

## Mentors foster young scientific minds

When the budding scientific minds of tomorrow fall under the tutelage of today's leading researchers an interesting phenomena takes place, according to Barbara Cleary of the Illinois Mathematics and Science Academy (IMSA). "The growth of our students is extremely great," she said.

Cleary, a college/career counselor at IMSA is well-versed in the area of educational growth. As program coordinator for IMSA's Mentorship outreach program, she has directed the scientific inquiries of 35 of the Academy's students as they explore their interests and test their abilities in professional settings like Fermilab's scientific community.

Based on their individual interests, students coming to Fermilab work with leading researchers in their fields as "apprentices." Mentees, or the student "apprentices," engage in the various stages of research activity, from proposal writing and experimental design to library research and brainstorming. Cleary said that Mentorship is geared more to the research process than to product development.

"Our focus as an institution is to really have students get some research experience to enrich and enhance the curriculum that we have," Cleary said. "Rather than approaching a Mentor institution and saying, 'Look, we have a student who is interested in such and such, and we'd like you to help him build something or work on this project that he has in mind'—instead of doing that, our students will plug into a mentor's area of research."

IMSA's Mentorship program currently enjoys the sponsorship of several corporations, research laboratories and educational institutions in the greater Chicagoland area. In addition to Fermilab, those other institutions include Argonne National Laboratory, Cargill Hybrid Seed, Field Museum of Natural History, Federal Reserve Bank, Illinois Institute of Technology, Loyola University Medical Center, Loyola University of Chicago, Northern Illinois University, Northwestern University and the IMSA Faculty Researchers.

As an IMSA outreach program, Mentorship was strongly supported by former Fermilab Director Leon Lederman, who had provided much of the impetus for IMSA's formation in the early 1980s as a pioneering educational community that would have strong ties to the outside "real world" and would be able to address the growing national need for citizens trained in the fields of science.

Today, Fermilab's **Drasko Jovanovic** (Physics Dept.) coordinates the Mentorship program from



*"There is no doubt in my mind that (Mentorship) will have an impact."*—**Drasko Jovanovic**, Fermilab's coordinator for the IMSA Mentorship outreach program.

the Fermilab side by identifying suitable mentors for the IMSA mentees. Serving as mentors during the 1990-91 school year are **David Anderson** (RD/Part. Det.) and **Uday Pabrai** (CD/Access Lia. Group) of Fermilab and senior research associate **Jean Slaughter** of Yale. Drasko claims that not only do the students benefit from their experience at Fermilab, but Fermilab may ultimately benefit from the students' participation in the Mentorship program.

"These youngsters, being so smart, may eventually become physicists because they chose the Mentorship program," Drasko said. "Four of the five students currently in

**Mentors continued on page 4**

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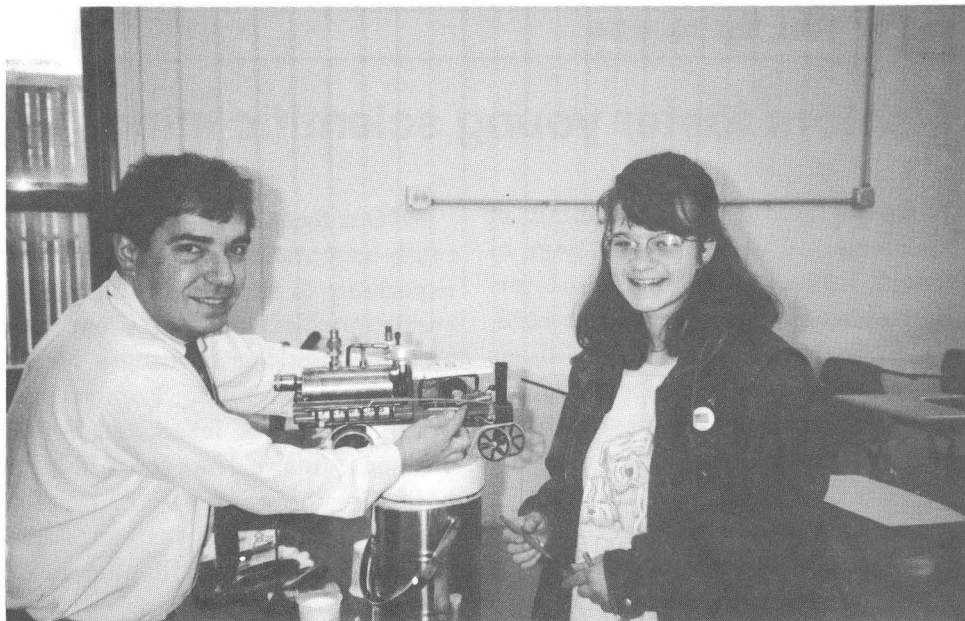
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## Education Office participates in Engineers' Week

