

## Fire at High Flux Beam Reactor Alarming But Not Dangerous

Employees arriving at work last Thursday, March 31, might have assumed that the BNL fire trucks and police cars stationed at the High Flux Beam Reactor, Bldg. 750, were part of a routine drill. But, in fact, Lab emergency personnel were handling a real incident — an early morning fire at an experimental station in the reactor building.

No one was injured during the incident, and the fire did not involve the reactor itself, which was safely shut down as a routine precaution. The fire did involve, however, equipment that contained radioactive material and so resulted in slight contamination in the building and externally on seven people.

Six had barely measurable contamination on their clothing, and the seventh person had contamination on his hair. All seven, plus four other individuals who were also in the building, were additionally checked in BNL's whole-body counter, which is a device that can measure radioactive particles that might have been ingested. No one showed any internal contamination.

Because the levels of contamination were so low, no health effects are expected for any of the people involved.

In addition, there was never any hazard for anyone outside of the build-

ing, either for people on site or for residents off site. That is because only a wisp of radiation was emitted from the red-and-white reactor stack during the incident.

Measurements and calculations indicate that the level emitted was far below state and federal limits for routine radiation releases, and, therefore, no protective action was ever required for the public. The maximum exposure to an individual would have been equivalent to several minutes of exposure to natural background radiation, which comes from the sun and from cosmic rays.

In numbers, the Lab estimates that less than 0.00005 curie of iodine was released from the stack, resulting in a dose to the thyroid many billion times smaller than the protective action guides set by the U.S. Department of Energy (DOE). And the whole-body dose, due to a stack emission of noble gases of less than 0.1 curie, was at least a million times smaller than the whole-body limits.

Thus, with the exception of the reactor building, the Lab was open for business as usual Thursday and Friday, March 31 and April 1.

### A Synopsis

The official time log for the incident began at 2:20 a.m., March 31. That's

**Bob Casey points to the High Flux Beam Reactor, where, last week, a fire broke out on the experimental floor.**



Roger Stoutenburgh

when reactor operations personnel observed smoke and called the emergency number, Ext. 2222, to report a fire on the experimental level of the reactor, at the location called H-2 (see diagram). Experimenters at another station had also noticed the smoke coming from the shielding blocks surrounding the beam line at H-2, known as TRISTAN.

BNL firefighters and police responded within minutes and started evacuating the building. Personnel began monitoring the H-2 area with a closed-circuit TV.

The experimenters were evacuated, and, shortly after that, airborne radiation monitors on the experimental level started to sound an alarm. Subsequently, reactor operations personnel began to shut down the reactor at 2:46 a.m., an action that only takes  $\frac{6}{10}$ ths of a second.

At 3:04 a.m., a second shift of firefighters was called in to stand by at the BNL Firehouse, in case there was a fire elsewhere at the Lab.

At 3:21 a.m., reactor personnel cut power to TRISTAN, after consulting with a technician for the experiment.

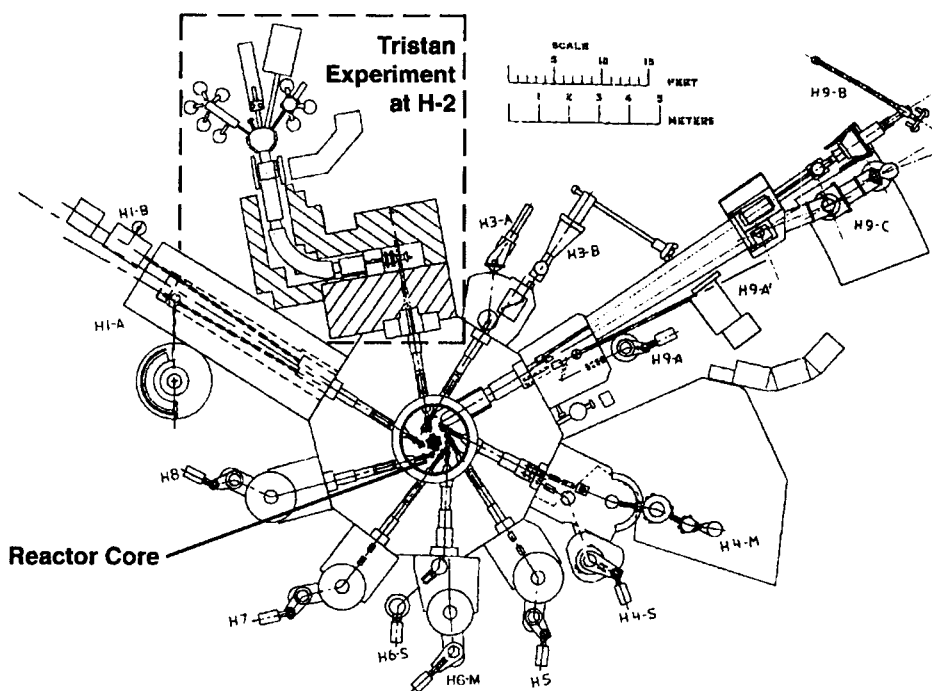
Reactor personnel completed evacuating the building by 3:25 a.m. Soon after, they concluded that there was widespread contamination inside the building. Accordingly, starting at 3:43 a.m., another series of phone calls was begun to apprise additional Lab personnel of the situation. Calls were also made to notify staff with DOE's on-site office.

At 3:30 a.m., the stack monitors indicated a slight release of radiation for 30 minutes. Before reaching the stack, air from the reactor passes through two banks of filters — a set of 96 HEPA filters and a set of 96 charcoal filters. So, the level of release was so small for two reasons: There was little to begin with, and the filters worked as intended.

At 3:48 a.m., the first contaminated individuals were identified. Decontamination consisted of either removing clothing and waiting for the radiation to decay and/or washing.

Robert Casey, Head of BNL's Safety & Environmental Protection Division (SEP), arrived at the reactor building at 4:08 a.m. After assessing the situa-

(continued on page 2)



Schematic of the experimental floor of the High Flux Beam Reactor.

