

F E R M I N E W S

F E R M I L A B

A U.S. DEPARTMENT OF ENERGY LABORATORY

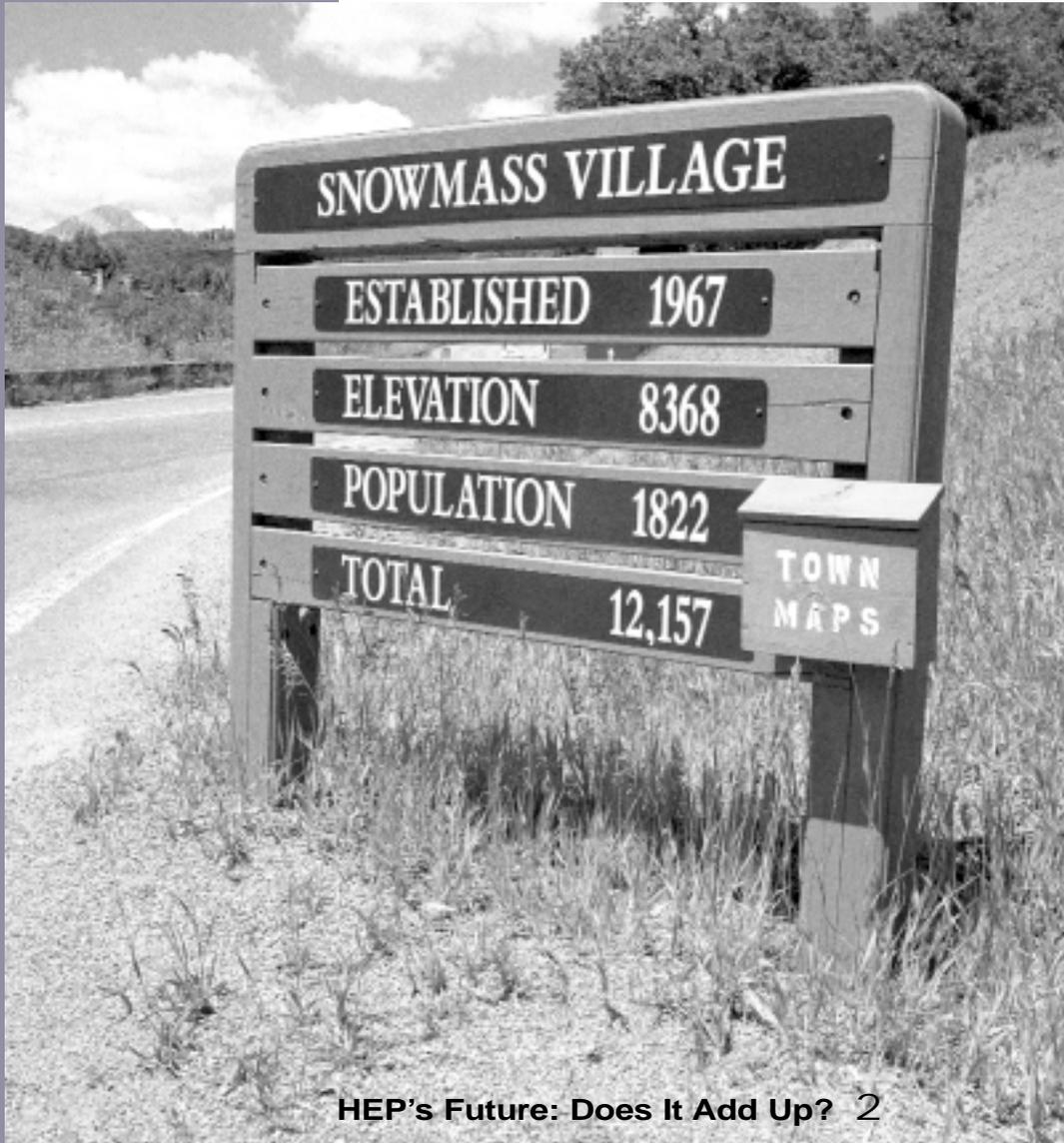


Photo by Fred Ullrich

HEP's Future: Does It Add Up? 2

Volume 24
Friday, July 27, 2001
Number 12



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ROCKY MOUNTAIN HIGH ENERGY PHYSICS SNOWMASS 2001

by Judy Jackson

SNOWMASS, COLORADO—The particle physics community may never have been so physically fit. Three weeks of hustling up and down the steep slopes of this Rocky Mountain community, rushing at 8,500 feet from working group to plenary session to town meeting, have infused this normally sedentary crowd with more red corpuscles than they've had in years.

But what about the field whose future the scientists came together to consider? Have three weeks in the mountains given U.S. particle physics a muscular run at the scientific challenges of the decades ahead—or have they left it gasping for breath?

More than 1200 particle physicists left their normal pursuits at universities, national laboratories and government agencies to come to the Snowmass Summer Study on the Future of Particle Physics. They used this “three-week sabbatical,” as one physicist called it, to concentrate on shaping the future of particle physics not only in the United States but in the global setting that is increasingly the context of this most international of scientific endeavors.



The Snowmass conferees represented every area of particle physics. Tunneling experts sat next to string theorists; astrophysicists had coffee with superconducting-magnet builders; young physicists hiked alongside old physicists; lifelong hadron fans even occasionally ate lunch with lepton disciples. For three weeks they talked, argued, reflected, persuaded, harangued and listened to each other as they grappled with nothing less than the fate of their field.

Like the mountain road they scrambled up each day, the questions the Snowmass physicists confronted are daunting: After Fermilab's Tevatron cedes its place at the high-energy frontier to Europe's Large Hadron Collider, what will happen next? Can the U.S. hold to its role as a world leader in particle physics? When the LHC begins

operating a few years hence, will there be a new frontier accelerator? What kind? What technology will it use? Where will it be built? In the U.S.? At Fermilab? In some other country? Can the nations and regions of the world collaborate to build and operate it? Even, starkly, as one Administration budget official asked, does experimental particle physics still mean high-energy physics? Does the world still need particle accelerators?

The physicists who arrived at Snowmass were far from united in their answers to these questions, or even in their approaches to the answers. At the conference's end, differences remained. But its co-organizer, Fermilab theorist Chris Quigg, expressed satisfaction—and relief—at the way things had gone.



