



Doug Humphrey

Discussing district heating on Long Island at a forum held Monday at the Lab are, from left, Lee Koppelman, Director of the Nassau-Suffolk Regional Planning Commission; the Honorable George Hochbrueckner, New York State Assemblyman; and Bernard Manowitz, chairman of BNL's Department of Energy and Environment.

A Look At District Heating

This past Monday, a forum on district heating was held at Brookhaven Lab. Spearheaded by James Powell, DNE, and John Karkheck, formerly of BNL and now with General Motors in Illinois, the meeting brought together local policy makers and technical experts in the field to talk about the possibilities for district heating on Long Island.

District heating is a system that serves urban and suburban population clusters. In some cases, it draws on a source of free energy: waste heat from power plants and industries. Where a plant is exclusively used for district heating, the system can be more efficient and, in the case of a coal plant, less vulnerable to oil supply fluctuations. According to Powell, district heating is widely used in Europe and is starting to look more attractive in this country. However, American cities and towns aren't rushing to convert to district heating, because it isn't right for all areas and careful study is required to determine its feasibility for each case. Also, except in places like Boise, Idaho and Klamath Falls, Oregon and sections of a few large cities, Americans have not had much experience with district heating. The first question is, "will it work?" The second is, "how much will it cost?"

Now, city planners, town officials and private companies can come to BNL for help in answering those questions. Ann Reisman, at the National Center for Analysis of Energy Systems, is working on a methodology to examine the economic feasibility of district heating in communities. "It provides a first-cut look at a community to see if conditions are right for district heating," says Reisman, principal investigator of a DOE-funded district heating program.

Reisman says Karkheck and Powell had done some earlier calculations which were slowly turning into a computer model, and she, with programmer Keelin Fendler, took over the task in January, 1980.

Reisman designed the model to identify areas of a community where there is high heat demand, identify heat sources, and lay out the most economical distribution system to hook up the supply and demand sectors. The model considers such cost variables as piping materials, labor, pumping fuel, heat source fuel, and construction and operation of a heating facility. "What

comes out is a total cost estimate of putting in a system and operating it for a 30-year life-time," Reisman says.

She recently did a case study on Provo, Utah, population 50,000. The city is considering building a district heating plant using geothermal, coal or refuse burning. It has a low population density, which means a lot of piping per household, but the numbers that have come out of the model indicate that district heating would be economically feasible for Provo.

"It's a popular misconception that high density is required for successful district heating," says Reisman. "Under-the-street congestion, like sewer, water, gas, electricity and telephone lines, can be so bad that if hot water heating pipes have to be woven into the mess, labor costs skyrocket, making the venture very expensive." Reisman says every city or town needs a tailored plan.

Recently, the Department of Housing and Urban Development and the Department of Energy invited cities and towns across the country to apply for money to examine the economic feasibility of district heating for their communities. Reisman reports that 111 responded and 28 were selected, among them New York City and Albany. She says some of those who didn't win are so convinced about the

(Continued on page 2)

Feedback on Cutbacks

In response to the Cost Cutting Committee's request for suggestions, employees have already sent in a number of ideas. Joseph Hendrie, chairman of the committee, has indicated his appreciation for the thought and concern that has gone into these suggestions and hopes that everyone will continue to be alert to any possible economies. He notes that "of course, we can't use everything, and it may well be that on further examination, some suggestions may not actually save us money."

Here is a sampling of the suggestions thus far, and Hendrie says that his group would appreciate hearing from employees as to their reactions. For instance:

Space — Where there are empty offices, consolidate personnel and close off sections of buildings or, where possible, shut down modular units and move people back into buildings.

Pay cuts — Pay reduction for employees making over a certain amount; or a percentage decrease which would depend on the salary range; or a flat percentage decrease for everyone.

Furlough — Close the Lab for several days, with everyone taking leave without pay.

Holidays — Take the two floating holidays and put them in Christmas week, and close down the Lab. Vacation or leave without pay could be used at the employee's option for any days not covered by holidays.

