



Hats Off to Waxahachie

Déjà vu.

For the second time in three weeks, Fermilab's Ramsey Auditorium was SRO to hear a Director's Meeting address by Fermilab Director Leon M. Lederman. The topic at noon on November 10, 1988, however, was not the winning of a prize, but the "losing" of one: an hour and a half earlier, Secretary of Energy John S. Herrington had announced Waxahachie, Texas, as the preferred site of the Ronald Reagan Center for High Energy Physics, home of the Superconducting Super Collider.

Before beginning his remarks to an estimated 900 Fermilab staff, scientists, and an impressive array of visiting journalists, the Director pulled a full-bore Stetson from under the podium and put it on his head. Having broken the tension, the Director went on to say:

I don't know if we have such a thing as a prairie hat.

As you know, the U. S. Department of Energy (DOE) selected Texas as the site for the SSC. I think we're all disappointed at the decision for it not to go to Illinois. I personally believe that it would have been much easier to build a machine in Illinois and harder to build it in Texas, but on the other hand, I am impressed that the Department of Energy is moving ahead with the entire SSC process in picking the contractor, which is well under way, and picking the site. It seems clear to me now that the next Administration will have the SSC in its budget and what this means is that the subject of high-energy physics (HEP), which is something we do here, is considered terribly important and is scheduled to proceed in a very important way.

Now, I know some of the questions on your minds. What happens to Fermilab? Let me give you my best estimate of what should happen. We do have a new machine here called the TEVATRON. In case you haven't noticed, it is operating at the highest energy in the world and it's operating extremely well. Its efficiency has caught the attention of everybody involved with the subject of HEP, and

in addition to its current level of operation, we have been urging the Department of Energy over the last several years that we need upgrades. These upgrades are needed wherever the SSC goes, because we know that the SSC will not be publishing physics until roughly the year 2000 and we have to keep a lively program of physics going between now and then. That lively physics program means a flow of young people into research and then out into the field. If we don't keep a lively physics program going there won't be anybody to use the SSC, let alone help in building it.

We think that the TEVATRON will be the prime tool for keeping physics in the United States going over at least the next decade, if not the next 15 years. We are a crucial part of this essential need to continue to produce the physicists and the scientific results. And so we've asked for very substantial upgrades that have to do with new linacs, a new machine that replaces the Main Ring, and then finally in the third phase, a higher energy TEVATRON. All of these things, which are modest on the scale of the SSC expenditures, are still fairly substantial. We've asked for budget increments of something like \$50 million a year over the next five or six years in order to get this program going. I believe that we will have an excellent chance of convincing the Department of Energy; we've been convincing the rest of the high-energy physics community. Everyone agrees that this is a sensible program and so we have a lot of things to do between now and when the SSC comes on the air.

When it comes to predicting what happens beyond that, well, Fermilab makes a firm, long-range plan and then we change it every two weeks, so it's hard to predict ten years from now. All I can do is look around and cite the experience of, for example, the Stanford Linear Accelerator Center in California, which is 24 years old and still going; the Alternate Gradient Synchrotron, the AGS, at Brookhaven, which is 28 years old or more and still going; and

Continued on page 3

Bioengineering Topic of Next Lecture Series

For the first time in the history of the world there is evolution taking place, not in the realm of chance, but in the test tubes of the laboratory. Dr. W.R. Gomes, Professor and Acting Dean of the College of Agriculture at the University of Illinois (Urbana-Champaign) discusses the biological implications of this "manipulated evolution" and its impact on the future of the planet in his talk, "Designer Genes, Frozen Assets, and Clones from the Bank: Boon or Bane?" on Friday, December 9, 1988, at 8:00 p.m. in Fermilab's Ramsey Auditorium.

Research into the rules governing the transmission and manipulation of genetic information has resulted in such new technology as gene splicing (recombinant DNA), artificial insemination, embryo transfer, in vitro fertilization, and laboratory-induced twinning. This work has already created advancements in disease control and increased food production through enhanced strains of both plants and animals. Other potential benefits may include new human health-care products and chemicals, the conversion of biological products into energy sources, and the clean-up of wastes. But intelligent use of this new knowledge depends upon society's understanding of its potential and its limitations.

Dr. Gomes, an internationally-respected reproductive physiologist, has studied and researched the

manipulation of animal embryos for over 20 years. He will discuss, in layman's terms, some of the genetic research taking place today, its applications to the human genome, and speculate on some of the future implications of this important work.

