

Binge Eaters' Dopamine Levels Spike At Sight, Smell of Food

Evidence that brain's reward/motivation circuits are linked to compulsive overeating

A brain imaging study at BNL reveals a subtle difference between ordinary obese subjects and those who compulsively overeat, or binge: In binge eaters, but not ordinary obese subjects, the mere sight or smell of favorite foods triggers a spike in dopamine — a brain chemical linked to reward and motivation. The findings — published online on February 24, 2011, in the journal *Obesity* — suggest that this dopamine spike may play a role in triggering compulsive overeating.

"These results identify dopamine neurotransmission, which primes the brain to seek reward, as being of relevance to the neurobiology of binge eating disorder," said study lead author Gene-Jack Wang, a physician at BNL and the Mount Sinai School of Medicine (MSSM). Previous studies conducted by Wang's team have identified a similar dopamine spike in drug-addicted individuals when they were shown images of people taking drugs, as well as other neurochemical similarities between drug addiction and obesity, including a role for dopamine in triggering desire for drugs and/or food.

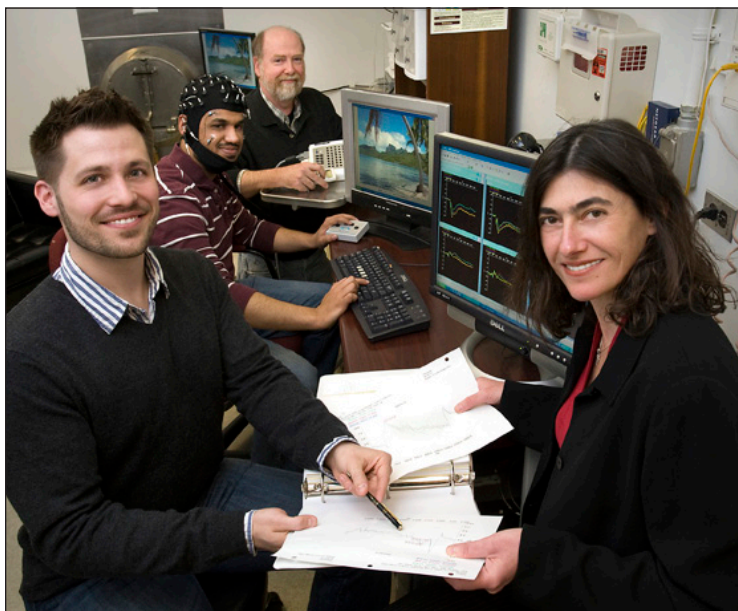
"In earlier studies of normal-weight healthy people who had been food-deprived for 16 hours, we found that dopamine releases were significantly correlated with self-reports of hunger and desire for food. These results provided evidence of a conditioned-cue response to food," Wang said.

In the current study, the researchers suspected that binge-eating obese subjects would show stronger conditioned responses to food stimuli when compared with non-binging obese subjects.

"Understanding the neurobiological mechanisms underlying food stimulation might point us toward new ways to help individuals regulate their abnormal eating behaviors," Wang said.

The scientists studied 10 obese people with a clinical diagnosis of binge eating disorder, based on evaluations at St. Luke's-Roosevelt Hospital (SLRH), and eight obese subjects who were not binge eaters.

The scientists used positron emission tomography (PET) to scan the subjects' brains after injecting a radiotracer designed to bind to dopamine receptors in the brain. Because the tracer competes with the brain's natural dopamine to bind to these receptors, the signal picked up by the PET scanner provides an inverse measure of the brain's dopamine levels: a strong signal from the bound tracer indicates low levels of natural brain dopamine; a low signal from the tracer indicates...
See Binge Eating on p. 3



From left: Jonathan Dunning, SBU; Muhammad Parvaz, BNL/SBU, wearing the "event-related potential" cap; and Thomas Maloney, Rita Goldstein, BNL

Cocaine Images...New Findings

Cocaine images capture motivated attention among users, but recent drug use diminishes response to drug images and other emotional stimuli over time

Scientists at BNL and Stony Brook University (SBU) have conducted the most comprehensive study to date of how cocaine users respond to drug-related and other emotional stimuli, making use of comparisons with a matched control group and exploring the effects of recent cocaine use and abstinence. The findings appear in a paper published online in the *European Journal of Neuroscience*.

