

# FermiNews

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Fermi National Accelerator Laboratory

## Fermilab's ACP, VDAS Win IR-100 Awards for 1986

Fermilab's Advanced Computer Program (ACP) multi-microprocessor system, and the Video Data Acquisition System (VDAS) received two of the 21 awards garnered by Department of Energy labs in the 1986 IR-100 awards selected and sponsored by *Research & Development* magazine, bringing to 11 the number of IR-100s the Lab has won since joining the program in 1980. The awards were presented at the annual IR-100 Award banquet held at Chicago's Museum of Science and Industry.



Members of the Advanced Computer Program team are (first row, l. to r.) Hari Areti, Carla DeBarros, Bob Atac, Don Husby, Claudia Foster, and Tom Nash; (2nd row, l. to r.) Art Cook, Mark Fischler, Rick Hance, and Irwin Gaines; and (3rd row, l. to r.) Joe Biel, Glenn Case, and Ted Zmuda.

Each year, the competition recognizes innovators and organizations for the previous year's 100 outstanding practical technical developments. Winners are selected on the basis of their importance, uniqueness, and usefulness from a technical standpoint as determined by the magazine's editorial staff and advisory board along with other selected experts.

The ACP was developed by the ACP team led by Tom Nash. The system can be comprised of either a few or hundreds of 32-bit microprocessors. It is the first large-scale parallel computer to be applied intensively to practical research. The system simultaneously processes the huge amounts of data (up to 100 million events) from high-energy physics experiments. By analyzing more data more quickly, the ACP will free scientists to spend their time on physics rather than sitting in front of a keyboard, according to Nash.

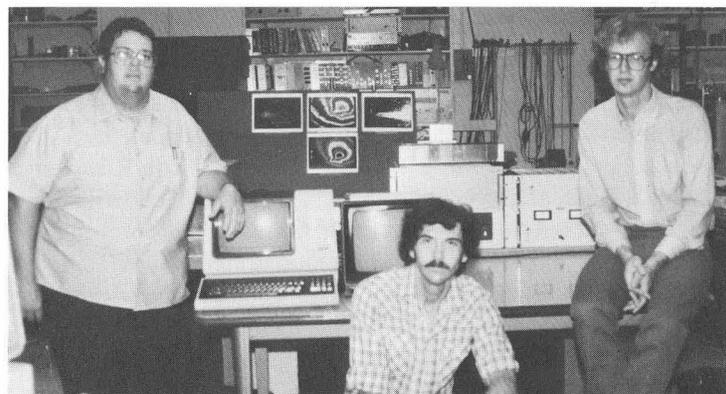
"Physicists should be doing physics, not computing. That's an enormous waste of talent," Nash said. "This is the first real 'I've-got-to-have-it' piece of equipment for this sort

of research. It's really an example of the business axiom, 'If you need it and can't buy it, invent it.'"

The ACP was designed to be cost-effective, a major high-energy physics consideration these days. For instance, three experiments scheduled for next year's run would require more than a year of computing time on a CYBER 175 which costs \$3,500,000. The ACP will do the same work in less than two months at a cost of well under \$500,000.

The ACP system is projected as being useful in other areas such as banking, process simulation, animation, and robotics.

The Video Data Acquisition System was developed by Al Baumbaugh and Kelly Knickerbocker of Fermilab, and Barry Baumbaugh and Randy Ruchti from the University of Notre Dame. VDAS can instantaneously convert video images into digital data for computers. The system can store single frames, a continuous set of images, or selected frames to produce "time lapse" video. Thus, VDAS can collect data from fast-rate, short-lived events in high-energy physics experiments. VDAS has already been used to study the light from Halley's comet in order to explore the comet's changing structure. VDAS could also be used to greatly reduce the x-ray dosage from CAT scans and presents the possibility of applications in areas such as motion analysis.



The VDAS developers are (l. to r.) Al Baumbaugh, Barry Baumbaugh, and Kelly Knickerbocker.

Commenting on the awards, Secretary of Energy John S. Herrington said, "The continued strong showing of DOE research and development laboratories in the IR-100 Awards demonstrates the department's commitment to the spinoff of basic and applied research to practical products."

(Material for this article came from the Fermilab Public Information Office, DOE, and the article "New Fermilab Computer Unveiled" by UPI Science Writer Larry Doyle.)

## Quality Education Improves Quality Control for Technical Support



A firm handshake and a certificate of accomplishment are presented to ASQC achievers by their supervisor, Greg Kobliska, far left, followed by (l. to r.) Dan Assell, Mark Oropeza, Rob Riley, Steve Merkler, and Tom Van Raes.