They came, they saw, they pondered: many of the 1,200 physicists attending Snowmass 2001 gather near the conference center, in the hopes that the future of particle physics always presents this happy a picture.

Photo by Fred Ullrich

ROCKY MOUNTAIN
HIGH
 ENERGY PHYSICS
 SNOWMASS 2001

DESY Director Albrecht Wagner, proponent of the TESLA linear accelerator and of a global accelerator network to include the world's laboratories in the operation of future accelerators.



"The Snowmass Summer Study has turned out the way I didn't dare to hope," Quigg said. "I am happy that so many people came, eager to think creatively and positively. People didn't come with chips on their shoulders, ready to settle scores. People have been working hard the whole time, from eight in the morning until ten at night. What's been especially noticeable is the intensity of the discussions at the coffee breaks and at lunch and dinner. It has not been just armed camps of believers, but people of all different views talking with each other."

Duke University physicist Al Goshaw, spokesperson of Fermilab's CDF experiment, echoed Quigg's view.

"It has pushed us out of our busy lives back home and forced us to talk with each other," Goshaw said.

Indeed there were plenty of opportunities to talk. In every nook and cranny of Snowmass Village, scientists in shorts converged to work on accelerator and detector technology, physics theory, cosmology, experiment and computing. For the first time at a Snowmass physics conference, there were even workshops on how to communicate from the physics community to the rest of the world. There were so many groups meeting in so many places that, in the chaotic first days of the huge conference, many had trouble finding their meeting places. Not everyone saw the confusion as a problem.

"I had hoped that Snowmass would get people to cross their normal boundaries and talk to each other," said Northwestern University physicist Heidi Schellman. "At the beginning, it seemed like a drawback when no one could find their meeting rooms; but I have concluded it was all part of the plan to get unlikely groups of people together."

Not that it was all mountain sunshine. During the first week's panel discussion by many of the world's high-energy physics laboratory directors, physicist Hirotaka Sugawara, director of Japan's KEK laboratory, gave an impromptu geography lesson. In response to a proposal to build a future linear collider in the United States, perhaps at Fermilab, Sugawara said the machine should be built somewhere on the Pacific Rim, which he defined as a place where one can see the Pacific Ocean.



Conference organizer Chris Quigg, left, greets SLAC Director Jonathan Dorfan and Renée Dorfan.

"People in the state of Illinois cannot do that," Sugawara said pointedly.

In general, however, international harmony prevailed.

"The strong presence of the Europeans and the Japanese has been critical to the success of the Snowmass conference," said theorist Bob Cahn of Lawrence Berkeley National Laboratory. "It's evidence of how far our field has come. No longer can we have a meeting on the future without our Japanese and European colleagues."

Of the 1,200 registered Snowmass participants, some 200 came from offshore laboratories and universities, with an especially strong contingent from DESY, the *Deutsches Elektronen Synchrotron* Laboratory in Hamburg, Germany. Scientists at DESY recently proposed to build TESLA, a linear collider that would use superconducting accelerator technology.

Physicist Fred Gilman, of Carnegie Mellon University, Chair of the Department of Energy/National Science Foundation High Energy Physics Advisory Panel, praised the conference's inclusion not only of the nations of the world but of the entire universe.

"The character of this meeting shows not only the global nature of our field," Gilman said, "but also the convergence of particle physics and cosmology. More and more we see that particle physics and astrophysics are seeking answers to the same fundamental questions about the nature, the history and the composition of the universe."

By the conference's end, most participants said that Snowmass 2001 had succeeded in helping the physics community frame its future; and that the future, though still cloudy, looked like a linear collider.

"Snowmass has been enormously valuable," said Stanford Linear Accelerator Director Jonathan Dorfan. "We have a big field. We have more ideas than we can get funded, a situation that forces us to make choices and then to get behind the choices we make. There is really no way to do that except at a meeting like this."

Although conferees did not achieve official consensus (nor even consensus on whether there should be a consensus), they did move in a linear direction.



Photos by Michael Brands

Directors of many of the world's high-energy physics laboratories met during the conference's first week. From left, Maury Tigner, of Cornell; Hiroataka Sugawara of KEK; Michael Witherell, of Fermilab; Alessandro Bettini, of Gran Sasso; Jonathan Dorfan, of SLAC; and Albrecht Wagner of DESY.

"It seems there has been some self-organizing movement," said University of Michigan physicist Dan Amidei. "This direction was not engineered or imposed. There has been a grass-roots movement toward building a linear collider somewhere in the world."

However, as a vision of the future began to crystallize, talks by budget officials and Washington insiders provided a sobering realization that, difficult as it may be for physicists to convince each other of the proper direction for their future, it is likely to be far harder to convince the U.S. government to fund it.

"Snowmass has been a great reminder of the tremendous vitality of our field," said physicist Natalie Roe of Lawrence Berkeley National Laboratory. "We have interesting projects at all scales: small, medium and large. There are exciting fundamental questions that we need to answer and that we know how to answer. At the same time, I have a new recognition of the budget problems our field is facing. I'm coming away both uplifted by the prospect of the wonderful science ahead and deeply concerned about how we will find the resources to carry it out."

As particle physicists came down off the mountain at the end of Snowmass 2001, they still had some steep hills to climb. 🏔️

NEW RESULTS

Make Headline News

by Kurt Riesselmann

SNOWMASS, COLORADO—When more than 1,200 particle physicists gathered for a conference in the Rocky Mountains, research at their home institutions didn't take a break. Two major scientific announcements – the observation of CP violation in particle interactions involving B mesons, and the non-observation of the Higgs boson – created a series of newspaper articles that informed Snowmass 2001 participants about the latest developments in their field.

FUNDAMENTAL DIFFERENCE REPORTED

On July 6 scientists at the Stanford Linear Accelerator Center announced the observation of a new matter-antimatter asymmetry. Studying the decay of heavy, short-lived subatomic particles containing bottom quarks, physicists found a fundamental difference in the disintegration of B mesons and their antimatter equivalent, anti-B mesons.

