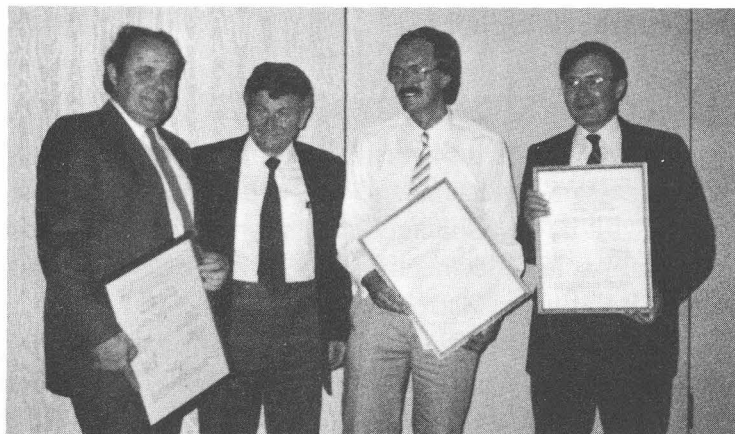


Joint Accelerator School "Beams" Ideas to Students

by S. Winchester

The Joint US-CERN School on Particle Accelerators Topical Course on Frontiers of Particle Beams was held last month at South Padre Island, Texas, and the school was proclaimed a success. Contrary to popular belief, the "Red Tide" did not take over the Island, the students did.

Over 100 students and 33 lecturers participated in the international school which ran from October 23 - 29, 1986, and the overwhelming response from attendees was, "Terrific! When's the next one?" They claimed they were talking about the school, but one wonders if the beautiful location didn't have something to do with their enthusiasm. (South Padre Island is a small island in the Gulf of Mexico where Mexico and Texas meet).



The scene: awarding of the US Particle Accelerator School's 1986 Prizes for Achievement in Accelerator Physics and Technology. The participants, (l. to r.) Helmut Piel, Herman Grunder (presenter), Jorg Rossbach (accepting for Thomas Weiland), and Maury Tigner. (Photo by S. Winchester)

Since selection of the location and organization of the school is the responsibility of the host country, Mel Month and Marilyn Paul of the US Particle Accelerator School, together with their Texas host, Russ Huson of the Texas Accelerator Center, searched out the island paradise. Representing the CERN Accelerator School were Phil Bryant and Stuart Turner.

"Planning for these schools begins at least a year in advance," Month explained. "The school was successful because of all the hard work and time that was invested." He was referring to Paul (Fermilab), who was capably backed in South Padre Island by Anne Burwell (Fermilab), Ginny Jahn (TAC), Carol Kuc, Suzanne von Wartburg (CERN), and Susan Winchester (Fermilab). Angela Gonzales and Cynthia Sazama of Fermilab also made important contributions during the planning stages of the school.

"In the last few years, these two schools, devoted to the subject of particle-beam physics, have been set up, one on either side of the Atlantic," Month explained. "Each year since 1981, the US Particle Accelerator School has organized Summer Schools, hosted by the major American laboratories, Fermilab, SLAC, and BNL. The CERN Accelerator School started in 1983 and offers annual courses on general accelerator physics as well as participating in the organization of special workshops. The worldwide response to these courses reflects the growing demand for education in this field."

The international collaboration has been established between the two schools to organize a series of courses on advanced topics. The course this year was entitled "Frontiers of Particle Beams."

Particle beams have already been put to use in medicine and cancer therapy, food irradiation, and sewage treatment, and it is believed that they have considerable

Continued on page 4

IMPORTANT NOTICE

Due to budgeting and staffing constraints, the following will take effect November 17, 1986:

Offsite pickup (and delivery) by Fermilab drivers will no longer be made except in emergency situations. The Procurement Group will attempt to obtain next day delivery service from our suppliers and common carriers when that kind of special service is required.

Private vehicles will no longer be towed or started either by Support Services or our Guard staff.

Leon Lederman Wins 1986 Sigma Xi Science Award

The Chicago Area Sigma Xi Clubs and Chapters selected Fermilab Director Leon M. Lederman as its 1986 Outstanding Chicago Area Scientist. The award was presented on October 17th during ceremonies marking the organization's centennial.

Lederman was cited as an individual "who has made distinguished contributions to science in the Chicago area. Your leadership in scientific research and in science education certainly constitutes an outstanding contribution to our field."

