Fermi breaks ground on Main Injector

On Monday, March 22, the Illinois congressional delegation and URA and DOE officials helped Fermilab break ground for the Main Injector accelerator. Standing in two inches of snow with a cold wind blowing at their backs, they ceremoniously turned the soil and officially began a project that will greatly increase the capabilities of the Tevatron, which is currently our nation’s premier proton accelerator and the highest energy collider in the world.

“This isn’t the first time that Fermilab began building for the future on a cold, snowy day,” said Director John Peoples in his opening remarks. Huddled in a tent, the audience listened as John told the story of how Fermilab began. “On December 1, 1968, almost 25 years ago, Fermilab had its first groundbreaking. It snowed that day. That groundbreaking started a 25-year tradition of building accelerators on budget and as quickly as possible. It also started a 25-year tradition of excellence in science and service to the Fox Valley, the state of Illinois and the nation. I am sure that today’s groundbreaking will mark the beginning of the next 25 years of excellence in science and service to our community and the nation.”

The road to building the Main Injector took hard work and dedication on the part of many employees as well as DOE, URA, the state of Illinois and elected officials.

Assistance by the Division of High Energy and Nuclear Physics, Chicago Area Operations Office and the Batavia Area Office has enabled Fermilab to proceed with the Main Injector.

Both Illinois senators have also worked hard for Fermilab and its future. Sen. Carol Moseley-Braun and Sen. Paul Simon were present to help Fermilab celebrate the occasion.

“Senator Moseley-Braun has in the short time that she has been in Washington found the time to understand the issues of Fermilab’s future and to become a strong champion for our Laboratory,” said John.

“I am delighted to be here and delighted to have this chance to be an advocate for Fermilab,” said Moseley-Braun. She stressed that the Illinois congressional delegation has worked cooperatively, coming across partisan lines, to support issues that are good for the state of Illinois.

Simon supported these comments. “Our country simply has to continue to be on the cutting-edge of basic research if we are to do the right thing for our children and future generations.” John commended Simon on his long and diligent work on behalf of the Laboratory.

Rep. Dennis Hastert from the 14th Congressional District is a dedicated friend of Fermilab and a proponent of the Fermilab III Project. “Fermilab III is an important project,” said Hastert at the ceremony. “The high-energy physics establishment has made it one of the country’s top projects.” He added that technology born from high-energy physics is a “boon to our society.”

The state of Illinois also played a significant role. Jan Grayson, director of the Illinois Department of Commerce and Community Affairs, attended the groundbreaking. DCCA awarded Fermilab a $2.2 million Illinois challenge grant. These funds were used to prepare a conceptual design of the conventional construction and an Continued on page 7
Brazil commends Fermilab scientists

The LAFEX International School on High Energy Physics was held at LAFEX (Laboratorio de Cosmologiae Física Experimental de Altas Energias), a division of CBPF (Centro Brasileiro de Pesquisas Físicas), Rio de Janeiro, Brazil from January 24 to February 15, 1993. At the opening ceremony for the third section of the school on February 11, CBPF formally expressed its appreciation to four scientists, three from Fermilab, who have helped build up the LAFEX high-energy physics group. The persons honored were Jeffrey Appel (Physics Department), Tom Nash (Computing Division), Enrico Predazzi (Torino, Italy) and Roy Rubinstein (Director’s Office).

The collaboration between CBPF and Fermilab goes back about a decade, when four Brazilian theoretical high-energy physicists, three of whom were from CBPF, decided to become experimentalists. They initially came to Fermilab for over a year, working on the charm photoproduction experiment E-691. Over the succeeding years, the CBPF group, led by Alberto Santoro, has grown to over 60 people, with significant support from the Brazilian government. Fermilab has aided in this growth in many ways, and the group is now the most successful experimental high-energy physics group in Latin America. It has collaborated on the Fermilab charm hadroproduction experiments E-769 and E-791 and is a member of the D0 collaboration. In addition, the group has been strongly involved at Fermilab in the development of the Advanced Computer Program and its successor, the Computer R&D Department. Working with the Farms Group, CBPF personnel turned the ACPII system into a production machine. This has recently been sent to CBPF, and CBPF now has the most powerful computing facilities of any Latin American high-energy physics group.

At the February 11 ceremony, held in the auditorium of the University of Rio de Janeiro, CBPF Director Amos Troper presented certificates to Jeff and Tom. Jeff also accepted for Roy, who was unable to attend. An approximate translation of the Portuguese citation on the certificate is “The Brazilian Center for Physics Research recognizes for his important contribution to the scientific and technological development of this institution and the Fermilab-CBPF high-energy physics collaboration.”

