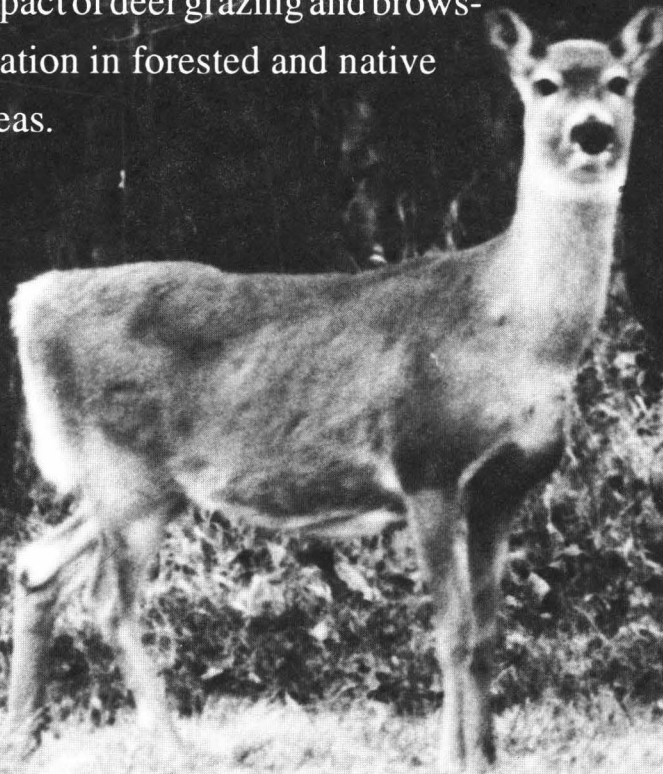


# Ferminews

FERMI NATIONAL ACCELERATOR LABORATORY

## Fermilab initiates long-term deer study

If you are inclined to take a noon-time walk through the Big Woods or the Prairie Interpretive trail this winter, you'll notice some new features in the landscape that look strangely like enclosures for farm animals. The difference is that these structures are eight feet tall, and there are no animals inside. The seven fenced areas located around the Laboratory are actually "exclosures," designed to exclude white-tail deer from selected tracts of land for a period of at least five years. The purpose of the exclosures is to assess the impact of deer grazing and browsing on vegetation in forested and native grassland areas.



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Please send your article submissions or ideas to the Publications Office.

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## Deer study continued

This project is part of a multi-year study of the deer population at Fermilab, and is being managed by **Rod Walton** of the National Environmental Research Park program. Early in the Spring of 1992, botanists, led by Vicky Nuzzo from Native Landscapes of Rockford, a consulting firm, began surveying sites around the Laboratory to select areas for the study. In cooperation with the National Environmental Research Park program, researchers located areas that were vulnerable to over-browsing by deer and amenable to the construction of exclosures. The seven fenced exclosures are located in four areas, two in forest and two within the prairie reconstructions. The exclosures were built by ecologist and contractor Steve Banovetz from DeKalb, Illinois. Plots 25 meters on a side were established in pairs, and the plant communities in each were monitored and characterized. One plot of each pair was randomly chosen to be protected from deer by building an exclosure, and the other was left unfenced, as a control. Annual surveys comparing the plants inside the exclosures with those outside them will shed light on the impact of deer on plant communities. This method of investigating the relationship between deer and their food supply is a standard technique for forested areas. However, the use of exclosures in tall-grass prairies is a new and untried undertaking, so the results of this study at Fermilab will be of interest to ecologists throughout the country.

Why spend time and money on a study of deer at Fermilab? The white-tail deer is the last remaining large mammal on the Illinois landscape and provides nature-lovers a unique opportunity to observe wildlife. Deer are striking in their dignity and grace. Unfortunately, deer have also become problematic for land managers throughout the state, and a source of emotional confrontation between those whose interests lie in controlling deer numbers and those who emphasize the rights of deer to exist undisturbed. There is a significant deer population at Fermilab, and making intelligent decisions about its management in the future will require reliable information.