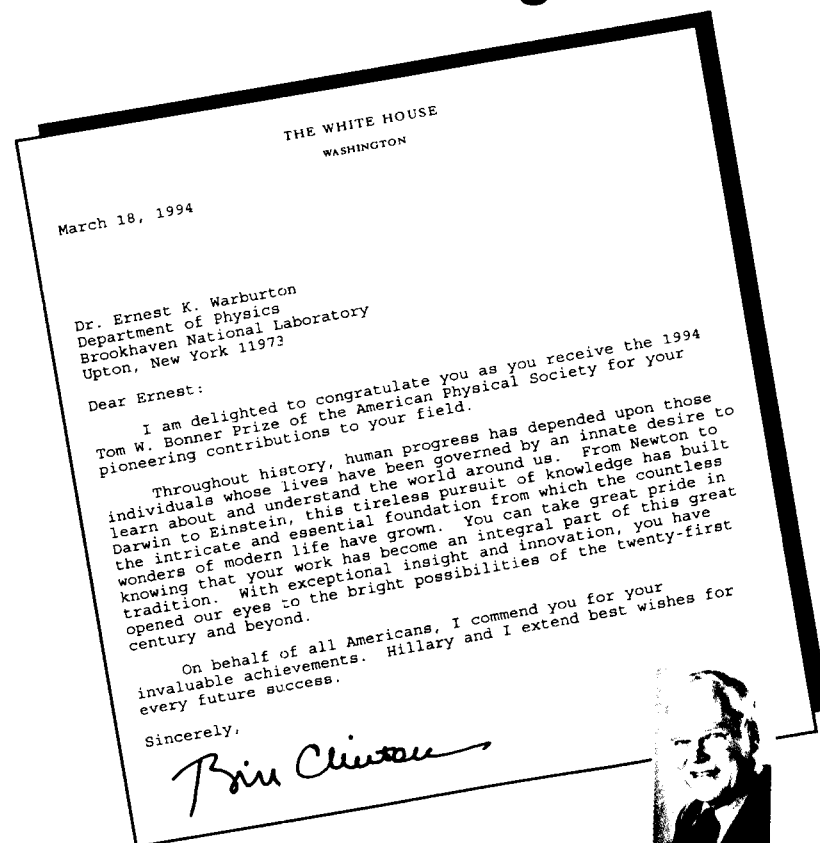
## Sharing Insights Into the Brain



Tipper Gore (left), of the Office of the Vice President of the United States, and Nora Volkow, a scientist in BNL's Medical Department, paused in a Capitol hallway on March 11 for this picture, after Volkow concluded her presentation at a public forum entitled "Understanding and Healing the Human Brain: Neuroscience and Behavior Research to Improve Public Health." Gore provided the opening remarks at the forum, which was sponsored by the National Institutes of Health (NIH) Reunion Task Force, Senator Ed-

ward Kennedy and Representative Henry Waxman, to highlight the important public health contributions made by NIH-supported neuroscience and behavior research. In her invitation to give a 20-minute presentation at the forum, Volkow was told, "You have been selected . . . because your research is on the forefront of scientific knowledge in brain and behavior research." Volkow uses BNL's Positron Emission Tomograph to conduct her research into brain chemistry and how it is altered by drugs such as alcohol and cocaine.

## Presidential Recognition



As reported in the Bulletin last December, Senior Physicist Ernest Warburton (inset), Physics Department, has been awarded the Tom W. Bonner Prize in Nuclear Physics by the American Physical Society (APS). In addition to the \$5,000 award he will be given at the APS meeting to be held April 18-22, in Virginia, Warburton also received this congratulatory letter from President Bill Clinton.

## Sweet Harmony — Blending Physics and Song

How do you get to Carnegie Hall? According to an old joke, the answer is "Practice, practice, practice!" But, in the case of one BNL physicist, it's more like "Harmonize, harmonize, harmonize!"

On April 16, the historic New York City hall will reverberate with the sounds of old-fashioned barbershop harmony when the all-male, all-barbershop Big Apple Chorus presents a concert in its award-winning, genre-spanning style. And among those hit-

ting the low notes will be BNL's own Paul O'Connor, Instrumentation Division.

The chorus, which was founded in 1983 as a revival of New York's barbershop tradition, will perform not only 1900s-era popular songs, but gospel, jazz and show tunes as well.

When he's not designing tiny silicon chips or singing with Big Apple, O'Connor also lends his bass voice to a brand-new barbershop quartet known as the New York Chimes, whose mem-

bers are scattered all over the metropolitan area. "Our 100-mile-plus geographical radius makes rehearsals a long-distance affair, but that hasn't dampened our enthusiasm for the hobby," he said.

O'Connor also treks to 33rd Street and Park Avenue in Manhattan every Wednesday to rehearse with the Big Apple Chorus, and he has traveled with the group to competitions as far away as Calgary, Canada. But every year, the chorus returns to its name-



Paul O'Connor (second from right) with the New York Chimes.

sake city for a sellout performance at Carnegie Hall (which you can also get to by turning east at Broadway and 57th Street). This year, they'll be joined by two of the country's top barbershop quartets, Acoustix and BSQ.

For tickets to the concert, or to a performance on April 9 in Jamaica, Queens, that will include the New York Chimes, call O'Connor at Ext. 7577 or 286-7127. And if you're interested in performing a capella music as well as listening to it, ask him about Big Apple rehearsals. Then, maybe next year, you'll be getting to Carnegie Hall through practice, practice, practice!  
— Kara Villamil



In this photo of the Big Apple Chorus, Paul O'Connor is in the second row, just right of center.

### Reactor

(cont'd)

tion, in his capacity as the Lab's emergency supervisor, Casey called Police Headquarters and requested that the Emergency Operations Facility be activated. That action triggered more phone calls to bring in more emergency personnel from SEP, the Reactor Division, the Safeguards & Security Division and the Director's Office.

In the meantime, smoke from the fire stopped, as observed through the closed-circuit TV.

Reactor Operations Manager Joseph Barkwill, acting as the local emergency coordinator at the reactor building, declared an "Alert" at 4:51 a.m. BNL's emergency plan spells out three categories of emergency, starting with Alert at the lowest level, moving up to Site Area Emergency, and finally General Emergency. An Alert is a condition for which there are no off-site consequences.

Further phone notifications to DOE were made, first to Chicago, starting at 5:05 a.m., and then to DOE in Washington, D.C., starting at 5:15 a.m. Subsequently, Suffolk County was notified at 5:46 a.m., and New York State at 5:51 a.m.

What followed next were several hours of analyzing information on the

observed smoke, radiation-survey levels and updates on the contaminated personnel.

Soon after 8:30 a.m., a brief memo about the incident was faxed to department and division main offices, asking that employees be informed.

Notifications were begun to federal and state elected officials. And a press release was prepared, and calls to the media were begun.