"After 37 years of searching for further examples of CP violation, physicists now know that there are at least two kinds of subatomic particles that exhibit this puzzling phenomenon," said Princeton physicist Stewart Smith, spokesman for the collaboration. Previously, physicists only had observed CP violation in processes involving K mesons, composite particles containing a strange instead of a bottom quark. Scientists believe that the violation of charge and parity (CP) symmetry in subatomic processes holds the key to explaining why the Universe consists entirely of matter while antimatter disappeared shortly after the Big Bang.

The SLAC announcement is the latest highlight in a decade-long success story that focused on the determination of sine-2-beta, a measure for the amount of CP violation present in the B system. Initial measurements by the CDF collaboration at Fermilab in 1999 seemed to favor a non-zero value, but the results were far from being conclusive. Physicists eagerly waited for special B Factories, under construction in California and Japan, to start operations.

The BABAR and BELLE collaborations, experimental groups using the two new B facilities, presented their first data in July 2000. The SLAC group recorded more than 32 million pairs of B mesons. They reported a value of sine-2-beta equal to 0.59 ± 0.14 , substantially different from zero.

Although the new result agrees with the current theoretical framework, called the standard model of particle interactions, the present theory is not sufficient

*Second Look
Backs Doubts
On Finding
Key Particle*

By JAMES GLANZ

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NEW YORK TIMES NATIONAL SATURDAY

Tiny Discovery May A

By JAMES GLANZ

SNOWMASS VILLAGE, Colo., July 8 — By observing millions of subatomic particles called B mesons, a team of scientists working at the Stanford Linear Accelerator Center in California has found new evidence of a basic but subtle lopsidedness in nature that may explain why the universe contains mostly matter, rather than being virtually empty and devoid of stars, planets and people.

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The results found by a multinational team of about 600 physicists and engineers were announced today in

Stanford.

The lopsidedness is "extraordinarily tiny," Dr. Jonathan Dorfan, director of the center, said at a

physicists here. Nonetheless, they explain "a spe

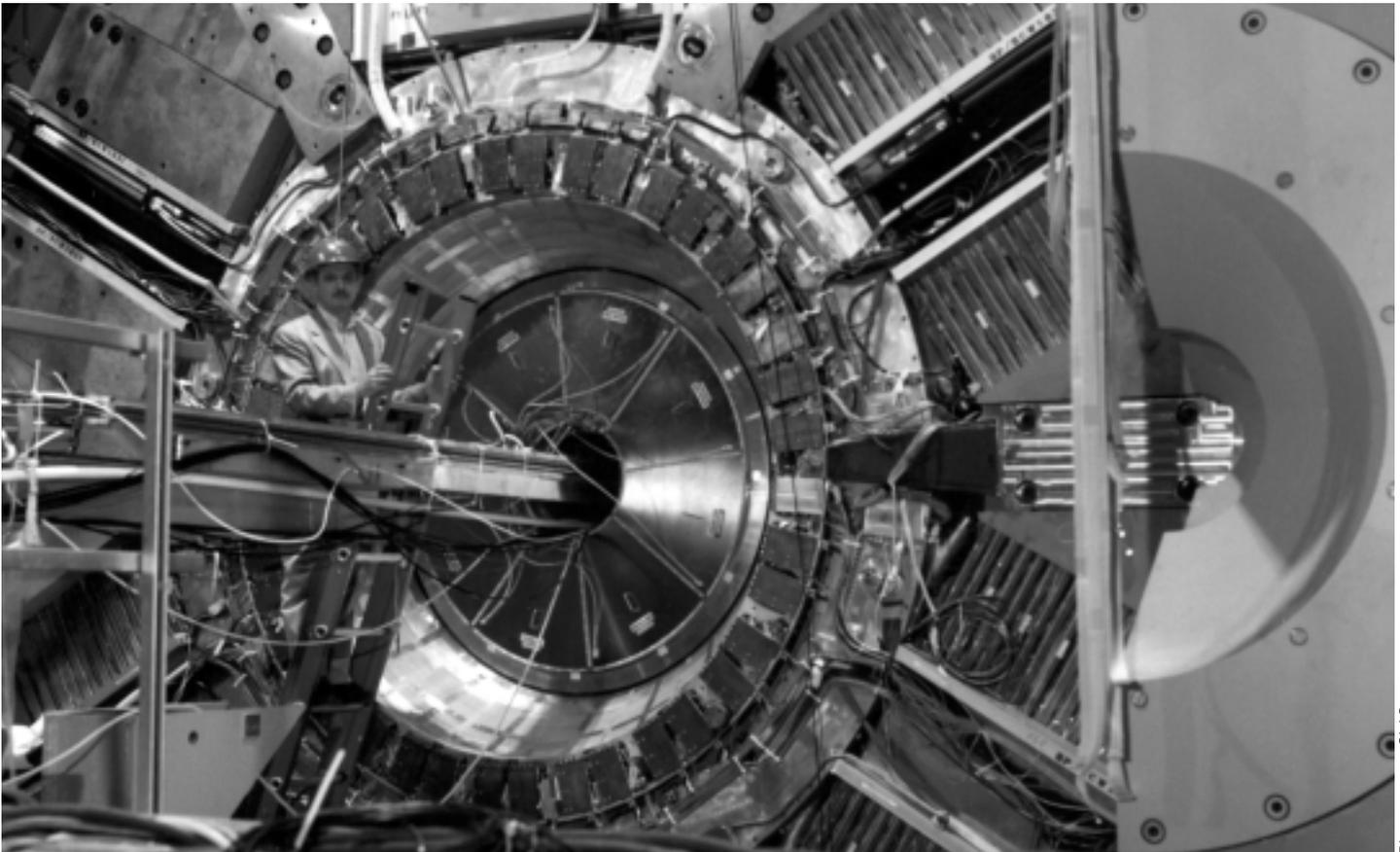


Photo courtesy SLAC

BABAR collaborator David Hitlin at the calorimeter of the BABAR detector. This end view shows some of the concentric layers used to track particles.

to explain the great abundance of matter in our universe. Physicists are eager to find additional CP-violating processes beyond the standard model.

“We are poised for further discoveries that should open up new directions for particle physics,” Smith said.

HIGGS STILL MISSING

Another cornerstone of the standard model, the Higgs boson, also re-appeared in the news. Last fall scientists at the European Particle Physics laboratory CERN created a media storm when they announced preliminary results that seemingly provided a hint of the Higgs boson, the particle believed to give mass to quarks and other subatomic building blocks.

