

FermiNews

The Newsletter of the Fermi National Accelerator Laboratory

FERMILAB ENTERS SECOND CRADA

Fermilab reached another milestone in its effort to transfer technology developed at the Laboratory to outside industry and universities when the Department of Energy approved the Lab's second Cooperative Research and Development Agreement (CRADA) on July 16, 1994.

The CRADA, between Fermilab and

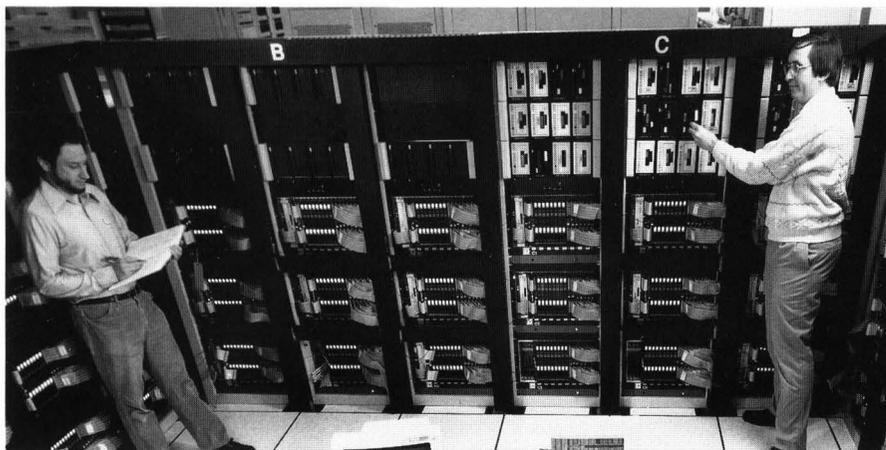
Cray Research, Inc., will extend the use of Canopy, a copyrighted parallel-computing software package developed at Fermilab, to the commercially available Cray T3D Supercomputing System®. Through the agreement, users at the Pittsburgh Supercomputing Center, a National-Science-Foundation-funded computing center, will have access to Canopy via the Cray system.

"This is the first time that Fermilab has in a formal way taken software that was developed and used specifically at the Laboratory and moved it out into the public."—BETSY SCHERMERHORN

"This is the first time that Fermilab has in a formal way taken software that was developed and used specifically at the Laboratory and moved it out into the public," said BETSY SCHERMERHORN, Computing Division High Performance Computing Coordinator. This will give other scientists, in addition to high-energy physicists and theorists, access to this software designed for building parallel applications, added Betsy.

Canopy was developed at Fermilab by MARK FISCHLER of the Computing Division Research and Development Department and GEORGE HOCKNEY and PAUL MACKENZIE of the Research Division Theoretical Physics Group and has been in use in the ACPMAPS supercomputer at the Laboratory since 1991. Canopy provides a natural environment for solving grid-oriented problems. It includes tools such as links, sets and fields over grids and subroutines for doing numerical analysis operations. The goal of Canopy is to allow

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Canopy developers Mark Fischler (left) and George Hockney check the operation of the ACPMAPS Supercomputer. Not pictured is fellow Canopy-developer Paul Mackenzie. Canopy has been in use in the machine since 1991.

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CRADA

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scientists to use massively parallel systems for a broad class of applications without having to become expert in any particular system or parallel-programming techniques. Since it is designed to run in a parallel environment, Canopy uses the natural parallelism in most grid-oriented problems automatically, isolating the user from the multi-node nature of the machine. By using the grid-oriented concept of performing the same operation on many sites of the grid simultaneously, it encourages more structured programming as well as efficient use of the parallel-processing machine.

Mark Fischler said the Cray T3D is an excellent prospective platform for the Canopy software framework. "Bringing Canopy up on the T3D will open this valuable tool for use in many other scientific and engineering applications." MIKE UCHIMA of the Computing Division has begun to port Canopy to the T3D.

The Cray T3D is a commercially available computer architecture that is suitable for performing grid-based operations such as those that are common in high-energy physics. It is a massively parallel supercomputing system with distributed memory with each processor having complete access to the entire memory space. Its features make it an excellent platform for supporting the physical concepts relevant for doing problems on a grid.