In Professor Troper’s remarks during the presentation, he thanked the Fermilab recipients individually for their specific roles in the Fermilab-CBPF collaboration over the past several years. Tom Nash gave a response praising the high standard achieved by the CBPF group. Among the other guests at the ceremony were the Deputy Mayor of Rio de Janeiro Dr. Rodrigo Lopes, the Brazilian Deputy Minister of Technology Dr. Luiz Bevilacqua, the former Brazilian Minister of Science Dr. Renato Archer, the Head of CNPq (the Brazilian science funding agency) Professor Lindolpho de Carvalho Dias, the former Head of CBPF Professor J. Leite Lopes, and the Head of LAFEX Professor Alberto Santoro.—Roy Rubinstein

Russian officials visit Lab

A group of senior Russian officials who are involved in the science program of their country visited Fermilab from March 12 to March 17. Pictured are (left to right): Chuck Schmidt (AD), Alla Krilova (head, Financial Department, Russian Ministry of Science), Bruce Chrisman (Director’s Office), Leonid Kravchuk (deputy director, Institute for Nuclear Research, Moscow, Russia), Vladimir Fridlyanov (head, Division for the State Program for Science, Russian Ministry of Economics), Anna Belkova (manager of High Energy and Nuclear Physics Budgets, Russian Ministry of Science) and Roy Rubinstein (Director’s Office).
Fermilab honors inventors

A reception was held on March 17 in the Wilson Hall 2nd Floor Art Gallery to honor the achievements of 37 Fermilab employees and former employees who filed records of inventions between August 1, 1991 and December 31, 1992.

During the ceremony, each inventor received a certificate in recognition of his valuable technology contribution and a monetary award. Honored at the reception were:

David Anderson (RD), Simon Kwan (RD) and Vladimir Peskov (RD) for their work on the enhancement of the quantum efficiency of phototubes by the addition of a small amount of gas. They found that introducing a small amount of methane in a phototube gives improvement of a factor of two in the quantum efficiency without affecting the rate of response or the stability of operation.

H. Venkata Areti (CD), G. William Foster (RD), Umeshar Joshi (RD), Kenneth Treptow (CD) and Sergio Zimmerman (CD) for their invention of the FASTBUS readout controller. This specialized technology reads data from FASTBUS modules in a FASTBUS crate and stores that data in its internal memory.

David Beechy (formerly at Fermilab, now at the SSC), David Dupuis (AD), Glenn Mayer (formerly at Fermilab, now at Motorola), Craig McClure (AD), Jawahar Ticku (AD) and Jeffrey Utterback (AD) for their invention of the flexible VME human interface module (system service module). This device is an electronic circuit board that is compatible with the VMEBUS standard. It is designed to provide many useful debugging features for software development and to provide system services that are needed in almost any VMEBUS system.

Morris Binkley (RD) and Thomas Zimmerman (RD) for the development of the VTX multichannel preamplifier, an application specific integrated circuit preamplifier. It was designed and built to improve performance of the vertex time projection chamber at Fermilab’s Collider Detector Facility.

William Boroski (TS), Richard Kunzelman (formerly at Fermilab, now at Carlson Tools), Mark Ruschman (TS) and Christopher Schoo (TS) for their invention of the controlled temperature heat exchanger for cryogenic transfer lines. This device is capable of providing a constant temperature exhaust gas in the region of 10K to 50K.

William Boroski (TS), John Gonczy (formerly at Fermilab, now at Argonne) and Ralph Niemann (formerly at Fermilab, now at Argonne) for the development of a fabrication method for a multilayer insulation blanket. This new technique insures consistency in the thermal performance of mass-produced MLI blankets by providing positive control of the dimensional parameters which contribute to the blanket performance. Bill, John and Ralph also designed the apparatus for fabricating a MLI blanket. This new apparatus employs a large diameter winding mandrel that has a circumference that is equal to or greater than the required blanket length.

John Brubaker (AD) and Joel Fuerst (AD) for the invention of a meter that measures the volume fraction of vapor (the so-called void fraction) by measuring the capacitance of two metallic plates between which the two phase fluid flows.

John Carson (TS) for inventing the two-stage-coil-curing press. The press is used to confine accelerator magnet coils to their proper shape during the curing process.

Daniel Darimont (AD) for designing the captured-key electrical safety lockout system. This new system will not allow the key to be removed from the lockout device unless the switch is in the off position.