Admission to Fermilab Lecture Series events is \$2. As is customary at Fermilab's public Lecture Series, a question-and-answer session and reception will follow the talk. Reserve your seat by completing the attached order form and returning it to Fermilab with payment and a self-addressed stamped envelope.

For further information or phone reservations, call ext. ARTS weekdays between 10:00 a.m. and 12:00 noon or 1:00 and 4:00 p.m. Phone reservations are held for five days awaiting payment.

- Tammy Kikta

Coming Attractions

Lecture: *Musica Transalpina*, January 29, 1989, at 4:00 p.m.

Chamber Music - *Waverly Consort* - January 29, 1989, at 7:30 p.m.

Musical Comedians - *The Cambridge Buskers* - February 18, 1989, at 8:00 p.m.

2nd Stage of Computing Dept. Reorganization Implemented

The second stage of the Computing Department reorganization is evident in the new organization chart. Five new groups and four newly appointed group leaders highlight these changes.

Richard Adamo is leader of the In-House Maintenance Group; Marc Haibeck is leader of the Field Maintenance Group. These two groups were formerly part of the Data Acquisition Hardware Group; Rich Knowles, formerly leader of that group, has been asked to take on leadership of the newly formed Technical Support Group, which has support responsibilities across both the hardware and software elements of the data acquisition functions of the Computing Department. The group's responsibilities include support of ACP systems in central computing and at experiments, and the Expert Systems prototype project headed by Bill Booth.

Don Petravick is leader of the new Online Software Group, which has as its major responsibility sys-

tems such as those associated with acquiring data at fixed-target and collider experiments. Ruth Pordes is the new leader of the Data Acquisition Software Group whose focus will be on data acquisition and other computing subsystems, especially as new components are evaluated and incorporated into systems. The members of these two groups were formerly in a single group, whose leader, Vicky White, was recently promoted to Associate Head of the department.

The intent of the reorganization is to form smaller, more flexible groups. They and the other groups in the department are capable of expanding in size to meet the increasing challenges in the computing arena. Typical among currently expanding activities are support of a new, more global data acquisition environment called PANDA, local-area VAX Clusters or workstations, and video technology applied to data recording. These are only a few of the most visible

Continued on page 8

"In the Beginning. . ."

Free copies of the *Chicago Tribune Sunday Magazine* featuring Fermilab Director Leon Lederman and the Lab are still available from the Public Information Office, WH 1W. - **Barbara Lach**

Aurora Blood Bank at Lab

The Aurora Blood Bank drive will return to Fermilab on Thursday, December 8, 1988, from 9:00 a.m. to 2:00 p.m. in the Wilson Hall 1W conference room. - **Sharon Koteles**

"Hats" continued from page 1

the CERN Proton Synchrotron, which is about the same age and still running. There is a lot of precedent for accelerators going a long time. Of course, everything depends on the physics that will be happening in the year 2000, and also it depends on the pace of the SSC. We don't know how that will go; it may go slowly, Congress may decide it can't afford large expenditures. I hope it goes fast. If it goes slower, the goal for the year 2000 stretches out into the future.

There is almost no instance I can think of where a laboratory has ever actually closed. The closest thing to that has been the Princeton-Penn accelerator, which terminated and was immediately replaced by a much larger plasma-physics activity in the Forestall Laboratory. Argonne also had an accelerator and Argonne is 40 years old and going strong. I can't imagine that this Laboratory, with all of its facilities, and especially in this high-tech area, won't be devoted to some kind of scientific research. Given all of that, I don't think there's any concern from the point of view of the staff of the Laboratory. We have a tremendous program of high-energy physics for at least ten years, and if you look at it closely, you can probably see 15 years of work at this Laboratory. Lots of things can happen.

There is disappointment. We would have liked to have the SSC here. We could have done the upgrade and the SSC simultaneously here. But I don't think it's the end of the world. I think we have a big set of jobs to do and I hope that we will all, one way or another, be doing them.

I think I'll stop here and take questions. Don't be bashful. This Laboratory is one laboratory that is not bashful.

Question: Will Fermilab be able to continue work after losing people to the SSC?