By working cooperatively, Fermilab and Cray Research, Inc. can port this parallel software tool to the Cray T3D environment and study the behavior of Canopy in a new, commercially available, massively parallel processing environment. This effort will quickly give access to Fermilab software to a larger user community.

"Canopy is one of the hidden jewels of Fermilab technology," said Associate Director TOM NASH. "I am glad that through this CRADA other scientists and engineers can benefit from its advanced concepts and capabilities. The American taxpayers, who fund our work, deserve to see our products as broadly used as possible." ■



A Cray Research, Inc. employee alongside the Cray T3D computer. Canopy will soon be available on the T3D.

Office of Research and Technology Application Paves the Way for CRADA Approval

The Fermilab Office of Research and Technology Application (ORTA) is the focal point for Laboratory technology transfer activities and is the key to the development of CRADAs, formal agreements between a federal laboratory and one or more non-federal entities to work together to solve a mutually interesting problem. Headed by JOHN VENARD and assisted by PAT OLECK, the office coordinates and facilitates the flow of Fermilab-developed technology and expertise to other organizations, especially industry. Their work involves matchmaking to initiate the dialog between Laboratory and company technical personnel, advising in the

definition of the problem to be attacked, negotiating the terms and conditions of the CRADA and preparing the documents to formalize the resulting agreements. ORTA, in addition, obtains Fermilab, company and Department of Energy approvals for these projects.

MIKE RALLS of the Office of the Chief Legal Counsel also is involved in the preparation of formal agreement documentation, ensuring that the best interests of Fermilab and Universities Research Association are served and that these proposed agreements fall within Department of Energy guidelines.

DATA COMMUNICATIONS GROUP OPENING INTERNET DOORS FOR LAB

Imagine you want to attend an important conference in some far away location, perhaps Europe or the far East, but you're swamped with work and can't find the time to make travel arrangements. What do you do? Wait for the proceedings of the conference to be published and then read up on what took place? No need for that. With the help of the Computing Division's Data Communications and Networking Group you may one day see the conference as it happens and have the information literally at your fingertips.

The Data Communications and Networking Group, led by MARK KALETKA, is in charge of coordinating the Lab-wide use of a set of Internet-based software tools that allow Internet users at Fermilab to watch and broadcast video conferences right off their computer workstations.

"Anyone who has the software and a proper workstation (such as a Sun or Silicon Graphics; the software will not work with PCs) can hook in and see what's happening in a conference or a meeting," said Mark. The software supplies users with the tools for audio and video and for white board, which lets users see graphics and documents across workstations as they are drawn in real-time.

The software is available as shareware on the Internet, but Mark stresses that anyone at the Laboratory who wants to use it should contact either him or MATT CRAWFORD, who coordinate use of the video conferencing software. If you are somewhere other than the Lab and want to use it, you should contact KIPP KIPPENHAN in the HEPNet Resource Center. A person only needs the software to listen and view, said Mark, but, if the user wants

to broadcast, he or she will need a special board. Mark added that the use of this network-based video conferencing is currently being monitored. The system is still in its experimental stages and there are concerns about how this will effect network performance. "Video conferencing pushes the envelope of what the network can handle. Network bandwidth is a concern (and) we would like to find out what we can do."