The history of Illinois' deer herd is interesting and illustrates the principle that all elements of the ecosystem are interdependent, and that changing even one element often has far-reaching consequences. In the words of an old ecology adage, "You can't change just one thing."

In 1800, at a time when the human population of the Illinois territory was under 3,000, there were fewer deer than there are presently. White-tail deer were in competition with elk and bison for food, and they had to survive a formidable host of large predators, such as wolves, coyotes, bears and cougars. During the mid-nineteenth century, the combination of severe winters and over-hunting reduced the herd drastically. Conservationist Aldo Leopold estimated in 1931 that the last white-tail deer in northern Illinois was seen in 1874. Deer were virtually extinct throughout the state by 1890. During the same time, the human population had risen to nearly 5 million. By the mid-twentieth century, competitors and predators of the deer had been eliminated. The alteration of the landscape by agriculture; planting row crops such as corn and soybeans, and redirecting water supplies, created ideal habitat for white-tails to thrive. During the 40s and 50s, the Illinois Department of Conservation re-stocked deer in all parts of Illinois, chiefly to provide hunters with game.

IDOC estimates the current deer population in Illinois to be roughly a half million, and hunters killed approximately 100,000 deer in the state during the 1992 hunting season. In some instances, deer have come to be considered a severe problem. Deer can damage crops and ornamental shrubs, and automobile collisions with deer result in costly repairs and occasionally personal injuries. Ultimately, an over-large herd may result in a population "crash" in which the animals eat themselves out of their food supply and many may suffer and die from starvation.

Wildlife biologists and governmental agencies have responded to problems of this sort by instituting deer control practices. Recently, the DuPage County Forest Preserve District drafted a deer control plan for the first time in its history, because deer numbers have increased between 150 - 200%



*Rod Walton assists with the construction of the deer exclosures.*

in the county's forest preserves since 1988. The plan is a drastic one: under the auspices of IDOC, sharpshooters will kill as many deer as necessary to reduce the population to desirable levels. Similar plans have been underway for several years in Cook and Lake Counties. The DuPage County plan concentrates on the herd in Waterfall Glen Forest Preserve near Argonne National Lab, where deer density is nearly 100 per square mile. In the eastern U.S., the desirable range is 15-20 animals per square mile. Such a density should provide adequate cover and browse to maintain a healthy herd, while not forcing the destruction of valuable plant communities. Rod Walton counted a total of 144 deer last March in the ten square miles enclosed by Fermilab's boundaries. This density of about 15 deer per square mile is not alarmingly high, although there is evidence of the effect of deer on prairie plants and forest trees every year, and some areas within the Laboratory have much higher local deer densities than the overall average. The annual count will be done again this winter and in subsequent years to determine whether the numbers of deer are increasing, and if so, how quickly.

Herds of large animals such as the white-tail deer coexist uneasily with human industrial society. It is a lamentable fact that the deer in Illinois are not "natural" in any true sense. They were imported by game man-

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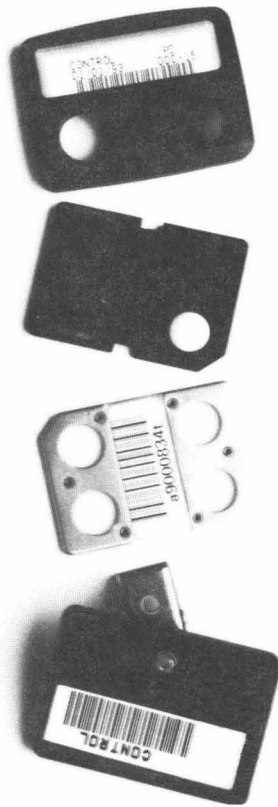
## Out with the old, in with the new

### Laboratory to use new "film badges" in '93

Beginning in January 1993, Fermilab will be using a new type of dosimeter badge. Although we are all used to calling personal dosimeters "film badges," the new badges contain no film. Instead, they use a set of thermoluminescent dosimeters or TLDs. These are small crystalline chips (LiF) which store the energy of radiation and release it in the form of light when heated afterwards. The light levels ("glow curves") are recorded and translated to a dose equivalent. The badges also contain a set of filters to determine the type of radiation and a strip of CR-39 polycarbonate to record neutron doses.