Using measures of brain activity over time, the scientists found that images depicting cocaine use immediately captured motivated attention among both active and abstinent cocaine users — similar to the way other pleasant and unpleasant emotional images captured their attention compared with less evocative neutral scenes. But while abstinent cocaine users generally retained this heightened attentive engagement, those who had used cocaine within the past three days quickly lost their sensitivity, first to pleasant and then to drug-related and unpleasant

evocative images — all within a mere 2,000 milliseconds.

"Though a dampened response to drug images might appear helpful in those struggling with addiction, the impaired response to other emotional stimuli among recent cocaine users could indicate a general difficulty in sustaining motivated attention," said Rita Goldstein, Director of BNL's Neuropsychology Group. "Impairments in sustaining non-drug-related, goal-oriented motivation could predispose addicted individuals to drug use as a way to compensate for their reduced response to other reinforcement — including the rewards that would come from not taking drugs," she said.

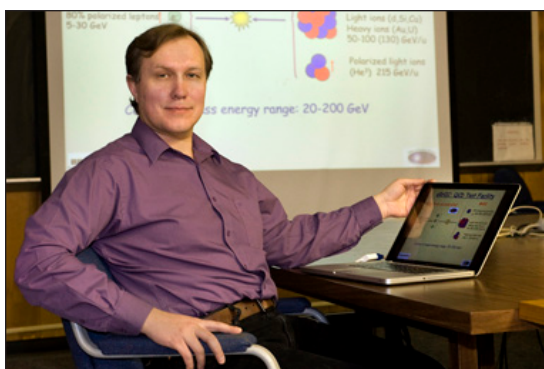
The scientists studied 28 people addicted to cocaine who had used the drug within the past three days, 27 addicted individuals who had not used it in that time, and 29 healthy control subjects. Using a "cap" of electrodes placed externally on the scalp, the...

See Cocaine Images on p. 2

Eight BNL Scientists Receive Tenure

Brookhaven Science Associates (BSA) granted tenure to eight BNL scientists, effective December 1, 2010. The scientists are Elke Aschenauer, Physics Department; Mary Bishai, Physics Department; Vasilis Fthenakis, Sustainable Energy Technologies Department; Peter Petreczky, Physics Department; Vadim Ptitsyn, Collider-Accelerator Department; Jianwei Qiu, Physics Department; Jian Wang, Environmental Sciences Department; and Lin Yang, Photon Sciences Directorate.

Tenure appointments are made after a rigorous selection procedure culminating in a comprehensive review of each tenure case by the Brookhaven Council, an elected body that advises the Director on matters of concern to the scientific staff. The BSA Science & Technology Steering Committee oversees the tenure process and makes final recommendations to the BSA board. The newly tenured scientists are being featured in alphabetical order; below are summarized the contributions of Vadim Ptitsyn and Jianwei Qiu.



Vadim Ptitsyn

Physicist Vadim Ptitsyn, Collider-Accelerator Department (C-AD), was granted tenure for his original and innovative applications of Siberian Snakes, which are specialized magnets that keep particle spins aligned during their acceleration, and spin rotators, both in the Relativistic Heavy Ion Collider (RHIC); and for his leading role in the development of the future polarized electron-ion collider, a key project for the future of nuclear physics at BNL.

"Vadim has made outstanding scientific contributions to the RHIC spin program from its very inception," said C-AD Chair Thomas Roser. "He brought to BNL the scientific knowledge,...
See Vadim Ptitsyn on p. 2

BNLer Julius Hastings: Senior Chemist Emeritus

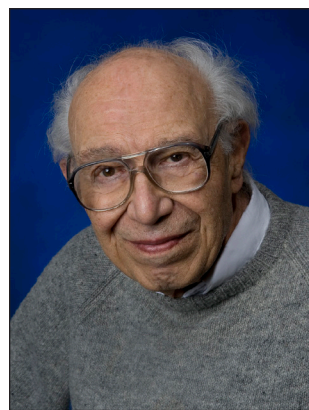
Julius Hastings, Chemistry Department, who joined BNL in 1947 soon after it opened, has been named Senior Chemist Emeritus for his distinguished contributions to the Laboratory, particularly in the area of neutron scattering research. Although Hastings retired in 1987, he maintained his full work schedule until the closing of the High Flux Beam Reactor in 1999.

