BROOKHAVEN BULLETIN
Vol. 36 - No. 6 February 12, 1982
BROOKHAVEN NATIONAL LABORATORY

Highlights of FY 83 Budget

President Reagan's budget for Fiscal Year 1983 (October 1, 1982 - September 30, 1983) has been submitted to Congress and BNL is now trying to assess its impact on Lab operations.

So far, all that can be reported is what's in the budget. How it will eventually be interpreted and what Congress will do in adjusting the figures, is anybody's guess.

It should also be noted that we are dealing here with the *Department of Energy budget,* BNL's principal funding agency. As a matter of fact, in the FY 83 plan, DOE is considered defunct. The relevant budget items are now listed under the Department of Commerce, and specifically with an agency called the Energy Research and Technology Administration. Brookhaven would be under the jurisdiction of this new agency.

Brookhaven also receives some funding from the Nuclear Regulatory Commission and grants from other government agencies such as the Environmental Protection Agency and the National Institutes of Health.

The following notes deal with the principal scientific programs. Operating budgets for some DOE programs are up, some are down. All of the percentages given are in terms of 1982 dollars and do not reflect inflation.

High energy physics has received a 23% increase in operating funds. BNL expects to receive a proportionate share of these funds for its high energy physics program. This will allow for an increase in the operation of the AGS from 20 to 30 weeks, and for an extensive R&D effort on superconducting magnets. However, there were no funds for the construction of ISABELLE.

"This is very disappointing," said Nicholas Samios, acting director, "particularly in view of the recent substantial technical progress. The ISABELLE project is such an important part of the future of BNL and of a balanced high-energy physics program for the country, that it is hoped such monies will be restored in the months ahead. If funding remains at zero, the unfortunate result will be a reduction in high energy physics staff and a delay in the completion of the project."

Funding for nuclear physics remains essentially constant. Basic energy sciences are up by 15%. Included in this category are funds for the HFBR, and NSLS operations, and many research programs in the Chemistry, Physics and Energy and Environment Departments.

Environmental programs such as biological and environmental research have been cut by 20%. These are important to the support of the life sciences program at BNL, principally in the Energy and Environment and Medical Departments.

The program item, Life Sciences Research and Nuclear Medicine Applications, has been cut 18%. This may affect the Medical, Biology and Chemistry Departments.

The Reagan Administration has cut deep into funds for applied research in a number of areas, the idea being that private industry will take over this effort. What is left will go to basic research and this is what Brookhaven does well.

For instance, fossil energy programs have been reduced by 75%, leaving 25% for basic research. BNL is hopeful that our programs in DEE (e.g. coal) will be funded.

Similarly, the item called Conservation, Solar and Other Renewables has been cut back 80%. Some items under this heading, such as electrical energy systems, energy storage systems, and buildings and community systems, have been eliminated entirely. But as BNL does basic research on electrochemical storage and conversion, cited as examples of needed research, it is hoped that some of these programs may be continued.

The Laboratory is in the process of obtaining FY 1983 budget figures from DOE for its specific programs. Over the next several weeks, Lab officials will be assessing the effects of President Reagan's budget on BNL's individual activities and developing specific courses of action.

Final figures are not expected to emerge from Congress for some months. In the meantime, the Lab is exploring with other agencies what support they might give to BNL programs not sufficiently funded under DOE.

Visiting Scientists ♥ BNL

Because of their uniqueness, large experimental facilities such as the AGS, the High Flux Beam Reactor and the National Synchrotron Light Source tend to attract many visiting researchers to Brookhaven. But the Laboratory is attractive to scientists in many other ways as well. In these articles, you will meet two researchers whose work requires a mixture of expertise, information and instrumentation that they can find only at BNL.

A Cell Biologist

Eyes — especially their color — have always intrigued people. Through the years, they have gazed into big brown eyes, cooed over infants' baby blues and been wary of the green-eyed monster. For most of us, analyzing the pigments that create those colors would destroy that fascination. But Barbara Panessa-Warren not only finds this kind of analysis intriguing, she also thinks it may be the key to solving the mystery of some forms of blindness and many vision disturbances.

Barbara Panessa-Warren is an analytical cell biologist. Her interest in the pigment of the eye stems from her post-doctoral research when, piqued by findings of calcium in eye pigment, she began asking such questions as: What other elements are contained in the pigment of a normal eye? Is elemental content different in light and dark eyes? Does it change in abnormal or diseased eyes? Are changes consistent and repeatable? If so, could pharmaceutical intervention alter elemental content to either restore lost sight or prevent further loss?

Answering those questions requires analysis on sophisticated instruments which Panessa-Warren does not have in her laboratory at SUNY, Stony Brook where she is a research assistant professor in the Department of Anatomical Sciences. But that equipment *is* available at BNL. As a guest associate scientist here, she is frequently in Instrumentation with her research assistant Ana Maria Vidal. There, she is collaborating with her husband, materials scientist John Warren, and nuclear physicists Hobie Kraner and Keith Jones, to devise methods of analyzing eye tissue. Last

(Continued on page 2)

Doug Humphrey

Barbara Panessa-Warren (seated) and John Warren observe the results of eye tissue analysis on the scanning electron microscope. Ana Marie Vidal checks a polaroid photograph of data that had appeared on the screen a few minutes earlier.

An Astrophysicist

"We are such stuff as dreams are made on..." wrote William Shakespeare in *The Tempest* in 1611. But 371 years later, astrophysicist Marty Spergel can add that we are also such stuff as meteorites, comets, planets and moons are made of. Says Spergel, "Most non-living things contain the same kinds of ingredients as you and I. They're usually very rich in carbon, oxygen, nitrogen — some of the most common stuff found in the universe."