Lederman: That's a good question. I think that we'll lose some people to Texas. We've been anticipating this, you know; we haven't been blind to the possibility that this would happen. I think that this might slow us down some, but I don't think it's going to stop us in any way. I think we'll grow new people. We already are preparing for this, we've been preparing slowly for this over the last two or three years. I think that we'll manage, we'll certainly manage. Everything depends crucially on the attitude of the DOE and that should be made clear to us in the near future. There's a HEPAP meeting in Washington on Monday [November 14] where we hope to get an indication of DOE's plans, with a better picture in the President's budget in January. As soon as that happens, I think we'll hold on to the key staff and just build upon them. Some people will move to Texas. I think that's not so bad.

Q: [On the managing contractor for SSC.]

L: The Department of Energy has issued a call for proposals to be the contractors for SSC, and although I don't know the details, I know that URA, Fermilab's managing contractor, is one of applicants. My own personal opinion is that they have an extremely good chance of winning that job as contractor and they've made a lot of progress in their report; they've done all the things that have to be done to satisfy the Department of Energy as to their qualifications. Of course, the major qualification they point to is Fermilab as a laboratory that seems to be working, so I think SSC will be managed very much on the model of Fermilab, with the URA managing both Fermilab and the SSC.

In fact, in order to do that, URA has restructured to a super board, or Board of Trustees, composed of a number of university presidents and corporation executives, and two Boards of Overseers, one of which oversees Fermilab and has been in operation now for a year, and another Board of Overseers which will be supervising the SSC. That structure is already in place. I think that will go very smoothly.

Q: Is there a proposal for a site-filler ring?

L: We proposed it back in '83 or a little bit earlier than that, but the proposal was not accepted by DOE. The present set of proposals we have are not site fillers. We think the site filler would probably be too much like the SSC to have much of a chance of being successful. What we are hoping to do is make room in the Main Ring tunnel by replacing the Main Ring. The plan is to build a new ring, a smaller ring.

Continued on page 6

HEAR YE, HEAR YE,

WHEREAS, *December 1968 was the date on which the Fermilab site was first occupied, we hereby declare that December 2 will be the official celebration of the Twentieth Anniversary of FERMILAB.*

THEREFORE, *you are all invited to an intimate and exclusive celebration of this occasion to be held in the Atrium of Wilson Hall beginning at 4:00 p.m. We have two important themes: (1) The Next Twenty Years will be the Best and (2) Oh! What a Ball to Live in the MIDWEST. There will also be music, food, surprises -- all in all a class act in the Fermilab manner.*

ENJOY!

Paul M. Cedevan

THIS SYMBOL



BELONGS TO ALL OF US



At the base is a helping hand. The hand symbolizes the human care services supported by the United Way and all the men and women who contribute to it.



The image in the center, the symbol of mankind, is cradled by the helping hand. It shows that all people are uplifted by the United Way in a community of sharing.



A rainbow springs from the helping hand representing the hope of a better life possible through the United Way.....

The time of year has arrived when employees are asked to contribute to charities through payroll deductions or one-time contributions. Using the payroll deduction plan, an employee may choose up to three charitable organizations, including a community fund.

No pledge below \$12.00/year for 1989 can be accepted through the payroll deduction plan. The selected charities must be among those approved by the Internal Revenue Service.

The payroll deductions an employee designates will be made every pay period, beginning January 1, 1989, and will continue throughout the year. At the end of 1989, employees taking advantage of this plan will receive a statement of their contributions for income tax purposes. Pledges for the 1988 year will end December 31 unless they are renewed.

For additional information please contact extension 4632.

STANDING UNITED MAKES IT ALL WORTHWHILE!

Continued from page 3

Because the Main Ring now only has to operate at 150 GeV, we can get the old magnets out of the Main Ring tunnel and in their place we can put powerful superconducting magnets based on the new technologies that have evolved since the Energy Saver was developed. That should get us from our present 1.8 TeV to something over 3 TeV. The combination of that plus all of the other improvements that we are hoping to make in the collision rate should give us a very, very impressive new range of discovery potential. We are all quite excited by that. The higher energy will also give the capabilities of the fixed-target program a tremendous boost. All in all, we foresee operating between Collider and fixed-target programs with an ever increasing clout for discovery.

If anybody has any new ideas that we can incorporate in this, we are always open to new ideas.

Q: Has the Department of Energy given any reasons for choosing Texas?