These badges are considerably more complex than the old film badges and are not designed to be taken apart by the wearer. They will not pop open as the old ones do. Although it is possible to pry them open, the badge is very likely to be damaged in the process, so please do not try to open your badge. Flyers posted near the badge racks show what the insides look like. If your curiosity compels you to actually examine the innards of a real badge, there is a demonstration model located at the ES&H Section in Wilson Hall 7E.

The new badges will be collected quarterly rather than monthly. Permanent badge holders will exchange their badges for new



ones in April 1993. Temporary badges will continue to be exchanged monthly.

The guidelines for wearing the new badges are the same as those for the old one:

- Wear the badge on the front of your body.
- Never leave the badge behind in a radiation area.
- Do not wear the badge while receiving medical x-rays.
- Do not launder the badge.
- Do not tamper with the badge.
- Keep the badge away from high temperatures.

If you have any questions, contact Radiation Physics at x8743. —*Dave Boehnlein*

## Wellness works

### Stress reduction workshop to be held at Fermilab

Fermilab's Wellness Committee and Fox Hill Counseling Services, a program of Lutheran Social Services of Illinois, will present another program in the continuing Family Life Education Series on Monday, January 25. The series is designed to assist families with the challenges they face today by helping to strengthen family bonds and encourage individual growth. The Family Life Education Series is a service that the agency provides in addition to individual, family and marital therapy, and specialized children's groups.

The workshop topic is "stress reduction" and will take place from 7 to 8:30 p.m. in Ramsey Auditorium. The LSSI Counseling and Education Center staff will present an evening of their favorite stress reduction techniques. Come and pick up a few pointers on how to manage the stress in your life.

To enable parents to attend the lecture, Fox Hill will offer a children's event at the agency for children 6-10 years of age. Please call 708-879-7266 to register your child in advance. Fox Hill is located at 113 N. Batavia Avenue in Batavia next to Burger King. A staff member will supervise the children, who should be dropped off between 6:30 and 6:45 p.m.

For more information, call Fox Hill Counseling Services at 708-879-7266. A donation of \$5 is requested to help defray the cost of the children's events.

## The tax collector cometh



Most of you have probably noticed that your cafeteria-purchased lunch has risen in price—by 6.75% to be exact. This is because, as of January 1, 1993,

Fermilab began collecting sales tax on all its "cash register" sales.

In 1970, shortly after the Laboratory was opened, the State of Illinois made the determination that Fermilab was "an instrumentality of the federal government" and

therefore exempt from paying state sales tax. In the summer of 1992, the state re-evaluated its 22-year-old position and decided we were no longer exempt.

"The state is taking a more active look at the tax status of organizations to ensure that all possible sources of revenue are being secured," said **Dave Gassman**, Fermilab Legal Office. Prompted by current revenue shortfalls, many states are looking more closely at the tax status of government-owned, contractor-operated facilities. "In

the 70s there was more of a feeling that the contractor and the government were one in the same. That is not the attitude now," said Dave.

This new ruling means that sales tax will be added to all food, beverage and "tangible personal property" purchased at the Laboratory. This includes purchases made from the cafeteria, Public Information, the Users Center and Nalrec.



## Milestones

Employees honored for 10 years of service



Assistant Director **Jack Pfister** presented 10-year service awards to 20 Fermilab employees at a luncheon held November 18, 1992 at Chez Leon. The recipients were: (top photo, row 1, l to r) **Teresa Larson** (LS), **Lisa Lopez** (AD), **Arlene Havlicek** (FESS), **Bonnie Seraphin** (BS), and **Wyatt Merritt** (RD), (row 2, l to r) **Edward Szarzynski** (TS), **Steve Bjerklie** (AD), Jack Pfister (Directorate), **Harold Wilkinson** (BS), and **Alex Elwyn** (ES&H). (Bottom photo, row 1, l to r) **Craig McClure** (AD), **Thomas Fitzpatrick** (RD), **Steven Chappa** (RD), **Carol Magnuson** (BS), and **John Thompson** (AD), (row 2, l to r) **Dwaine Foster** (BS), **Phil Paul** (AD), Jack Pfister (Directorate), **Jim Patrick** (RD) and **Dave Slimmer** (CD).