Determining the composition of the bodies that populate our solar system has been the main focus of Spergel's part-time research at BNL. A full-time professor at York College in Queens, Spergel reserves two days a week for his work at Brookhaven, which is partially funded by NASA. Using techniques developed in collaboration with people such as nuclear chemist Bob Reedy of Los Alamos and Jack Trombka of NASA, Spergel's principal work lately has involved investigating the chemical abundances in meteorites.

The techniques Spergel uses are similar to those used in neutron activation analysis. In the materials of interest to Spergel, cosmic rays act as probes of materials. Given off by exploding stars or the sun, these high energy cosmic ray particles are constantly bombarding surfaces of moons, meteorites and planetary atmospheres, changing and activating the materials they contain. Activated-materials give off signatures — gamma rays or protons that can be detected and analyzed to determine the nature of the material.

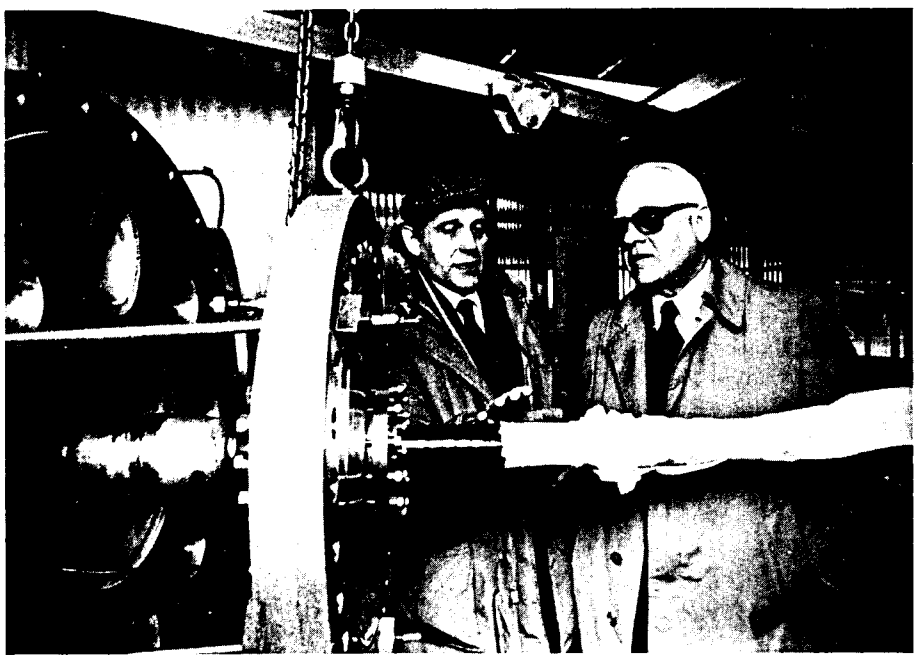
Studying high speed particles has long been an important enterprise at BNL. As a result, there exists in the

(Continued on page 2)

Mort Rosen

Frances M. Scheffel (right), data services supervisor at the NNDC, provides Marty Spergel (center) and Len Slatest with data for their studies on chemical abundances in meteorites.

ERAB Chairman At Lab



Doug Humphrey

At the Power Transmission Project last week, Project Manager Eric Forsyth showed the recently threaded superconducting cable to Louis H. Roddis, Chairman of the Energy Research Advisory Board (ERAB). As an advisor to the Secretary of the Department of Energy, ERAB is studying the multi-purpose national laboratories. Mr. Roddis visited Brookhaven to become more familiar with the programs and facilities here, including ISABELLE, the NSLS, the Tandem Van de Graaff, the HFBR and Nuclear Medicine.

Biologist (Cont'd)

March, the National Eye Institute recognized the potential of this association by awarding Panessa-Warren a three-year grant. "The reviewers were very excited about applying new methods to eye research," she said. "There are so few places where this can be done, and we're mapping out a new territory — tracing changes in elemental content of eye pigment in health and in disease."

The human eye has two pigmented areas. The amount of black pigment (melanin) in the stroma and on the back of the iris determines eye color. The more melanin there is, the darker the iris is. Less colorful, but perhaps more important to sight, is the eye's second pigmented area, the retina pigment epithelium. Forming a black layer behind the retina, this "seems to be a reservoir of very essential elements," Panessa-Warren said. "When something goes wrong here, vision is altered." Two diseases in which this pigmented area of the retina may be a primary target are diabetes mellitus and retinitis pigmentosa, the progressive degeneration of the retina and these pigmented cells. Loss of visual acuity and ocular degeneration in the elderly may also start here.

At BNL, tissue samples from this area of the eye are analyzed on three different instruments. One of those is John Warren's scanning electron microscope, located in the Instrumentation Division. With its high resolution, LaB_6 gun and a stage adapted for x-ray fluorescence, the microscope can do electron beam induced x-ray microanalysis, x-ray fluorescence and scanning electron microscopy.

X-ray induced fluorescence spectroscopy (XRF) is also available at the Instrumentation Division. With Hobie Kraner's help, Panessa-Warren finds the XRF to be a convenient non-destructive method of measuring trace concentrations of a wide range of elements.

The third research technique available at BNL is PIXE, proton induced x-ray emission spectroscopy at the 3.5 MV research Van de Graaff in the Physics Department. Both Kraner and Keith Jones analyze samples and interpret data from PIXE. BNL is one of the few places in the world to do PIXE analysis of biological specimens, Panessa-Warren said, "because the interpretation of the data is so difficult."

Most samples examined on these instruments are from vertebrates with eyes that are analogous in structure to human eyes. "Animals give us experimental models for comparing data," Panessa-Warren said. "The real detailed, accurate analysis is done on human tissue. I get some human tissue through a donation program where people will their bodies directly to the Department of Anatomical Sciences at Stony Brook. Human eye tissue is so rare and valuable, that when we are lucky enough to get some tissue I rush right over here to analyze the samples."