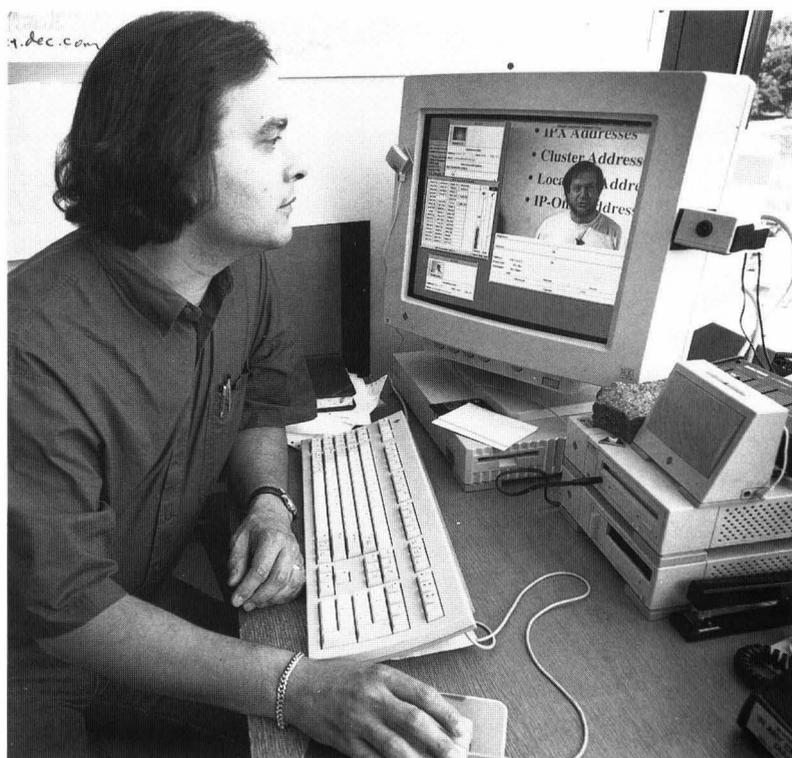
The data is sent globally over the Internet multicast backbone. Multicasting is what allows one workstation to send information to two or more workstations. This lets the Fermilab user broadcast to or view a broadcast from any place in the world that is connected to the Internet network.

The technology for this system was developed at Lawrence Berkeley Laboratory with help from Xerox Corporation. Mark noted that in the tradition of the Internet, many contributions were also made by researchers on the Internet.

The system has been in use at Fermilab for nearly one year and was recently used by the Data Communica-

tions Group to broadcast the press conference on the announcement of evidence for the top quark. Nearly 100 people from as far away as Japan and Taiwan tuned into that broadcast, which Kipp and Matt videotaped and then played back on the network. Most recently, CDF experimented with using the video conferencing to broadcast its weekly meetings and individual conferences. Currently, Mark, Matt and Kipp are working on tying this system into the video conferencing rooms in Wilson Hall.

"We are at a point where we want to get more physicists and other technical and administrative people at the Lab to look at this tool," said Mark. "This is an example of the technology that will drive the emerging information highway. You can sit in your office and view something from well across the country. You can't beat this." ■



Mark Kaletka views a video conference from a workstation in the Feynman Computing Center. Software on the Internet provides the tools for Internet users like Mark to view and hear meetings from all over the world.

COSSAIRT, COOPER RECEIVE DOE ACCOLADES

The Department of Energy recently expressed its appreciation to ES&H Section Head DON COSSAIRT and JONATHAN COOPER of DOE's Batavia Area Office (BAO). They were honored for serving as regulatory response leads for commenting on proposed Federal rulemaking that may potentially impact Fermilab operations. The certificate, issued by DOE Office of Environmental Guidance RCRA/CERCLA Division Director Thomas T. Traceski in June, congratulates both Don and Jon "for responsive assistance in conducting incisive regulatory analysis advocating the Department of Energy's position on complex, diverse regulatory initiatives."

BAO works closely with the ES&H Section in coordinating comments on pending Federal environmental protection regulations as they are being developed. Members of the Fermilab staff, largely in the ES&H Section but sometimes from other divisions and sections, support Don in reviewing these complex regulations and generat-

ing pertinent comments as a part of the Laboratory's program to fully understand and comply with these requirements. The comments are prepared in the spirit of assisting the development of sensible, cost-effective approaches to environmental protection issues.

Don also received a separate honor from the Health Physics Society in the month of June. The Health Physics Society is the principal scientific society of radiation protection professionals in the United States and was founded in 1955.

On June 29, 1994 at the Society's annual meeting in San Francisco, Don was elected by the membership of the Society's newly formed Accelerator Section as a Director of the Executive Board of the Accelerator Section for a three-year term that will be completed in 1997.