Transportation — Eliminate unnecessary Lab vehicles.

Vacation allowance — Reduce the allowed vacation carryover from the current 36 days to 26 days, the reduction to be effective October 1, 1982.

Recreation — Close the swimming pool and gym.

Pay periods — Instead of weekly and monthly pay periods, have all employees on same payroll schedule, e.g., every two weeks.

Administration & budget — Reorganize and consolidate the administrative and budget functions now done in both the departments and in the Director's Office.

Group energy manager — Have each research group appoint an "energy manager" to check which equipment must be kept running and which could be shut down over night.

Energy from waste — See if use could be made of waste energy from Lab equipment to heat buildings.

Time cards — Tighter control of time card reporting, with supervisors keeping a daily log and signing time cards only for their own people.

Retirement — Ask for voluntary retirement.

Travel — Place a ceiling on all Lab travel.

Work week — Put Lab on 4 day work week/10 hours per day.

Job-sharing — In appropriate jobs, have two employees who are agreeable work one job; half time for half pay.

Send your reactions to the above, and any other ideas you may have, to Joseph Hendrie, Bldg. 475.

Former BNL Student Wins Nobel Prize

Although it was 24 years ago, Jim Cumming recalls that Roald Hoffmann, his 1957 summer student in chemistry, "had great promise. He was clearly one of the brightest people we'd seen." Hoffmann's early promise has since been fulfilled and often recognized by his peers in the American Chemical Society. On Monday, however, it received worldwide recognition when Hoffmann was awarded the Nobel Prize in Chemistry.

Hoffmann, now chairman of the chemistry department of Cornell University, shares the award with Kenichi Fukui of Kyoto University, Japan, for their independently developed but similar theories of quantum mechanics. These theories describe the behavior of atoms and molecules in order to predict the course of chemical reactions.

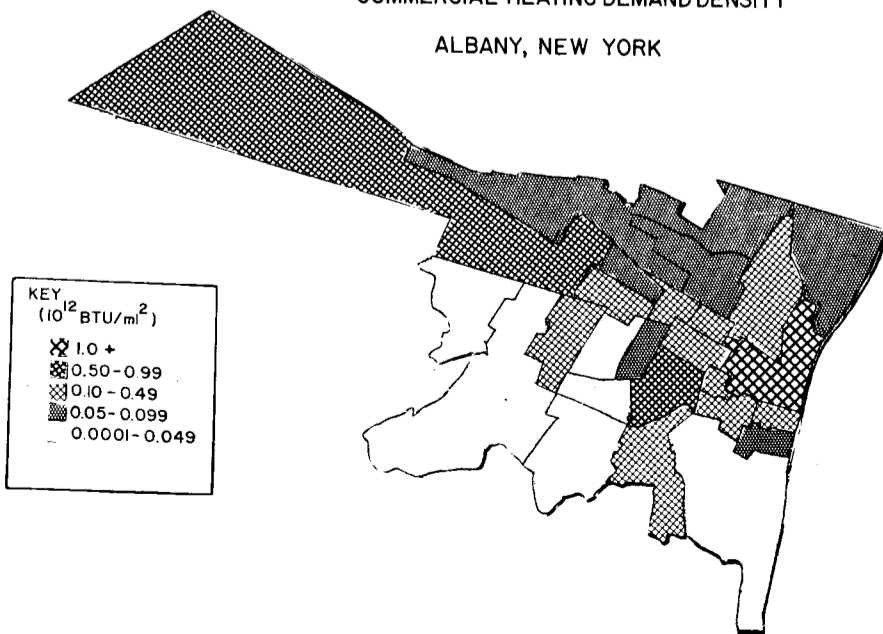
But when Hoffmann came to BNL as a Columbia University undergraduate student, he was not yet a theoretician. That summer he practiced experimental nuclear chemistry at the Cosmotron, working with Cumming to develop a system for counting Carbon-11. At summer's end, he continued as a research collaborator, commuting to the Lab in the evenings and on weekends until the system was completed and any problems had been eliminated. "This was so effective," said Cumming, "that it formed the basis for a number of measurements for many years thereafter, both at the Cosmotron and the AGS." Cumming also said that their efforts resulted in what may have been Hoffmann's first published scientific paper — a technique paper they co-authored and published in 1958, entitled "Efficient Low-Level Counting System for C₁₁."