Hastings came to BNL with a Ph.D. in chemistry from Cornell University and experience as a chemist at Monsanto Chemical Company in Dayton, Ohio. He was the first Ph.D. hired in the BNL Chemistry Department, and he rose to become a senior chemist in 1960.

When he first arrived at BNL, the former Camp Upton site looked more like an Army site than a laboratory. "The Chemistry Department was located in Building 459 [currently the home of administrative computing and the Human Resources training room], and there were no laboratories at first," Hastings recalled. "Later, the department moved to Rochester Street, where it was located in a series of single-story, concrete buildings with lab facilities. I worked there until the Chemistry Department building [Bldg. 555] was completed in 1966."

Early Work

Hastings was interested in studying the structure of materials using neutron scattering, but the Brookhaven Graphite Research Reactor (BGRR) would not be operating until 1950.



Until then, he worked on mass spectrometry experiments, including one, suggested by former Laboratory Director Maurice Goldhaber, which determined the age of the elements.

A 1951 publication by

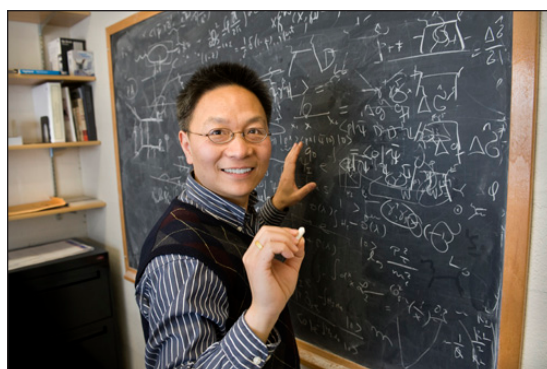
Hastings and colleagues reported on the measurement of the half-life of Iodine-129, which was essential for determining the age of the elements, and, therefore, fundamental in establishing the age of the Earth. They determined that the age of the elements was 3.6 billion years, which compares favorably with the current estimate of 4.5 billion years as the age of the Earth.

BGRR: New Research

After the BGRR began operations, Hastings began using neutron beams at the facility to study magnetism. In 1959, Hastings and his BNL collaborators Lester Corliss and Richard Weiss studied the atomic structure of chromium. In that experiment, they were the first to observe a modulated magnetic structure, an unusual phenomenon in which magnetic moments form spirals. The magnetic moment of the chromium atom arises from the spin of its unpaired electrons. The unusual structure of chromium is still a subject of intense study today.

HFBR Design & Research

By 1956, it became apparent that a new reactor was needed for certain experiments that required greater neutron...
See Julius Hastings on p. 2



Jianwei Qiu

Senior Physicist Jianwei Qiu was granted tenure for his pioneering work and world leadership in elucidating the theory of strong interactions, quantum chromodynamics (QCD), and its applications to the structure of the nucleon and of nuclei. His outstanding contributions on the spin, flavor, and momentum distribution of quarks and gluons in hadrons and atomic nuclei have had a significant impact on experimental studies of QCD at a wide range of experimental facilities, including the Relativistic Heavy Ion Collider (RHIC).

After an international search, Qiu was recruited to the Physics Department at BNL in 2009 from Iowa State University (ISU), where he was a full...
See Jianwei Qiu on p. 2

Vadim Ptitsyn from p. 1
...skills, and tools needed to accelerate and collide spin-polarized beams for the first time, he can synthesize theoretical work with hands-on work, and his versatility makes him capable of dealing with a wide range of accelerator problems. He is eminently suited to a tenured position at BNL."