James Freeman (RD) for developing a hold-down spring for conduits. This invention is an omega-shaped spring that encircles a cable, such as a fiber optics line and fastens it securely in a square groove. The spring works by deforming as it is inserted into a slot. Jim also developed a simple scheme to label the ends of optical fibers. Using this system, multicolored permanent markers are used to identify a fiber. The color bands do not affect the optical properties and the alcohol-based markers do not attack the plastic of glass fibers.

Charles Grozis (RD) for designing a cutting tool.

Records of Invention award recipients l-r: Finley Markley and Hans Jostlein.

On April 30, Bill South (RD/Oper.) is going to hit the road. After 12 years as a Fermilab employee, Bill is retiring. Bill and his wife plan to travel in a full-time motor home after his last day here and see the United States. Bill, who retired from the Navy before joining the Laboratory in November 1971, said he has seen the world, "now it is time to see the United States."

Bill started at the Laboratory in the Accelerator Division before joining the Research Division at D0. Besides his duties at D0, Bill also spent a few seasons playing on the Fermilab Golf League.

Bill said he enjoyed working here and looked forward to coming to work each morning. "I liked the people working here. It was a nice experience. In a way, I hate to leave."

South to retire

Harper’s Index

Percentage of Americans who say they “love” doing their taxes: 2.

Number of Porsches pawned last year at Collateral Lender of Beverly Hills: 21.
Fermilab Arts Series presents

Carnival, a musical love story

Carnival, often billed as “America’s Magical Musical,” pulls into Batavia on Saturday, April 24 complete with a colorful array of puppets and some of the most memorable music from Broadway. The highly acclaimed Nebraska Theatre Caravan sets up its tents at Fermilab’s Ramsey Auditorium for one show only starting at 8 p.m.

Carnival chronicles the story of Lili, a wide-eyed lonely orphan girl who is captivated by the once glorious Grand Imperial Cirque de Paris. When she joins the puppet act, she becomes the pawn in a fierce rivalry between Marco the magnificent, the suave and beguiling magician, and Paul, the puppeteer with the bad leg. The hauntingly beautiful theme song, “Love Makes The World Go ‘Round” is heard throughout the play as the two men fight for her affections and Lili ultimately makes her choice. With music and lyrics by Bob Merrill and book by Michael Steward, it was originally produced on Broadway by Gower Champion.

Carnival is a past winner of the New York Drama Critics’ Circle Award. The Nebraska Theatre Caravan is the professional touring wing of the Omaha Community Playhouse, the largest and most successful community theatre in the U.S. Nebraska Theatre Caravan has been enchanting audiences across the nation since 1976 with their highly acclaimed annual tour of A Christmas Carol.

Carnival captures the mood of carnival people in a simple, touching way, blending pathos with comedy. Don’t miss the splendor of Carnival on Saturday, April 24 at 8 p.m. Tickets are $14. For further information or telephone reservations, call 708-840-ARTS weekdays from 9 a.m. to 4 p.m. At other times an answering machine will give you information and a means of placing ticket orders.

Congratulations to

Maria and Terrence Morrison (AD/E/E Support) on the birth of their son Charles Grant. Charles was born at 12:16 p.m. on March 5, 1993 at Mercy Center in Aurora. He weighed eight pounds, ten ounces and was 20 inches long. He is welcomed by siblings Thomas, nine, and Terry, four.

Nalwo events

Nalwo invites you to a potluck dinner on Friday, April 2 at the Village Barn at 5:30 p.m. Please bring a dish to share. If you cannot prepare a dish please donate $3 at the door. Families are most welcome. Babysitters and pizza are provided on the lower level. Enjoy the company and conversation of lab employees, associates, visitors and guests from around the world.

Nalwo’s Spring Crafts Workshop will be on Thursday, April 8 at the Users’ Center from 2 p.m. until 5 p.m. Learn different kinds of egg decorating techniques and several paper crafts. You may bring your children and some hard-cooked eggs for them to color for Easter.

Nalrec news

Mark your calendar for the Spring Fling, April 16, 1993. This really looks to be a great night out and a super meal deal. You’ll get 1/2 of a chicken (grilled or barbecued), potato salad and roll for $2 (not bad), and spending time with that great dj, Homer. Hope you’ll be there. For more information call Alma Karas at x3529 or Bob Lootens at x3303.