After graduating from Columbia, Hoffmann earned his master's and doctoral degrees from Harvard. When he switched from experimental to theoretical chemistry is uncertain, but, remembering that summer, Cumming quips, "Maybe we frightened him out of it." Actually, Cumming feels the world of chemistry has benefited from Hoffmann's choice, saying, "He understands the theory very well and has a knack for explaining it to us non-theoreticians so we can use it very easily."

Cumming, now a senior chemist, continues to stay in touch with the first Brookhaven summer student known to have won the Nobel prize and last saw him four weeks ago when Hoffmann visited the Lab to give a chemistry seminar.

COMMERCIAL HEATING DEMAND DENSITY

ALBANY, NEW YORK



This is the kind of graphic that can be used to show heating patterns within a city. As indicated by the legend, 10^{12} BTU/square mile is used as a standard for heat demand density. To read the graph, match a cross-hatch pattern with its corresponding range of numbers in the legend and multiply by 10^{12} BTU/square mile. The resulting number gives the heat demand density for that area on the map.

Channels Of Communication

With the large number of employees at BNL, it would constitute a small miracle if every one of them were in agreement all of the time. In recognition of the fact that, on occasion, an employee may disagree with a supervisor or have a work-related complaint, BNL has a number of channels to air and resolve such grievances.

Ideally, any problem can be settled within a department, through first or second line supervision or the department chairman. But, depending on circumstances, the further avenues listed here may be appropriate. Employees are encouraged to become familiar with these options and to use them when it is clear a third party decision is necessary. The several alternatives give employees an opportunity to consult with whomever they feel most comfortable.

Employee Relations Counselor

Janet Whitehead, Assistant Manager of Personnel and Labor Relations, has been appointed Employee Relations Counselor. This office, formerly held by Peter Paige who retired this summer, was established by the Director in March 1980. Whitehead has a comprehensive knowledge of Lab policies and practices and is available for consultation on any work-related problems. She may be reached at Ext. 2872, Bldg. 185. Problems not resolved by her may be referred to the Employee Relations Committee, if the employee so wishes.

Employee Relations Committee

This committee reviews problems of non-bargaining unit employees which come to its attention directly from the employee, or through referral from the Employee Relations Counselor. According to chairman John Keane, the committee has been effective in providing a listening post to relieve employee frustrations and to give objective opinions. Sometimes if there is poor communication between supervisor and employee, the committee is able to open up this avenue. Potential problem areas may be spotted and, if appropriate, Lab-wide policy changes can result. The committee stresses confidentiality in its dealings. Contact the chairman on Ext. 4724, or any other member of the committee: Roger Bailey, Ext. 2491; Frank DeVito, Ext. 4113; William E. Lenz, Jr., Ext. 2422; Vincent LoDestro, Ext. 4592; Irene Steele, Ext. 3415.

Tune In!

Since its inception in 1969, the Tune In! program has provided employees with a means of anonymously questioning Laboratory policies and practices. The Tune In! letters received by the Editor of the Brookhaven Bulletin range from simple comments or requests for information to complaints. After the writer's name is removed, each letter is sent to the appropriate Laboratory official for a written reply. The Editor acts as middleman — making sure the question is answered, preserving the employee's anonymity, and determining whether the question and answer would interest enough employees to merit publication in the Bulletin. The Tune In! approach is recommended whenever the subject is general in nature. Boxes containing the Tune In! forms are located in all major buildings throughout the Lab. Forms can also be obtained from Public Relations, Bldg. 134, Ext. 2345.

Affirmative Action

Several avenues are open to those employees who have a problem concerning the Lab's equal employment policy. Employees, including those covered by a collective bargaining agreement, may consult any of the following. However, adjustment of their complaints must be in accordance with the pertinent collective bargaining contract.