Cy Curtis Retires Fermi I.D. #14

Cyril Curtis, one of Fermilab's charter members, has retired after 19 years of dedicated service. Cy joined the National Accelerator Laboratory design group in Oakbrook in September, 1967.

Cy served in the Army Air Force during World War II as a radar-weather officer, and also witnessed the first atomic bomb test in a bunker 6 miles away from the test site in Los Alamos. At Argonne, Cy participated in the first demonstration experiment of breeding plutonium fuel from uranium.

After joining NAL, Cy went to work immediately on the design and construction of the 750-kV Cockcroft-Walton preaccelerator and ion source. Under his direct supervision the first proton beam at the new laboratory was accelerated to an energy of 60 KeV (300 mA) on January 20, 1969, and to an energy of 750 KeV on April 17, 1969. The Cockcroft-Walton accelerator, the first accelerator in the chain of accelerators at Fermilab and, according to Cy, probably the most photogenic, was Cy's responsibility. In those early days of the laboratory, the Cockcroft-Walton was so pleasing to Bob Wilson that he proposed installing it in the Atrium of Wilson Hall.

Cy has spent his 19 years at the Lab working on the improvement of the Linac and preaccelerator. The highly successful conversion from protons to H⁻ ions in 1978 again is testimony of Cy's dedication to improving the operation of the Fermilab accelerators.

"His contributions have been immeasurable," said Don Young, who recruited Cy in 1967 and was the Linac Section Leader in those early "Fort Weston" days. "It has been a great privilege for me to have worked so closely with Cy. His extremely modest and

articulate nature will be missed by all. His attention to the fine details and his continual search for a better understanding have contributed to many of Fermilab's successes. We hope that his retirement will give him the freedom to pursue some of his many interests without the pressures of an operating schedule."

"Courtesy, tact, patience, and modesty are among the fine qualities that Cy exhibits so well," said Curt Owen of the Accelerator Division. "His virtues do not keep him from discussing some of his deceptively simple-looking inventions with his colleagues. After working with Cy for many years, and very closely for the last 15, I can't imagine the Linac without him."

"It has always been a pleasure working with Cy because of his friendly, positive attitude as well as the capable, but low-key, manner in which he carries out his work," said Deputy Director Phil Livdahl. "Following a short, well-earned vacation, we look forward to his return to supervise the building of the ion source for the Loma Linda medical accelerator."

After retirement, Cy plans to devote more time to gardening, playing the piano, and seeing to neglected repairs around the house.

Astrophysics Symposium to Begin

Nearly 700 of the world's leading experts on black holes, pulsars, quasars, and the evolution of the Universe will be in Chicago next month for their most important scientific meeting, the 13th Texas Symposium on Relativistic Astrophysics.

Held every other year, the international gathering runs this year from Sunday, December 14, through Friday, December 19, 1986, at the Holiday Inn City Center in Chicago. It is cosponsored by the University of Chicago and Fermilab. Among the scheduled speakers are Nobel laureate Stephen Weinberg, British physicist Stephen Hawking, Riccardo Giacconi, Director of the Space Telescope Science Institute, and Princeton physicist Ed Witten.

Topics will include the latest black hole and pulsar discoveries, and the latest work on the theories of cosmic inflation, supersymmetry, and the birth of the Universe. For the first time, debates on several hotly contested questions in modern theoretical astrophysics such as the age and distance scale of the Universe are planned. Funding for the conference has been provided by NASA, the NSF, DOE, and the Adler Planetarium. For more information, contact Cynthia Sazama, ext. 3082.

College Scholarships to be Awarded in Constitution Essay Contest

Next year marks the 200th anniversary of the ratification of the Constitution of these United States. In observance of the occasion, The East West Corporate Corridor Association (EWCCA) is sponsoring a "United States Constitution Essay Contest" for "all high school seniors in districts serving the communities of the members of the East West Corporate Corridor Association in the area of the I-5 High Tech Corridor" (Fermilab, for one), and "all high school seniors in the immediate family of employees who work at these locations [also Fermilab], regardless of what high school they attend."