## Paula Garrett travels "down under"

Fermilab's head librarian, **Paula Garrett**, is heading south for the winter, but she is not stopping in Florida, she is going all the way to Australia.

Paula will be traveling to the land "down under" as part of a six-month librarian exchange. Beginning in February, Paula and Katie Wilson, senior librarian for electronic information services at Macquarie University in Sydney, Australia, will exchange jobs. Paula will travel to Sydney where she will take over Katie's role as senior librarian while Katie will come here to fully assume Paula's responsibilities as Fermilab's head librarian.

The exchange, said Paula, is analogous to a sabbatical for a physicist, and will provide many opportunities for both her and Katie. It will allow for "hands-on" job experience and will bring each librarian a new and enhanced job perspective. "This will give me the opportunity to master an area of my profession and also an opportunity to make contacts in the profession that will be useful at Macquarie and when I get back to Fermilab," Paula said.

Paula added that she and Katie will each return to their institutions with more of a "global vision of librarianship" that will be beneficial and constructive in planning, problem-solving and decision-making. Fermilab, in turn, will also benefit as they get a fresh perspective from Katie and then added new experience from Paula upon her return.

The exchange is supported by Laboratory Services Section Head **Chuck Marofske**, who believes this unique professional arrangement will add to the resources of the library operation.

This exchange is not the first time Paula and Katie have traded jobs. They first switched roles back in 1985 while Paula was working at Rice University Library in Houston, Texas and Katie was at the Australian National University in Canberra. That exchange was a tremendous success, where both institutions benefited, said Paula. She added this is a fantastic opportunity that eight years later both she and Katie are in positions where they can do this again.

Since their first exchange, Paula and Katie have kept in touch personally and professionally. This friendship will undoubt-



*Katie Wilson (l) came to Fermilab in October to visit with Paula Garrett (r) and other library staff members.*

edly make the exchange run more smoothly as the two not only exchange jobs, but homes and cars (and Paula's cat, Mel) as well.

While at Macquarie University, Paula's main responsibility will be managing the on-line and CD-ROM campus-wide network of

databases in the library. She will also be evaluating and recommending hardware and software purchases and coordinating end-user access to these databases for the whole campus of 14,000 students. Paula, in addition, will assume Katie's role as reference librarian, providing information services to the students and faculty.

When Katie arrives, she will be picking up where Paula left off on planning the implementation of a CD-ROM network of databases similar to one she worked on at Macquarie. These databases will list references to articles, reports, standards, etc. in the subject areas of physics, engineering and computer science. As well as working with the library staff to get these databases up and running, Katie will also fully assume Paula's management and supervisory responsibilities.

Paula plans to leave for Australia in early February. Katie will arrive later in the month.

## Nalrec committee elected



*The Election for the 1993 Nalrec committee was held December 9 at their annual Christmas Party. The new officers are (row 1, l to r) **Jesse Guerra** (RD/Thermal Sys.), president; **Nancy Bartlett** (TS/Mag. Prod.), secretary; (row 2, l to r) **Dominick Carullo** (TS/Eng), vice president; **John Kowalski** (RD/Oper. R&D), treasurer; **Gary Smith** (RD/Eng. & Design), vice president; **George Davidson** (BS/Veh. Maint.), vice president. In other Nalrec news, a ski trip to Chestnut Mountain in Galena, Illinois will be held February 20. Those interested in attending please contact Dominick at x3187 for further information.*

## Lab Services offices relocating



Three Laboratory Services Sections offices will be moving January 18-19. The **Section Office** will be moving from the east side of the 15th floor of Wilson Hall to the west side of the 15th floor. The **Education Office** will be moving next door to the Section Office from their current location on WH 8W. The **Publications Office**, in addition, will be moving to 15W to the south of the Activities Office. The Publications Office technical papers display will be located at the north end of 15W for those looking for Fermilab preprints.