Affirmative Action Assistant to the Director — Harvey Thomas heads the central affirmative action staff in the Director's Office, Bldg. 460. Thomas can be contacted on Ext. 3318.

Women's Program Coordinator — Recognizing that women may have particular employment concerns, the Laboratory appointed Gail Williams to deal with BNL women on these

matters. Williams is located in Bldg. 460, Ext. 3338.

Affirmative Action Representatives — These representatives have been selected to respond to employees' equal opportunity concerns in their particular departments. They also act as liaison with Thomas' office. The current list includes:

Affirmative Action Representatives

- Accelerator**
R. Brown/I. Montanez/R. Edwards/
P. MacKay-Iulo/H. Fadem/W. Tuttle/
J. Grisoli/L. Toler
- Admin. Sys. & Data Proc. MIS.**
G. Mack/R. Merker
- Applied Math**
E. Taylor/M. Cooper
- Biology**
H. Kondratuck/P. Tinsley-Smith
- Central Shops**
A. Velasco
- Chemistry**
J. Fowler/M. German
- Contr. & Proc.**
R. Piccione
- Director's Office**
G. Williams
- Energy & Environ.**
T. Neuhoff/H. Serry/A. Reisman/
W. O'Grady/C. Benkovitz
- Fiscal**
M. DuBois
- Instrumentation**
B. Gaer/S. Rankowitz
- Medical**
E. Popenoe/S. Haber/R. Brown
- Nuclear Energy**
N. Sarsfield/R. Bari/A. Prince
- Photo. & Graph. Arts**
E. McLean/L. Lawrence
- Physics**
R. Manning/G. Grigg/M. McKeown
- Plant Engineering**
J. Mendez/S. Ebron/W. Milian/B. Washington
- Reactor**
D. Rorer
- Safety & Env. Pro.**
C. Flood/R. Mosley/P. Cahill
- Staff Services**
C. Brown
- Technical Info.**
M. Galli/M. Hicks

Meeting On Statistics

The 1981 DOE Statistical Symposium will be held at Brookhaven, Nov. 4-6 in Berkner Hall. The sessions are open to anyone interested in statistics. For more information on the program, call Diane Barletta (Applied Math) on Ext. 4142.

District Heating (Cont'd)

potential savings of district heating, they are going ahead with studies of their own.

To date, Reisman has had numerous requests to tap her expertise and to use the model. She says this is a good first step in determining the economic feasibility of district heating for a specific community.

•
Winter is the time of year when your car won't start and your fuel bills won't stop.

•
A tax collector has what it takes to take what you've got.

•
Inflation is when your nest egg is no longer anything to crow about.

•
A successful doctor is one who can keep his patients alive long enough for nature to heal them.

United Way Under Way

In summing up her view of the United Way of Long Island and her role as chairman of BNL's 1982 campaign, Betty Pergan cites the slogan coined specifically for this year's Lab drive: United Way... The Fusion of Friendship.

With the opening of the campaign next Monday, October 26, the fusion process will begin. Fusion, according to Webster, is "a merging of diverse elements into a unified whole." This is what Pergan expects to happen as the 27 people who have volunteered to coordinate the United Way effort within the departments each meet with the people in their groups — over 3000 people all together. Despite the diversity of so large a population, Pergan believes that all those people can merge into a unified whole, so that when the fusion process is completed, friendship will be the big winner.

United Way offers a special brand of friendship by supporting over 120 human care agencies that offer health, mental health, family, youth and planning services throughout Long Island. These services are available year-round to you, your family, friends, fellow workers, and the general community.

United Way is supported by your voluntary contributions. You can pledge on a weekly or monthly basis or make a one-time donation. You can return your pledge card either to your coordinator or directly to Payroll. Whatever you choose, if everyone gives something, BNL will be able to reach this year's goal: to top last year's figure of \$48,062. "Even a one time donation of a dollar could help someone in need," Pergan says. "Please try to give a little to help a lot."