In celebration of National Engineers' Week, the Fermilab Education Office took an active part in the 1991 DuPage Area Engineers' Week program held at the College of DuPage on February 22 and 23. **Kristin Ciesemier**, Program leader, served on the program steering committee. **Robin Dombeck**, Outreach coordinator, used several interactive learning stations, along with Legos and Ramagons Construction Systems (a building toy used by NASA scientists and engineers to create space station models) as an introduction to the exciting world of engineering. **Mike Urso** (RD/Cryo.), made his third annual appearance and expanded students' horizons with his Cryogenic Show, a perennial favorite among the hundreds of student participants.

During the two-day program, the Education Office made available 700 copies of a special Spiderman comic book titled *Chaos at the Construction Site*, which was produced in cooperation with the National Action Council for Minorities in Engineering. It was designed to appeal to mid-level students and to encourage girls and minorities to take math and science courses and pursue careers in engi-



*Mike Urso demonstrates the engineering behind the liquid nitrogen powered locomotive to a DuPage County junior high school student. The "Cryo wagon" is used in Mike's traveling cryogenics show.*

neering. Fermilab's *Highlights*, prepared by the Public Information Office and *Physics in your Future*, prepared by the Committee on the Status of Women in Physics of the American Physical Society were also distributed to interested individuals.

Program activities were initiated by Illinois Institute of Technology's

(IIT) Daniel F. and Ada L. Rice Campus and sponsored by professional engineering societies, DuPage area businesses and educational institutions. Over 400 students attended the special Friday program aimed at middle/junior high school students and approximately 800 people participated in the Saturday program which was open to the general public.

## A clean environment needs a community effort

An environmental issue was recently brought to the attention of the Business Services Section Office by concerned employees. It has been observed that the large 20 yard dumpsters placed at various building locations are being overloaded with trash. Consequently, the trash spills out onto the ground and the wind blows it over the surrounding area. Although there are warning labels on the dumpsters cautioning against overloading, the practice still occurs.

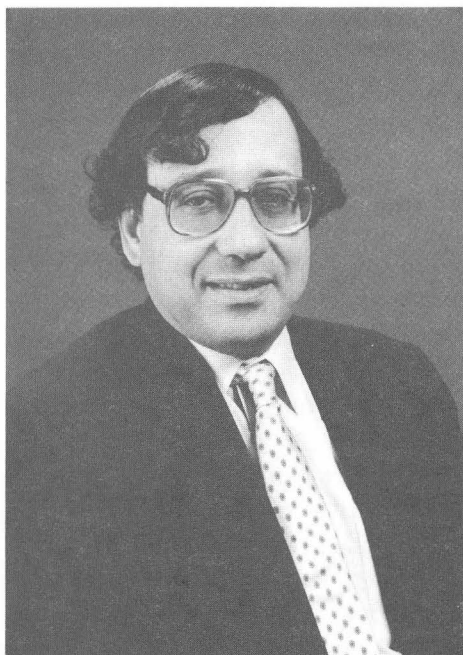
I would like to remind all employees who place trash in these large dumpsters not to overload them. Let us all take pride in the beauty of Fermilab's environment and help to keep the site clean.

If a dumpster is full, arrangements can be made to have it emptied by calling x3807, as listed for trash disposal in the Fermilab telephone directory.

As a Laboratory, we place a high value and emphasis on maintaining a safe, healthy and attractive environment. Assisting with the proper disposal of waste is one area in which all employees can share the responsibility and the benefits.