Several years ago, members of the particle accelerator community recognized that no organized section of the Health Physics Society existed that recognized the specific needs of the community of



Jon Cooper (left) and Don Cossairt display their citations from the Department of Energy.

individuals engaged in radiation protection at particle accelerators. To that end a separate section, called the Accelerator Section, was founded. This relatively new section joins six other sections that specialize in other areas of the field of radiation protection.

In this capacity, Don will help lead this new section as it attempts to address radiation protection problems specific to the accelerator community. This board also participates in the organization of technical sessions at scientific meetings.—*Brian Charles*

WATCH YOUR WASTE

NEWS FROM THE WASTE MINIMIZATION SUBCOMMITTEE

RECYCLING UPDATE

A new pick-up and collection area has been established in the DØ High Bay. CHL is also joining the recycling effort. Thanks to our enthusiastic employees in those areas! We are trying to set up recycling areas in the Village and at the Kuhn Barn. Watch for recycling bins at the next Nalrec party.

Rubbermaid recycling bins have been ordered and will soon be available through the stockroom. *FermiNews* will publish the availability date. Remember, the proper sorting of recyclables saves us money.

WASTE MINIMIZATION

The Accelerator Division has been working on a waste minimization project to reduce their mixed waste. Mixed waste is the most expensive waste to dispose of because it's both radioactive and hazardous. An example of

mixed waste are the seals used in some of the flanges in the Main Ring tunnel. Because the seals are lead coated, when they become radioactive, they are mixed waste. Even if the seals never became radioactive, the lead seals are still hazardous waste when removed from the Main Ring. A vendor has helped in designing an aluminum seal to be used in the present flanges, in place of the lead seals. Many sizes have been tried, all successfully. If these aluminum seals become radioactive, they are stored until

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D.A.R.E. OFFICERS SALUTE FERMILAB SECURITY DEPARTMENT

On July 8, members of two local police departments paid a visit to Fermilab to issue a citation — of appreciation — to Fermilab Security Department member DONALD FOSTER. Officer Mark Johnson of the Villa Park Police Department and Officer Karen Miller of the Addison Police Department awarded Don, who serves as a Loss Prevention Manager, a plaque in recognition of the Fermilab Security

Department's participation in the second annual D.A.R.E. Drug Abuse Resistance Education 5K Family Challenge run.

The race, held April 16 at Fermilab on a course that took 220 runners, walkers and rollerbladers around the Fermilab site, generated about \$5,000 for the D.A.R.E. program, race director Miller said. Johnson and Miller presented the

award on behalf of all D.A.R.E. Officers from DuPage, Kane and Will counties for Fermilab's "outstanding support" of the event. The Security Department supported the D.A.R.E. run by clearing a race course on site roads, providing traffic control and emergency support.

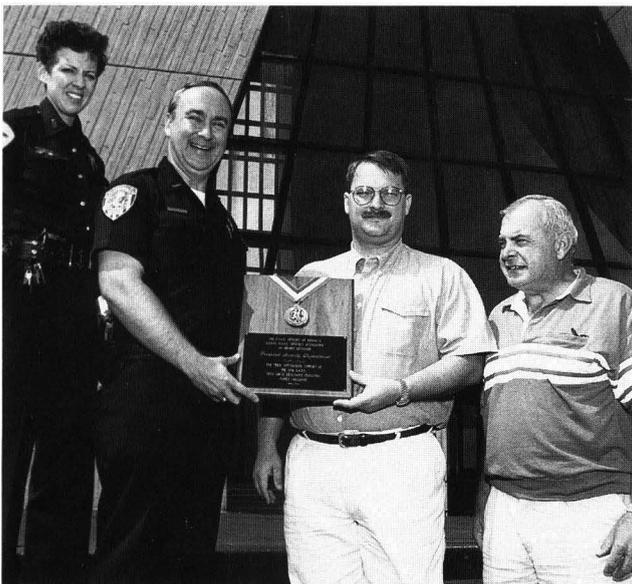
Both officers thanked Don for the Fermilab Security Department's cooperation with local law enforcement agen-

The D.A.R.E. 5K Family Challenge run held at Fermilab is one way in which the D.A.R.E. program offers children alternatives to drugs by providing them with a fun, healthy and family-oriented activity.

cies in sponsoring the event. "We couldn't have put this race on without your help," Johnson said. "We appreciate everything you've done in order for us to provide our children with alternatives to drugs."