## Nalwo activities

Join Nalwo for a trip to the Art Institute of Chicago on January 21. The bus will leave the Users Center at 9 a.m. and return by 3 p.m. At the Art Institute Auditorium there will be a slide lecture on the artist Henri Rousseau entitled "The Man in the Dream." Also, there is a special exhibit for children called "Art Inside Out." This exhibit features interactive games for children in addition to a family room with books. For more information or to register call Selitha Raja at 708-665-5539 or Brenda Kirk at x3440.

Sue Mendelsohn has a stretching exercise class which meets on Fridays from 9:15 -10:15 a.m. in the Users Center. For more information, call Sue at x2660.

The Guest Office has a coffee every Tuesday and Thursday morning from 10 a.m. until 12 p.m. in the Users Center. There will not be a coffee when special events are planned for a specific day. Everyone is welcome to come.

Nalwo sponsors a folkdance group which meets each Thursday from 7:30 p.m. until 10 p.m. in the Village Barn. Early in the evening, instructions are given to beginners. Later on, requests are taken. Dances are primarily from Europe and are circle and line dances. No partners are needed. No babysitting is offered, but children are welcome, as long as they are supervised. For more information, call Mady Newfield at 708-584-0825 or Susan Jensen at 708-232-9089.

## Free blood pressure checks

Free blood pressure screening will be offered in the Wilson Hall atrium on January 19 from 11:30 a.m. to 1 p.m. Do it for the health of it.

## URA scholarship applications due

Candidates for Universities Research Association scholarships are reminded that applications are due March 1, 1993. Applications are available from and should be returned to Personnel Services, M.S. 113, x4367.

Scholarships are awarded on the basis of S.A.T (Scholastic Aptitude Test) scores.

URA awards a number of scholarships to regular, full-time Fermilab and SSC employees' children who are currently high school seniors and who will begin a four-year, college-degree program next fall. The maximum amount of the scholarship is \$3,000 for tuition and fees, and is renewable for four years if the student progresses in good academic standing.

Applicants will be notified regarding scholarships in early April.

## 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. The cost is \$2.

January 22: *The Cook, the Thief, His Wife & Her Lover*, a shocking, savage fable about corruption and cruelty, power and perversion in the modern world. Peter Greenaway, director, France-Holland, 1989, 126 minutes.

February 12: *La Grand Chemin* (The Grand Highway), a city boy is moved to a rural village where he is bewildered by country life and confused when his hosts vie for his affection and attention. Jean-Loup Hubert, director, France, 1987, 107 minutes.

February 26: *Naked Lunch*, filmmaker David Cronenberg interprets William Burroughs' novel. Focus is on the writer's creative process with drug-induced hallucinations & bizarre imagery. Canada/Great Britain, 1991, 115 minutes.

## Children's Center presents opera

The Fermilab Children's Center will present their 1993 Winter Fest "Three Piggy Opera" Thursday, January 28 at 7 p.m. in Ramsey Auditorium. Everyone is invited. Admission is free.



## Fermilab art series presents

### Michala Petri, recorder virtuoso with Lars Hannibal, guitar

In an international career that spans four continents, Michala Petri has become firmly established as one of the very finest recorder players performing today, delighting and astonishing audiences worldwide with her virtuosity and musicality. This outstanding musician will be performing in a rare recital with guitarist Lars Hannibal at Fermilab's Ramsey Auditorium on Saturday, January 30 at 8:00 p.m.

Since her professional debut at the Tivoli Concert Hall in 1969, Ms. Petri has toured extensively throughout the world, appearing at many of the world's most prestigious festivals. A frequent soloist in Europe with such groups as the English Chamber Orchestra and the Academy of St. Martin-in-the-Fields, she made her highly acclaimed New York debut in 1982 with the New York Chamber Symphony of the 92nd Street Y and at the Weill Recital Hall, where she gave the world premiere of a work by Malcolm Arnold for recorder and strings, commis-

sioned by Carnegie Hall as part of their Centennial Season. Recent and upcoming engagements include the Saint Louis, Toronto, Rochester, New Jersey and Oregon symphonies, the Saint Paul and Los Angeles chamber orchestras, the National Arts Centre Orchestra, U.S. tours as soloist with I Solisti Italiani and the Guildhall String Ensemble and recitals in Chicago, Los Angeles and New York.