Although much more study is needed to reach statistically valid conclusions, findings thus far have been exciting. For example, from limited studies of eye tissue of people with advanced diabetes, it appears that diabetic eyes contain more calcium than normal ones. To confirm this, Panessa-Warren will conduct experiments on the eyes of diabetic animals at various stages in the progression of the disease.

For the first time, Panessa-Warren said, "We have data on newborns and fetuses from human pathological tissue. We're beginning to see how elements localize in the developing eye. We're finding that the fetus has a very rich concentration of elements before it's born; after birth it's really totally dependent on the nutrients it takes in. Babies who have been on IV, particularly those who weren't able to take milk, showed markedly different elemental concentrations from the norm. Before this no one really knew how important ingested trace elements were to developing ocular tissues."

While still preliminary, these findings do indicate the potential importance of Panessa-Warren's research. "My work is dependent on collaboration," she said. "I can process the tissue at Stony Brook, but without the expertise here, it would be impossible. I don't think that this kind of interdisciplinary approach using PIXE, XRF and cell biology exists anywhere else in the country."

— Anita Cohen

Craft Exhibit

Opening night for the second BERA Members Craft Exhibit is Wednesday, February 17, from 4:45 to 7 p.m. in Room B of Berkner Hall. Come and meet the craftspeople who will be exhibiting their work. As you browse through the displays that evening, you can also enjoy some wine and sandwiches.

The exhibit will run through Wednesday, March 3. Hours are 9 a.m. to 5 p.m., weekdays only. Crafts on display will include pottery, needlework and carvings.

Astrophysicist (Cont'd)

National Nuclear Data Center (NNDC) a large reservoir of information about how high speed particles interact with materials. Much of this data has been assembled for calculations of how a neutron interacts with different elements at a whole range of energies. The data collections contain cross sections which indicate the probabilities involved when a particle strikes a nucleus: Will it produce a new particle? Will it simply slow down?

Astrophysics is a branch of astronomy that treats the physical properties of celestial bodies as well as their origin and evaluation. While it is not the usual application for this information, Spergel explains, "We're using existing things in a novel way, and these data files exist only at BNL. I couldn't do this anywhere else."

Collaborating with Len Slatest of the Computational Assistance Division in Applied Math, Spergel uses computer programs developed at BNL and elsewhere, along with the NNDC neutron cross section files, to predict the abundances of elements contained in meteorites. Spergel says, "Without the Lab's computers, I'd be unable to calculate how the neutron moves through materials, what interactions take place and what nuclei are formed."

Spergel also consults with associate physicist Otto Lazareth of DNE. An expert in radiation damage calculations, Lazareth can draw direct parallels between how neutrons move through reactor shielding materials and how they move through materials in celestial bodies.

Solid state physicist Paul Levy is another BNL scientist with whom Spergel consults. "He has extensive experience in all radiation problems," says Spergel. "We have interesting conversations — just 15 minutes are very useful. I come from a small college and I'm the only one there working in this field. That's another virtue of the Lab. It's a resource that lets me work with full-time researchers — to share their insights and stay abreast of what's happening."

By combining these human and informational resources, Spergel expects to learn about more than just the make-up of meteorites. The center of our solar system is the sun, around which revolve nine planets and an asteroid region, principally between Mars and Jupiter. Except for Pluto, all these bodies lie within 7° of the same plane — called the ecliptic. It is difficult and expensive to send probes outside of this planet to study the rest of the solar system, but, says Spergel, "Nature helps us out with meteorites and comets."

Both meteorites and some comets are believed to be asteroids that have escaped from the asteroid belt. Meteorites which land on Earth are extensively investigated in numerous laboratories and, in turn, these data are analyzed by Spergel to determine information about the solar system outside of the area occupied by planets.

Comets are icy asteroids that heat up as they approach the sun to become gaseous and glowing. Spergel calls comets "one of the most interesting pieces of our solar system because their gases represent the original ingredients of the solar system, cryogenically preserved." The comets may occasionally come close to the Earth's orbit. When Halley's Comet passes near the sun in 1986, both Europe and Japan will explore it using spacecraft. These will employ measurement techniques based on analyses such as those used by Spergel and his collaborators and developed for analyzing data obtained by NASA during the Voyager and Mariner missions. He hopes to have the opportunity to analyze data collected in those comet missions to increase his understanding of the beginnings of our solar system.

Techniques such as Spergel's are also being considered for more down-to-earth uses. With Paul Levy, he has been exploring their possible use in uranium prospecting. Remote sensing with large counters has been used to locate this rare element. The calculating techniques developed for determining the elements in meteorites should make it possible to determine the distribution of uranium in soils near the Earth's surface.

By sending a radioactive source down a test hole to activate the materials there, then sensing the gamma rays emitted, oil companies are able to determine the chemistry of a site. And NASA's Jack Trombka has been using similar techniques to monitor the Potomac River for poisonous trace pollutants.

From the sea to the stars, techniques like those used by Marty Spergel and his collaborators are helping to provide important information about chemical abundances and composition.

—Anita Cohen

Equipment Demo

Representatives of Phillips Information Systems will be on site Wednesday, February 17, at 3 p.m. to demonstrate their new MICOM 1001 portable Word Processor. The demonstration will take place in the conference room of Bldg. 725B at the monthly MICOM Users' Meeting and is open to anyone interested in word processing. Please call Lavina Richter, Ext. 2905, or Jeannette Thiede, Ext. 4548, for further details.