The D.A.R.E. 5K Family Challenge run held at Fermilab is one way in which the D.A.R.E. program offers children alternatives to drugs by providing them with a fun, healthy and family-oriented activity. The D.A.R.E. program teaches fifth and sixth grade children skills that they can use to resist drug and alcohol abuse throughout their lives. Crime prevention officers from area police departments visit students in their classrooms to discuss topics such as self esteem and risk taking during the 17-week D.A.R.E. program.

1994 is the second year that the D.A.R.E. 5K Challenge has been held at Fermilab. In 1993, 120 runners participated in the event.—Brian Charles



(l to r) Officers Karen Miller and Mark Johnson present Donald Foster with a plaque in recognition of Fermilab's participation in the D.A.R.E. 5K run while Security chief Roger Clark looks on.

WATCH YOUR WASTE

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they are no longer radioactive, then they become metal scrap. This eliminates all disposal costs and even gives us some return on our money when they are sold for scrap. At some point, we would like to see the usage of lead seals reduced to zero. If you or someone in your division has an application that could benefit from an alu-

minum seal replacement, call KAY WEBER at x2279.

In future columns we will be featuring other waste minimization success stories. If someone in your division has a Waste Minimization project, send it to either KEVIN MOSS, MS119 or Kay, MS106. Watch for the new Fermilab

Waste Minimization Video.

QUESTIONS

- Why does Shipping & Receiving buy styrofoam packing materials? Good news. The Shipping & Receiving department will no longer buy

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People & Events

IN MEMORIAM

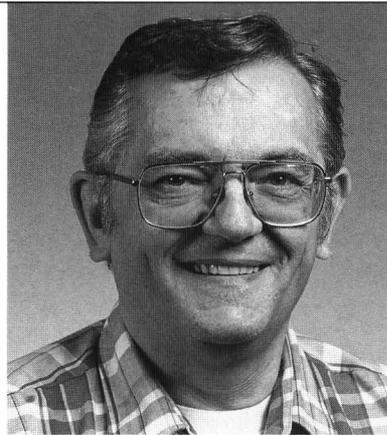
CARL ANTHONY SWOBODA, 56, passed away on July 8 after a three-year bout with cancer. Carl spent his entire 34-year work career at Fermilab and Argonne National Laboratory, with 20 years of employment at Fermilab. Up to his death, he served a dual role in Fermilab's Computing Division, assistant division head and associate department head of the Electronic Systems Engineering Department. Carl will be remembered not only for his engineering skills and his excellent leadership and organizational abilities but also for the friendship and concern he showed for others. Behind the scenes many, many people asked for some, sometimes much, of Carl's time to help them with their personal problems. He always extended himself to others, giving many hours of his time at and away from work to help others. His unique style of humor and wit made being around him very enjoyable. His family was so very important to him.

Ed Barsotti, a fellow worker and close friend of Carl stated: "There are probably very few men in this world who gave more time, love and care to their family than Carl." Joel Butler, head of the Computing Division summed up the feelings people had for Carl with these words: "Carl was much more than a good, productive worker. He was a special friend to all of us. We will truly miss him."

His family, especially his wife Joy, have expressed many times since his death their pleasant surprise at the large number of people who have contacted them telling them how very important Carl was in their lives and how Carl helped them. Carl will be missed very much. He was loved by many.—*Ed Barsotti*

Congratulations!

To Bob and CHARISSE MALO (BS/Accounting) on the birth of their son John Banik Malo. John was born on March 31, 1994 at Hinsdale Hospital. He weighed nine pounds, three ounces and was 22 inches long. He is welcomed by his big sister Ashley.