Ms. Petri's extensive discography includes numerous recordings of the solo recorder repertoire and six concerto albums with the Academy of St. Martin-in-the-Fields. She now records exclusively for RCA Victor Red Seal, which recently released *Albinoni/Eight Concertos* with Claudio Scimone and I Solisti Veneti. Other recordings on that label include Vivaldi's *Four Seasons* with the Guildhall String Ensemble, *The Virtuoso Recorder*, *The Modern Recorder*, *Noel! Noel! Noel!* with the Westminster Abbey Choir, and *Vivaldi/Six*



*Concertos* also with Scimone and I Solisti Veneti. Ms. Petri has also recorded sonatas for recorder and harpsichord by Handel and Bach with Keith Jarrett.

Don't miss this outstanding young soloist on Saturday, January 30 at 8:00 p.m. Tickets are \$11. 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.

## Playgroup events



The playgroup will sponsor a trip to the Discovery Zone in Aurora near Fox Valley Mall on January 22. Meet at the Children's

Center at 9:30 a.m. or at the Discovery Zone at 10 a.m. Cost is \$2.95 per child, adults are free. An optional meal deal is also offered for \$2. The group will return by 1 p.m. Another trip to the Discovery Zone will be held on February 18. Those who have come on previous trips to the Discovery Zone will be admitted for free. For more information, call Annamaria at 708-897-7228 or x2034 Monday-Friday, 9-11:30 a.m.

Other upcoming events include a bus trip to *Disney on Ice* on Wednesday, February 3. The bus will leave at 9 a.m. from the Users Center parking lot for the 10:30 performance. The bus will return by 2 p.m. Tickets for those 2 years old and up are \$6.

## Ping pong tournament planned

The Activities Office will be sponsoring its second annual singles ping pong tournament at the Users Center beginning February 15, 1993.

Single ping pong will be played on Monday through Friday with time slots available from 5:30 to 8:30 p.m. Sign-up sheets are located on the bulletin board at the Users Center. You must sign-up prior to the deadline of February 8.

Besides a chance to meet new people and the thrill of competition, a trophy will be presented to the champion!

For more information contact Jean Guyer at x2548 or 4544.

## Harper's index

Average length of a professional football player's career, in years: 3.2

## Deer study continued

ers and have adapted to human activities in the absence of natural circumstances. Intelligent management thus becomes a necessary response to the errors and short-sighted decisions and actions of the past. Those whose responsibilities include deer management must keep in mind that wild animals, like people, have an intrinsic value that should be considered along with economic factors. By gathering as much knowledge as we can about animals at Fermilab long before critical management decisions have to be made, we will be in a position to make the best possible judgments along the way.

If you're interested in learning more about the project, or have questions, please contact Rod Walton at x2565 or FNAL::RWALTON.—Rod Walton

# Classified ads

## Vehicles

For sale: **1991 Dodge Ram 250 maxi van**, V-8, 318 ci, fuel inj., PS/PB, A/C, new tires, 25K miles, carpeted in back, transferable warranty, \$13,500 o.b.o. Call Jay at x8319 or 708-717-5819.

**1986 Chevy Nova**, 70K miles, 4 door, automatic, AM/FM radio, A/C, dark red, \$2,700. Call Kim at 708-892-9776.

## Miscellaneous

2 **bench seats** for Chevy van, tan vinyl, 3 seat belts each (attached), quick release type, good condition, \$100 ea. or both for \$175;

**battery** for Chevy van, used 1 day, heavy duty, 72 mo. warr. (Montgomery Wards), \$65 new, \$40/make offer; beige **couch** with oak trim, fabric protector, like new, very comfortable, \$375/make offer. Call Chuck at x2271, pager 536-8410 or phone 708-879-0394 evenings.