Ptitsyn earned his Ph.D. in physics from BINP, Novosibirsk, in 1997. He came to BNL in 1997 as a postdoctoral research associate. A key early contribution was the Siberian Snake design and spin rotators he developed for RHIC, which included smaller aperture magnets while improving beam dynamics at significantly reduced engineering cost. He was involved in the operation of RHIC polarized beams, dedicated beam experiments for better understanding beam orbit corrections, investigating the role of electron clouds in beam instabilities, and improving RHIC beam luminosity. His leading role in the design of the future polarized electron-ion collider led to the choice of a linac-ring design as the high luminosity option. His accelerator expertise is internationally recognized and accelerators around the world have benefited from his advice and participation in design and project issues. — Liz Seubert

In Memoriam

Kurt Fuchel, who came to the Applied Mathematics Department as a programmer II on June 21, 1960, and retired on September 30, 1995, as Manager of the Information Technology Division's (ITD) Acquisitions, died at age 79 on January 24, 2011. He had returned to ITD as a guest computer scientist from January 5, 1996, to September 29, 1998.

James Trombacco, who joined BNL as a hazardous waste technician on May 28, 1996, and retired from the Waste Management Division on January 2, 2009, died on March 27, 2011. He was 68.

Charles Spillett, who joined the Plant Maintenance Division as a laborer on January 20, 1964, becoming a building and grounds utilityman, then a driver, and later, a rigger, and lastly, rigger group leader, died at age 74 on March 21, 2011. He had retired on May 31, 2000.

Cocaine Images from p. 1
...scientists took measures of brain activity while the subjects viewed selected pleasant, unpleasant, neutral, and drug-related images, capturing data at three time intervals — within 300 milliseconds, 400–1000 milliseconds, and 1000–2000 milliseconds after each image was shown.

"These event-related potentials (ERPs) are a direct measure of neural activity and are ideally suited to study the time-course of attentive engagement with emotional and drug-related stimuli in addition," said SBU graduate student Jonathan Dunning, first author on the paper, who worked on this project in collaboration with Rita Goldstein and Greg Hajcak, his advisor at SBU.

The earliest measure showed that all subjects paid heightened attention to drug-related, pleasant, and unpleasant images compared to neutral ones. But in the next time interval, only the cocaine-addicted individuals (both those who were abstinent and recent users) showed a heightened

Jianwei Qiu from p. 1
...professor of physics and astronomy. At that time, he also became Brookhaven Professor at the C.N. Yang Institute for Theoretical Physics at Stony Brook University.

Said Physics Chair Thomas Ludlam, "Jianwei's theoretical work helped lay the groundwork for what we now refer to as high energy nuclear physics, providing a quantitative basis for key measurements at RHIC and elsewhere. Throughout the years he has been a strong supporter of the RHIC program, and we expect him to play a central role in BNL's intellectual leadership of the international effort

Calling all Veterans
BVA Quarterly Meeting, 4/12

In 2007, a small group of BNLeers who were also military veterans came together to establish a new Brookhaven Employee Recreation Association Club — the Brookhaven Veterans Association (BVA). The BVA currently has 38 paid members.

"We know there are more veterans at BNL and we hope they will join us," said BVA Commander Scott Bradley, who works in the Lab's Information Technology Division. "Our mission is to assist veterans and soldiers on active duty and enjoy the camaraderie we share as Americans who have served our country in this manner."

The BVA will hold its quarterly meeting at noon on April 12 in the Hamilton Auditorium in Chemistry (Bldg. 555). The BVA encourages all BNLeers who have served in the military to attend the meeting.

BVA History

In 2007, under the direction of their first commander, Don Farnam of the Facilities and Operations Directorate, the group began organizing events to help support U.S troops and veterans and held on-site memorial services to honor all veterans. Before long, BVA members became involved in many other volunteer

response to drug-related images, continuing to respond as they did to other pleasant and unpleasant evocative images, while healthy control subjects maintained elevated responses only to the pleasant and unpleasant images.

"This increased neural response to cocaine-associated images among cocaine users is what we expected," Dunning said. "It suggests that cocaine stimuli are similar to other emotional stimuli in increasing motivated attention among cocaine users."

In the final time interval, 1000–2000 milliseconds, the scientists found that healthy controls remained responsive to pleasant and unpleasant images, while abstinent cocaine users continued to respond to pleasant and drug-related images at a heightened level. Interestingly, however, neural activity among subjects who had recently used cocaine was no longer heightened by the cocaine-related images — or by the other emotionally evocative images — compared with the neutral ones.