Five members of Fermilab's Technical Support Section have been certified as Mechanical Inspectors and Quality Technicians by the American Society for Quality Control (ASQC), a non-profit educational and scientific society composed of quality-control professionals "dedicated to the advancement of quality" in the American workplace.

Dan Assell, Steve Merkler, Mark Oropeza, Rob Riley, and Tom Van Raes achieved one or more of these certifications following "successful attainment of a prescribed combination of education, experience, and demonstrated knowledge of quality control principles and their application within the quality sciences."

In order to achieve their new ratings, the five Labsters evidenced proficiency in such areas as technical mathematics, blueprint reading, inspection tools and equipment, statistics, and inspection technology (for Mechanical Inspector); metrology and calibration, quality audit, probability and statistical methods, human factors in quality, and problem solving (geometry, trig.) for the Quality Technician rating.

Greg Kobliska, Material Control Group Leader, said of the recipients, "One doesn't have to look very far around the Lab to witness the continuous upgrade in the capabilities of our people. The knowledge that was gained from passing the examinations has benefited these people and made them more valuable to Fermilab.

"Plans for continuing education in the future will allow Fermilab and its employees to keep pace with the rapid strides occurring in today's technology and quality control. And let me emphasize that it's been very encouraging to see this type of professional development taking place within our group."

## MOMIX Brings Unique Dance Theater to Fermilab

MOMIX is some of the "wittiest, brawniest, most imaginative dance theater" on stage today. The performers have been described as dancers, acrobats, mime artists, and vaudevillians, and you can experience it all when the troupe performs in the Ramsey Auditorium on November 1, 1986, at 8:00 p.m.



MOMIX has won international accolades for its performances in France, Italy, Spain, Japan, Israel, and the Canary Islands. In addition to its concert performances, MOMIX has been involved both individually and as a group in projects for the film, video, and commercial industries, and with fashion designers, composers, visual artists, and theaters.

Originating in 1980 as a duet of Pilobolus performers Moses Pendleton and Alison Chase, MOMIX has grown to a company of ten who experiment with and create an expanded dance theater. Their interest lies in "making pictures and shapes with the body, incorporating naturalistic movements, and showing the interaction between bodies and their environment."

Admission to MOMIX is \$9.00 and tickets are available at the Information Desk in the Atrium of Wilson Hall, ext. 3353, between 10:00 a.m. and noon, 1:00 p.m. to 4:00 p.m. weekdays. Due to ticket demand, those reservations not paid for within five working days are released for sale.

-Tammy Kikta

Percentage of Icelanders who say they believe in elves: 5  
Lifespan of a baseball in major league game (in pitches): 5  
- from *Harper's Index*

## Extracurricular Activities

### **Karate Fall Special**

All students enrolling in karate classes this fall for the first time will receive a free uniform. A 10-week session begins October 20, 1986; cost is \$36.00. Classes meet Monday, Wednesday, and Friday from 5-6 p.m. in the Recreation Facility. A current Facility membership is required. For more information, contact Mark Leininger, ext. 4775 or (312) 695-3263.

### **Yoga Bears Consideration**

Yoga classes led by instructor Mary Ann Cummings will be held in the Recreation Facility on Wednesdays from 6:00 p.m. to 7:30 p.m. Classes begin on October 22; a Recreation Facility membership is required. For more information contact Helen McCulloch at ext. 3126.

### **Art and Wine from NALWO**

NALWO, Fermilab's women's organization, will sponsor a wine tasting/art exhibit on October 24, 1986, from 8:00 to 10:00 p.m. at Chez Leon. A selection of California premium wines will be available for sampling, and Chez Leon's walls will be adorned with watercolors of local scenes by Audrey Johnson. Tickets are \$5.00 per person and are available at the reception desk in the Wilson Hall Atrium, ext. 3353.

### **Children's Halloween Party**

NALREC's 1986 Children's Halloween Party will be held on Sunday, October 26, 1986, at the Village Barn from 2:00 p.m. to 4:00 p.m. Children (ages 4 to 10) of all employees, visitors, and contract personnel are welcome.

There will be a costume parade, prizes, surprizes, and a magician.

For more information, please contact Peggy Montgomery at ext. 4883, or Mary Fray at ext. 3711.