Sorry about the mess-up on the date, so take notice. All you Kane County Cougar fans, get ready for a winning day on July 11, 1993. Treat Dad or the whole family to a fun, fun day at the old ball park. First 1,000 fans will receive a special gift. This game is with the Peoria Cubs.—Charlotte Smith

Stockrooms close

The Fermilab Stockrooms will be closed for annual inventory on the following schedule:

The Wilson Hall Stockroom will be closed Friday, May 14 at 12 noon and will re-open Monday, May 17 at 12:30 p.m. The Site 38 Stockroom will be closed Monday, May 17 and Tuesday, May 18 all day both days. Please plan accordingly. Any questions call the Supply Office at x3808.
The way we were

From the Village Crier, April 7, 1977:
A ribbon-cutting ceremony Friday marked the mailroom’s relocation to the catacombs. L-R are Ernie Guzman, Mack Hankerson, John McCook, Steve Anderson, Carolyn Hines and Lonzo Johnson.

From the Village Crier, April 7, 1977:
When an employee is traveling for the Laboratory outside a normal commuting area, expenses associated with the trip are reimbursed under the per diem policy. Effective April 1, 1977, the per diem rate is being revised upward from $12 to $15. On the same date, the reimbursement rate for using a private vehicle while performing a Laboratory-directed assignment will also be revised. The rate is being increased from $.12 to $.15 per mile.

Chez Leon

April menus

Lunch, April 7: Spring vegetable soup, reddened catfish with lime watercress sauce, vegetables of the season, chocolate pecan Kahlua mousse, $13.

Dinner, April 8: Stuffed baby eggplant, spring lamb with fresh mint vinaigrette, roasted pink potatoes with rosemary and garlic, vegetables of the season, spinach and bacon salad, lemon mousse, $23.50.

Lunch, April 14: Hot and sour soup with crab won ton, marinated flank steak, vegetables of the season, ginger custard, $13.

Dinner, April 15: Antipasto, roast porkloin with sausage stuffing, baked beets, vegetables of the season, apple almond cake, $23.50.

Lunch, April 21: Melon and prosciutto, chicken with red and yellow peppers, lemon rice, chocolate squares with mint creme anglais, $13.

Dinner, April 22: Roasted red peppers with goat cheese, capers and red onions, grilled swordfish with lime and coriander, vegetables of the season, pineapple cake, $23.50.

Movie schedule announced

The Fermilab International Film Society presents movies from all over the world. Movies are shown at 8 p.m. Fridays in Ramsey Auditorium. All foreign films have English subtitles. Admission is $2.

April 16: Drowning by Numbers, metaphorical game-playing of sex and death set in an idyllic English summer landscape with a tribute to the numbers 1-100. Peter Greenaway, director, Great Britain, 1988, 114 minutes.

April 30: Local Hero, offbeat comedy about a Texas oil executive sent to a coastal village in Scotland to purchase the drilling rights for his company. Bill Forsythe, director, Great Britain, 1983, 111 minutes.

May 7: Seconds, a man thought to have died uses the opportunity to start over with a new identity. Rock Hudson stars with cinematography by James Wong Howe. Frankenheimer, director, U.S., 1966, 106 minutes.


New from the Stockroom

- Lockout device, 480/600 v circuit breaker, accepts up to 9/32 in. shacke dia. lock, red, Brady P/N 65966.

- Lockout plug, 110 v plug, 2 in. x 2 in. x 3.5 in., polypropylene, red, Brady P/N 65674.

- Lockout plug, 220/550 v plug, 3-1/4 in. x 3-1/4 in. x 7 in. polypropylene, red, Brady P/N 65675.

- Lockout plugout, H.D. industrial plug, plastic material, 2-3/4 in. dia. x 4-3/4 in. length with 1 in. cord, yellow, Brady P/N 65695.

- Lockout plugout, H.D. industrial plug, plastic material, 4-1/2 in. dia. x 10-1/4 in. length and 1-3/4 in. cord, yellow, Brady P/N 65968.

TLD badge news

Occupational radiation exposure histories for CY 1992 are now ready. These reports summarize each employee’s or user’s monitored radiation exposure for the past year. Fermilab employees will receive them in the mail. Users can pick them up at Wilson Hall 7E or call Radiation Physics at x3642.

Also, a reminder: April 1 marked the beginning of the second quarter and the time for the quarterly exchange of TLD badges. Please exchange your TLD badge this week. Unlike the old film badges, the TLD badges themselves are the same color (black for permanent badges, red for temporary badges) for every wear period. However, the colored band on the barcoding label changes each quarter. The first quarter’s band is blue, the second quarter’s band is green. When the racks are distributed, exchange your blue-banded badge for a green-banded one.