Select A Student

Completed applications for the 1982 Summer Student Program will be available for review in the Office of Academic Relations, Bldg. 460, 2nd floor, as of February 22. Guidelines regarding the selection of summer students have been distributed to research department offices. Staff members are invited to review applications and to select students to work under their supervision from June 7 to August 20.

Music From Marlboro

Tues., Feb. 16
Berkner Hall,
8:30 p.m.
Adults — $7
Students,
sr. citizens — $4
Under 18 — $3

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BERNICE PETERSEN, Editor
MONA S. ROWE, Assistant Editor
ANITA COHEN, Reporter

35 BROOKHAVEN AVE., UPTON, N.Y. 11973
Telephone (516)282-2345

Lawyer To Lecture

Margaret Bogosian, BNL patent lawyer, will be guest speaker at a luncheon meeting of Women in Science on Tuesday, February 16. Her topic will be "The Union of Law and Science."

Ms. Bogosian received a degree in Pre-Medical Studies from the Newton College of the Sacred Heart in Massachusetts, attended Columbia University College of Pharmacy, and received her J.D. degree from the Fordham University School of Law. She was a patent advisor for the Dept. of Health, Education, and Welfare and a patent attorney and general attorney for Hoffman-LaRoche, Inc. in New Jersey. Before coming to BNL, she was legal counsel for the Research Foundation of the City University of New York.

The meeting will be held in Room A, Berkner Hall, at noon, and Ms. Bogosian will speak at 12:30 p.m. Bring your own lunch. Everyone is invited.

BERA Sales Office

Tickets available:

Islanders Hockey

Tue.	Feb. 16	Pittsburgh
Tue.	Feb. 23	Chicago
Tue.	Mar. 2	Calgary
Thu.	Mar. 4	Toronto
Tue.	Mar. 23	Washington

Metropolitan Opera

Fri.	Feb. 26	Il Travatore
Tue.	Mar. 2	Il Travatore
Fri.	Mar. 19	Il Barbieri di Siviglia
Thu.	Mar. 25	Il Barbieri di Siviglia
Fri.	Apr. 2	Fidelio

Walt Disney's Magic Kingdom Club membership cards are distributed to on-site employees free-of-charge.

The BERA Sales Office is located in Berkner Hall and is open Monday through Friday from 9 a.m. to 1 p.m. Call Pat Manzella on Ext. 3347 to answer any questions.

Camping Club

The regular monthly meeting of the BNL Family Camping Club will be held on Thursday, February 18, at 8 p.m. in the Recreation Building.

Call Club Chairman Chuck Watson, Ext. 5317, for more information.

Arrivals & Departures

Arrivals

Saed Mirzadeh ..... Chemistry
John G. Trunk ..... Biology

Departures

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

Joseph G. Albergo ..... Staff Services
Barry L. Burns ..... Accelerator
Wilbourne A. Cameron ..... S.&E. Prot.
Terence C. Wesley ..... Physics

Dramatic Recital By Black Poet

A dramatic, rhythmic poetry recital — *The Many Facets Of Lindamichellebaron* — will be presented in Berkner Hall next Thursday, February 18, as the third major event in a month-long celebration of Black History being sponsored by the BNL Afro-American Culture Club.

Lindamichellebaron is a published poet and an experienced dramatic performer. *The Sun Is On,* a book of poetry for children, is her most recent publication, joining earlier works such as *Black Is Beautiful And...,* and *Going Through Changes.* Her poetry has also been included in an anthology edited by Ruby Dee and has been aired on Public Broadcasting stations. Her recital will begin at 8 p.m. and tickets will cost $2 each.

The last two events in the series will be *Hats,* a dramatic tribute to Harriet Tubman by Saundra Dunson-Franks (Saturday, February 20, 8 p.m., $6 and the *Bill Mackey Dance Theatre* (Friday, February 26, 8 p.m., $8). For planning purposes, advance sales are very important. Tickets for all remaining events can be purchased from Berthel Beckton, Ext. 4432; Mary Durham, Ext. 7981; Renee Flack, Ext. 3316; Michele Henderson, Ext. 4303, and Deidre Seymore, Ext. 5037.

"Malcolm X" Part 2

Part two of the documentary film "Malcolm X" will be shown on Thursday, February 18 in Berkner Auditorium at noon and again at 12:35 p.m. The film is free of charge and sponsored by the Afro-American Culture Club.

Afro-American Club

A general meeting of the Afro-American Culture Club will be held on Wednesday, February 17 at noon in Berkner Hall, Room D.

Progress of Black History Month events will be reviewed.

Plants In Water

If you've got a heavy hand with the watering can, the Cooperative Extension Association of Suffolk County suggests you grow indoor foliage plants that seem to adapt themselves well to growing in water, rather than in a soil mix. Such plants include the common Aglaonema (Chinese evergreen), Syngonium (nephthytis) and many varieties of ivy and philodendron. You might also try the coarse-textured dieffenbachia. Cuttings of the wax begonia will last a few months and add color in a sunny window.

Bowling

Pink League

R. Rosati bowled a 210, D. Johnson 170/177, H. Keeley 195, J. Thiede 176, C. Tyler 175/162, M. Connelly 171.

Red & Green League

R. Wiseman rolled a 201/224 for a 618 scratch, 672 gross series, R. Brown 207, E. Gill 200, H. Marshall 210/200/203 for a 613 scratch, 685 gross, R. Barberich 225/201, 608 scratch, 659 gross, M. Iarocci 233, E. Sperry IV 201, R. Larsen 210/233, 634 scratch, 661 gross, G. Spira 207, R. Sick 200, J. Ferrero 204.

White League

The only high game bowled was a 234 by B. Jones.