— Chuck Anderson

## Joel Butler elected APS Fellow



**Joel Butler** (CD/Division Office) was notified that he has been accepted to Fellowship in the American Physical Society (APS) during the meeting held last fall in Urbana, IL. His name and citation was published in the February 1991 *Bulletin of the American Physical Society*.

Only APS members who have contributed to the advancement of physics by independent, original research, or who have rendered some other special service to the cause of science are elected into Fellowship. Less than one-half of one percent of the APS membership obtain Fellowship each year.

Joel was elected to fellowship "for his leadership in the study of charm quark states."

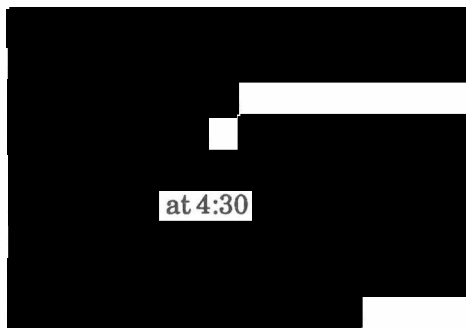
## Attention Golfers

Fermilab's Golf League has a few openings for the 1991 season.

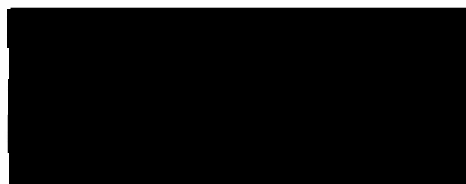


If you are interested in playing after work on Wednesdays at St. Andrews golf course, call **Ed Crumpley** at x4640 or **Paula Cashin** at x4361. If you are interested in playing after work on Tuesdays at Prestbury golf course, call **Alan Baumbaugh** at x4044/4480 or **Don Arnold** at x2871. Make your call as soon as possible.

## Congratulations to:



at 4:30



## Reminder from the Publications office

The *FermiNews* audit response is due March 15. If you have misplaced your audit form, please contact the Publications Office, MS 107, x3278, FNAL::TECHPUBS for a replacement. Your cooperation with this audit is appreciated. Remember, we must have a response to maintain your name on our mailing list.

## A note of thanks

Dear Fermilab Friends,

Our daughter, Bethany Rose Schram, died at home on February 9, 1991 at the age of six weeks. We would like to thank all of those who offered so much support to us during her struggle with Trisomy 18, a chromosome imbalance. The thoughts and prayers you conveyed were deeply appreciated by us both.

In her brief stay, she touched in her special way not only her parents, but everyone who came in contact with her. We are comforted to know her life was not without purpose. She reminds us, among other things, of the frailty and priceless value of every life, of any age. As any parent can relate to, every day with Bethany was like a peek at heaven. Now our daughter lives there.

Sincerely,

Joyce and Henry Schram  
(RD/Facil. Dept.)

## Aerobics

The holidays are over; you've let out another notch in the old belt; last year's bathing suit doesn't fit and the new styles cover even less.

Sound familiar? Then it's time to shed those unwanted pounds! A new twelve-week session of low-impact aerobics and toning for men and women will begin on February 25. Classes will be held on Monday, Tuesday and Friday from 5:30 p.m. to 6:30 p.m. in the exercise room of the Recreation facility. The fee for the total session is \$25. Class size is limited. You must be registered to participate. For further information or to register call Jean at x3126. Gym members only.



## Mentors continued

the Mentorship program have expressed their desire to receive Ph.D.'s in physics, while only one has expressed an interest in computer science ...so in some sense we are cultivating our future generations."

Amy Oldenburg, a 16-year-old IMSA senior from Westmont, IL may someday become a member of that future generation as a direct result of her initial involvement with Fermilab. She has been working for the last three weeks with Jean Slaughter at the Tagged Photon Laboratory to study charm particle production and decay.

While Oldenburg is still familiarizing herself with the experimental data by comparing histograms, she said she has already learned a valuable lesson about the vastness and scope of the work performed at Fermilab. "It really helps me realize what physics research is all about...that's what I want to do in the future. One of

the things that I might not have realized before is that people hook onto projects that take years," Oldenburg said.