Prizes will be cash scholarships to be paid directly to the college or university of each winner's choice. If your high-school age child wishes to enter the contest, he and/or she must compose an original essay describing the significance of the United States Constitution in the transition of American life from the status of a colony to that of an independent nation, and

as the Constitution affects our country and our government in the 1980s and beyond. Entries must be neatly typed and double spaced on plain white 8-1/2" x 11" paper, and must be no more than 1500 words in length. Entries can be mailed to the EWCCA, 1431 Opus Place, Suite 546, Downers Grove, Illinois, 60515, and must be postmarked no later than 2/28/87. Each submission should be attached to a separate transmittal letter which clearly identifies the contestant's name, address, and telephone number, and the identity of either the high school district OR the name of the family member/employee and his/her employer (Fermilab).

Essays will be judged by a panel made up of volunteer local professional educators; judges' decisions will be based on grammar, substance, and rhetoric. Winners will be chosen by May 15, 1987. For more information contact Marge Bardeen, Fermilab's coordinator for the contest, ext. 3211, MS 105.

Benefits Notes

Tax Reform Act of 1986

Congress passed and the President signed the Tax Reform Act of 1986. The Act included the provisions that were described in the September 19th issue of *FermiNews* with one exception. The \$9500.00 maximum tax deferral **will include all** employee's salary-reduction contributions to the basic retirement plan as well as to the Supplemental Retirement Account (SRA). In spite of lobbying for the maximum not to include the mandatory employee contributions to the basic retirement plan, the effort failed. The \$9500.00 maximum is effective January 1, 1987.

Effective January 1, 1987, "early distributions" from an SRA will be subject to ordinary income tax plus an additional 10%.

Effective January 1, 1989, TIAA-CREF SRA withdrawals will be subject to the same limitations as the other SRAs. The limitations were outlined in the notification from TIAA-CREF.

The Special Three-Year Cost Recovery Rule is repealed for individuals whose annuity starting date is after July 1, 1986. Each annuity payment is treated as partial payment to taxable income, and partially a

non-taxable return of the employee's investment in the annuity contract. No longer will the annuity payments received in the first three years of retirement be considered recovery of contributions that were already taxed.

A summary of the Tax Reform Act was mailed to all TIAA-CREF participants' homes. The Act left many things open to interpretation and clarification by IRS regulations and rulings. The Employee Benefits Office and TIAA-CREF are not authorized to give you tax advice. Therefore, you may wish to consult your own tax advisor to find out how this new law affects your particular situation.

Maxicare Participants

Maxicare recently mailed incorrect Subscription Certificates to new members. Under the section titled Outpatient Prescription Drugs, they show "No Coverage." It should read "No Charge." Maxicare will send a corrected page.

- Paula Cashin

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Credit Checks

As part of the Argonne Credit Union's Financial Fitness Days, the ACU will sponsor a seminar on "The New Tax Laws: How They Affect You."

The seminar will be held on Thursday, December 4, in Building 362/Auditorium at Argonne from 6:00 p.m. to 8:00 p.m. Presenters are from the certified public accounting firm of Selden, Fox and Associates, Ltd.

All Fermilab/DOE employees, visitors, and contractors and their spouses are welcome. For purposes of gauging attendance, reservations are requested. R.S.V.P.: Deborah Edwards, 76-2-5800 (ACU). If you're planning to attend, please contact the credit union for information and security clearance.

Piano Quartet Concert Sold Out

"The rare art of piano and strings" will be celebrated when the Los Angeles Piano Quartet brings its artistry to Ramsey Auditorium on November 22, 1986, at 8 p.m. They will perform piano quartet music of Beethoven, Faure, and Brahms.

The Los Angeles Piano Quartet is a collaboration of pianist James Bonn, violinist Joseph Genualdi, violist Ronald Copes, and cellist Peter Rejto. Individually, each of these musicians holds impressive credentials as teachers and solo performers. The group was founded in 1977, and rapidly became one of our country's top chamber ensembles, performing on major chamber music series in New York, San Francisco, Los Angeles, Detroit, Chicago, and Washington. The Los Angeles Piano Quartet made its European debut at the Cheltenham International Music Festival this past July. They have also recently released a recording of the Brahms Piano Quartets on the Klavier label.

This concert is sold out as part of Fermilab's chamber music series. However, you can obtain advance information on future exciting Fermilab Arts Series programs when you join our mailing list. Call ext. 3353 weekdays between 10 a.m. and noon, or 1 p.m. to 4 p.m. for mailing list and performance information.

- Tammey Kikta

"School" continued from page 1

potential in industry and defense. However, it will take time to train enough experts to continue the research and disseminate findings.