The media frenzy continued in November when scientists pleaded with Luciano Maiani, director general of CERN, to continue their experiments. Maiani and other decision makers, however, found the Higgs results to be far from conclusive and decided to pursue the demolition of the LEP accelerator to advance the construction of the new LHC accelerator.

Lacking new data, scientists at CERN turned to a careful re-analysis of last year’s data that possibly contained tracks caused by the Higgs boson. On July 10 they presented their combined preliminary results. Though the data are still tantalizing and may contain some true Higgs signals, the evidence got weaker from a statistical point of view. Chris Tully, a Princeton physicist who was a strong proponent of extra time for the LEP experiments, conceded in a New York Times interview that “for the laboratory, Maiani made the best decision.”

Despite the revision of the CERN results, scientists still expect the Higgs particle to be “just around the corner.” A wealth of experimental data indicates that the Higgs boson, though too heavy to be produced by the LEP accelerator, could be within reach of Fermilab’s upgraded Tevatron accelerator. Collecting enough data to see it will take years, however. Fermilab scientists could run out of time when the LHC accelerator (seven times more powerful than the Tevatron) begins operation in 2006.

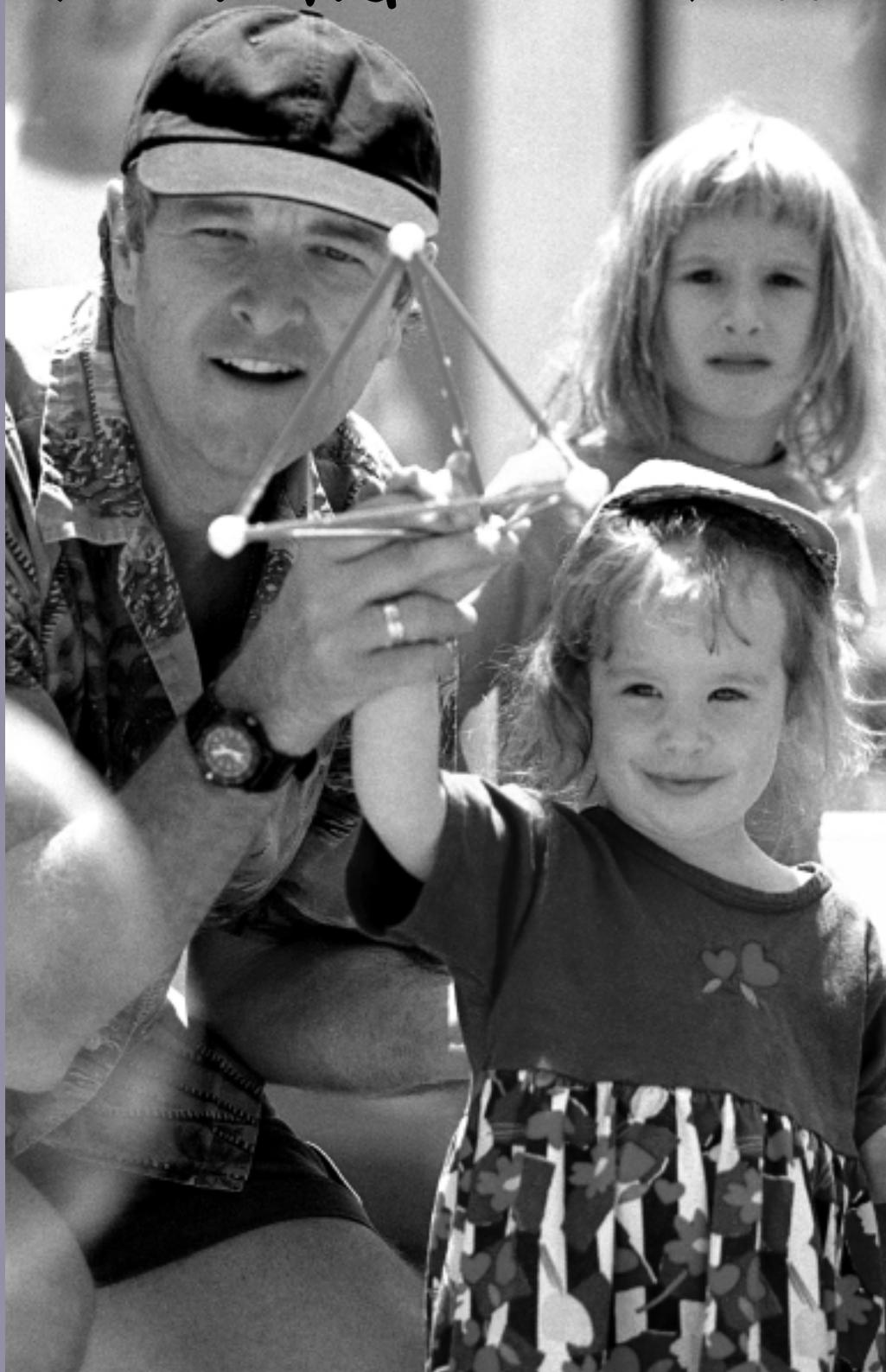
Meanwhile, the physicists at Snowmass continued debating the future of the field. Physics doesn’t stop, even if you are in the Rocky Mountains. 

Science Weekend July 7-8 on the Mall



No matter the shape of the wand, nor the age of the experimenter, the soap bubble always comes out approximately spherical, varying in size and duration but not in delight. And the delight was the best part of Science Weekend.

Photos by Michael Brands

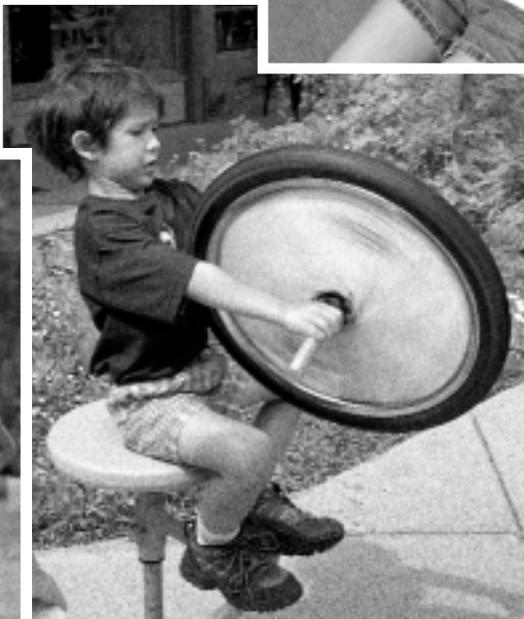




"You may think you're on pins and needles, but you're actually experiencing the distribution of a force over a large number of points."