Since the students' academic schedules only permit them to visit Fermilab once every eight days for a period of several hours, the time spent with their respective mentors has to be concentrated and work-oriented, while still allowing for an adequate amount of research exposure. "They learn what the scientists do, they learn the jargon, they learn to interact with us. The program is very fruitful," Drasko said.

While the Mentorship program is still too young to track the career paths of its participants, Drasko maintains that Mentorship has been able to ground its students in some of the basic tenets of scientific and scholarly activity—perhaps most importantly in the area of communicating and net-

working. "The fact that we have a symbiotic relationship with a neighborhood institution for very talented students is very good," he said. "There is an open door between us."

The Kazadi brothers, identical twins and Mentorship participants, exemplify the type of relationship that the program is designed to foster, Drasko said. Both twins, now studying physics at the California Institute of Technology, regularly communicate the focus of their studies with him via e-mail and even periodically visit Fermilab when they are in town.

"They maintain sort of a lively contact; this is not an opportunity that is gone," Drasko said. "(Fermilab) is their cradle of science. It's a very comforting thing that we can compare notes as they progress along the ladder of science."— *Brian Dick*, Public Information Specialist. Brian joined the staff on February 11.

## Cla\$\$ified ad\$

### Motorized vehicles:

**1979 Oldsmobile Cutlass Supreme Brougham**, silver, 2-door, auto. trans., pow. str., pow. br., A/C, good condition, new exhaust, asking \$1,400. Call Joy at x3111 days or 708-859-3671 after 5:00 p.m. and weekends.

**1978 Chevy C10 Pickup**, rebuilt engine/trans./carb., small block V8 (400ci), auto. trans., new radiator, front end alignment, dual exhaust, pow. str., pow. br., aluminum cap, Firestone tires (2 spares), very dependable, \$2,000 o.b.o. Call Dan at x3235.

**1971 Honda 350 motorcycle**, needs carburetor work, \$50. Call Owen at x3535.

### Miscellaneous:

**Seagate 50 meg SCSI drive**, one-year-old; no problems, \$200 o.b.o. Call Mike at x4518 or x2479.

**Large sofa** for sale, light gray with streaks of different colors, 2 extra decorative pillows (hand painted) south western style, excellent condition. Only 2 years old, \$450. Call x4741 or 708-896-1538.

**Speed Queen**, white electric dryer, \$75. Call Barbara at x3492 or 708-859-8699 evenings.

**Zenith**, older model 23" for sale, color T.V., works great. Wife wanted a new one. \$30. Call Glenn Lee at x4448.

**Trumpet**, Commander model by Fred Gretsch of Chicago-Brooklyn, excellent condition, \$75. Call Glenn Lee at x4448.



## Quality corner

Quality management is a systematic way of guaranteeing that organized activities happen the way they are planned. —Philip Crosby, *Quality is Free*

For the last 5 years, Fermilab's QA program has been based upon a national consensus standard called NQA-1. Originally, NQA-1 was written to oversee the design, construction, operation and decommissioning of nuclear reactors. Although the Laboratory has attempted to tailor NQA-1 to our unique situation, it has been very difficult to implement effectively because Fermilab's activities are so very different than those of a nuclear reactor.

In January 1991, the Directorate issued a new QA program which is based upon QA guidance that better fits our own research mission. The new QA program is different than the NQA-1 based program in

many ways, but the most substantial difference is that it is "performance-based." In other words, the major focus is on improving the performance of what we do.

One of the most important aspects of a performance-based program is to define all Laboratory activities as "processes." Based upon this view, activities like producing *FermiNews*, tuning the P-West beamline, repairing a sub-station, processing requisitions, bringing up the accelerator, processing requests for keys, computer accounts, travel and machining parts are considered "processes" that can be defined in a systematic way.

Once the steps that are necessary to perform these and other processes are clearly defined by the people who do them, the goal is to study the way the process works and find ways to improve it. Improvement might mean things like decreasing the time it takes to do one or more steps in the process,

eliminating any problems or mistakes that may effect the end product, whether that be building a piece of hardware, repairing a magnet power supply or trouble-shooting problems in a CAMAC module.