"This latest time interval re-

sponse to drug-related images, continuing to respond as they did to other pleasant and unpleasant evocative images, while healthy control subjects maintained elevated responses only to the pleasant and unpleasant images.

to develop a science agenda for a future electron ion collider." Qiu received his Ph.D. in 1987 from Columbia University. Citation records place two of his papers in the category of "renowned" (more than 500 cites) and ten others are "famous" (240-499) or "very well known" (100-249). His awards include a DOE Outstanding Junior Investigator Award and an ISU Outstanding Career Achievement Award, as well as an "Outstanding Professor Award for Teaching Excellence in Graduate Physics" from ISU physics graduate students. He was elected Fellow of the American Physical Society in 2005.

— Liz Seubert



Joseph Rubino D3380509

veterans activities, including refurbishing local veterans' homes and participating in "Wreaths across America" by placing wreaths at Calverton National Cemetery in December.

One of the most successful functions of the BVA is their participation in the national Adopt-A-Platoon program (AAP). Under the leadership of BVA member John McCaffrey of the Photon Sciences Directorate and BVA volunteer Joanne Rula of Staff Services, BNL/AAP volunteers coordinate fundraising activities and use the money to send packages of goodies and basic supplies like toothpaste, shampoo, and socks to soldiers in a particular platoon serving in an active war zone. AAP also sends packages to family members of BNLeers currently serving in the military.

"Your level of involvement in the BVA is completely up to you," said Bradley. "We welcome and encourage all veterans to join our ranks."

For more information on BVA membership or activities, please come to the April 12 meeting or contact Scott Bradley, Ext. 5745, bradley@bnl.gov or any of the BVA officers listed here: <http://www.bnl.gov/bera/activities/va/Administration.asp>. — Jane Koropsak

ffects sustained processing and encoding of information," Goldstein said, "so our findings may indicate an impaired ability for sustained processing of all emotional stimuli — pleasant, unpleasant, and drug-related — among the recent cocaine users."

This difficulty in sustaining motivated attention to emotional stimuli could potentially predispose cocaine users to compulsive drug use as a compensatory mechanism for their blunted response, she said.

Given these findings, Goldstein and her SBU colleagues are interested in conducting further research to investigate whether similar event-related brain potentials can be useful in predicting behavior (e.g., drug-related choice) or even longer-term abstinence and treatment outcomes among individuals addicted to cocaine.

This research was funded by the National Institute on Drug Abuse and the General Clinical Research Center of SBU.

— Karen McNulty Walsh



BSA Noon Recital: Prima Trio, 4/13

The Prima Trio — consisting of a clarinetist, violin/viola player, and pianist — will perform on Wednesday, April 13, at noon in Berkner Hall. Sponsored by Brookhaven Science Associates, the company that manages BNL, the concert is free and open to the public. Visitors to the Lab age 16 and older must bring a photo ID.

Since winning the coveted Fischhoff National Chamber Music Competition's Grand Prize and Gold Medal in 2007, the Prima Trio has performed more than 150 concerts worldwide to great critical acclaim. The trio distinguishes itself not only with its skillful playing, but also through the repertoire it performs, from Mozart to Schickele, in addition to arrangements of Piazzolla and Lotti by the clarinetist. The program at BNL consists of works by Schumann, Milhaud, Khachaturian, and Schickele.

Julius Hastings from p. 1

...intensity. Hastings was among the scientists who entered discussions on the type of reactor that would be built. Eventually, he became one of five co-holders of the patent for design of the High Flux Beam Reactor (HFBR), BNL's world-class research reactor that began operations in 1965.

Hastings and Corliss performed experiments at the HFBR to study magnetic materials until the reactor closed. They were especially interested in the mechanisms of magnetic systems as they change from a disordered to an ordered state. Of particular importance was Hastings' experiment in which he measured the critical exponents — the behavior of physical qualities near phase transitions — of an antiferromagnet, rubidium manganese fluoride.