"You take the high tones and I'll take the low tones, and if we get integral multiples of the fundamental frequency we'll produce a harmonic series."



"So let's see...to tilt the shaft while the wheel is spinning, Resnick and Halliday says I have to exert an average torque of $\bar{\tau} = \Delta L / \Delta t = L \sin \Delta\theta / \Delta t$, right?"



"Science is even cooler than I expected, especially at -195 degrees Celsius or 77.4 Kelvins."



"The escaping hot gas is the action, the force exerted on the rocket is the reaction, and—thank you, Isaac Newton—**BLAST OFF!**"



"Maybe we can find some new instances of symmetry breaking, as long as we don't break the mirrors."



1988 Nobel Prize winner Leon Lederman was the focus of one of several informal "conversations" with scientists in the Snowmass Village Mall.

SCIENCE THEATRE

Students from the University of Illinois and Michigan State University rock the house during a Science Theater presentation.



Balloon Flight Launches



Cosmic Ray Education Project

by Mike Perricone

SNOWMASS, COLORADO—

The sun rose slowly and blindingly above jagged and sharp-shadowed Rocky Mountain peaks. The airborne explorers loosed their tethers and slipped upward into a thin blue sky, passing feathery clouds, plotting to measure emanations from their blazing home star and from countless stars beyond.



Before the flight, Heather Zorn (left) and Greg Snow prepare instrumentation with state-of-the-art duct tape.

“The view is spectacular,” said University of Washington physicist Jeff Wilkes, leaning over the side of the wicker basket dangling from the rising rainbow-hued hot-air balloon. “The winds are at a very low level, and we’ve drifted only a few hundred yards from where we took off. I can see evidence of snow on the mountains, the last snow of the season. I can see a herd of horses below, but they’re paying us no attention whatsoever.”

A small band of early-rising witnesses, however, was paying close attention to the flight of the balloon, and to the voice of Wilkes relayed by two-way radio to University of Nebraska physicist Greg Snow, staffing the ground station this dawning Sunday, July 8. Wry comments aside, Wilkes fitted his role as early cosmic ray explorer Victor Hess: he wore the peaked cap of a civil servant in the German Empire, circa 1912, along with a neatly-trimmed beard and somewhat baggy (but surprisingly trendy) three-piece, three-button windowpane plaid suit borrowed from the University of Washington drama department.

Nearly 90 years earlier, Hess led a similar expedition into the skies above Austria. His instrumentation: a Wulf Electroscope, state-of-the-art in its day, now commonly used for high school physics experiments. In its brass case, the electroscope carries two charged strips of gold leaf, which move apart when struck by charged particles. With the electroscope, Hess entered a new realm of physics: he demonstrated the existence of cosmic rays—electrons and atomic nuclei, generally hydrogen—originating in outer space and striking the earth from all directions.

German physicist Theodore Wulf developed the electroscope to study radiation emanating from the earth, but doubted its reliability when his measurements atop the Eiffel Tower (a height of 300 meters) were higher than at ground level. He had expected them to be lower, diminishing with distance from the earth source. Hess, studying at the Radium Institute in Vienna, decided to take the experiment a step further—and a few thousand meters higher.

First, Hess determined that ground radiation would dissipate at about 500 meters of altitude. Then, in 10 balloon ascents from 1911 to 1913, he found that radiation first decreased with height, as predicted, but then increased rapidly with altitude to a level many times greater than at the earth's surface. He concluded that "a radiation of very high penetrating power enters our atmosphere from above." Hess also saw that ionization did not decrease on his flight during a solar eclipse on April 12, 1912; he concluded the sun could not be the main source of the radiation. His work won the Nobel Prize in 1936.

Wilkes and Snow are aiming for a different prize: inspiring young minds. Their re-enactment of the Hess discovery inaugurated a week-long training workshop for SALTA—the Snowmass Area Large-scale Time-coincidence Array, a project to set up a cosmic ray detector network in collaboration with four secondary schools in and around Colorado's Roaring Fork Valley. Using detector equipment donated by NALTA (North American Large-area Time-coincidence Arrays), the Roaring Fork Valley schools will join a network of high school and college teams extending to Canada, California, Washington State, Nebraska and Illinois, all doing "real" physics, with real data.

"The equipment is from a cosmic ray experiment called CASA (Chicago Air Shower Array), which ran for almost nine years and finished taking data in 1998," said Snow, who co-chairs SALTA with Wilkes. "The spokesperson for that experiment was James Cronin, who won the Nobel Prize for Physics in 1980."



Photos by Michael Brans

The ground crew uses a flamethrower to inflate the balloon. Victor Hess, via poster, makes a guest appearance.

The SALTA balloon carried aloft two modern Geiger counters to count cosmic ray interactions; a seasoned pilot, Fred Gorrell, head of the Unicorn Balloon Company, whose efforts produced a company-record altitude of more than 13,000 feet; journalist Dave Gordon of the *Snowmass Village Sun*; and Washington graduate student Heather Zorn, who represented 21st century physics in contrast to Wilkes/Hess—young, female, t-shirt and jeans.

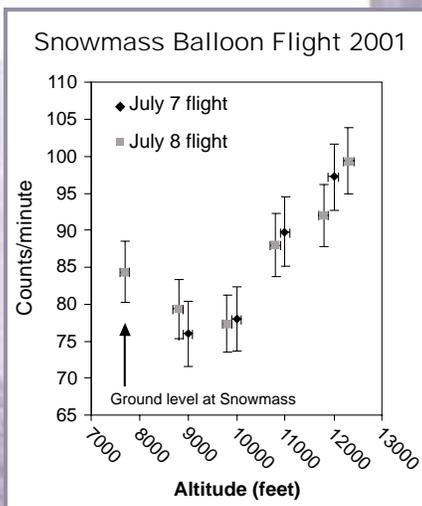
"When I took physics as a senior in high school," she recalled, "I had an excellent teacher and I was hooked on studying physics. Getting kids excited about the cosmic ray network in high schools is very important. And we need to encourage more women to study physics."