She speaks from experience. As department coordinator of DEE last year, the Senior Staff Assistant guided her department to a 158.54% increase in total contributions. Pergan and assistant chairman, Rosalie Piccione of Contracts and Procurement, both feel that it's simply a matter of education — letting people know what United Way is all about and how important their contributions are. These



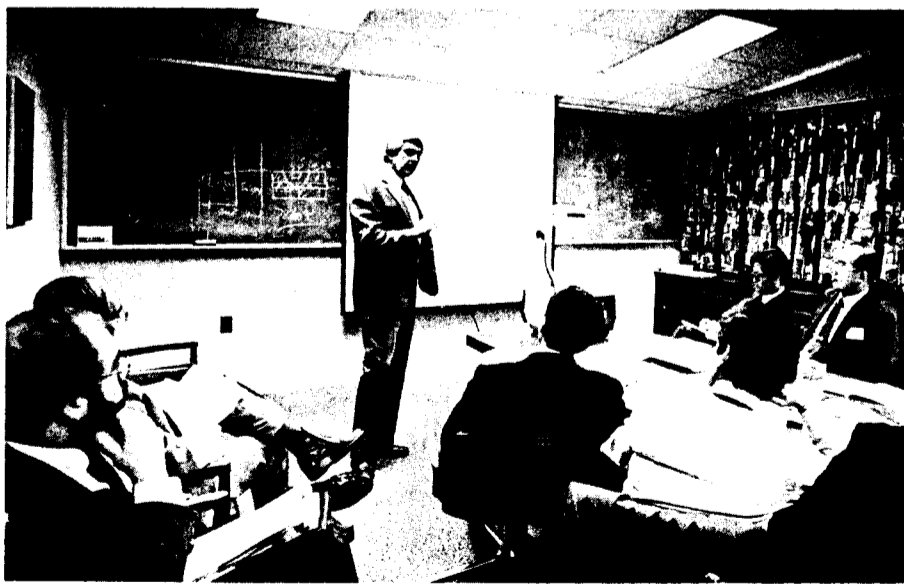
Betty Pergan

subjects will be covered by the department coordinators listed here during introductory presentations next week.

Department Coordinator, Ext.

- Accel & ISA... R. Gottschalk, 4805/7184
- Applied Math... E. J. McFadden, 4188
- ASDP & MIS... Gerard Haubert, 3302
- AUI... Elinor Adams, 2498
- Biology... Frank German, 2328/3413
- Central Shops... W. Massinger, 2957
- Chemistry... Madeline Kinney, 4316
- Cont. & Proc... Harold Klein, 4917
- DEE (Bldg.179A)... G. Neuhoff, 3058
- DEE (Bldg.120)... Patricia Towey, 3445
- DEE (Bldg.475)... A. Vanslyke, 2211
- Director's Office... Beth Salata, 3325
- DNE (Bldg.830)... Calvin Brewster, 3532
- DNE (Bldg.197C)... A. Romano, 4024
- Fiscal... Josephine Gazzola, 2456
- Instrumentation... Lee Rogers, 4222
- Medical... Amanda Harrison, 3555
- NSLS... William Foyt, 4752
- Personnel... Patricia Gorden, 2880
- Photo/Graphic Arts... Nora Davies, 2926
- Physics... Sharon Smith, 3995
- Plant Engr... Edward Byrne, 2477
- Reactor... Robert Fuchs, 4400
- S&EP... Andrew Hull, 4210
- Staff Services... Joan Perullo, 2525
- Supply & Materiel... Lewis DiCarlo, 2302
- Tech. Info... Bronnie Orlowski, 3484