Scotch Doubles Tournament

A Scotch Doubles Bowling Tournament, open to all, is set for Sunday, March 7, at 2 p.m. at Port Jeff Bowl. Rules and entry blanks can be obtained at the BERA Sales Office in the Cafeteria, or by calling John Connelly, Ext. 3566.

They're A Joy To Work With

Congratulations to Arlene Benkenstein and Harry Klein whom we have selected as BNL's No. 1 Valentines based on letters from their co-workers.

Although it's obvious that both Valentines are sweethearts, our decision was made difficult by the quality and quantity of the other nominations we received. There are a lot of special people at BNL, including Inan Feng, Biology; Dorothy Greco, C&P; Kay Hunt, Personnel; Fran Hydoski, Fiscal; Anne Katz, Biology; Eileen Kosloski, Reactor; Jean Lauer, ASDP; Anne Mauro, Directors Office; Ella McLean, P&GA; Dorothy Metz, Staff Services; Robert Mitchell, DEE; Joan Perullo, Staff Services; Helga Perozzi, P&GA; Richard Scheidet, Plant Engineering; Michael Stachnik, Plant Engineering; and everyone in Staff Services' Transportation, Travel and Housing Offices.

Mort Rosen

Harry Klein

Mort Rosen

Arlene Benkenstein

We, the staff and friends of the Division of Contracts and Procurement, do hereby nominate Mr. Harry Klein for our special Valentine. He always has a smile and a witty comment for all his co-workers. Even people outside of our department enjoy his winning ways. Please make him a special Valentine in the February 12 issue of the Bulletin. (All you have to award him is a bagel and he'll be thrilled!) Please consider this petition a vote for each signature.

WE'RE JUST MAD ABOUT HARRY!!! —Signed with hearts by 37 of Harry's colleagues.

Our nomination for a BNL Valentine is Arlene Benkenstein, a Facilities Office Assistant in Bldg. 452 for the Mechanical and Electrical Divisions of Plant Engineering.

She is a real sweetheart to work with. Her nice smile and disposition cheers everyone up, makes work a real pleasure. She is everyone's girl Friday, always willing to do whatever work anyone asks of her.

We the undersigned vote for Arlene. —Signed by 96 of her co-workers, who also sent a heart-shaped sign proclaiming that "Arlene is our Valentine."

Diners Note

The Center Club will be closed Sunday, February 14, the day preceding Washington's Birthday. However, it will be open on Monday evening, February 15, at 5 p.m.

The Cafeteria will be open from 9 a.m. until 2 p.m. on Saturday, Sunday and Monday, February 13, 14 and 15.

The Vended Food Service in Building 912 is in operation continuously.

Cafeteria Menu

Week Ending February 19, 1982

Monday, February 15
Snack bar service, 9 a.m. to 2 p.m.

Tuesday, February 16

Beef noodle soup	(cup)	.55
	(bowl)	.65
Southern fried chicken & 1 veg.		1.75
Batter fried steak & 1 veg.		1.85
Hot Deli: Meatloaf w/BBQ sauce	(bread)	1.75
	(roll)	1.85

Wednesday, February 17

French onion soup	(cup)	.55
	(bowl)	.65
Roast turkey w/stuffing & giblet gray		1.80
Meatcakes & onions w/1 veg.		1.75
Hot Deli: Corned beef on rye		1.75

Thursday, February 18

Turkey & rice soup	(cup)	.55
	(bowl)	.65
Meatballs a la mode over noodles		1.75
Sauerbraten & potato pancakes		1.85
Hot Deli: Monte Cristo		1.80

Friday, February 19

New England clam chowder	(cup)	.60
	(bowl)	.70
Breaded filet of fish & 1 veg		1.75
Tuna noodle casserole		1.70
Hot Deli: Italian meatball hero		1.85

To Stop A Thief

Don't be careless with your own or government property. Make sure that everything is secure when you go home at night. If you see this card in the morning you'll know that you have forgotten.

WE NEED YOUR HELP

PLEASE SECURE ALL PERSONAL AND GOVERNMENT PROPERTY

BNL POLICE

The BNL police will leave this notice behind when they make security checks and find something left out in the open when it should have been put away. So make a mental note to lock up before you leave.

Indoor Tennis

On Friday, February 19, a new system for reserving the gymnasium court will go into effect. (The court is available from 5 p.m. to 9:30 p.m. on Tuesday, and 1 p.m. to 5:30 p.m. on Sundays.)

Reservations will now have to be made in person at the BERA Sales Office in the Cafeteria, between noon and 1 p.m. on Monday for play the next day, and between noon and 1 p.m. on Friday for play the following Sunday.

Players are reminded that they are limited to one hour of court time each per week for singles, or two hours each per week for doubles.

Volleyball

Mixed League Standings as of 2/8/82

A Division

Mixed Ups	3-0
Dinkers	2-1
Teddybares	2-1
High Society	1-2
Las Bolas	1-2
Nuts & Bolts	0-3

Teddybares over High Society 15-1, 4-15, 16-14. Mixed Ups over Nuts & Bolts 15-5, 15-12, and 15-12. Dinkers over Las Bolas (upset of the evening saw Las Bolas take one game from the Dinkers) 15-8, 10-15, and 15-8.

B Division

End of 3rd Quarter

Puff & Stuff	14-1
TNT	11-4
Semi Tough	10-5
KMA	3-9
Quirks	2-10
Big Boopers	2-13

Puff & Stuff over Semi Tough 11-15, 15-8, 15-8. TNT over KMA 15-1, 15-10, 15-12. Big Boopers over Quirks 15-11, 16-14, 5-15.

Congratulations to Puff & Stuff who will be in the Playoffs at end of the season. **Remember** — no games next Monday (2/15/82).