Altan

ARTS SERIES PRESENTS

ALTAN

Named "the hottest group in the Celtic realm these days..." by Scott Alarik of the *Boston Globe*, Altan has been earning critical and popular acclaim since the group's first album came out in 1990. See what all the rave reviews are about when Altan visits Ramsey Auditorium on Saturday, August 27 at 8 p.m.

Altan features the angelic voice of Mairead Ni Mhaonaigh singing songs in her native Gaelic and in English and playing fiddle. Second fiddle is played by Ciaran Tourish, flute by Frankie Kennedy, accordion by Dermot Byrne, bouzouki by Ciaran Curran and guitar by Daithi Sproule.

Altan's repertoire comes primarily from County Donegal in the Northwest corner of Ireland. Their Green Linnet album, "The Red Crow" was rated top folk album of 1990 in *The Irish Voice*, *The London Telegraph* and "Q" Magazine. Their next disc, "Harvest Storm" spent 12 weeks in the top ten on Billboard's World Music charts and was named Best Traditional Album of 1992 in *The Irish Echo's* annual poll.

Tickets are \$13. For reservations, call xARTS weekdays from 9 a.m. to 4 p.m.

TIME FOR ONE LAST SWIM

Want to get in a few more laps at the pool before the summer is over? There's still time. Pool hours for the rest of the swim season are:

- August 22-August 26: 12 p.m. to 8 p.m. - adult swim only
- August 27 and August 28: 12 p.m. to 8 p.m. - family swim
- August 29-September 2: 12 p.m. to 8 p.m. - adult swim only
- September 3-September 5: 9 a.m. to 8 p.m. - family swim

The pool closes for the season at 8 p.m. September 5.

NALREC

Would you like to volunteer to help Nalrec with the Taste of Fermilab, August 19, 1994? Volunteers are needed for dunk tank, food, ticket sales, t-shirt sales and tug-of-war. The workers have the best time, just ask anyone who has helped us in the past. Do you want to get in on the fun? For a good time, call Alma at x3452. We have a fun job for you plus free food tickets for workers.—*Alma Karas*

Harper's Index

Estimated number of standard-sized helium balloons required to lift an American ten-year-old off the ground: **2,450**

Number of times a baseball is weighed before being used in a major-league game: **5**

FILM SOCIETY 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 \$3 for adults, \$.50 for children 12 and under. Coffee and cookies will be served on the second-

floor mezzanine following each film.

■ August 13: *Un Coeur en Hiver*, story of friendship, unrequited love and betrayal is acted to perfection and unfolds against a background of Ravel's achingly beautiful music. Claude Sautet, director, France, 1993, 105 minutes.

USERS' CENTER SATURDAY NIGHT MOVIES

August 6: *Grumpy Old Men*, 7:30 p.m.; *In the Name of the Father*, 9:30 p.m.

August 20: *Philadelphia*, 7:30 p.m.; *Rudy*, 9:30 p.m.

August 13: *Sister Act II*, 7:30 p.m.; *The Piano*, 9:30 p.m.

August 27: *Wayne's World 2*, 7:30 p.m.; *Tombstone*, 9:30 p.m.

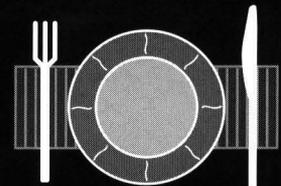
DART LEAGUE TO START PLAY

The Fermilab Dart League, in conjunction with the Fox Valley Dart Association, has announced its 1994 fall schedule. Games will be held at the Users' Center and various other sites in the Fox Valley area on Thursday nights at 7:30 p.m. Sign up with blind draw

will be held on August 18 and 25. The captain's meeting will take place September 6, with the season starting September 8. For more information call WAYNE JOHNSON at x3190, JIM LOSKOTT at x3355 or JEAN GUYER at x2548.