Japanese Visitors



To cope with the energy shortage and environmental pollution, Japan initiated its "Sunshine Project" in 1974. Aimed at achieving energy-independence by tapping non-fossil resources, this technical development program is being promoted on a national scale with the cooperation of Japanese research institutes, universities and private enterprises. Accordingly, on October 16, eighteen members of the Japan New Energy Foundation Technical Development Committee visited Brookhaven for an afternoon of presentations about DOE-funded research activities into various energy options. Here, DEE's Alessio (Al) Mezzina addressed the group on the "Chemical Hydrogen Energy Storage Systems Program." The representatives of such Japanese firms as Fuji Electric Co.; Hitachi, Ltd.; Mitsubishi Electric Corp.; and Kobe Steel, Ltd. were also updated by Bernie Manowitz, Sumner Levine, Jim Reilly, Gerry Strickland, Bill O'Grady, Jim McBreen and Eric Forsyth. The areas of discussion included fuel cells, superconductivity, metal deposition studies for battery application, and metal hydrides. The talks and a subsequent tour of DEE's hydrogen storage facility and electrochemistry labs were organized by Frank Salzano, head of the Division of Materials Chemistry and Energy Conversion.

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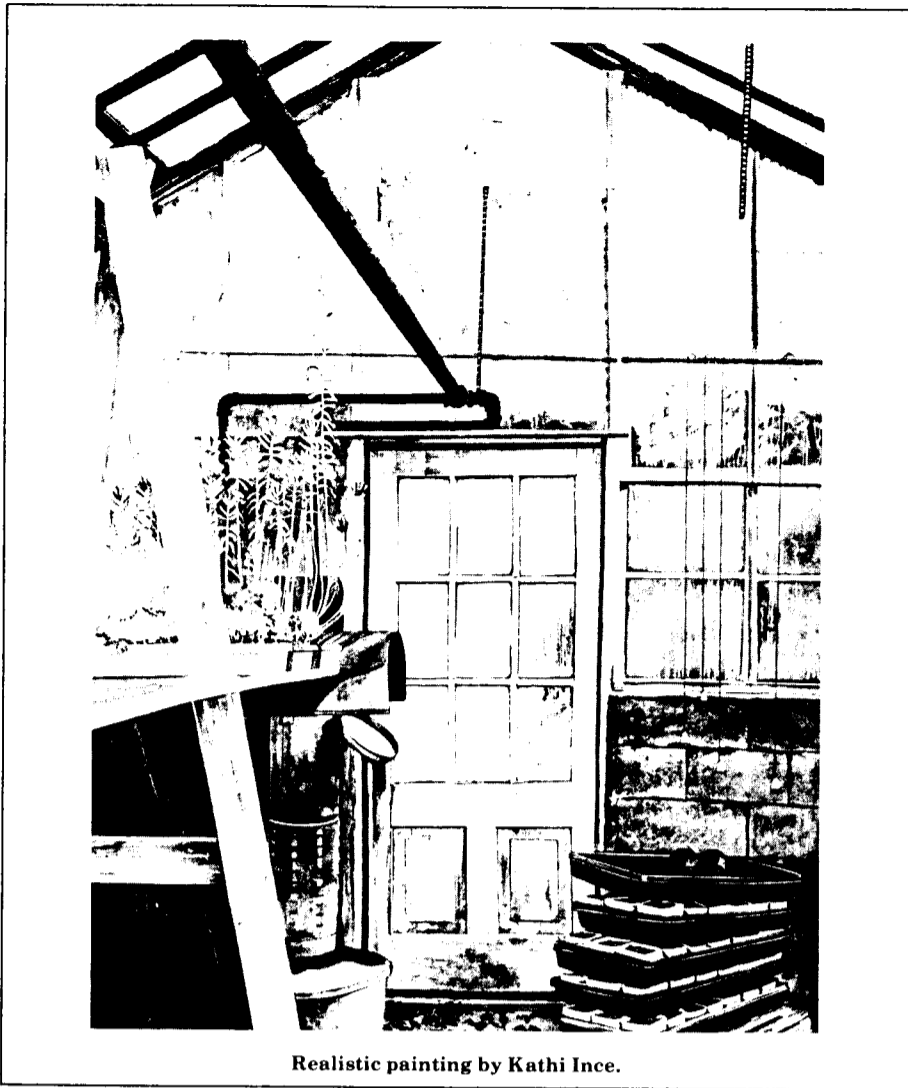
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Realistic painting by Kathi Ince.