Open League Standings as of 2/3/82

Spikers	10-2
Burnouts	8-4
Line One	7-5
Toga	6-2
Brewmasters	5-3
Pickups	0-8
Roga	0-12

Classified Advertisements

Placement Notices

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

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

The vacancies listed below have been exempted by the Director's Office from the current freeze on open requisitions.

LABORATORY RECRUITMENT: Opportunities for present Laboratory employees.

1656. MAIL CLERK - (Labor Grade 4) Staff Services Division.

OPEN RECRUITMENT: Opportunities for present Laboratory employees and outside applicants.

1657. REFRIGERATION AND A/C ENGINEER -Requires competence with trouble-shooting, repairing, installing and operating commercial/industrial air conditioning and refrigeration equipment including steam absorption, centrifugal and helical screw refrigeration machines. Successful completion of refrigeration and A/C apprenticeship program or related coursework is highly desirable. Must be available to work shifts as required. Plant Engineering Division.

Autos & Auto Supplies

MAG WHEELS - 15", fits Chev. Both $25. Ext. 4229.

76 TOYOTA COROLLA - wagon, 5 spd overdrive, a/c, am/fm, cass., luggage rack, excel. cond., $2,550. 281-8274.

68 VW - recond. eng., new clutch, new paint, very clean. Must be seen. $1875. 281-2431.

80 KAWASAKI - Z-1 classic, 1000 cc, fuel injected, 1800 mi., mint cond. John, Ext. 2964.

75 OLDS - Cutless Supr. Spt. Cpe., auto., 260 V8, stereo cass., swivel front seat, powder blue, white int., immaculate. Asking $2800. Ext. 3381 or 286-1024.

73 OLDS - excel. running cond., am/fm stereo, 8-track, full power. Ext. 4835 or 289-9811 after 6 p.m.

80 SUZUKI - GS1000L, shaft drive, luggage rack, many extras, warranty, $3,000. Ext. 7745 or 981-9474.

66 T-BIRD - body in good cond., runs, best offer. Alex, Ext. 2336 or 421-1173 eves.

70 NOVA - poor appearance but runs well. Cheap, $150. Darryl, Ext. 4375 or 399-3882.

67 FORD TRUCK - F250 with camper, showroom cond., must see. $4,000 firm. 732-3338.

62 CHEVY - original 34,000 mi., 283 motor, runs excel., needs restoring, $395. 732-3338.

72 DODGE COLT PARTS - glass, doors, wheels, radiator, etc. 732-3338.

70 FORD - Maverick, auto., new paint, tires, etc. Good MPG, excel. cond. Avail. Feb. Ext. 7112 or 3017 eves.

68 VW BUG - no rust, good interior, extra parts, $750. 475-3415 p.m.

SNOW TIRES AND RIMS - 8.25-15, 175R-15, 165-15, $8/ea. Ext. 4613.

74 VEGA - Std., R&H. 422-0545 after 6 p.m.

79 MGB - 30,000 mi., am/fm 8 track stereo, 2 tops, new brakes & tires, garaged, showroom cond., must sell. 878-0516.

74 PONTIAC CATALINA - 4 dr., hdtp., ps/pb, a/c, body good, needs some mech. work. $775. M. Rosen, Ext. 2382.

1981 CHEVY CHEVETTE - 4 sp., sun roof, am/fm stereo, good mpg., clean, rustproof. Jimmy, 878-4506.

76 DATSUN 710 - New tires, batt., 4 dr., excel., 30 mpg. Bermudez, Ext. 7953 or 282-3117.

80 SCIROCCO - 4 spd., am/fm, metallic dark green, excel. cond., 25,000 mi., $6,750. Ext. 2525.

DUNE BUGGIES - (2) VW, fiberglass, less engine, street-legal, $150 & $250. Augie, Ext. 2419.

80 KAWASAKI - 250 LTD, windshield, sissy bar, luggage rack, full face helmet, like new, $850. 281-8911.

75 CADILLAC - El Dorado, moon roof, pwr. seats, all pwr. opt., $3,000. 744-3968 after 6 p.m.

Boats & Marine Supplies

COLUMBIAN WOOD BOAT - 28 ft., sleeps four, galley, deep finder compass, good cond. $3000. 399-2149.

FIBERGLASS BASS BOAT - 16 ft., 1979 Charger Inc., $1,500. Ext. 4543, 3365 or 744-7577, 473-1456.

ELECTRIC BOAT MOTOR - 10.5 lbs., thrust, like new cond., $55. 286-0353.

8' PRAM - Excel. cond., good for fishing, hunting, kids, $100. Pete, Ext. 3406 or 399-6278 eves.

Free

DOG - approx. 1 yr. old, Lab/Collie mix, excel. disposition, needs loving family w/children. Joe, Ext. 7961 or 878-2655 eves.

Miscellaneous

FREEZER - $200; b/w TV, needs repair, $25; shag rug, $40; girl's bike, $45. Paul, Ext. 4156.

BATH TUB - antique, ball & claw foot, 4 ft., rare type. Also sink, $175.00 firm; girls bicycle, 26", $20; file cabinet, $12; wheels for 1958 Ford truck; antique grinder, treadle type, $65 or best offer. 732-3338.

RANGE - Tappan, exc. cond., free standing, 2 broilers, 2 ovens. Orig. cost $650. $200 firm. 654-0812 after 5 p.m.

GOLDEN RETRIEVER PUPS - AKC registered, $250. 473-1175 after 5 p.m.

JET PUMP - 3/4 hp. deep well, micromet feeder, 30 gal. tank, $75. 286-0795.

JACKET - Mouton lamb, fits sz. 12-16. Good cond., $75. 475-0144 after 6 p.m.

LOVE SEAT - tan plaid upholstery, nearly new, $75. 286-0384.