Mentoring

In addition to his significant impact on neutron-scattering research, Hastings made an important contribution to the Laboratory and future scientists through mentoring. He trained numerous young scientists in neutron scattering, and many of them became leaders in the field. They include the late Walter Hamilton, who was a well-known crystallographer in the Chemistry Department, and the late Robert Nathans, who had a distinguished career studying magnetism in the Physics Department.

Today, at age 90, Hastings still visits the Lab to speak with colleagues. He also recalls his earlier times at BNL with pleasure. "I've worked with very talented colleagues using world-class research reactors. It was an exciting time," he said.

— Diane Greenberg

Celebrate National Library Week, 4/11-15

To celebrate National Library Week, the Research Library's staff invites the BNL community to an Open House at the Research Library, Bldg 477. All are invited to learn about resources now available through the newly updated Library website and to explore the trial databases offered by vendors for limited time.

Drop by and enjoy refreshments in the relaxing new reading area and attend Library orientations throughout the week.

The following special events are scheduled at the Research Library:

Monday, 4/11	Engineering Village	11 a.m.-noon
	<i>Webinar* by Gali Halevi from Elsevier</i>	
Tuesday, 4/12	Library Open House	10 a.m.-3 p.m.
Wednesday, 4/13	Library Open House	10 a.m.-3 p.m.
Thursday, 4/14	Web of Science	10-10:45 a.m.
	EndNote Web	11-11:45 a.m.
	<i>Webinars* by T. Matthews from Thomson Scientific</i>	
Friday, 4/15	Inspec	11-11:45 a.m.
	<i>Webinar* by K. Berryman from Inspec, IET</i>	

For more information, call the Research Library, Ext. 7761/3483.

**Please call Ext. 7761 or e-mail mtanaka@bnl.gov if you are interested in participating in these webinars from your office.*

Summer Sunday Tour Guides Wanted

The Community Relations Office has Summer Sundays tour guide positions posted at <https://hris.bnl.gov/psp/H8prod/?cmd=login>.

The job description is as follows: A Summer Sundays employee's tasks include, but are not limited to, preparing for the activities on a Summer Sunday, greeting, assisting, and escorting visitors with safety in mind, and cleaning up at day's end. They will be trained to meet all Lab requirements. Employment will begin on Thursday, July 7, and terminate on Sunday, August 14. Employees will be paid an hourly wage commensurate with their experience and education. For more information, contact ndeitweiler@bnl.gov.

TIAA-CREF One on One Retirement Counseling

A TIAA-CREF consultant will visit BNL on April 13, 18, and 29; and May 5, 23, 26, and 31; and June 8 and 16 to answer employees' questions about their financial matters. For an appointment, call 1-800-732-8353 or go online at www.tiaa-cref.org/bnl and select "set up a meeting."



Fundraising Benefit for Japan Relief

The BERA Asian Pacific American Association (APAA) hosted a Japan Relief Fundraising Benefit Talk and Reception for the Lab community on March 30, in Berkner Hall. After APAA's Susan Wong welcomed the attendees and thanked the many volunteers who had made the event possible, Lab Director Sam Aronson spoke, expressing the BNL community's deep sympathy for the many friends, colleagues, family members, and all others affected by the tragedies in Japan.

Aronson introduced BNL Nuclear Science and Technology Chair Bill Horak, who spoke on containment and release management strategies for reactors; and Stony Brook University (SBU) Geosciences Professor Teng-fong Wong, who gave a talk on earthquakes and tsunamis. In conclusion, SBU's

"Taiko Tides," a group including Joseph Dvorak of BNL's Photon Sciences Directorate, took the stage with two dramatic and moving Japanese taiko drum performances. *Miyake Daiko*, a traditional piece from Miyakejima island south of Tokyo bay, symbolized fishermen with their nets; and *Hiryu San Dan Geishi*, composed by Daihachi Oguchi for a festival at the Suwa Shrine in Nagano prefecture. In the piece, a short prayer is said to wish for peace and prosperity in the household.

A reception was held in Berkner Hall lobby immediately following the presentations.

As Wong made clear, the APAA was extremely grateful for the unstinting help from all involved in the event, including last year's United Way captains, other members of departments and divisions, Nayyarsons, and

others who all worked together to ensure such a successful effort.