"Particle beams are changing our whole way of thinking about the world." Month said, "For scientists,

it's an exciting field. Particle beam science is still just on the verge. It has an unlimited number of uses."

On Tuesday, October 28, the participants gathered for the US Particle Accelerator School Award ceremony. Herman Grunder, Director of CEBAF, gave an amusing performance as the Master of Ceremonies and awarded the 1986 prizes for achievement in accelerator physics and technology to Thomas Weiland, "for the development of novel methods for calculating electromagnetic fields in complex structures," and to Helmut Piel and Maury Tigner "for their contributions to making rf superconductivity a practical reality." The prizes were awarded on a competitive basis for outstanding accomplishments in accelerator physics and technology by a committee consisting of Robert Gluckstern (Univ. of Maryland), Emilio Picasso (CERN), Burton Richter (SLAC), and Matthew Sands (UC/Santa Cruz). The awards were supported by the Universities Research Association, Inc., the Continuous Electron Beam Accelerator Facility, the Houston Area Research Center, Varian, and the Westinghouse Electric Company.

Participants also enjoyed such social events as a Pina Colada Night, a Western BBQ, Margarita Night, and an excursion to Matamoros, Mexico, where they let loose while buying huge sombreros, cowboy hats, and other miscellaneous souvenirs.

The Joint US-CERN School on Particle Accelerators Topical Course on Frontiers of Particle Beams was sponsored by the U.S. Department of Energy, the National Science Foundation, and the European Center for Nuclear Research.

Next Research Division Seminars

On November 20, 1986, Tom Nash will speak on the "Advanced Computer Program."

On November 24, 1986, G. Charpak will discuss "Research on Particle Detectors: Goals and Results."

These Research Division Seminars are at 4:00 p.m. in Curia II.

Fermilab Academic Lecture Series

"Introduction to String Theory," five lectures by Michelangelo Mangano, will be the topic of the fall Academic Lecture Series. The lectures will be presented on November 10, 14, 17, 21, and 24, 1986, in Curia II, from 1:00 p.m. to 2:00 p.m.

Fermilabers Run (and Run and Run) in America's Marathon/Chicago

Seven intrepid Fermilab staffers braved the rigors of the 26.2-mile America's Marathon/Chicago on October 26, pushed by the "eighth man," Roger Dixon. Roger had trained hard for the marathon, totaling from 45 to 60 running miles each week, but it was not to be. Roger came down with a sore throat and the flu and had to cancel out just one day before the run. The rest of us shared in Roger's disappointment and missed the competition Roger would have presented.

Though the official marathon times are not in on most of us yet, the unofficial Fermilab times for the 26.2-mile run are: Merle "Iron Man" Haldeman: 3 hrs, 10 min, 5 sec; Joel "Run the Ring" Misek: 3 hrs, 37 min; Rich "Triathlon" Rebstock: 3 hrs, 40 min; Lester

"Les" Erwin: 3 hrs, 40 min, 33 sec; Steve "Juice" Butala: 3 hrs, 41 min; Mark "I Never Run Before Breakfast" Schmitz: 3 hrs, 54 min; Dick "Breathes Like a Horse" Adamo: 4 hrs 9 min.

Merle placed 17th overall in his age group with only 15 minutes difference between his time and the first place finisher in his age group.

Special thanks to Steve "The Coach" Conlon and wife for the great carbo-loading lunch on the Friday before the marathon.

As for Roger, he plans to run the St. Louis marathon in November. Good luck in St. Louis, Roger. I wish we could be there to cheer you on. - Dick Adamo

In the Library

The article "Sermon for Science Teachers" by Leon M. Lederman appears in the September 1986 issue of *The Physics Teacher*.

"R&D Budgets: Congress Leaves a Parting Gift" in the October 31, 1986, issue of *Science* casts some light on HEP appropriations.

URA Scholarship Reminder

Candidates for Universities Research Association (URA) Scholarships are reminded that the scholarships are awarded on the basis of ACT (American College Testing) scores.

URA awards a number of scholarships to full-time Fermilab employees' children who are currently high school seniors and who will begin a four-year college degree program next fall. The maximum amount of the scholarship is \$3000 for tuition and fees, and is renewable for four years if the student progresses in good academic standing.

Applications will be available after the first of the year from Personnel and are due March 1, 1987. For more information contact Ruth Christ, ext. 3793.