PEDESTALS - (3) in graduating szs., burlwood, can be used for sculptures or plants, 3/$40. Louisa, Ext. 4207 or 286-2251.

HORSES - (2), gentle, Pinto mare, Bay Gelding, ribbon winner. 698-4006 or 732-1393.

BARBER CHAIR - porcelain, 1940's, great conservation piece, $150; electric barber pole, $120. Mike, 669-9482.

BASF CASSETTE TAPES - ferrite, chrome FeCr & Metal. Ext. 2521 or 928-8379 eves.

ATARI VIDEO GAME - w/extra paddles, $125; (13) cassettes, $325. Both for $400. Eric, Ext. 2973 after 5 p.m.

PANELS - (12), pinch-pleat, 96" long, off-white, attached 18" valance, 6 w/gold, 2 w/blue, 2 w/green, 2nd valance, $5/panel. 281-7844.

P.A. SPEAKERS - Cerwin-Vega V-32, w/covers, mint. cond., $500/pr. firm; Roland Space Echo, excel., $300. Ext. 4661 or 363-2614.

SEARS BATTERY - 48 mo. maint. free, new, cost $62, under Sears guar., $40. Ext. 2483.

HIGHCHAIR - $9; 7' cutting edge for snowplow, $30; Smith-Corona (Corsair Deluxe) portable typewriter, $18. 727-1617.

C.B. RADIO - Midland, $65; 50' Coax, $20; 12 volt converter, $10; Big Stick antenna, $30, good cond., all for $100. 727-1617.

ICE SKATES - Hockey Colt, sz. 4, used 1 season, like new, $15; ladies coat, full length, mink paw, cust. made, sz. 10-12, $250. 286-0353.

TRANSITE PEGBOARD PANELS - 4'x8'x1/4", cost $48/ea., asking $22/ea., have 350 on hand. 286-1522 eves only.

INFANT CARRIAGE/CAR BED - $25; changing table, $20; diaper pail, $3; infant tub, $2. Cecilia, Ext. 3117.

KEROSENE STOVE - old type, brand new, never used, container incl., $50. Willie, Ext. 3696.

OIL BURNER - model B2-1, rate 1/2 gals/hr., fan 1/6 hp, 1725 rpm, $50. Ext. 4613.

FIREWOOD - split, seasoned oak, 4'x16'x18", delivered, $110. 924-4284 or 924-3919.

MUSICAL NURSERY LAMP - $20; Biltrite couch-type baby carriage, $45; 10 gal. fish tank, $10. Don, Ext. 7611.

HIGHCHAIR - iron; folding bed; electric cooker (Slo-Pulse); quartz heater. 924-4991.

YARN - custom blended, by the oz. or lb. Jean, 698-6345.

TYPEWRITER - Adler, manual port. w/case, good cond., $65. Marian, Ext. 3552.

HARMON KARDON RECEIVER - 25 wrms, $25; Garrad AT6 Shure cartridge, $10; AR4AX speaker, $25. Bill, Ext. 3452.

CATCHERS MITT - Regent, like new, $15; ski boots, Henke, womans sz. 5, leather w/buckle, $10. Georgia, Ext. 2772 or 286-8869.

KEROSENE HEATER - Corona 22DKG, used twice, $150; 55 gal. drum, never used, $30. Leslie, Ext. 2093 or 473-4938.

FURNITURE - contemp., good cond., liv. rm. couch, 2 chairs, dinette set. Franz, Ext. 7103 or 744-3235.

PORCELAIN BATH TUB - antique. 928-8522.

CASTRO CONVERTIBLE - 2/pc. sect. sofa w/match. chair, good cond., $200. Ext. 5272 or 281-2767 eves.

FREE PUPPY - German Shepherd mix. Regist. Cairn Terrier pup, orig. price $350, asking $175. 924-4054.

FUJI BIKE - Grand Tourer, 12 speed, black, excel. cond., water jug pump, must see to apprec., $175. Ron, 878-1731.

PENTAX 35MM CAMERA - F1.8, 55mm w/bellow units, $90; G.E. port. cooler, excel cond., $95. Ext. 7547, 7110, or 282-9346.

AURORA CAR RACING SET - new power transformer, extra tracks & cars, hardly used, like new. Mark, 744-8063.

C.B. TOWER - 40', tilt, Wilson "Y" quad antenna, rotor, cable & many other extras, $150; all wood credenza, beautiful for dining rm. or liv. rm.; black Japanese Silkie chickens. 751-5539.

RUG - 12x15, Karastan, avoc. green., very gd. cond., pad incl., $190; chair, blk. naugahyde, excel. cond., $85. Ext. 3652 or 744-5866 eves.

NIKON CAMERA - F2.0 & F135, lens, flash, camera bag, compl. $275. Jim, Ext. 4452 or 543-0079 after 6.

Real Estate

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

For Sale

PT. JEFF/MT. SINAI - 4 bdrm, colonial, wooded 1/2 acre, fenced yd., pool, coal stove, w/w carpet throughout, washer/dryer, refrig., dishwasher, 2 car garage, many extras. 8 miles to Lab. $60,000. 331-9171.

SELDEN - 100' x 175' prop., city water. $10,500 firm. 732-3338.

FARMINGVILLE - mother-daughter, corner prop., near everything, beautiful location, 110' frontage x 165' depth. $56,000. 732-3338.

WADING RIVER - 3 bdrm., older brick home, adj. to Wildwood Park & priv. beach, beautifully renovated, h.w. floors, pvt. 1 bdrm. apt on sep. floor w/pvt. ent., ($250-$300/mo.), landscaped wooded lot, 80'x100', treed st., nice neighborhood, low taxes, Riverhead schools, $55,500. 929-4180 before 10 p.m.