Also, a reentry into the reactor building was planned to characterize radiological conditions within and to confirm that the fire was out. Wearing protective clothing and self-contained breathing apparatus, two teams entered the reactor building at 9:45 a.m. One proceeded to the control room on the floor above the experimental level, and the other went to TRISTAN.

Based on the results of the radiological characterization performed by the reentry team, the alert was terminated at 11:51 a.m. by M. Sue Davis, the Lab's Associate Director for Reactor, Safety and Security.

#### Some Speculation

At the outset, the fire appeared to have started as an electrical fire within the TRISTAN shielding blocks.

TRISTAN separates isotopes for physics research on nuclear structure. To do so, it uses five grams of ura-

nium-235, which are bombarded by neutrons from the reactor. The facility is also powered by a 50,000-volt power supply.

A fire within the shielding enclosure could have resulted in contaminated smoke, that is, smoke carrying radioactive particles, only if it broke through the vacuum chamber piping.

#### Assessment Time

In the harried hours of that Thursday morning last week, says Casey, everyone involved in handling the incident performed admirably. And, by late afternoon that day, the Lab had assembled a team to begin recovering from the fire.

The Thursday-morning reentry teams reported that, at TRISTAN, everything looked normal to the eye. The only evidence of a fire came from the surveys around TRISTAN, which showed light sooty deposits on surfaces. The teams performing radiological surveys also confirmed low levels of contamination throughout the building and very low dose rates.

Reentry teams did not receive any measurable exposure. Workers in the building could work all day and not receive as much exposure as would be received in taking a coast-to-coast airplane flight.

Based on those morning readings, the Thursday afternoon reentry team went into the reactor building with protective clothing but without any breathing apparatus.

Two BNL teams that were sent off site on Thursday to collect soil and vegetation found no detectable radiation beyond normal background levels. A team from New York State also joined in that effort and performed additional reviews on Friday.

Teams entered the reactor building again on Friday and over the weekend. By Monday of this week, the radiation levels had decayed below the point at which the building would be considered contaminated. Only a few spots remained.

Essentially, then, from Monday, April 4, on, the level of radiation inside the reactor building has not been different from prefire levels.

Reactor Division employees who have offices inside the building may not be able to return to them right away, however, until the entire building is surveyed.

#### The Review

DOE began a formal investigation of the incident on Tuesday this week. One priority for the five-person DOE team will be a close scrutiny of TRISTAN, in order to find out the

### About the HFBR

The High Flux Beam Reactor (HFBR) is a research reactor that operates at low pressures and temperatures, and is about 1/100th the size of a modern commercial power reactor. It does not produce electricity for the Lab.

According to Lance Junker, Manager of the Reactor Division, which operates both the HFBR and the smaller Medical Research Reactor, the HFBR is inherently safer than a commercial reactor.

Hence, the evacuation zone required for the HFBR is less than one mile. That one-mile zone is entirely within the Lab property. By comparison, a commercial reactor has a ten-mile zone.

Considered one of the premier research reactors in the world, the HFBR is used annually by several hundred researchers from universities, industry and other laboratories. The reactor produces intense beams of neutrons for experiments in nuclear and solid state physics, materials science, biology and chemistry. — M.S.R.

exact cause of the smoke and determine what radioactive material was involved. To do that, the Reactor Division will assist the DOE team by dismantling the shielding blocks around the beam line.

Another important issue will be to determine the timeliness with which off-site officials were notified. The Lab itself is also concerned about the unevenness of employee notification last Thursday.

Since this DOE review is focused on the incident that occurred at the TRISTAN experiment, which was a problem completely unrelated to the reactor itself, the review does not cover the question of when the reactor will resume operations. That will be a separate DOE decision.

Says Casey, "The Lab's response to the fire was very effective and prompt. The workers in the facility and the public at large did not receive any radiation exposure that compromises their environment or their safety and health."

"But still," Casey adds, "there are questions that must be answered, and there are lessons that we will learn from those answers that will improve our operations and our emergency response."  
— Mona S. Rowe

### Outreach Workshop How to Age Gracefully

Despite the euphemisms "senior citizens" and "golden years," most people do not look forward to aging. Growing old is often associated only with mental and physical deterioration and decline — so it is resisted emotionally.

Given that the alternative — dying young — is not an attractive option, what is a middle-aged person to do about facing old age?

Attend the next Outreach workshop: "Aging Gracefully: Advice for the Middle Aged." Sponsored by the Employee Assistance Program (EAP) of the Occupational Medicine Clinic, the workshop will be presented by clinical psychologist Michele Steinberg, on Tuesday, April 12, from noon to 1 p.m. in Berkner Hall. All are invited.

As Steinberg will explore, the way one thinks about aging affects the way one perceives old age and, most important, the way one ages. Even in light of illness, disability and death, old age can be a time of new vitality and opportunities for personal growth and change — depending upon how the time is approached. Steinberg will examine the role that expectations and attitudes have on one's later quality of life and suggest ways to prepare now for a happy and healthy old age.

Michele Steinberg took her Ph.D. in clinical psychology from Hahnemann University and is certified in gerontology, focusing on the field of gerontopsychology. Since 1991, she has been a part of the Adult Development Center, a group private practice in Rockville Centre, where she primarily counsels older adults.

To register for this workshop, return the bottom portion of the EAP flyer recently sent to all employees to EAP Staff Psychologist Dianne Polowczyk, Bldg. 490. For more information about EAP, call Ext. 4567.

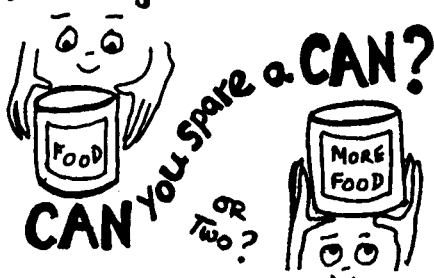
## Dance Sold Out

The Country-Western Line Dance to be held at the Lab tonight is completely sold out. As a result, no tickets will be sold at the door, so the dance's co-sponsors, Brookhaven Women in Science and the Upton Chapter of Professional Secretaries International, regret any inconvenience this may cause.

## Weight Watchers

The next 12 sessions of the on-site Weight Watchers group, which meets noon to 1 p.m. on Wednesdays, will begin on Wednesday, April 20. Registration for these sessions will be held on Wednesday, April 13, noon to 1 p.m., in the Brookhaven Center. Since BNL pays \$10 for each participant, the cost to BNL employees or spouses is \$90, payable at registration. For more information, call Health Promotion Specialist Mary Wood, Ext. 5923.