Number of votes Donald Duck received in the 1985 Swedish Parliamentary elections: **291**

Write-in votes, in the 1985 Boise, Idaho, mayoral election, cast for Mr. Potato Head: **4**

-from *Harper's Index*

Congratulations to:



Extracurricular Activities

NALREC TURKEY TROT

Don't forget the NALREC Turkey Trot, kicking off tonight at 5:30 p.m. at the Village Barn. Labsters can look forward to Italian beef sandwiches, the usual refreshments, and live music by Baroque-n-Glass. Fifty gift certificates, good for turkeys or other grocery items of equal value, will be raffled off. Be there!

FILM SOCIETY PRESENTS

Coming up next from the Fermilab International Film Society will be *Fanny and Alexander*, Ingmar Bergman's "triumphant finale; the film tells the story of a turbulent year in the lives of two children."

The film will be shown at 8:00 p.m. on Friday, December 12, 1986, in the Ramsey Auditorium. Tickets are available at the door and are \$2.00 for adults, \$.50 for children.

You Know You've Been at Fermilab a Long Time When...

Some time ago, we sent out letters to a representative cross section of the Fermilab staff, asking them to complete the sentence above. The printable responses are reproduced below. Amateur sociologists might want to analyze the recurrence of certain themes. Or not.

- you find your name in the stock book.
- the geese start pecking at your ankles because they think you look like a piece of stale bread.
- your boss comes to work in the morning and holds a mirror under your nose.
- you start buying steel-toed wingtips.
- you can find the Publications Office.
- you take your floating holiday on January 2nd.
- your birth certificate has the Fermilab logo on it.
- you were on the welcoming committee for the first Canadian honker.
- you personally knew Che-Che Pinqua.
- you have had your work area relocated 10 times and your department reorganized 20 times.
- your picture was in the *Village Crier*.
- you don't understand why five drafts isn't enough to arrive at the final version of a paper [or maybe when you *do* understand -Ed.].
- you realize that in the "old days," after a payroll increase, you didn't owe Fermilab money.
- you remember when Tom Regan's hair wasn't gray.
- you think you've seen the sun rise twice in one day.
- the cleaning staff has to dust around you.
- you can drive 16 miles to work and not remember anything of the trip.
- you go off-site for lunch even when the cafeteria serves chef-carved roast beef.
- you write letters to dogs.
- an experiment ends.
- an experimenter who started here at the same time you did is now your department head.
- you are a summer student who makes more money than your boss.
- people with higher I.D. numbers than yours are retiring.
- the spider that has been weaving a web between you and your terminal screen suddenly stops weaving and says, "I'm sick of looking at your face! How about a face lift? Or better yet, retire!"

- you find yourself complaining to the geese.
- the Control Room informs you that the Main Ring is under six feet of water and you respond, "So what?"
- there is a memorial plaque on your barstool at the Users Center.

Lab-Wide Clean Up

Bob Hall, Head of Roads and Grounds, asks that you get ready for a site-wide clean up from November 17 through 21, 1986. Any trash or excess materials set outside will be hauled away. Separate recoverable copper, aluminum, and steel; place refuse in piles outside of buildings. Material from accelerator and experimental areas should be monitored by a local Radiation Safety Officer; other areas: call Chuck Zonick, ext. 3458. For disposal of liquids, chemicals, and toxic substances, call Bob Allen, ext. 4498; for storage, call Fred Assell, ext. 3577; for questions and/or haul away of trash or metals, call Bob Hall, ext. 3303.

CAFETERIA CLOSED FOR HOLIDAY

The Fermilab cafeteria will be observing the Thanksgiving holiday along with the rest of us and, as a result, will be closed on November 27, 28, 29, and 30, 1986. Felicitations of the season.

FermiNews Holiday Publication Schedule

Given the calendar realities of this year's holiday schedule, this will be the only issue of *FermiNews* for November. The next issue of *FermiNews* will appear on December 12. It, too, will carry classified ads. Deadline for articles and ads for the December issue is December 2.

Percentage of liberals who say they've gone skinny-dipping: **28**

Of conservatives: **15**

Lifespan of a tree in New York City: **7 years**

Average percentage of income Americans earning \$200,000 or more will pay under the new tax bill: **22**

Average percentage they pay today: **22**

Percentage of Americans who say they dream in color: **40**

Who say they dream in black & white: **23**

Percentage of Americans who say that U.S. space shots have caused changes in the weather: **41**

- from *Harper's Index*