chicago, where he compiled a high scholastic average.

"Bill was an extremely capable young technician," said Peter McIntyre, group leader of the Internal Target Group. "His work in electronics showed great promise, and he demonstrated impressive potential for leadership. Bill was respected and well-liked by all who worked with him. His very untimely death is deeply mourned by all of his colleagues."

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FINE ARTS QUARTET TO PERFORM HERE

The Fine Arts Quartet, in a return engagement, will perform at Fermilab April 19.

The concert in the Central Laboratory auditorium will begin at 8:30 p.m. The price of a reserved seat is $5 and may be obtained at the ticket sales desk in the atrium. Telephone orders may be placed by calling (312) 840-3353. Tickets must be paid for by April 16. The quartet's appearance is part of the Fermilab Art Series and is arranged by the Auditorium Committee.

Considered by critics throughout the world as one of this country's best string quartets, the Milwaukee-based group has brought its music to tens of thousands in this country and abroad. Presently, they are giving more than 100 concerts each year. They are particularly noted for their beauty of tone, refinement of interpretation and perfection of their ensemble work.

One critic wrote following their first appearance here: "One marveled at the range of sounds which string instruments can make in the hands of these four masters of the art."

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CHEZ LEON MENUS

Tuesday, April 1, 7:00 p.m.

Restaurant reserved for Cooking Class

Wednesday, April 2, 12:30 p.m. - $4.50

Oxtail soup
Chicken cutlets quattrocento
Saute cabbage and onions
Baked tomatoes w/herbs
Grapes in brandy

Thursday, April 3, 7:00 p.m. - $8.00

Stuffed peppers
Filet of sole meunier
Potato noisette
Stuffed mushrooms
Spinach salad
Melon stuffed w/fresh strawberries

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REMINDER ABOUT SCIENCE AND HUMAN VALUES LECTURE

Prof. M. Cherif Bassiouni will speak about "The Islamic Revolution" March 28.

Another in the Science and Human Values Lecture Series, his presentation will begin at 8:30 p.m. in the Central Laboratory auditorium. Though free and open to the public, admission is by ticket. They are available at the ticket sales desk in the atrium.

Bassiouni is professor of law at DePaul University. He is widely known for his scholarly achievements and has been given a number of awards and distinctions for his contributions to his field.

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GRADUATE STUDENT PARTY

The next party for graduate students will be held 6 p.m. March 31 in the Users Center. Dr. Leon Lederman, Fermilab director, will join the students for informal discussions on a variety of topics. For example: Are you learning? Can things be improved? Is there an antidote to big science? Does it need one? Food and beverages will be available.

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COOKING CLASSES TO START

People interested in improving their cooking ability are invited to participate in a meeting March 28.

The discussion, at 5:30 p.m. in the Users Center kitchen, will be about cooking classes that will start April 1. The cost for each lesson is $12.50 and includes instruction and a five course meal. The instructor, Tita Jensen, will give recipes to the participants.

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NEW AEROBIC DANCE EXERCISE CLASS TO BEGIN

A new class in aerobic dance exercises will begin March 31.

Individual sessions will be held on Monday, Tuesday and Thursday for seven weeks from 5 to 6 p.m. at the Village Barn. The cost is $25. Interested men and women should contact Helen McCulloch, Ext. 3126.

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