## THE HUNGRY NEED HELP



**BNL FOOD DRIVE  
PICKUP ALL NEXT WEEK**

## PSI Meeting

All are welcome to the next meeting of the Upton Chapter of Professional Secretaries International (PSI), which will begin at 6 p.m. on Tuesday, April 12, in the South Dining Room, Brookhaven Center and feature two presentations. The first speaker, Laura Ryan of the Radisson Hotel, will describe the hotel's conference facilities and accommodations. She will be followed by a representative of the Guide Dog Foundation, Smithtown, who will show a video about the foundation's work.

For more information, contact Susan Carlsen, Ext. 7647.

**Film badges will be changed tomorrow. Please place your badge in its assigned rack space before leaving work today.**

## Boardwalk Bound

The next BERA-sponsored, one-day bus trip to Atlantic City will be on Saturday, June 18 — to the Claridge Hotel and Casino on the Boardwalk.

The bus will leave the Brookhaven Center at 9 a.m. promptly that day and return before midnight. Stops will be made at the LIE exit 63 park and ride, if requested. The cost is \$22, but the Claridge will give a \$10 coin return. Buy tickets now at the BERA Sales Office, Berkner Hall, weekdays from 9 a.m. to 1:30 p.m. For more information, call Andrea Dehler, Ext. 3347; M. Kay Dellimore, Ext. 2873; or Rosalie Piccione, Ext. 3160.

# BROOKHAVEN BULLETIN

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## The Winners Are ...



Luis Nieves

Edward Sperry IV

Luis Nieves, Fujitsu Business Communication Systems, and Edward Sperry IV, Relativistic Heavy Ion Collider Project, have been elected to the Executive Board of the Brookhaven Employees Recreation Association (BERA).

Chosen by BERA members in elections held March 28-April 1, they will replace outgoing BERA Executive Board members Betty Pergan, Department of Applied Science, and Maryann Reynolds, Safeguards & Security Division.

On May 1, Nieves and Sperry will join the other six Executive Board members: April Donegain, Fiscal Division; Andrea Epple, Safety & Environmental Protection Division; Skelly Frei, Reactor Division; Augie Hoffmann, Physics Department; Rosalie Piccione, Contracts & Procurement Division; and Bridget Ramos, Department of Advanced Technology.

## Eye on the Younger Set at BNL

### Child Development Center

It's never too early to learn about science, so BNL's Child Development Center (CDC) held a Science Fair on April 24. In the photo below, Timothy Akins (left), Shirin Mortazavi (center) and Scott Schill (right) learn about how colors mix from CDC teacher Lauretta Pirraglia and Scott's father, John Schill, Instrumentation Division.



## Cafeteria Menu

<b>Monday, April 11</b>	
Soup: Spicy potato-kale	.80/1.10
A la carte: Bourbon-herb chicken	\$3.85
Fitness: Pepper steak	\$4.25
Deli: Pastrami	\$2.95
Grill: Bratwurst & peppers	\$2.95
<b>Tuesday, April 12</b>	
Soup: Corn chowder	.80/1.10
A la carte: Shepherd's pie	\$3.45
Fitness: Curry chicken	\$3.85
Deli: Ham	\$2.95
Grill: Spanish omelet	\$2.55
<b>Wednesday, April 13</b>	
Soup: Split pea	.80/1.10
A la carte: Tortellini carbonara	\$3.45
Fitness: Cod Florentine	\$3.85
Deli: Roast beef	\$2.95
Grill: Monte Cristo	\$2.95
<b>Thursday, April 14</b>	
Soup: Egg drop	.80/1.10
A la carte: Mandarin chicken	\$3.85
Fitness: Stir-fry beef	\$3.85
Deli: Turkey	\$2.95
Grill: Cuban sandwich	\$2.95
<b>Friday, April 15</b>	
Soup: Manhattan clam chowder	.80/1.10
A la carte: Display cooking of omelets	
Fitness: Flounder w/julienne veg.	\$4.25
Deli: Corned beef	\$2.95
Grill: Fried clams w/cheese roll	\$3.25
<i>Deli, Burger and other specials daily.</i>	

## TGIF Social

Celebrate the end of the tax season and the work week at the next informal monthly Thank Goodness It's Friday (TGIF) Social, on Friday, April 15, from 5:30 to 11 p.m. Sponsored by the BNL Dance Club, TGIF socials feature dancing to Ralph Izzo's 300-CD collection of oldies and the latest dance music. Food and beverages are available at the Center Club.

The suggested donation of \$1 per person is used by the club to purchase more dance music. For more information, call Brenda Riddle, Ext. 4524.

## Water Aerobics

Sign up for one or both of the next 10-week sessions of water aerobics, which begin on Tuesday, April 12, and Thursday, April 14, and will be held at the BNL pool from 5:15 to 6 p.m. If you do not have a season pool pass, then the cost for each session is the \$2 daily pool fee. Call Mary Wood, Health Promotion Specialist, Ext. 5923, for more information.

## Nursery School Bake Sale

The Upton Nursery School will hold its annual spring bake sale on Thursday and Friday, April 14 and 15, from 11:30 a.m. to 1:30 p.m. in the lobby of Berkner Hall. Proceeds from the sale will be used toward the purchase of school equipment.

## Arts & Flowers

Cherry blossoms and tulips, great American and European paintings, and a wonderful new Egyptian exhibit are yours for the day — if you join the BNL Art Society's bus trip to the Brooklyn Botanical Gardens and Brooklyn Museum. All are invited.

The trip will take place on Saturday, May 14, when the luxury coach, complete with bathroom, will leave the BNL tennis-court parking lot at 9 a.m., to return around 6:30 p.m. In addition to the gardens and museum, a side trip to see — but not buy — the Brooklyn Bridge is an option.

The coach ticket costs \$17; the gardens are free; the museum is \$4 for adults, \$1.50 for seniors, free for children under 12. For tickets and information, call Liz Seubert, Ext. 2346.

## Rifle & Pistol Club

The next monthly meeting of the Rifle & Pistol Club will be held at noon on Wednesday, April 13, in Room 202, Bldg. 911. For more information about the meeting and the club's activities, call Otto Jacobi, Ext. 3471.

## Golf Tournament

The first golf tournament of the BERA Golf Association (BGA) season will be held at the Heatherwood Golf Course on Wednesday, April 20. Sign up by Friday, April 15, by calling Rick Jackimowicz, Ext. 3803, who can also provide more information on BGA.