Women In Science

At the September meeting of the Women in Science, officers were elected to serve for one year in the following capacities:

- Group Coordinators — Betty Heldman and Vicki McLane
- Secretary — Mary Phillips
- Treasurer — Ellen Gannon
- Program Coordinator — Eva Bazoki
- Publicity Coordinator — Mary Kinsley
- Seminar-Lecture Coordinator — Louise Hanson
- WIS Liaison Coordinator — Harriet Fadem

The officers are available for discussions about the group and are receptive to program suggestions.

A joint luncheon meeting of the Women in Science and the Professional Women in Government will be held on Wednesday, October 28 at noon in the Brookhaven Center. Guest speaker Corinne Ince will talk about "Employment Interviewing — Effective Techniques for Conducting and Participating in the Job Interview." All women are invited. Those wishing to attend should send a check for \$6, payable to SAGA Foods Inc., to Harriet Fadem, Bldg. 911C, Ext. 4853, by Friday, October 23.

Cooking Exchange

The International Cooking Exchange will feature tempting breakfast foods at its next meeting, "Rise and Shine," on Wednesday, October 28. Meetings are held at the Recreation Building between 12:30 and 2:30 p.m., and are open to employees and their immediate families. There is a \$1.00 charge per person and babysitting is provided at a cost of 50¢ for each child.

For more information call Bernie Benz (928-1068) or Ruth Fernow (928-8465).

Art Show At Berkner

Realistic paintings and wooden sculpture from the Loft Gallery of Southampton, New York, will be exhibited at Berkner Hall, Room B, from November 2 through November 13. The work of two realists, Ricardo Wiesenbergs of East Hampton, and Kathi Ince of Brookhaven Hamlet, will be shown along with the sculpture of Michael Ince, also of Brookhaven.

Mr. Wiesenbergs, formerly of Germany and Italy, has exhibited widely throughout Europe, including annual shows at the prestigious Haus der Kunst. His classical training and reverent sensibility for the natural form

is evident in his paintings based on local East End scenes.

Kathi Ince uses large canvases to depict rural Long Island. Michael Ince does abstract sculptures in natural materials to reflect the local environment, particularly marsh and beach areas.

Sponsored by BERA, the art show opens with a reception from 4:45 p.m. to 7 p.m. on Monday, November 2. Employees are invited to meet the artists at the reception and to view the show from November 3 through 13, between the hours of 11:45 a.m. and 1:30 p.m.

R/C Airplane Club

On Wednesday, October 28, at noon, the Radio Control Model Airplane Club will show the film "To Fly" in Berkner Hall. This general interest film, which has been shown at NASA, traces the history of flight. Everyone is welcome to attend.

Mountain Club

A canoe trip on the Carmen's River is planned for Sunday, October 25. For the following weekend, October 31-November 1, a backpacking trip (destination negotiable) is in the planning stages. Contact Pat Thompson, Ext. 7635 for information.

Bowling

Purple League

Highlights for past weeks include games of 235 for A. Pinelli and L. Musso, J. Connelly 601 scratch series, M. Connelly 215/210 games, W. Milian 229, B. Brown 215/221, G. Schuman 212, K. Riker 211, B. Benson 203, E. McDougall 202, J. Penoyar 211.

White League

Notables for prior weeks include J. Griffin 214/215/230 for a 659 scratch series, M. Stoeckel 181/190/512 scratch, N. Erickson 190, R. Flack 190, K. Asselta 203/210/584 scratch, J. Roesler 209, B. Belligan 201, J. Griffin 201.

Pink League

The Lickety Splits are in jeopardy for the first time with the Knockouts trailing by only 3 points. High games were bowled by R. Rosati 179, A. Donegain 175, M. Connelly 171, M.G. Meier 169, D. Johnson 168, K. Kissel 160.