Zorn read off the Geiger counter data during the flight, and Snow plotted the points at the ground station. The data was consistent with a Saturday morning "dry run," and with the Hess findings of early in the century. Gorrell brought the balloon down with no more than the normal allotment of bumps. "The procedure for landing," Wilkes said, "is to bend your knees and don't get out of the basket until you're told."

Traditionally, champagne is served after a successful balloon trip. Gorrell produced a wicker picnic basket from the back of the "chase vehicle," driven to the landing site to retrieve the deflated balloon. Gorrell popped the cork with a flair. The returning aerialists toasted and celebrated in the warm, golden morning. Adding their own cosmic ray measurement, the champagne glasses sparkled in the sunshine. ☼



Jeff Wilkes takes a practice sighting through the electroscopes, built in Fermilab's machine shop.





Real World SNOWMASS

Young physicists had a lively presence at the Snowmass Summer Study. They tackled theoretical, experimental and technological questions in physics working groups; conducted a survey (one result: young physicists' views aren't very different from those of their elders); held a Vermont-style town meeting; and thought hard about how to communicate their passion for physics to others.

"The presence of the young physicists was one of the highlights of Snowmass," said CDF AI Goshaw. "It showed the enthusiasm and energy of the people who will be carrying forward the long-range proposals discussed at this workshop."

For three weeks in July, five Columbia University physics graduate students lived and worked together at high altitude. "I thought it was important for them to be here at this conference on the future of their field," Columbia University physicist and MiniBooNE spokesperson Janet Conrad said.

Colorado photographer Michael Brands chronicled the young Columbia scientists at home, at work, and on their off hours.



Photos by Michael Brands



Real World First Person

"I expected a mess: Seven people crammed into one van for a two-day drive from Chicago, only to be dumped into an equally crammed house in Snowmass for another three weeks!" But the drive was surprisingly fun, the house turned out to be gorgeous, and I awoke that first morning to the scene of a vast display of multi-colored balloons rising above the hills in the distance. An ideal setting. The days followed with physics talks, working groups, and discussions—also with group dinners at the house, pleasant conversations over good food (courtesy of Michel, Bonnie, and Jocelyn) and good wine. I hope the same group comes together again five years from now (in the same house, if we're lucky)."

—Joseph A. Formaggio

"There was so much physics packed into three weeks that I often didn't see my condo mates at all during the day, with all of us in a variety of different working groups. But what a great experience to live and breathe the future of HEP for three weeks! The grass roots efforts of young physicists here that will hopefully grow into a worldwide effort are inspiring." Young people have shown here at Snowmass that we are ready and able to take the field into the future and are really excited about it. My best work here: In a dream, I imagined Eric Hawker insisting on a YPP ice cream flavor. They said I was crazy, but I'd sure buy Ben and Jerry's Neapolitan!"

—Bonnie Fleming



"Arriving here seemed almost like heaven: it's basically like the alpine *Valle d'Aoste* close to my hometown in France. I have to come again during the winter! Our condo had a pool, Jacuzzi and sauna, which we fully exploited. Of course, I realized this is not really heaven, especially when I woke up in the morning in my cramped camping-style bed. Also, three week of conferences, even though extremely interesting and a true learning experience, can be really tiring. But dinners were a great surprise: everybody in the condo is a great cook! And the local people were very, very friendly, so sunny, healthy and fitness-conscious. I almost managed to quit smoking, especially after mountain biking on the rim trail for four hours!"

—Michel Sorel



Photo by George Fleming

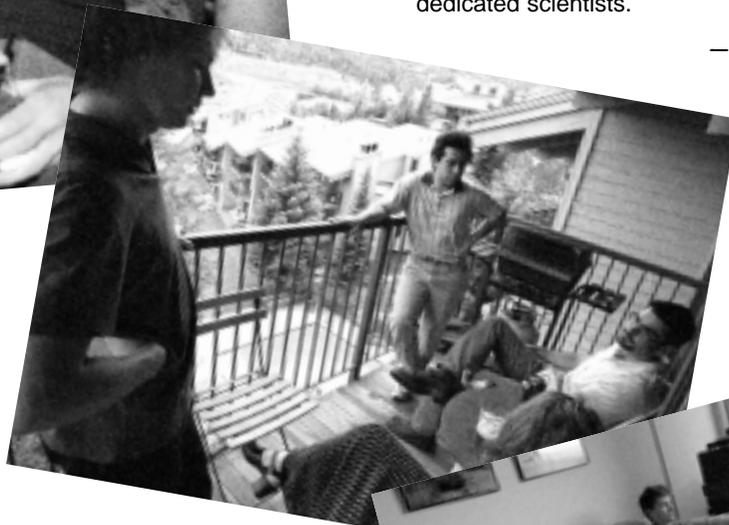


Real World Snowmass 2001



"As an undergraduate student, I think I will leave Snowmass less sure of what the future of HEP will be, but completely convinced that I want to be a part of whatever the future may hold. I've learned a bit about accelerators, a great deal about what other physicists find intriguing, and a ton about the political issues most physicists would probably prefer to forget. I learned it all against the backdrop of the mountains, overpriced deli sandwiches, Jacuzzis, and some very relaxed, very dedicated scientists."

—Matthew Sharp



"The best of times, the worst of times. The best of times: our dinner parties rehashing everyone's day of physics, followed by a dip in the Jacuzzi (pronounced *ya-ku-tsi* by Michel)... religiously attending every possible Linear Collider session, and forming my own opinion on the future of HEP ...learning the hard way to bring water on a (gorgeous, awesome) hike...Harry's Velvet Room in Aspen (worst of times: the next morning) ... young physicist activism taking over at Snowmass, especially Bonnie's talk at the Young Physicists Forum (we were all so proud, especially that she didn't fall off the stage in her new shoes) ... reading all the comments from the YPP survey ... *crème brûlée* in Basalt ...The worst of times: 8:15 meetings on Saturday morning (rough on the graduate student lifestyle) and, of course, leaving."