For sale (or trade): Budget **classical music CDs**, 10 for \$35; **Atari Lynx portable color video game system** (+AC adapter), \$59 o.b.o.; **Lynx games**: California games, \$12, Blue Lightning, \$12, Awesome Golf, \$17; **Atari ST 14" color monitor** with 10 programs, +30 disks of software, \$249; **Atari ST software programs**, choice of many - 6 for \$29; **padded carrying bag** for Apple Mac Classic/Plus (\$25). Call John at x4774.

For sale: **Hang glider** (UP 1-Comet), \$1,000 or offer; **hang glider** (Volero), \$300 or offer; 1953 **BMW Metsershmitz** - converted to electric car (in pieces), \$1,000 or offer. Call Steve at x4607.

**Sierra games for IBM compatible PC**: Space Quest II-IV, Police Quest I-III, King's Quest III-V, Quest for Glory I-II and Manhunter New York. Prices negotiable. Call Chris at 708-665-9584, weekdays after 5 p.m. or Jeff at x3951 or 708-690-3719.

For sale: **Baby crib**, \$30; **high chair**, \$10; **men's bicycle**, \$50; **recliner** (gray/blue),

\$250; **coffee table**, \$100. Call Kim at 708-892-9776.

For sale: Used **Kenmore washer and gas dryer**, heavy duty, large capacity, white, asking \$125 each; used Montgomery Ward **refrigerator**, 20 cu. ft., side-by-side doors, frostless, asking \$350; used Electrolux **canister vacuum cleaner**, good condition, \$75. Call Dan x3916 or FNAL::KAPLAN.

**Baldwin acrosonic piano**. Great sound! \$900. Call x2684 or 708-513-5102 evenings.

**Men's brown leather jacket** by Members Only, size 46, worn only twice, \$300. Call Shelley at x3324.

**Drop-leaf table**, seats 10-12 people, \$50 o.b.o. Call Sue at x3762.

## Real Estate

**Apartment** for rent in Wheaton Center highrise, great views from large terrace (17th floor), large 1 BR, plenty of closet space, walk to train and bus, tennis, pool, clubhouse, security and maintenance on building. With or without furniture (for sale). Sublet for 8 months starting Feb.-Mar. with option to renew (7 month for \$726/month, 1 month free, heat and water included). Call Enrique at x3755 or 708-510-1038 or FNAL::ENRIQUE.

Large **1 BR apartment** for rent 4 miles from Fermilab on east side of Batavia. Private entrance. \$550/mo. includes all utilities. Will furnish completely for \$625/mo. Garage available. Call 708-879-6618 after 7 p.m.

## New from the Stockroom

1340-0680 Labels, diskette, color coded red, yellow, blue and green, Avery P/N 5274, 80 labels per box 2-3/4 in. x 2-3/4 in. for 3-1/2 in. disk.

## Harper's index

Percentage of Super Bowl viewers who do not live in the United States: 89.

## For your information

### Use of back belts by Fermilab employees

Recently, there has been much interest among lab employees and management regarding the use of back belts to prevent injuries to the lower back when lifting. Manufacturers of these devices have heavily promoted them, and they are now available without prescription in drug and hardware stores. In some Fermilab areas back belts have been given out without instruction on their use or any instruction in proper lifting techniques. The ES&H Section does not recommend the use of back belts except for a short time as part of therapy for an individual who has had an acute injury and, most probably, will be restricted in motion and lifting capabilities. Our opposition to their use at the present time is based on the following concepts:

- There is no data at the present time showing their long-term efficacy.
- Lifting requirements should not be so demanding that an employee needs the protection of an orthotic device.
- Prolonged use of back belts can allow the back support muscles to weaken and foreshorten.
- A back belt is not a substitute for proper lifting, material handling techniques and back care.
- Back belts artificially increase inner abdominal pressure, the effect of which may lead to internal organ damage.

The analogy of industrial lifting to sport lifting is not a good one, as power lifters strive to increase the strength and flexibility of their back muscles and use a stylized lifting technique. Furthermore, they lift extreme weights very few times rather than lesser weights repetitively or asymmetrically as some Fermilab employees do.

Until further studies are done, we view back belts as an unproved, quick fix for a problem that has bothered the human race since we first assumed upright posture. We do not recommend the use of back belts.—*Steve Bluma*