A performance-based approach to quality focuses our attentions on improving the work that we do, not simply compliance with QA requirements that may be of little or no benefit to carrying out the performance objectives of your group, department, division/section or the overall mission of the Laboratory.

If you have questions concerning the Quality Assurance program or have a suggestion on how to improve the quality, efficiency, reliability or effectiveness of a Laboratory service or operation, please send it to Mark Bodnarczyk, MS 200 or BITNET Bodnarczyk @FNAL.

## Mandatory HazCom classes

In upcoming April or May, the National Safety Council will be on site to perform Hazard Communication training in the Wilson Hall Auditorium. Each class will last approximately two hours and will cover the OSHA Hazard Communication Standard, the use of material safety data sheets, methods of detecting dangerous chemicals, means of protection from hazards, as well as other important safety topics.

**Attendance will be mandatory for all employees and users.** Stay tuned for a schedule. —Joe Kenny

## Recognition for employees

In order for the Laboratory to provide the proper recognition and publicity, the Publications Office would like to be notified if an employee is elected or appointed to office of a professional or civic organization or receives a professional or civic honor, award or recognition.

Please send this information to the Publications Office, MS107, x3278, FNAL::TECHPUBS.

## Activities Office

### One week only!!!

Do you need a new car? A used car? Well, here's your chance! The United Buying Service is pleased to announce a very special offer for Fermilab employees.

From April 13 - 20, you can purchase most domestic cars, trucks and vans at only \$50 over the factory invoiced price. Most foreign cars, trucks and vans can be purchased at 3-4% over the factory price.

With an offer like this, you might want to buy two! Brochures can be found in the pamphlet rack in the Activities Office.

## Give it your energy

### Water heaters

Energy-efficient water heaters may cost a little more initially, but reduced operating costs can more than make up for the higher outlay. Check the Energy Guide label to help choose an energy-thrifty heater.

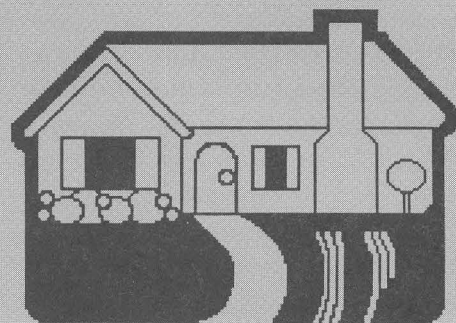
- **Buy a water heater with thick insulation on the shell.** While the initial cost may be more than one without this conservation feature, the savings in energy costs over the years will more than repay you.

- **Add insulation around the water heater you now have if it's inadequately insulated,** but be sure not to block off needed air vents. That would create a safety hazard, especially with oil and gas water heaters. When in doubt, get professional help. When the water heater

is well-insulated, you should save from \$8 to \$20 a year in energy costs, much more if it's located in an unheated area of the house.

- **Check the temperature on your water heater.** Most water heaters are set for 140°F or higher, but you may not need water that hot unless you have a dishwasher. A setting of 120°F can provide adequate hot water for most families. If you reduce the temperature from 140° to 120°F, you could save over 18% of the energy used at the higher setting. Even reducing the setting 10 degrees will save more than 6% in water-heating energy.

To determine water temperature, draw water from the heater through the bottom faucet and test it with a thermometer.—*Tips for Energy Savers*, U.S. Department of Energy, Washington, D.C.



### Hot water energy savers

Heating water accounts for about 20% of all the energy we use in our homes. Don't waste it.

- **Repair leaky faucets promptly.**
- **Do as much household cleaning as possible with cold water.**
- **Insulate your hot water storage tank and piping.**
- **Install aerators and low-flow shower heads.**

## Beware of sales reps bearing toner

A Laboratory employee was recently contacted by a sales representative regarding the purchase of dry ink and toner for her office's Xerox machine. During the telephone contact, the comments made by the sales representative lead the employee to believe that the supply of these products was part of the office's Xerox service agreement and that this company had in the past supplied these products to the office. In truth, the salesman was in no way connected with Xerox Corporation and the purchase of the products mentioned was not part of a contracted service.

According to a spokesperson for Silent Witness, a consumer advocate

group, such sales tactics are common. Xerox Corporation is currently trying to gather information through the Silent Witness organization in order to prosecute those groups using the Xerox name for sales purposes.