If the first quarter’s badges are collected from your area before you have turned yours in, send or bring your badge to ES&H Radiation Physics in Wilson Hall 7E (MS 119).

Do not put the badge back on the rack. The badges will not be collected again for three more months.—David Boehnlein
Science Education Center announces new hours

The Leon M. Lederman Science Education Center has announced new hours for the facility. The center’s hours are now Monday through Friday 8:30 a.m. to 5 p.m. and Saturdays 9 a.m. to 3:30 p.m.

Trained staff docents are available to facilitate visitors in the use of the interactive teaching stations located throughout the center. The stations are targeted for students in the 6th through 8th grades, but 4th and 5th graders can benefit as well as older students.

One of the interactive stations geared toward teaching students particle physics is the “Race for Energy” station. There, students learn about the differences between acceleration and speed. Students will realize that fast moving objects have a large amount of energy when compared to slower objects. The students also see that there is a greater “oomph,” or energy, with the greater acceleration.

At the “Shoot Particle Pinball” station, students decipher clues about structure based on a collision pattern that develops as a result of a large number of collisions with a target. A secondary purpose of the station is to have students discover some ideas involved in probability. For example, they should see that many trials are needed to get a clear picture of the event as it unfolds before them.

When students “Play Particle Pool” they will visualize the importance of using trials to find out how particles interact. The students will learn that electronic devices can help us see events that our eyes cannot. Further, this station will help students discover some laws about how particles move in our world.

The center is open to the public. Groups of five or more should call for an appointment. There must be one adult supervisor for every 10 student visitors.

International Folk Dancers put spin on fun

Every Thursday night at the Village Barn a group of about 25 people gather for some good old-fashioned fun. They spend the evening spinning, twirling and shuffling their way to a good time.

These people are all part of the Fermilab International Folk Dancers. With the exception of July and August, when the barn is too hot, they gather each Thursday to learn and do dances from all over the world. On one night they might do a circle dance from Israel or a line dance from Greece. At the next meeting, a couple dance from Germany might be on the agenda. Although the group has learned dances from South Africa and South America, most of the dances are from Eastern Europe.

The group was begun five years ago by Mady Newfield and Diane Cihangir, wives of Fermilab physicists, under the auspices of Nalwo. The group is open to the public as well as Fermilab staff, users and visiting physicists. Donations of $1 are requested to help cover the expense of music and equipment.

Mady said the group has grown since it began and now has a good turnout. Although the number of dancers varies from week to week, approximately 25 people attend on the average. About 15 “regulars” make up the core of the group. Mady said that dancers with all levels of experience are welcome to attend, as well as children and the whole family. Throughout the evening, Mady, the group’s instructor, will help teach the dances. In addition, the first half of the evening is devoted to teaching, followed by requests for dances. The easy dances are performed first, so the beginners can follow along, said Mady.

At times, the group will also have visitors attend, such as a Girl Scout troop or a local high school French class. On that night, the dances will be geared toward the visiting group. For example, the night the French class attended, French dances were chosen and performed.

Besides the enjoyment of the dances, Mady said the group is also a good place to find aerobic exercise and social interaction. “This is a good place to meet people and make friends. And it’s good for singles, too,” Mady said.

For more information on attending the folk dances, call Mady Newfield at 708-584-0825 or Susan Jensen at 708-232-9089.
Groundbreaking continued

environmental assessment for the Main Injector site. Both were necessary for DOE approval of the project.

An environmental assessment insures that the integrity of the land is preserved. “In everything we do at Fermilab we want to maintain a deep sensitivity for the environment. There is much on the site that is beautiful and natural and we want to keep our search for the fundamental properties of matter in harmony with that beauty,” said John. He thanked the state of Illinois for their generosity and foresight.

Secretary of Energy Hazel O’Leary was unable to attend, but she sent her congratulations in a letter read by Wilmot Hess, DOE director of the Division of High Energy and Nuclear Physics. This division provides the scientific oversight of Fermilab for the U.S. government. “It also helps to nurture the ideas of scientists, such as the Main Injector, and helps them grow into a reality,” said John.

Also participating in the ceremony was Steve Holmes, Main Injector project manager and the head of the Accelerator Division. “He has provided the scientific leadership that has brought the project from an idea to a very cost-effective design,” said John.