## Upton Nursery School

Meet Alane Fleming (second from left above) and Linda Draycott-Plofker (right), the certified teachers at the Upton Nursery School, at a "Meet the Teachers Night" that the school will hold on Tuesday, April 19, from 7 to 9 p.m., in the Recreation Building in the apartment area. That's where the school holds classes three mornings each week for the children of BNL and AUI employees and their relatives, guests, visitors and on-site contractors. The teachers are shown here in the playground of the nonprofit, cooperative nursery school with their current students and last Tuesday's parent helper, Cindy Anderson (left). For more information, call Liz Loeb, 567-8510, or Sue Ellen Gerchman, 929-3732.

## Arrivals & Departures

<b>Arrivals</b>	
Valerie A. Curry	..... Comp. & Comm.
James F. Davis	..... Adv. Tech.
Qing-Li Dong	..... NSLS
Joseph A. Granato	... Comp. & Comm.
Robert F. Lavelle	..... Adv. Tech.
Edmund B. Laviano	..... Physics
Pamela J. Montag	..... Plant Eng.
<b>Departures</b>	
This list includes all employees who have terminated from the Lab, including retirees:	
Carin J. Ashjian	..... App. Science
Ramesh C. Budhani	..... App. Science
Julian J. Eaton-Rye	..... Biology
Mabel Evans	..... Con. & Proc.
John J. Giarratano	..... Plant Eng.
Richard P. Giesler	..... Sfgds. & Sec.
Warner P. Hayes	..... Reactor
Derrick E. Hoggard	..... Staff Serv.
Albert A. Pinelli	..... Adv. Tech.
John D. Siple	..... Biology
Ronald G. Wittlock	... Comp. & Comm.

## Basketball

<b>Games of March 31</b>			
<b>Knicks 72</b>		<b>Magic 66</b>	
Rich Domenech	27	Troy Mayo	23
Chris Ingoglia	12	Terrence Buck	13
Ed Gregory	10	Ray Jackson	11
Greg Mack	10	Mitch Williams	7
Al Ratti	6	Pat Browne	6
Mike Parks	4	Neil Donahue	4
Al Langhorn	3	James Rank	2
<i>Three-point shots: Domenech (5), Buck (2), Williams, Mayo.</i>			
<b>Runaways 66</b>		<b>Scream 57</b>	
Ed Meier	19	Tim Powers	15
Wayne Cummings	12	Al Boerner	11
Jerry Gaeta	9	Steve Coleman	11
Bob Wells	7	John Duggan	11
Lars Furenlid	6	John Skonieczny	7
Pete Ratzke	5	Victor Cassella	2
Jim Desmond	4		
Gerry Shepherd	4		
<i>Three-point shots: Powers (3), Boerner, Gaeta, Meier.</i>			



# Bowling

## Red/Green League

A. Warkentien bowled a 258/226/665 scratch series, E. Beadle 248/204/621 scratch, R. Mulderig Jr. 248/202/619 scratch, R. Mackinnon 245, R. Raynis 224/209, H. Arnesen 215/215/214/644 scratch, E. Larsen 215, G. Spira 213, E. Sperry IV 212/209/601 scratch, O. Mirjah 209/201, R. Wiseman 209/200, S. DiMaiuta 204/200, B. Guiliano 204, C. Bohnenblusch 203.

## Purple League

**Week of 3/31:** George Munoz bowled a 220/212, Ray Raynis 214/212/204/630 scratch series, Ed Sperry III 212, Ben Belligan 208, Debbie Keating 192, Linda Farmer 191, Paula Pozzoli 185, Tracy Ryan 178, Fran Brown 176, Suzanne Agnetti 174, Denise Monteleone 173. Lynette Finlay converted the 1/2/8/10 split

**Week of 3/24:** Eric Larsen bowled a 215, Sam Logan 212, Fred Schaefer 206, Manny Dador 204, Ben Belligan 204, Debbie Reynolds 189, Maryann Reynolds 171. Chuck Bennett converted the 8/5/10.

## Classified Advertisements

### Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position. Consideration is given to candidates in the following order: (1) present employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action plan, selections are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, and second, for general recruiting under open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people.

Except when operational needs require otherwise, positions will be open for one week after publication.

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (282-7744), for a complete listing of all openings.

**SCIENTIFIC RECRUITMENT** - Doctorate normally required. Candidates may apply directly to the department representative named.

**POSTDOCTORAL RESEARCH ASSOCIATE** - Trained in biochemistry/microbiology, to work on identification and applications of biochemical processes for the conversion of oil wastes into bioadsorbents with surfactants and biopolymers as by-products. Contact: Eugene Premuzic, Department of Applied Science.

**POSTDOCTORAL RESEARCH ASSOCIATE** - Trained in experimental condensed-matter physics/materials science, with emphasis on measurements describing microscopic interactions in solids. Experience in diffraction techniques such as neutron, x-ray or light scattering is desired. Contact: Stephen Shapiro, Physics Department.

**LABORATORY RECRUITMENT** - Opportunities for Laboratory employees.

NS 2390. RESIDENCE CUSTODIAN - Staff Services Division.

**OPEN RECRUITMENT** - Opportunities for Laboratory employees and outside candidates.

DD 252. TECHNICAL POSITION - Requires an AAS degree and several years' health physics or industrial hygiene-technician experience. Will supply Safety & Environmental Protection coverage to the AGS. Participation in respirator, industrial hygiene and general safety training programs is required; some shift work will also be required. Safety & Environmental Protection Division.

NS 2556. TRAINING POSITION - (term appointment) Requires a BS or equivalent experience and substantial appropriate training experience. Proven ability to establish, implement and maintain comprehensive Radiological Control Technician and Protection training programs is required. Performance-based training and accreditation experience is essential. Safety & Environmental Protection Division.

DD 2555. TECHNICAL POSITION - Requires an AAS in chemistry, laboratory or other relevant experience, and computer literacy is essential. Responsibilities include the preparation of samples for the determination of radionuclide composition. Additional duties include data reduction and records maintenance. Safety & Environmental Protection Division.

DD 8191. HAZARDOUS WASTE MANAGEMENT TECHNICIAN - Under general supervision, performs work related to the operation of the hazardous-waste disposal facilities of the Division. Includes, but is not limited to, pickup, storage, packaging and bulking of hazardous waste. Responsible to complete and maintain any certifications required for the operation of these facilities. Safety & Environmental Protection Division.

### Motor Vehicles & Supplies

93 HONDA CBR600 FL MOTORCYCLE - low mi., header, jet-ki, Arai quantum helmet, tank bra, show-room cond., \$5,800. Matt, 472-0706.