Dick Auskalis, Procurement manager, stated that this is not the first time that a Lab employee has been contacted by sales representatives utilizing such sales tactics. "Most of this disreputable sales activity seems to crop up in the areas of copier supplies and paper products."

The Purchasing Department would like to issue a warning to Fermilab employees regarding such tele-

phone sales operations and cautions employees not to authorize shipment of any products.

If there is any doubt about the validity of a sales call, employees are encouraged to contact the Purchasing Department.

## Harper's index

Percentage of all Valentine's that are sent by women: 85

Number of false noses used by Gerard Depardieu during the filming of *Cyrano de Bergerac*: 100



## Travel Office is movin' east

If you have travel arrangements that need to be made before March 6—do it now, because the Travel Office is moving and will experience a brief interruption in service.

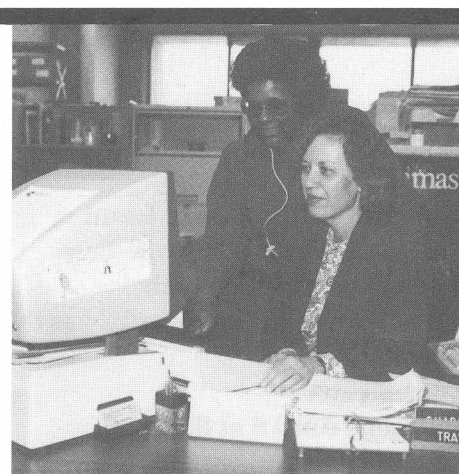
Due to space reorganization in Wilson Hall, the Travel Office is moving to Wilson Hall 1 East which is directly across the atrium from their current location. They will retain the same mail station and extension numbers.

The move is scheduled to begin on Monday, March 4. **The travel office will close at 12:00 noon on March 4 and will remain closed all day on Tuesday, March 5 during which time all computer hookups will be re-instated. They will be back in business on Wednesday, March 6, again offering full-service business travel arrangements..**

The Travel Office, staffed by veteran travel coordinator **Nancy Penson** and **Shari Boesch**, who joined the office in July, offer a full

complement of business travel services to Laboratory employees and users. These services include airline tickets, limousine pickup to and from the airport, car rental and hotel accommodations. The busy, but always accommodating, Travel Office staff also schedules the use of five government vehicles for business use by employees who hold government driver's licenses and coordinates car rental with Pilot Leasing. The on-site availability of rental cars, which may be used for business or personal use, is a Laboratory service provided for employees and users.

Nancy and Shari request that all employees and users who have upcoming business travel please plan ahead, so that the scheduled interruption of service does not affect plans. If emergency travel arises between March 4-6, employees should contact Travel and Transport Travel Agency at 708-377-4585. When contacting Travel and Transport, employees are requested to identify themselves as Fermilab employees. Travel and Transport is familiar with Fermilab procedures for



***Nancy Penson (l.) and Shari Boesch (r.) are moving to a new office located at WH1E. The move will necessitate closing their office at noon on March 4 and all day on March 5. The Travel Office will be back in business on March 6.***

booking travel and will be able to assist you.

The Travel Office had been in its present location since Wilson Hall first opened. According to Nancy Penson, the Travel Office was one of the first offices to open for business in the highrise. The Travel Office is part of the Laboratory Services Section.

## New items in the stockroom

•1008-2500 Brass nut and plastic sleeve assembly, for Poly-Flo flareless tube fittings, Imperial Eastman P/N 261-P-04, 1/4 in.

•1008-2510 Brass nut and plastic sleeve assembly, for Poly-Flo flareless tube fittings, Imperial Eastman P/N 261-P-06, 3/8 in.

•1110-2015 Outlet, electrical, duplex, GFCI, specification grade, feed-thru, Hubbell P/N GF5352-I, 20 amp, 120 VAC, ivory w/cover plate.

•1135-2565 Lamp, metal halide, clear, universal mount, G.E. P/N MVR175/4 or equal, 175 watt, mogul base.

•1135-2570 Lamp, metal halide, clear, universal mount, G.E. P/N MVR400/4 or equal, 400 watt, mogul base.