L: [As of 12:00 noon] I have not seen any reasons. I imagine that the Department of Energy must have a very closely reasoned rationale. [DOE officials cited Texas' superior performance on the various site criteria in general, and misgivings in regard to Illinois being able to quickly acquire the necessary property in particular, as the main basis for the decision. - ed.] I assume they do have reasons, but I've heard that the Illinois delegation, and I assume some of the other delegations as well, want to know what the reasons were. They seem to worry about why the announcement was made just after the election. Personally, I'm not sure that there was a connection. We'll just have to wait and see what the DOE says. So far, all we know is what came out over the Associated Press wires: that the Secretary had made his decision.

Q: Is there any chance that Fermilab would be put in a box and shipped to Texas?

L: Move the apparatus? We won't let them.

Q: Will you be going along with the SSC?

L: What does SSC stand for? I think we'll all be involved in it. Fermilab has a major role to play in the R&D program. We're making SSC magnets here and that program is expanding quite a bit. We have quite a lot of SSC-magnet research funding money at Fermilab. We'll also, I'm sure, begin to build some test beams for SSC detector research. We'll have a lot of SSC-related activities here. Of course, we'll insist on full cost recovery for all these

activities, which means we'll charge them. Fermilab will be involved in trying to making sure that the project is built and built well.

Q: Do you foresee any layoffs?

L: No I don't see any layoffs. On the contrary, if we're going to get an extra \$50 million a year, I see, in fact, a moderate buildup at the Lab. I think at its peak, when the Laboratory was totally involved with the Saver, the peak population at the Laboratory was 2250. Incidentally, when I first came here, there were 1400 people. Since that peak, we've gone down to a minimum of 2030 or so, and now we're going up. In fact we're going up rather rapidly. My guess is that the population of the Laboratory might have to get up to about 2150 or 2200 if we're going to do all the things we have to do, including the SSC work that is assigned to us. But certainly the upgrade is going to take more people.

Q: Do you think local opposition was a factor?

L: That's a good question. I have no idea what role they might have played. Clearly, whatever role they played was probably on the negative side. But whether it was important or not I have no idea. I know there was opposition when Fermilab first came here, and that opposition was eventually discounted by the Atomic Energy Commission. So there was certainly a precedent for taking opposition into account, but not letting it become an overriding factor.

[The Stetson appears again, and Lederman puts it on his head.] Call me Tex. Actually, this hat is a gift from some physicists at Rice University. They told me, "When you come down to visit us. . ." When I got this hat I suspected something was going wrong. I can't wear it, because my horse shies every time I put it on.

Q: When will the construction phase of the SSC begin?

L: The hope is fiscal year 1990; this begins on October of '89, and would be the first year in which construction money could be obtained. For that to happen, of course, construction funding must be in the new President's budget and Congress has to act favorably on it some time next summer. If all of that happens, then construction can start on October 1 of 1989 at the earliest.

Q: What are the chances SSC will be built?

L: I think there's a good chance it will be built; it's had so much publicity and discussion. I also believe there is a growing feeling in the Congress and among science-related officials that science and edu-

Continued on next page

Continued from page 6

cation are due for large budget increases; it's only a matter of when. People are beginning to realize that if we're going to survive the 21st century, if we're going to survive the terrible environmental problems were facing, and the shortage of various kinds of materials, and if we're going to make an impact on the budget deficit, we need activities which have a very large return, like a hundred to one or a thousand to one. That kind of return only comes from scientific work. So I see all of science advancing very dramatically. Whether it's in 1990 or '91 or '92, I think a lot of us are convinced that these funding increases for science and education will occur and that makes me optimistic that these so-called large science projects, of which there are a fair number, will fare well.

What if the next President walks up to a barrage of microphones on January 20 and says, "I'm going to double the science budget of this country," which is what President Reagan said in 1980 about the military budget? If you compare that to doubling the science budget. . . Well, you can't compare them because we spend in one year on science what the military spends in a few days. So doubling the science budget sounds like a much more feasible thing to do. My personal opinion is that the return to society will be enormous from that sort of act, and so I think something like that is going to happen.

Take Faraday's discovery of electricity. If we look at the returns on that research, the benefits to society, divided by the cost of doing those experiments, it is something like a billion to one. That's a good return on any investment, you'll all agree. That's why I think science is going to flourish.

The big question is, will the SSC be funded for construction in 1990? If it's delayed beyond that it's going to be a real problem for the design groups in terms of holding the team together.

Yes, I think it will be built, and I think that it will be funding limited rather than technically limited. The DOE's funding profile called for an eight-year construction period. I think they can do it in eight years if they get the money.