93 FORD PROBE GT - red/black, 5-spd., loaded, sunroof, 15k mi., mint cond., Charlie, Ext. 7638.

91 GEO STORM - 2-dr. h/b, 4-cyl., air bag, am/fm cass., met. blue, 35k mi., excel. cond., must sell, \$7,900. Manny, 286-9426.

91 MAZDA B2600I LE 4X4 - gem cap, 5-spd., 5-yr., 100k warr., 42k mi., \$8,000. 728-8424.

90 FORD MUSTANG GT - red, 46k mi., good cond. Jim, 878-6747 after 6 p.m.

90 ACURA INTEGRA LS - 60k mi., ac, sunroof, alarm, cruise, new radial tires, excel. cond., 289-8105.

90 BUICK LESABRE - 21k mi., fully equipped, excel. cond., \$10,000. Joe, 281-8943.

89 VW CABRIOLET - convertible, ac, a/t, Blaupunkt, 59k mi., excel. cond., \$9,250. 821-0686.

89 SAAB - 40k mi., 4-dr., black, very clean, \$9,900. Joe, Ext. 5979.

88 FORD FESTIVA - 48k mi., 4-spd., good cond., must sell, \$2,500 neg. Eric, Ext. 7648 or 341-1062.

88 PONTIAC LEMANS - 60k mi., 2-dr., a/t, am/fm, red, good cond., reliable, \$1,900 neg. Sam, Ext. 3631.

87 FORD BRONCO II 4x4 - new tires & shocks, 83k mi., 2.9L engine, touch drive, \$6,100. Jeff, 345-0766.

87 SUZUKI SAVAGE - 650cc, drag pipe, belt drive, 2.1k mi., mint, Harley look-alike, \$1,750. 467-1343.

87 PORSCHE 924S - white, black int., 69k mi., immaculate, \$5,800. Dave, Ext. 4084.

87 CAVALIER - a/t, ac, 4-dr., 4-cyl., radio, 62k mi., excel. cond., in & out, ask, \$2,500. Linda, 588-5034.

86 MITSUBISHI MIRAGE L - 5-spd. h/b, engine needs work, \$300 or best offer, '82 Mazda GLC, h/b, a/t, am/fm cass. stereo, runs well, \$1,000 neg. 331-9849.

86 HYUNDAI EXCEL GLS - 5-spd. h/b, am/fm cass., 2 new tires, orig. owner, 72k mi., \$1,000. Rich, 744-0960.

86 BUICK REGAL - 2-dr., a/t, ac, stereo, p/s, p/b, 82k mi., good cond., \$1,900 or best offer. Ken, Ext. 2563.

86 NISSAN PICKUP - 96k mi., \$1,500. George, 878-8177.

86 OLDSMOBILE CUTLASS - 2-dr., 8-cyl., ac, p/s, p/b, new tires & exhaust system, 64k mi., good cond., \$3,000. Ext. 4758 or 929-0468.

85 PLYMOUTH RELIANT WAGON - fuel inj., ac, 84k mi., clean, good cond., \$2,000. 475-8971 after 6 p.m.

84 VW VAN - 130k mi., seats 7, m/t, new tires & windshield, good instrumentation, good trans., \$1,400. Chu, Ext. 2389.

84 JEEP CJ7 - 4wd, good body cond., needs engine work, best offer. Jennifer, 427-0917 eves. or leave message.

84 NISSAN STANZA - 5-spd. h/b, 125k mi., looks good, new clutch & timing belt, best offer over \$1,000. Ralph, Ext. 4373.

84 SAAB 900 - turbo, loaded, 5-spd., mechanically perfect, clean, slate blue, \$3,500. Paul, 924-4779.

83 CADILLAC ELDRADO BIARRITZ - good cond., needs engine work, best offer. Jerry, Ext. 2907.

83 FORD LTD - runs well, \$950. Arlene, Ext. 3428.

82 CHEVY BEAUVILLE VAN - ac, tilt, cruise, rebuilt motor, many new parts, \$2,195. Bob, Ext. 4590 or 929-0572.

81 BMW - new tires, battery, clutch, muffler, sunroof, 5-spd. m/t. George, 878-8177.

81 CADILLAC SEDAN DE VILLE - many new parts, runs well, must sell, \$1,050. 475-8242.

78 MERCURY COUGAR - needs work, 100k mi., \$600. Ed, 929-5676.

77 SHASTA CAMPER TRAILER - 19', self-contained, roll-out awning, w/Reese hitch, asking \$2,000. Dan, Ext. 2012.

74 CHEVY - 2-dr., 350 V-8, runs well, \$800. Frank, Ext. 3372 or 473-8637.

69 FORD FALCON - yellow, as is, \$500. JoAnn, Ext. 4399.

64 VW BEETLE - convertible, needs top & restoration, \$800 neg. 878-2702 eves.

TIRES - P225x75R15, \$20 ea. or 4/\$60. 698-9274.

MOTORCYCLE HELMET - Arai, full-faced, black, good cond., ask, \$50, make offer. Charles, Ext. 5214.

FORD PICKUP BACK BUMPERS - 2, both excel. cond. & w/brackets; step bumper, \$35, std. bumper w/tr. hitch, \$25. Tom, Ext. 4507 or 878-1060.

TIRES - B60-13, radial, B.F. Goodrich, \$50/pr. Ext. 2913.

TRANSAXLE - Nissan 5-spd. from Sentra, \$150. Pam, 698-0596.

### Boats & Marine Supplies

28' HERRESHOF KETCH - 2 sets of sails, 130 RF, rebuilt 1992 Volvo diesel, mahogany on oak, black walnut compway. Skip, Ext. 3806 or 331-1195.

23' PUMA SAIL BOAT - all fg, sleeps 4, galley, fixed keel, mooring, dinghy motor, sails in good shape, extra sail, \$3,500 or best offer. Mike, Ext. 7861 or 331-7812.

23' GLASTRON - 1971 Volvo Penta engine i/o, best offer. George, 288-9086.

23' 4 WINNS - 1986, 230-h.p. Merc i/o, excel. cond., extras, trailer optional, \$8,900. Charlie, Ext. 2407.

23' BAYLINER TROPHY - 1984, full canvas, VHF, Loran, new depth sounder, 4-cyl. i/o, deep cockpit, encl. head, fish well, \$8,900. 325-1677.