—Jocelyn Monroe



Photos by Michael Brands

CALENDAR

AUGUST 10

International Film Series Presents: *Mulan*
USA (1998), 88 min., Dir: Tony Bancroft and Barry Cook

This animated Disney musical, based on an old Chinese folk tale, tells the story of a head-strong girl who disguises herself as a man so she can take her father's place in the army.

All shows are on Friday nights at 8 p.m. in Ramsey Auditorium, in Wilson Hall at Fermilab. Tickets are sold at the door: Adults - \$4, Children (under 12) - \$1, Fermilab students - \$2.

AUGUST 11

Summer Arts Series Presents: *Inca Son*

Saturday, August 11, 2001, 8 p.m.
Wilson Hall, Ramsey Auditorium.
Tickets \$16, \$8 for ages 18 and under.
7:00 pm Pre-Concert Talk on Incan culture

Website for Fermilab events: <http://www.fnal.gov/faw/events.html>

An evening with Inca Son, the most popular music group in Peru, features the music and dance of the Andes. Join us before the concert for a talk on the culture of the Incan people with Inca Son Founding Director, Cesar Villalobos.

For more information call (630)-840-ARTS, Fax to 630-840-5501, or email audweb@fnal.gov. Or visit the Fermilab Cultural Events website at <http://www.fnal.gov/pub/events/culture.html>.

BLOODDRIVE

August 7 from 9 a.m. to 2 p.m. in WH Ground Floor Training Room. All blood donors will be entered into a drawing for prizes donated by URA, Eurest Dining and Heartland Blood Center. Walk-in's are welcome.

ONGOING

NALWO

Free English classes in the Users' Center for FNAL guests, visitors and their spouses. Monday and Friday, 9:30 a.m. - 11:00 a.m. Beginning and advanced classes.

DANCING

International folk dancing, Thursdays, 7:30-10 p.m., Ramsey Auditorium, newcomers always welcome. Scottish country dancing, Tuesdays, 7:30 - 10 p.m., Ramsey Auditorium, newcomers always welcome. For information on either dancing group, call Mady, 630-584-0825 or Doug, x8194, or email folkdance@fnal.gov.

The Fermilab Barn Dance series, featuring traditional square and contra dances in the Fermilab Ramsey Auditorium, presents barn dances on Sunday. Admission is \$5 for adults, \$2 for age 12-18, and free for under 12 years old. Contact Dave Harding (x2971, harding@fnal.gov) or Lynn Garren (x2061, garren@fnal.gov) or see <http://www.fnal.gov/orgs/folkclub/>

MILESTONES

RETIRING

■ David Anderson, ID 6301 PPD-Minos, July 31, 2001.

■ Michael Shea, ID 351, BD-Accelerator Controls Dept., August 31, 2001.

LETTER TO THE EDITOR

To *FERMINES*,

I appreciated the recent story on *User Demographics* (Vol. 24, #10, June 8, 2001).

I also liked the very well-done article about our Czech colleagues. As a European I always feel the pinch when discussing the post-Cold War situation in Eastern Europe, and it is very useful to know that something good started in a conference we organized. (I was part of the p-pbar workshop in 1996 in Padua mentioned by one of the Czech physicist. Indeed, I remember meeting him!)

On a different subject (the statistics): I thought it may be useful to you to know about the complication of who pays what of 10% of the Fermilab users, the Italians. INFN is the institution actually supporting ALL Italian research in high energy physics and at Fermilab. Therefore "University of Pisa" (or any other University from Italy) should really be "INFN Sezione di Pisa and University of Pisa," etc.

INFN has both staff and "associated" personnel. I belong (for example) to the former category, as Franco Bedeschi and Luciano Ristori do. Giorgio

Belletini and Giovanni Pauletta belong to the latter (they are staff at University of Pisa and Udine). However, we are all DIRECTLY supported in our research (financial support of any kind, even per diem to stay at Fermilab) by INFN. The only difference being in the one who pays our salaries.

Apologies for this confusing situation...

Thank you very much,

Giorgio Chiarelli

LUNCH SERVED FROM

11:30 A.M. TO 1 P.M.

\$10/PERSON

DINNER SERVED AT 7 P.M.

\$23/PERSON

CheZ Léon MENU

FOR RESERVATIONS, CALL X4512

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DIETARY RESTRICTIONS

CONTACT TITA, X3524

[HTTP://WWW.FNAL.GOV/FAW/EVENTS/MENUS.HTML](http://www.fnal.gov/faw/events/menus.html)

LUNCH WEDNESDAY, AUGUST 1

*Turkey Salad with Chutney and
Cashews on Field Greens
Blueberry Tart*

DINNER THURSDAY, AUGUST 2

*Smoked Salmon Platter
Steak Diane
Vegetable of the Season
Potato Galette
Fresh Fruit Tarts*

LUNCH WEDNESDAY, AUGUST 8

*Duck Breast and
Peppered Mango Salad
Blueberry Lemon Cake*

DINNER THURSDAY, AUGUST 9

*Roasted Tomato and Chili Soup
Lobster Risotto
Indian Corn with Porcini
and Prosciutto
Summer Fruit Shortcake*

F E R M I N E W S

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The deadline for the Friday, August 10, 2001, issue is Tuesday, July 31, 2001. Please send classified ads and story ideas by mail to the Public Affairs Office, MS 206, Fermilab, P.O. Box 500, Batavia, IL 60510, or by e-mail to ferminews@fnal.gov.

Letters from readers are welcome.

Please include your name and daytime phone number.