Q: Is the decision to build in Texas irrevocable?

L: Certainly not. I revoke it. [Laughter, applause] There is now a recommendation to build in Texas. There will be an in-depth environmental impact study and then the final decision is made by the President in mid-January. It could be that they'll discover some kind of alligator or something that would be endangered. So, this is not the final decision, and

in that sense it does not violate any of the laws of physics that I know to say it can't be revoked. As for the laws of politics, I don't know.

Q: Will Fermilab be involved in SSC detector development?

L: A lot. There is already quite a lot of growing activity for detector development and I think SSC detector development, by its nature, will be centered here, because the beams are here for testing detectors. We'll get a lot of action and so will the other labs.

Q: How long have you known about the decision?

L: Since a couple of hours ago. We knew the following: We knew there was going to be a press conference and we knew that the site would be announced today; so we called this meeting, and I had two speeches. . .

Q: Could we hear the other one?

L: I think I lost it. It was a great one. But, yes, I heard about it at 10 o'clock or so. What's for lunch?

Audience member: Chili.

L: One thing is certain: This Laboratory will laugh no matter what happens, and that's why I love you all. ❀

Neural Network Startup

In the past few years, there has been a tremendous resurgence in research on neural networks, the name given to arrays of single-bit, quasi-digital processors whose high level of interconnectivity resembles that of nerve cells in the brain. Neural nets seem to be good at problems that humans solve easily, but that conventional computers are notoriously bad at, such as pattern recognition and decision making based on incomplete or faulty data.

Bruce Denby, who has recently joined the Lab as a Wilson Fellow based in the Computing Department, is beginning a project to explore the possibility of using artificial neural networks and other fine-grained SIMD architecture devices in experimental triggers or offline pattern recognition engines.

Networks implemented in VLSI have demonstrated enormous speedups over conventional microprocessors for certain applications. Also, because of the high redundancy in the interconnection network, neural sets are relatively insensitive to localized faults caused by point defects in silicon substrate or by errors in the data input.

Persons wishing to find out more about neural networks should contact Bruce Denby at FNAL::DENBY or drop a note to him at MS 120. If there is sufficient interest, regular discussion sessions can be set up.

Trudy's News from NALREC

The NALREC Committee has a full schedule of holiday events planned for Fermilab:

The **Thanksgiving Turkey Raffle and Social Event** will be held on Friday, November 18, 1988, at the Village Barn beginning at 5:15 p.m., with live music by A.B.L., roast beef or turkey sandwiches, and a raffle of 50 turkeys plus gift certificates. Call John Kowalski, ext. 3444 for info.

The **Children's Merry Christmas Party** will run from 2:00 p.m. to 5:00 p.m. on December 11, 1988, in the Ramsey Auditorium. There will be cartoons, refreshments, and a special visit from Santa Claus. Employees', visitors', and Security contract personnel's children up to age 8 are cordially invited. For more information call John Satti, ext. 3088.

The **Christmas Dinner Dance** will once again be held in the Wilson Hall Atrium. Festivities begin at 6:30 p.m. on Saturday, December 17, 1988, and continue until midnight. Tickets are limited to 500 and are \$15 each, for which you'll get a full-course dinner featuring either prime rib or chicken Veronique, two free drink tickets, and dancing to Burgundy Road. For reservations call Jo Baaske, ext. 3046.

The **Employee Christmas Party** will be held on Thursday, December 22, 1988, at the Village Barn beginning at 5:15 p.m. Music will be furnished by the Hometown Boys from Elburn, Illinois. For info, call Trudy Kramer, ext. 3228, or Pat LaVallie, ext. 4365. - **Trudy Kramer**

"Computing" continued from page 2

current examples. The smaller groups will be better focused, yet are expected to continue the strong coordination and cooperation characteristic of the members in the earlier organization.

Congratulations to the new Group Leaders and good luck to all. ❀

Percentage of Americans earning less than \$15,000 a year who say they've achieved the American Dream: **5** Percentage of Americans earning more than \$50,000 a year who say this: **6** - *Harper's Index*

Congratulations to:

Kristine and Eric (*Mail Room*) Hufstetler on the birth of Trent Robert Lee on November 7, 1988, at 9:32 a.m. Trent weighed 6 lbs, 4 ozs, and was 19-1/4 in. long.