Red & Green League

High games were bowled by K. Riker 235/665 gross, J. Morris 221/223 for a 631/691 series, J. Scandizzo 212, L. Jacobson 212, R. Larsen 206, R. Brown 205, H. Arnesen 203, H. Marshall 201, M. Iarocci 200, A. Almasy grossed 658 and N. Fewell 653.

Soccer

The indoor soccer league will start again on Friday, October 30 at 5:15 p.m. As in previous years, four or five teams will be formed among the various departments, and two matches will be scheduled for each team every Friday throughout the winter months between 5:30 and 7:30 p.m. The first two Fridays will be for registration and open play, with league play starting on November 13.

The annual meeting of the Soccer Club will be held on Wednesday, October 28, in Berkner Hall at noon. All members are requested to attend. For further information call Ken Batchelor, Ext. 4674, Enrique Abola, Ext. 4383, or Dave Cox, Ext. 3818.

Cafeteria Menu

Week Ending October 30, 1981

Monday, October 26

Black-eyed pea soup	(cup)	.55
	(bowl)	.65
Kielbasi w/sauerkraut		1.60
Cheese omelet w/hash browns		1.60
Hot Deli — Corned beef	(on bread)	1.70
	(on roll)	1.80

Tuesday, October 27

French onion soup	(cup)	.55
	(bowl)	.65
Beef liver & onions w/one veg.		1.55
Roasted chicken quarter w/one veg.		1.60
Hot Deli — Roasted turkey breast	(on bread)	1.70
	(on roll)	1.80

Wednesday, October 28

Cream of celery soup	(cup)	.55
	(bowl)	.65
Macaroni & cheese w/one veg.		1.60
Meatballs a la mode over rice		1.60
Hot Deli — Pastrami	(on bread)	1.70
	(on roll)	1.80

Thursday, October 29

Minestrone soup	(cup)	.55
	(bowl)	.65
Salisbury steak w/one veg.		1.60
Chinese pepper steak over rice		1.65
Hot Deli — Baked Virginia ham	(on bread)	1.70
	(on roll)	1.80

Friday, October 30

New England clam chowder	(cup)	.60
	(bowl)	.70
Fried shrimp & French fries		1.87
Turkey a la king over buttered noodles		1.65
Hot Deli — Barbequed beef	(on bread)	1.70
	(on roll)	1.80

NYC Train Trip

The Hospitality Committee is planning a group railroad trip to the city on Wednesday, November 4. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is \$3.50, children under six years ride free.

Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York 11973, no later than Thursday, October 29. Make checks payable to "Brookhaven National Laboratory." Your tickets will be given to you on the train. Refunds will be made only if cancellations are received by the Friday preceding the scheduled trip.

Arrivals & Departures

Arrivals

Peter J. Schultz Physics
David A. Wesner Physics

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:

Harold L. Atkins Medical
David Crowther Biology
Joseph P. DeRosa Staff Services
Richard K. Dilg Plant Engrg.
Maureen Mazzilli Ad. Sys. & Data Proc.
James S. Munson Energy & Environ.
Thomas M. Poole Staff Services
Laurie H. Rhodes Applied Math

Fall Back!

Set your clock back one hour, at 2 a.m. on Sunday, October 25.

To Pool Or Not To Pool

When it comes to carpooling, do the benefits outweigh the risks? Do the savings compensate for the rigid schedule? Must all participants have large cars? Bill Graves of DEE has tried to analyze the situation. His statistics are based on 249 work days per year, with each carpooler working on site for 203 days per year, randomly distributed. Some of Graves' findings are summarized here:

• How often must a carpooler drive?

Persons in carpool	3	4	5	6
Days each drives	83	62	50	42
Driving days saved	120	141	153	161

• Can small cars be used?

The following table shows that smaller cars can be used much of the time.

Persons in pool	3	4	5	6
Persons in car	Trips per year			
2	75	28	8	2
3	110	81	37	14
4		90	83	46
5			73	81
6				60

Based on this, Graves points out that with proper scheduling, a 5-person carpool can use at least one, and possibly two, subcompact (four-passenger) cars. A 6-person carpool needs only two six-passenger cars and can use one five-passenger car as well.