Chez Léon Menu

Lunch (Wed) \$8.00 • Dinner (Thurs) \$20.00
Reservations: x4512



Wednesday, August 10 • *Booked*

Thursday, August 11 • *Summer salad; honey, mustard and rosemary pork loin; potato Fontecchio; vegetable of the season; pineapple cake*

Wednesday, August 17 • *Ham and gruyere quiche w/marinated vegetable salad, cold orange soufflé*

Thursday August 18 • *Garden salad; lobster tail w/caper wine sauce; bowtie pasta w/summer vegetables, olive oil and sauterne; cake*

WATCH YOUR WASTE

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styrofoam packing "peanuts" and has agreed to reuse the existing styrofoam peanuts. If you have any you would like to dispose of, please collect them in large garbage bags and call Dispatch at x3133 to have them taken to Shipping & Receiving.

• Why is there no collection area in the Village for recyclables?

The Waste Minimization Subcommittee continues to evaluate new recycling locations. The Village has been a topic for discussion in the past. In order to have a pick-up area we need a place large enough for collection bins, preferably indoors. We also need someone to keep an eye on the collection area and let Buildings Management know when a pickup is needed. We are continuing our effort to make recycling convenient for everyone. If anyone has any suggestions for a good central location in the Village or has other suggestions, please contact Kevin or Kay.

• Why are there no containers for glass or cans at Kuhn Barn? There are often parties and picnics held there and many recyclables are thrown in the garbage. We are working on getting containers for glass and cans placed inside the Barn for parties as well as outside in the picnic area. These containers would need to be emptied into a central bin for pick-up. Once we have these issues worked out you should be seeing bins at the Barn.

—Kevin Moss and Kay Weber

FermiNews

*The Newsletter of the
Fermi National Accelerator Laboratory*

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CLASSIFIEDS

■ VEHICLES

1991 Mercury Topaz, 4 dr., blue, 51k miles, AM/FM, AC, cruise, tilt steer, power windows, new tires, 1 owner, \$6,200 o.b.o. Call Thornton Murphy at 708-462-9424.

1983 Toyota Tercel wagon, 4WD, 84k miles, \$1,500. Call Mike at x4948.

1978 Ford F150 pickup w/cab, as is, \$900 o.b.o. Call x3185.

■ MISCELLANEOUS

Sailboat, 16 ft. butterfly, fully equip., trailer, \$700. Call Alex at x3873 or 708-393-2846.

Bedroom set w/queen-size waterbed, 4 poster w/waveless mattress, 1 low 7-drawer dresser, 1 high 5-drawer dresser, 2 2-drawer nightstands, dark pine, must sell as set, \$400. Call Kelley at x4499 or 708-527-8049.

Kitchen cabinets, complete set w/ counter tops & built in gas oven & range, \$500; Gravely model L lawn mower, 30" mower, 48" snow plow, 8 HP, \$350. Call Mike at x4948.

Macintosh Powerbook 170, 120MB HD, 8 MB RAM, modem, \$1,650 o.b.o. Call

Dirk at 708-778-6067 or x4494.

Fishing magazines: *In Fisherman*, Nos. #25-#88 (63 issues) from '79 to '89 plus handbook & manual; *Fishing Facts*, '79 to '89 (7 issues missing); *Bassmaster*, '79 to '89 (4 issues missing); *Bassin*, '87 to '89 (1 missing). Best reference mag to learn the finer details of fishing. Used, very good cond., \$100 for all. Do not want to separate. Call Len at x2238 or 708-892-4508 evenings.

■ REAL ESTATE

House for rent, avail. 8/22, split-level, 3 bed, 1.5 bath, full lower-level family rm., wash & dry incld., 2 car att. garage, \$890/month, West Chicago, call 708-405-2928, 8-5 p.m.; 708-293-3923 after 6 p.m.

The Windings, country living, 7 miles w. of St. Charles, 4 bed ranch, 2.5 bath, 3 car garage, full basement, .8 acre, bright & airy w/step saving floor plan. Call 708-377-2336.

3 bed ranch, near I88, refinished hrdwood flrs., updated kitch. & bath, fenced backyard, 2.5 car unatt. garage, Batavia schools, 1/2 acre, \$116,900. Call 708-377-1771.



The deadline for the Friday, August 19, 1994 issue is WED., AUG. 10. Please send your article submissions or ideas to the Publications Office.