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CLASSIFIEDS

FOR SALE

- '97 Pontiac Grand Grix GT, 4 door, has every option (except leather interior). 62K miles. 30K miles left on warranty. Excellent condition. White exterior w/gold trim, gray cloth interior. \$13,500 Call Ed work x6300, home 630-665-6674, dijak@fnal.gov
- '97 Suzuki Sidekick JLX: 64K mi, 4WD, 6 cyl, man trans. Tires 15K mi. Options — A/C, rear defrost, sun roof, stereo/cass/10-disk CD changer, pwr windows, pwr locks w/ remote security, dual air bags, luggage rack. \$9,500 o.b.o.
- '94 Ford Aerostar extended minivan, 99k, all-wheel drive, Edde Bauer leather, CD, excellent condition. \$5,000. Call 630-557-2523; or 840-4606
- '93 Mazda 626 ES, white, V6, manual, 80k miles, loaded including ski and bike racks, very good condition. \$6,000. Call Stan at x2680 or email krzyw@fnal.gov.
- '90 Nissan Sentra E, 4 spd manual, white, trouble free, in excellent condition, 100K miles. \$2,000. Contact burair@fnal.gov x5643
- '69 Chevrolet Impala convertible. Garnet red, white top, parchment (pearl white) interior. 327 cid/ 235 HP engine, Powerglide transmission, 10-bolt Positraction rear axle. F70-15 redline tires on 15 x 7 rallye wheels (including spare), power steering, 6-way power seat, AM radio, deluxe seat belts. We have owned this car since 1983. 3 year frame-off restoration finished in 1994. Have all receipts for parts purchased and work performed since 1983. Title history from new. Class runner-up at Super Chevy Indianapolis show July '95. Well-detailed, looks & drives great. \$11,000. 630-859-8596, or email pritchard@fnal.gov.
- John Deere S92 rear engine riding mower. Rear bagger attachment, new battery, serviced this season. \$550 markl@fnal.gov, Mark X4776.
- Berkline sofa and love seat. Both have 2 built-in recliners. Dark green with burgundy and tan stripes. \$800 for set. Call Ed @ x2974 or 630-906-0752, email eop@fnal.gov.
- Oval pine table one leaf excellent condition \$35, braided oval rug neutral color \$25 new Packard Bell monitor 15" screen still in box \$50. Call Don 896-3211.

- Car carrier (Sears) fits on top of car \$50, bike rack holds 2 fits on top of car \$20, humidors 33"x32"x19" oak lined with Spanish cedar holds lots of cigars \$700 x3011 or 630-557-2523
- Lightweight metal desk \$25, birch Benno CD tower \$40 (holds 180 CD's). Contact Lynn x2061 or garren@fnal.gov.
- Girl's bicycle. Hardly used. Includes locks and chain, headlight and red backlight. Juan at 840-5199 or 840-4878 or negret@fnal.gov.
- Womens Univega Bicycle. Hybrid style. Shimano indexed shifters. Upright riding position. Excellent condition. Includes removable fenders. Color is Red.\$100, Mark at X-2253 or schmitz@fnal.gov
- Dillon RL-550B reloading press. Conversion kits for 9mm, .38 Super ACP, .38/.357, .44 Mag, and .45ACP. Dies and scale also. \$400 Call Mark @ x4472 or ruschman@fnal.gov.
- Neutral braid rug \$35, Packard Bell new monitor still in box \$50, new T.V. cabinet will hold 35" screen \$75, T.V.-VCR cassette case pine storage cabinet on bottom entertainment center \$35, Pine oval table \$35 one leaf, all in excellent condition. 630-896-3211.
- Yakima Raingutter cartop rack, 4 corner towers with locks, 2-7/8" round crossbars. New: \$200. Excellent condition, asking \$80. Adapters available for skis, bikes, boats, etc. from dealer 630-985-7204.
- 8" Schmidt-Cassegrain Telescope, Meade 8" LX50, mint condition (rarely used) w/ hand controller, equatorial wedge and tripod, two lenses (Meade MA25mm and Tele vue 10.5mm Plossl) and two filters (neutral density for viewing the moon, and blue). Price: \$1,500 o.b.o. (\$2,500 value new).
- Guitar Effect Pedal: Marshall ED1 Compression. \$45. Bicycle: Raleigh DL-1. British police/postman's bike. Large and heavy. Fully enclosed chaincase, rod and link brakes. \$300. Curtis x2394 or crawford@fnal.gov
- Medela(TM) Pump-In-Style Professional Breast Pump for nursing mothers. Housed in fashionable black shoulder bag. All wear components replaced within past year. Excellent condition. \$290 new, sell for \$100. Call Mike x2700.

APARTMENT FOR RENT

- BATAVIA: 2BR, all appls., excellent location, within 4.5 miles of Fermilab. Available in August, 2 Months minimum, \$715/ mo, Call Vlad x8777.

HOUSE FOR RENT

- Batavia: 3BR, 2BA Ranch , w/bsmt & 2 car gar. All appl. Big yard, excellent location, within 4 miles of Fermilab. No pets, non-smoker. Available in August, \$1,450/mo, 1 mo. security deposit & crdt. check. Call 630-761-3176

HOUSES FOR SALE

- 1932 Pinnacle Drive, Aurora: Savannah Subdivision...\$274,900. Understated charm abounds in this great four bedroom home in the centrally located Savannah subdivision. This home boasts many current features you have been looking for including a central vacuum, and a large eat in kitchen with center island. Other great things include a bi-level brick patio, hardwood floors in entry way and powder room, close proximity to the East/West Tollway, and award winning Batavia schools. Call 375-1813 to schedule a showing.
- Kaneville: 3 bedrooms hardwood floors, 2 baths tiled floors large living room with wood burning stove family room off kitchen maple kitchen cab. Dishwasher gas stove A/C Honeywell elec. air cleaner full basement 2-1/2 car garage small barn 1 acre lot. Asking \$195,000 phone 630-557-2397.

PROPERTY FOR SALE

- 8 acres in Missouri Amish country. Call Jerry Schmitt x3556.

FURNITURE FINISHING

- Furniture refinishing and restoration. Pick-up and delivery available. Call 815-695-5460

WANTED

- A permanent and loving home for a former homeless cat or dog. Homes for Endangered and Lost Pets (H.E.L.P.) is a non-profit, state licensed and all-volunteer organization that fosters the animals in our homes. Visit our website for more info and pictures of adoptable animals (www.geocities.com/help_the_animals/) or call 630-879-8500.

LABNOTES

TAI CHI CLASSES

- The Recreation Office is looking for individuals who would be interested in taking Tai Chi Classes at the Fermilab Recreation Facility. Mondays and Wednesdays,

5:30 – 6:30 p.m. beginning in October. Cost Range (depending on # of students): \$45.00 – \$90.00. Minimum of ten students needed. Presented by

Tai Chi Shaolin Chuan Association of St. Charles. Contact Jean Guyer, x2548, jeanm@fnal.gov. Deadline August 17.

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