### **Car Club Sign-up**

ATTENTION; all doityerselfers. Join the Fermilab Car Club and you, too, can have access to a warm, dry place where you can fix your car to your heart's content, to your satisfaction, and at your convenience. Sign up begins November 4, 5, and 6, 1986, from 12 noon until 1:00 p.m. in front of the Users Office, WH 1E. The fee is \$10.00/year. (And remember: Percentage of Americans who say they would rather have a tooth pulled than take a car in for repairs: 20 - from *Harper's Index*.)

### **Film Society**

Tonight, October 17, the Fermilab Film Society presents *The Best Man*, the screen adaptation of Gore Vidal's "bristling drama of several ambitious presidential candidates vying for important endorsements in the ruthless political arena." Showtime is 8:00 p.m. in the Ramsey Auditorium. Admission is \$2.00 for adults, \$ .50 for children; tickets are available at the door.

(Pairs of sunglasses owned by Jack Nicholson: 15  
Number of Rambos in the Washington, D.C., phone book: 3)

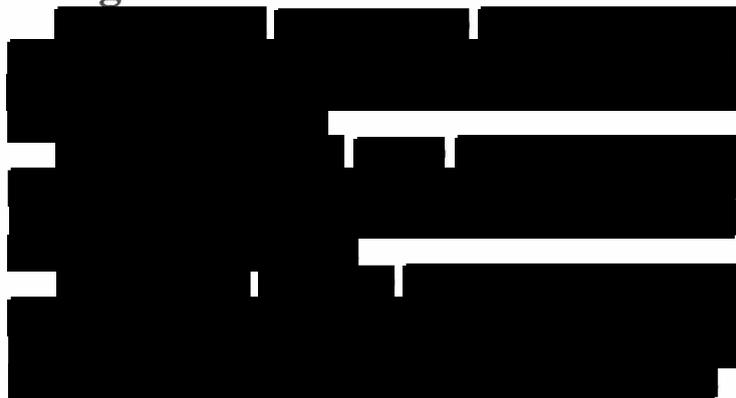
## **Next Research Division Seminars**

On October 21, 1986, Wesley Smart of the Research Division will conduct a seminar on "Holography in Bubble Chamber Physics, Especially the 15 ft."

On November 6, 1986, John Eades (CERN) will present "Results from the Omega RICH Detector."

All Research Division Seminars are at 4:00 p.m. in Curia II.

## **Congratulations to:**



## Benefits Note

### **Employee Benefit Costs**

Recently, you received a Summary of the 1985 Annual Report that Fermilab must file with the Internal Revenue Service. The summary outlined the 1985 employee benefit costs. If you did not read the entire SAR, a summary of the costs follows:

TIAA-CREF	\$ 8,717,331
Group Life and AD&D Ins.	\$ 692,447
Connecticut General Medical and Dental	\$ 3,902,589
Health Maintenance Organizations (HMO)	\$ 1,087,885
Long Term Disability Ins.	\$ 357,995
Business Travel Accident Ins.	\$ 6,500

\$14,765,747

The total cost represents both Lab and employee contributions.

### **Tax Reform Act**

You may already know that the Tax Reform Act passed both the House and Senate and is awaiting the President's signature. As yet, the Benefits Office does not know if any changes were included that differ from the original tax proposal outlined in the September 19, 1986, *FermiNews*.

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# PROCLAMATION

## Invest Now for Our Energy Future

**W**HEREAS, Fermilab has been a leader in the development of innovative methods of energy conservation, particularly in the use of superconductivity to reduce the use of electrical energy; and

**W**HEREAS, the wise use of energy and energy-producing resources are the foundations of future economic prosperity for our society; and

**W**HEREAS, while a consensus regarding proper use is not easily reached, all involved agree that using less energy, or practicing energy conservation, is most desirable and beneficial; and

**W**HEREAS, to ameliorate the burden of rising costs of energy, institutions, government, business, and individual citizens alike must cooperate to achieve meaningful savings in both energy use and dollars; and

**W**HEREAS, cooperative efforts such as these are beginning to have an impact on our energy-use habits and to demonstrate reduced energy consumption.

**T**HEREFORE, I, *Leon M. Lederman*, Director of Fermilab, proclaim October 1986 as ENERGY CONSERVATION MONTH at Fermilab because it is important for all employees to continue to be aware of the necessity of conserving energy for our mutual benefit.

**I**n Witness Whereof, I have hereunto set my hand

*Done at the Fermi National Accelerator Laboratory  
this Thirtieth day of September, in the Year  
of Our Lord one thousand nine hundred and eighty-six*

*Leon M. Lederman*  
Director