Janice and Ernie (*A.D./Ref. Cryo.*) Ernsting on the birth of Wyatt Elmer on November 4, 1988, at 2:44 p.m. Wyatt weighed 9 lbs, 14-1/2 ozs, and was 22 in. long, and he has a big brother, Kyle. ❀

FermiNews Cla\$\$ified Ad\$

FOR SALE

Motorized Vehicles:

1977 HONDA CIVIC HATCHBACK, 4 spd., AM radio, good tires, good battery, engine runs well. \$200 or offer. Call Dave Beechy, ext. 3880.

1977 HONDA 750 F2 MOTORCYCLE, 14,000 mi, \$600. Call Ted Roberts, ext. 4248 or 365-2834.

1979 DATSUN 210 STATION WAGON, good work car, good tires, new brakes, fuel efficient, A/C, radio, htr. and def. \$1075. Call Norb Ambrose, ext. 4744 or 815-467-6620 after 6:00 p.m.

Miscellaneous:

WOMAN'S WINTER COAT, wool, fully lined. WOMAN'S leather coat, knee length. Call Diana after 6:00 p.m. at 377-8256.

BICYCLE: 26 in. man's Schwinn Varsity 10 spd., \$110. 26 in. woman's Schwinn Varsity 10 spd., \$110. 20 in. girl's Raleigh Jazz I Sport, \$80. Call Ted Roberts, ext. 4248 or 365-2834.

TEXTRONIX OSCILLOSCOPE, like new, Model 465, with cart, no probes, \$500 firm. Call Hans, ext. 4546 or 355-8279.

FermiNews is published by the Fermilab Publications Office, P.O. Box 500, Batavia, IL, 60510 (312) 840-3278 (BITnet) TECHPUBS @ FNAL, (DECnet) FNAL::TECHPUBS

Editor: R. Fenner **Editorial Assist.:** S. Novack
Fermilab is operated by Universities Research Association, Inc., under contract with the United States Department of Energy.

November 17, 1988

Directors Office

Dear Fermilab Staff and Users,

On November 15, 1988, Secretary of Energy John S. Herrington called me to reassure the Laboratory that the Department of Energy (DOE), by selecting Texas as the site of the Superconducting Super Collider (SSC), is in no way turning it's back on Fermilab. In fact, the Department recognizes the importance of the Fermilab program and also recognizes that it may well be 10 years before the SSC is a smoothly functioning laboratory. Fermilab must continue to pursue its program with continuous improvements in its facilities; in the view of the Department, Fermilab has 10 to 15 years of high-energy physics research ahead. Many possibilities extend beyond this time. The encouragement of the Department will be evident in the FY90 budget that will soon be sent to Congress. The concern for the well being of the Laboratory will also be communicated to the next Secretary of Energy and has already been discussed with Senator J. Bennett Johnston who oversees appropriations for the DOE. All in all, the Secretary's message was very up-beat as to the future of Fermilab.

Secretary Herrington was kind enough to allow me to relay this message to the Fermilab community.

As I said at the Director's Meeting on November 10, Fermilab has the highest energy in the world in both fixed-target and Collider modes. The Collider mode is really in its first run for physics discoveries. We have been working hard for several years on defining the kinds of upgrades that would continue to enable the Laboratory to advance on both fronts over the next decade. These plans have been presented to DOE and to the scientific community as a phased approach.


If all phases are funded, we would have by 1994-1995 a new capability for data acquisition, which would be only superseded in part by the SSC when it comes on, perhaps by 1997 or so.

One can be sure that Fermilab, its very capable staff, and its users will be thinking hard about those aspects of high-energy physics which will be complementary to SSC. We note that the Brookhaven Lab, SLAC, and Cornell are all far below Fermilab in energy, but that they are still going strong and collecting a very respectable fraction of the high-energy physics budget.

One example of the kinds of experiments that will *not* be possible at SSC are fixed-target experiments; as these improve because of improved machine performance and increasing sophistication of instruments, these will be unique experiments that can well carry through for years and years past SSC time.

We are of course greatly disappointed in the decision not to add the SSC to the Fermilab complex, but we see a solid and exciting future here which can well be vastly enhanced by new ideas and new developments in the field of physics. When we couple this with the uncertain schedule of the SSC, and the now publicly stated intention of the DOE as given by the Secretary of Energy, I see lots and lots of silver linings for Fermilab and a future that *will* extend well into the 21st century!

Sincerely,


Leon M. Lederman