22' MACGREGOR - 1978, 7.5-h.p. Mercury ob., VHF, trailer, swing keel, pop-top w/encl., sink, 150 jib, excel. cond., \$2,600. Jon, 363-3661.

19' PEN-YAN - 115-h.p. Johnson, full canvas, Coast Guard pkg., 2 anchors, 18-gal. fuel tank, trailer w/elec. winch, needs some work, \$650. Vito, Ext. 4547.

MOTOR - 7-h.p. Mercury ob., like new, 298-5134.

### Furnishings & Appliances

BED - metal frame, casters, foam mattress, 4"x34"x74", new cond., \$60. Rau, Ext. 3864.

BEDROOM - girl's, white wood, desk w/hutch, chair, dresser w/mirror, headboard, \$150. Doug, Ext. 4661.

BEDROOM SET - girl's, white w/yellow trim, 6 pieces, excel. cond., \$525. 744-4466.

COUCH - & lounge chair, black leather, orig. \$2,000, \$550 neg.; 2 chairs, Knolls Wassily, brown leather, orig. \$1,534/ea., asking \$550/ea. Beu, 929-6984.

DINING ROOM - light oak table, 6 chairs, 2 leaves, breakfast w/mirrored back & glass shelves, table pad, like new, \$950. 368-6115.

FILE CABINET - white, heavy-duty, \$60. M. Rosen, Ext. 2388.

REFRIGERATOR - apt.-sized, \$100; dining room table, white Formica, drop-in leaf, 6 light green swivel chairs, \$250. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

REFRIGERATOR - Whirlpool, frost-free freezer, 16.3 cu. ft., works well, energy efficient, asking \$200 neg. Paul, Ext. 7507.

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REFRIGERATOR - Fridgidaire, 22 cu. ft., side-by-side, white, \$300. 821-0063, eves.

TABLES - 2, large, wood, pedestal, leaves, need refinishing & assembling, \$10/both. Victor, Ext. 2395.

WALL OVEN - Westinghouse, 22"x27", elec., \$100. John, Ext. 2913.

### Tools, House & Garden

ENGINE - Techumseh, 3 1/2-h.p., horizontal shaft, \$60; Craftsman II mower, 20" cut, rear bag, \$80; Snapper, 8-h.p., riding mower, \$150. Dan, Ext. 2012.

EVERGREENS - all sizes, you dig, \$5/any size. Lou, Ext. 4672 or 588-7260.

LAWN MOWER - Black & Decker, 18", push, asking \$50. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

PLANTS - florist-grade, discount prices, flat of annuals and vegetables, 10" hanging geranium, \$9/ea. Jon or Donna, 363-3661.

WHITE PINES - arborvitae, spruces, nursery grown, \$3/foot. John, 744-5867.

### Sports, Hobbies & Pets

BIKE - woman's, Schwinn Sprint, 10-spd., 17" frame, 27" wheels, orig. \$180. asking \$70. Ray, Ext. 4561.

BIKE - 24", 10-spd., works, \$10. Victor, Ext. 2395.

BOW - compound, excel. for beginner, 30-50 lbs., 25"-28" draw, 1 dozen alum. arrows w/field tips, \$125. Chris, Ext. 4672 or 399-6257.

COIN COLLECTION - Indian head pennies, most date between 1880-1899. Greg, Ext. 7960.

COWBOY BOOTS - men's size 8, \$75. Ext. 2913.

DRUM SET - Ludwig Quadra Plus, 12-piece, heavy-duty hardware, Ziljian cymbals, 6 1/2" deep chrome snare, black cortex color. Jeff, 345-0766.

FISH TANK - 70-gallon, under-gravel & flouval remote filters, pumps, 30 lbs. gravel, glass cover, fluorescent light, \$225. George, Ext. 5973.

GOLF CLUBS - Mizuno, metal woods, 1,3,5, v.g. cond., \$100. Joe M., Ext. 2575.

GOLF CLUBS - complete set, Wilson, almost new, w/bag, used once, \$250. Ext. 5080 or 751-1884.

KITTENS - 2, lovely, need love & care. Vadim, Ext. 1059 or 4984.

ORGAN - Wurlitzer, 3 keyboards, model 460, oak cabinet, w/bench, \$550. 325-2765.

RACE CAR - r/c, gas power, dune buggy, best offer. Fred Kuehl, Ext. 7947 or 588-2268.

WATCH - Seiko Sports 100, diver's, black & gold, analog/digital, calendar, alarm, stop watch, light, good to 100 meters, \$50. Jim, Ext. 5537.

### Audio, Video & Computer

CAMCORDER - Hitachi S-VHS, many features, like new, orig. \$1,200, sell for \$695. L. Arnold, Ext. 5462.

COMPUTER - Commodore 64C, 1541 II floppy drive, 13" color mon., joysticks, manuals, some games & programs. \$225. Vito, Ext. 4547.

KEYBOARD - Casio CA100, orig. \$125, \$75 neg.; GE stereo, dual cass., record player, tuner, 2 speakers, \$150 neg. Chris, Ext. 4672 or 399-6257.

### Miscellaneous

BOTTLES - glass, 5-gallon, w/crate, good for wine making, \$10. Bill, 878-9121.

LUGGAGE - American Tourister duffel, never used, grey, 26"Lx12"Wx15"H, side pocket, shoulder strap, \$75.95 new, now \$30. Marsha, Ext. 5053.

STROLLER - Kiddyco duo deluxe, \$40. Paul, Ext. 4156.

### Free

BOAT - 23' Thunderbird, excel. cond., cuddy cabin, f.g., no motor, no trailer, you haul away. 281-1832.

### Lost & Found

FOUND - camera, on site, Friday, April 1, describe and it's yours. Dennis, Ext. 4218.

### Car Pools

BOHEMIA/E. ISLIP/OAKDALE - looking for 1 or 2 drivers for existing car pool. Frank, Ext. 2314.

### Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed, sex or national origin of the applicant.

### For Rent

BAITING HOLLOW - beach cottage, sleeps 4, full bath, l/r, eik, deck, priv. beach, laundry, rec. hall, near farms, Polish Splash, wineries, \$400/wk., multi-week discount. Mike, 331-7812 eves.

CENTER MORICHES - 3-bdrm., 1 1/2 baths, huge l/r, fd/r, eik, gar., full bsmt., porches, all appl., fenced yard, walk to water, \$1,000/mo. Anna, 878-6760.

DAVIS PARK, FIRE ISLAND - 5 bdrm. bay-side beach house, 2 baths, \$1,600/wk. 289-8105.