Other attendees were Rep. Harris Fawell of the 13th Congressional District; John Toll, president of URA; John O’Fallon, director of the High Energy Physics Program; Gordon Charlton, program liaison officer in High Energy Physics; Dan Lehman, acting director Construction Division Energy Research; Cheri Lagenfeld, Chicago Operations Office manager; David Goldman, deputy manager of Chicago Operations; Andy Mravca, Batavia Area Office manager; and Ron Lutha, Batavia Area Office project manager.

In his concluding remarks Hastert jokingly quoted the late Sen. Everett Dirksen saying “everything has been said, but not everyone has said it.” In that spirit, all participants kept their comments brief and turned their attention to the business at hand, the groundbreaking for the Main Injector. Braving the cold, they put shovels in the earth and started a project that will keep the United States internationally competitive in the field of high-energy physics.

Secretary of Energy Hazel O’Leary was unable to attend the ceremony, but she sent her congratulations to the Fermilab community in the form of a letter. Dr. Wilmot Hess read the letter to the audience during the groundbreaking.

Milestones

The concept of the Fermilab Main Injector was developed over a period of several years.

The road to actual construction has been long and fraught with funding uncertainties. Hard work by Fermilab employees, users, elected officials and DOE and URA leaders have made this project a reality.

The milestones leading up to the March 22 groundbreaking included:

- September 1992: The Department of Energy authorized the application of appropriated construction funds towards development of the Title II design and the initiation of civil construction.
- December 1992: Fermilab awarded the contract for the MI60 enclosure.
- February 1993: Construction began.
- March 1993: Groundbreaking officially heralds construction of the Main Injector.
fixture for vessel head removal. It is sometimes necessary to remove the heads from large cylindrical storage vessels, such as cryogenic dewars, gas tanks and highway tankers used to transport helium and liquid nitrogen. This fixture allows head removal without damage to the vessel due to heat and flame.

Merle Haldeman (RD) and Bruce Merkel (RD) for inventing the Fermilab low-crosstalk cable. Crosstalk is a common problem in modern multi-conductor cable. Typically crosstalk is reduced by a combination of shielding and employing twisted pairs. This new invention embellishes these mechanisms to further reduce crosstalk by a factor of ten in typical situations.

Cary Kendziora (RD) for inventing a pipe crawler that carries out several functions. It is capable of operating many hundreds of feet down a 12 inch bore pipe and it includes a video camera for inspection, a fully rotating metal brush to clean a metal pipe, a freon spray cleaner, an epoxy application system with an expander that pushes the epoxy against the pipe and a 500 watt heat treatment light.

Hans Jostlien (Physics Department) for developing a capacitive probe for gauging. This device is a non-contact, omnidirectional, precision probe for dimensional gauging.

Michael Kucera (AD) and Michael Shea (AD) for the design of the ARCNET lan “industrypack” module. This technology is a small daughterboard that connects to a ARCNET lan to a computer motherboard. It is designed to meet the industrypack interface specifications developed by Greenspring Computers, Inc.

Carl Lindenmeyer (RD) for developing the blind doweling system. Normally the use of blind holes, holes that do not pass entirely through a piece, are avoided in the construction of tools and machinery, but at times there is no practical alternative. This new device has a small opening hole along the center line of the pin with a tapped portion in the head. A standard grease gun fitting can be inserted on the tapped hole. Carl was also honored for two more inventions: a chuck for holding plastic optical fibers and an optical fiber end polisher. Plastic optical fibers often must have a flat clear end machined on them. The outer sheath on many fibers is thin and quite brittle and diamond machining of the end often chips the edges of the sheath. The chuck eliminates the chipping by fully supporting the sheath of the fiber from the diamond cutter. The optical fiber end polisher machines plastic fiber ends using a diamond fly-cutter.

Finley Markley (retired from TS) for inventing both the radiation hardening scintillators using vacuum pump oil and the temperature gradient compensated dilometer. The first is a technique used to improve radiation resistance by adding large amounts of vacuum pump oil to the polystyrene used for scintillators. The second invention is a dilometer that provides more accuracy for measuring the change of sample lengths as a function of temperature by equalizing the response of all parts of the dilometer to thermal gradients.

Tom Nicol (TS) for designing the SSC single tube support posts. The new design utilizes filament wound composite tubes connected to metal end fittings and thermal intercepts via shrink fitting. This design no longer utilizes reentrant tubes, contains fewer parts and is easier to assemble.

John Venard and Pat Oleck of the Fermilab Office of Research and Technology Application hosted the reception. Bruce Chrisman represented the Director’s Office.