•1135-2575 Lamp, metal halide, clear, universal mount, G.E. P/N MVR 1000/4 or equal, 1000 watt, mogul base.

•1350-0500 File, magazine, fiberboard, for storing magazines/catalogs/brochures, walnut woodgrain finish, 9 in. L x 4 in. W x 11-1/2 in. D.

•1370-1100 Ribbon, thermal transfer printer, 3.2 in. wide x 1050 ft. long, standard register P/N RT012, black carbon.

•1425-1325 Capacitor, wet slug

tantalum, polarized, axial leads, .656L x .145D, Phillips series 40YW, P/N 40 YW 256D050T1A 25MF, 50WVDC.

•1425-1350 Capacitor, wet slug tantalum, polarized, axial leads, .656L x .145D, Phillips series 40YW, P/N 40YW406D030T1A 40MF, 30WVDC.

•1425-1375 Capacitor, wet slug tantalum, polarized, axial leads, .875L x .225D, Phillips series 40YW, P/N 40YW107E030T1A 100MF, 30WVDC.

•1780-0800 Mouse pad, foam rubber, for use w/computer mouse, 8 1/2 x 11 x 3/8 inches.



## The Art Series presents

### The Jim Cullum Jazz Band

George Gershwin's *Porgy & Bess*  
A Jazz Transcription with  
Special Guest William Warfield as the  
Narrator

Saturday, April 6 at 8:00 p.m.  
Admission \$14

The Jim Cullum Jazz Band has never steered clear of a challenging project, and their adaptation of George Gershwin's *Porgy & Bess* has been their most ambitious endeavor to date. Their marvelous jazz arrangements have received wide acclaim for capturing the many moods of this classic American opera. Add the narration of the legendary William Warfield, who played Porgy in *Porgy & Bess* as well as Joe in *Showboat*, and the music of Catfish Row springs to life. This innovative performance of Gershwin's music comes to Fermilab's Ramsey Auditorium on Saturday, April 6 at 8:00 p.m.

William Warfield has been acclaimed throughout the world as one of the great vocal artists of our times. From his debut in New York's Town Hall in 1950, he was thrust into the front ranks of concert artists. Although



### William Warfield

he has long received accolades as a recitalist, concert soloist, operatic vocalist and narrator, it is Warfield's name and face that are synonymous with the character of "Porgy." William Warfield is also known to audiences throughout the world for his classic performance of "Old Man River" in the film *Showboat*.

The Jim Cullum Jazz Band was founded in 1962. Based in San Antonio, the band has established musical standards of excellence, performing

traditional jazz with an infectious exuberance at their own club, The Landing, located on the Riverwalk. This club is the site of an American Public Radio series called *Riverwalk, Live from the Landing*. The series' live-to-air radio broadcasts hosts many great artists in a format that features the best in traditional jazz. The Jim Cullum Jazz Band has recorded forty albums, the most highly acclaimed of which is the recording of *Porgy & Bess* on CBS Masterworks.

Admission to *Porgy & Bess* is \$14. For further information or telephone reservations, call 708-840-ARTS weekdays between 9:00 a.m. and 4:00 p.m. At other times, an answering machine will give you information and a means of placing ticket orders.

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The deadline for the Friday, March 15 *FermiNews* is Wednesday, March 6. Please send your article submissions or ideas to the Publications Office.

## Trudy's corner Nalrec News

February 15 began the new year for Nalrec. Mike Urso was chairman of our "Winter Blah Party" that featured "Croozin' the Loop" and excellent pizza. It was held, as usual, in the Village Barn and the folks that were there had a sensational time.

The St. Patrick's Day Party is next at the Village Barn. Joanne Hall and Angie Velasquez have put their clever heads together and come up with some very exciting plans. They

have hired another great band, planned their elaborate decorating scheme and are having stuffed potatoes for all the good folks of Irish descent (and some pretenders). The band for the evening is "Dixie Highway" and although the name sounds just a little bit country, we assure you that it is pure rock and roll. Be sure to reserve March 15 for this party and come out and have some fun with all the other folks who have kissed the "Blarney Stone." Keep on smiling.—Trudy Kramer