HOLBROOK - 1-bdrm. apt., full kit., bath, combined l/r-dining area, 2nd floor, priv. ent., 20 min. to Lab, 1 person, no smoking, pets, \$525/mo. + sec., refs., lease. Fred, Ext. 7947 or 588-2268.

LAKE PANAMOKA - 2-bdrm. house, kit., d/r, l/r w/tp, bsmt. w/wd, deck, oversize yard, sheds, priv. lake rights, pets OK, 5 min. to Lab, avail. May 1, \$750/mo. John, Ext. 4668.

LAKE RONKONKOMA - ground floor, 1-bdrm. apt., across from Lake, furn. or unfurn., good size rooms w/parking, \$550/mo. incl. util. Dom, Ext. 3089.

MASTIC BEACH - share house, nonsmoker, near Smith Pt., use of yard, incl. w/d, cable & telephone, \$400/mo. + 1 mo. sec. Karen, 395-4716, after 6 p.m.

MIDDLE ISLAND - 2nd floor garden apt., w/balcony, cac, w/w, newly painted, pool & tennis, immediate, \$675/mo. Tom, Ext. 5265.

NORTH PATCHOGUE - small cottage, screened porch, gar., fenced yard, low maint., 1-2 people, \$650/mo. + sec. Richard, 475-4199.

PT. JEFF STA. - 1-bdrm. house, l/r, d/r, eik, deck, laundry, no pets, 1 mo. sec., \$700/mo. + util. 331-7812. eves.

PT. JEFF STA. - kit., l/r, lg. bdrm., full bath, very priv., \$600/mo. incl. heat and elec., security, ideal for single, no pets. Frank, 473-8637.

RIDGE - immaculate, 2-bdrm. condo, w/w, w/d, all appl., patio, \$700/mo. 878-6016.

ROCKY POINT - 1st fl. garden apt., w/patio, cac, w/w, walk to shops, \$650/mo. Tom, Ext. 5265.

SELDEN - 1-bdrm. apt., l/r-kit. cornbo, ground floor,

priv. ent., patio, no pets, quiet neighborhood, \$550/all. 732-7568.

SHIRLEY - 1-bdrm. waterfront property, eik, l/r, full bath, fp, priv. ent., parking, furn., 1 mo. sec., \$650/mo. Matthew, 399-2989.

SHIRLEY - new, lg. studio, priv. ent., carpeted, sep. kit., cable, no smoking, no pets, \$525/all. 395-3914.

SHOREHAM - studio apt., priv. ent., single, nonsmoker, no pets, ref. req., \$525/mo. incl. all util. & cable. James, 744-2095 after 6:30.

SOUND BEACH - 1-bdrm. apt., full bath, l/r, eik, priv. ent., driveway, single, nonsmoker, no pets, \$500/mo. incl. all & cable. 744-7007.

KEY WEST, FL - oceanfront timeshare, Coconut Beach Resort, studio, sleeps 2, refrig., microwave, a/c, TV, deck, pool, Jacuzzi, fish, swim, nightlife, \$700/wk. of July 23-30. Ralph, Ext. 2539 or 929-3586.

KEYWEST, FL - oceanfront timeshare, Coconut Beach Resort, 1-bdrm., sleeps 4, full kit., a/c, TV, deck, pool, Jacuzzi, fish, swim, nightlife, \$1,050/wk. of July 23-30. Pat, Ext. 2539 or 929-3596.

HILTON HEAD, SC - 2-bdrm. condo, sleeps 6, fully furn., 2 baths, pool, beach, golf nearby, April-Sept., \$450/wk. Guy, Ext. 3147 or 689-5378.

### For Sale

AQUEBOGUE - 3-bdrm. ranch, eik, fd/r w/hardwood floors, l/r w/tp, cathedral ceilings, skylights, Jacuzzi, full bsmt. w/8' ceilings, fenced 3/4 acre, \$145,000. Sharon, Ext. 5919 or 722-3010.

BELLPORT - 3-bdrm. ranch, l/r w/tp, d/r, bath, full bsmt., 20'x16' deck, det. 3-car gar., shy 1/2 acre, SCSD, city water, near village & dock, ask. \$125,900. Maryann, Ext. 2352 or 286-3377 after 7 p.m.

BROOKHAVEN HAMLET - 3-bdrm. ranch, 2 baths, eik, d/r, l/r w/tp, laundry rm., 6 appl., oversize 2-car gar., generator, 0.7 acre on cul-de-sac, \$197,500. Jeanne, 286-1200.

CALVERTON - 3-bdrm. ranch, 1 bath, 60'x130' fenced yard, new well, shed, roof, 1-car gar., 5 miles from BNL, \$105,000. Ken, Ext. 2012.

CALVERTON - 2-bdrm. condo, ac, 5 appl., patio, upper deck. Ext. 3558.

CENTER MORICHES - 4-bdrm. Colonial, l/r w/tp, d/r, eik, full bsmt., TV/laundry, 1.5 bath, oil heat, att. gar., town water, near all, 10 mi. to Lab, \$165,000. Marilyn, Ext. 2259 or 878-0939.

HOLBROOK - Woodgate Village, 2-bdrm. townhouse, new appl., HWH, wood stove, attic, pool, clubhouse, etc., Sachem schools, near major roads & shopping, immaculate, ask. \$102,000. Joann, 472-6742.

HOLTSVILLE - 2-bdrm. ranch, l/r, fp, d/r, lg. kit., property 50'x150', agp, taxes approx. \$2,000, Sachem schools, 15 min. to BNL, \$85,000 neg. Kelly, 289-1732.

MEDFORD - 3-bdrm. Cape, l/r, d/r, kit., full bsmt., fin. attic, fp, deck, sep. gar. w/loft, oil heat, fenced, extras, \$102,000. 698-3283.

MEDFORD - Blue Ridge Country Club, 5-rm condo, 1 1/2 baths, includes golf, tennis, billiards, in/out pools, whirlpool, sauna, clubhouse, restaurant, 15 min. to Lab, \$80's. 736-8742.

MIDDLE ISLAND - 2-3 bdrm. ranch, 1 1/2 baths, lg. country kit., gar., bsmt., deck, extras, mint cond., nice, quiet neighborhood, \$103,500 neg. 924-2839.

N. SHIRLEY - 5-bdrm. high-ranch, 2 full baths, w/w, l/r, d/r, kit., office, 2-car det. gar. w/loft, 1/2 acre, upper/lower decks, \$14