MATTITUCK - the orig. handyman's special., deeded dockage rights on, & view of Mattituck inlet, approx. 1400 s.f. frame on 46,000 s.f. wooded lot. 298-9594.

RIDGE - 3 bdrm ranch, l/r, kit., d/r, lg. den, music room, full basement, energy eff., (12" insul.), 2 stoves, 1 coal & 1 wood, 2 car gar., 3/4 acre, $62,000. Ext. 3496.

MIDDLE ISLAND - 3 bdrm., colonial, wooded 2-3/4 acres, eik, l/r, d/r, den w/fireplace, s/s, w/w carpet, 2 baths, apt. in basement, kennel, 924-4054.

YAPHANK - 4 mi. from Lab, 3 bdrm. ranch, new oil hot water heat, full heated basement, 2 lg. rms in rear, 1/2 acre, 7% assumable mortgage, $26,000 cash. 924-6895.

MILLER PLACE - contemporary ranch w/$-saving heat, 4 bdrms, eik, l/r, den, fenced yard, excel. cond., Rustic Acres. $72,500. 331-3724.

For Rent

MIDDLE ISLAND - 1 bdrm. priv. apt., util. incl., single male preferred. By appt. 732-9851.

STONY BROOK - 3 bdrm. house, fireplace, waterfront, walk to Univ. & stores. Avail. March. 928-8522.

ROCKY POINT - 4 rm cape, furn., 2 blocks from water on 0.4 acre. Avail. through mid June, $325/mo. plus util. 928-1339.

PORT JEFF VILLAGE - 1 rm., furn./unfurn., pvt. ent., pvt. bath, $250/mo. util. incl. 473-7739.

SETAUKET - colonial, 4 bdrm., l/r, d/r, f/r, full basement, 2 car garage, mint. cond., walk to Univ. (SUNY). Avail. in March. Ext. 2611 or 751-3702.

Car Pools

WADING RIVER - wanted to enter or form car pool, Cliff Rd. area. Ext. 2946.

BABYLON/WEST ISLIP - fourth driver needed. Ext. 2500.

HAUPPAUGE/SMITHTOWN - drivers needed for car pool. Ext. 2632.

Wanted

CAMPBELL'S SOUP LABELS - for St. Mary's School, East Islip. Send to F. Chandler, Bldg. T-89. Frank, Ext. 2311.

EXERCISE BIKE - w/tension knob. Susan, Ext. 4267.

BOAT TRAILER - for 23 ft. centerboard sailboat. Joe, Ext. 7961 or 878-2655 eves.

OUTBOARD ENGINE - 80 hp., Mercury, '78 or newer with low hours. Excel. cond. only. Ken, 924-3756.

BEETLE CAT - in reasonable or repairable cond. John, Ext. 7611 or 331-3516.

CUBSCOUT UNIFORM - sz. 8, in good cond. Ext. 4576 or 281-3093.

JEEP/FORD RIM - (1) 15"x8", preferably white spoke, apt. sz. washer. Toni, Ext. 2907.

TRAINS - Lionel, American Flyer access., any cond. brings good price. Carole, Ext. 3362 or 924-4097 eves.

COLLETS - 5C, 1/2" to 1-1/8", 32nds, 64ths szs. George, Ext. 3536.

HOUSE TO RENT - Stony Brook, for sabbatical visitor, Aug. 1982, for 1 yr. 286-9256.

ROLL TOP DESK - Barbie doll collection; girls 20" bike. 924-4991.

CHAIN LINK FENCING - 5 or 6'. Liz, Ext. 2082 or 286-8563.

USED CANOES - paddles, life jackets, etc. Ext. 4660.

TRAINS - Lionel, any "O" gauge or "027" gauge cars, track and equip. Frank, Ext. 3120.

BLACKBOARD - for small class instructions. George, Ext. 3636.

GOOD HOME - for 16 mo. old, female, Doberman. 924-9212 after 7 p.m.

Services

Services are listed as a courtesy to BNL employees. They are neither screened nor nor recommended by the ***Bulletin.***

TYPING - 744-4047.

INCOME TAXES - prepared by professional accountant, very reasonable rates. Bob, 286-5829 eves. and weekends.

PLUMBING & HEATING - Lab discount. John, 654-8189.

INCOME TAX - prepared by exper. tax attorney, reasonably priced. 666-4033.

INCOME TAX - exper. preparer, very reasonable rates. Federal long form only $16. Bill, 821-9081 anytime.

INCOME TAX - prepared by tax consultant, your home or mine. Reasonable. John, 732-2472.

CARPETS INSTALLED - quick, dependable service. Repaired free. Estimates, Jim, 821-0187 after 5 p.m.

KNIVES SHARPENED - on flat stone, razor edge. $10 per knife. Dave, Ext. 4755.

BABYSITTING - 5 min. from Lab. Kathy, 281-5605.

BABYSITTING - reliable and experienced 13 yr. old. 15 min. from Lab. Tracy, 281-2396.

T.J.'s AUTO SHAPING - cleaning, waxing, small repairs. Tim, 281-7873 after 4:30.

PAINTING - wallpaper hanging, renovation work, reason., reliable, prompt svc., free est. 929-4180.

SMALL APPLIANCE REPAIRS - vacuums, typewriters, heaters, sew mach., etc. No. Patch. 654-3900.

AUTOMOTIVE REPAIRS - tune-ups, Lab discount. Glenn, 281-7873.

FINANCIAL ADVICE - professional management, stocks, bonds, tax-free income, IRA's, regist. broker. Gene, 829-9168.

BABYSITTING - reliable mother, on-site apt. Mrs. May, Ext. 4360 or 689-9644 after 5 p.m.

HOUSESITTING - by student. Will care for animals, plants. Brookhaven refs. avail. Valerie, Ext. 4357.