Brookhaven Science Associates will match dollar-for-dollar all donations up to \$25,000 total from Lab wide to the Japan Society, an American nonprofit organization selected because of its partnership with several Japanese and American not-for-profits working on the front lines of disaster relief and recovery. Japan Society will forward 100 percent of the donations received to organizations that will have the maximum impact, both in terms of immediate relief needs as well as the long-term recovery process.

You may make a tax-deductible donation online at www.japansociety.org/earthquake (do not select the "matching gift program" box since BSA will handle the match separately). Or, write a check payable to 'Ja-

pan Society,' indicating 'Japan Earthquake Relief Fund' on the memo line, and mail it to: Japan Society, 333 East 47th Street, New York, New York 10017, Attn: Japan Earthquake Relief Fund. Following your donation, you will receive an acknowledgment for your 100 percent tax deductible donation with additional receipt information through the mail.

More donations may be made at lunchtime in Berkner Hall lobby where the APAA and other volunteers are ready to accept your gift through April 15.

For the BSA matching donation, send a copy of your receipt or check by April 15 to Jeanne D'Ascoli, Community Relations Manager, Bldg. 400C, Attn: Japan Donation. For questions about the BSA match, contact D'Ascoli at dascoli@bnl.gov or Ext. 2277.

— Liz Seubert



Organizers, BNL volunteer helpers, & performers from the Asian Pacific American Association (APAA), BNL's 2010 United Way team (UW), Staff Services Division (SS), Stony Brook University's Taiko Tides drummers (SBU/TT) included: (from left) Vatsal Bhatt, APAA; Gyanendra Kumar, APAA; Dan Dilauro, SBU/TT; Joseph Dvorak, BNL/TT; Beth Lin, APAA; Joanne Beebe-Wang, APAA; Eva Nagase, SBU/TT; Alyssa Abraham, SBU/TT; Hai-Dee Lee, APAA; Susan Wong, APAA; Satoshi Ozaki, BNL; Danielle Bulcock, SS; Hue-Anh Pham, APAA; Marie Van Buren, APAA; Ray Dumont, Media & Communications; Patricia Gregory, Fiscal/UW; Ruth Comas, SS; Eriko Sato, SBU and SBU Japan Center; Joyce Fortunato, Energy & Utilities Division/UW; and Bryan Gregory, volunteer.

Binge Eating from p. 1

...high levels of dopamine in the brain.

Each subject was scanned four times on two different days to test the effects of food stimulation versus neutral stimulation with and without pre-administration of a drug known to amplify dopamine signals. The drug, methylphenidate, blocks the reuptake of dopamine from brain synapses, allowing it to linger longer. In scans without methylphenidate, subjects were given a placebo drug.

In the food stimulation condition, research subjects' favorite foods were heated (if appropriate) and waved in front of their mouths and noses so they could smell and even taste tiny amounts swabbed onto their tongues. For the neutral stimulation scans, researchers displayed non-food-related pictures and inanimate objects such as toys and clothing items in close proximity so research subjects could smell them while lying in the scanner. In all cases, research subjects had been fasting for 16 hours prior to scans.

Results

Food stimulation with methylphenidate significantly increased

dopamine levels in the caudate and putamen regions of the brain in binge eaters, but not in the non-binge eaters. Subjects with the most severe binge eating disorder, as assessed by psychological evaluations, had the highest dopamine levels in the caudate.

Dopamine levels did not rise significantly in other brain regions or under any other condition (neutral stimulation with or without methylphenidate, or food stimulation without methylphenidate) in either group, and were not correlated with body mass index of the research subjects. Assessments of the levels of receptors for dopamine also did not differ between the two groups.

"So the key difference we found between binge eaters and non-binge eating obese subjects was a fairly subtle elevation of dopamine levels in the caudate in the binge eaters in response to food stimulation," Wang said.

"This dopamine response is in a different part of the brain from what we've observed in studies of drug addiction, which found dopamine spikes in the brain's reward center in response to drug-associated cues. The caudate, in contrast,

is believed to be involved in reinforcement of action potentially leading to reward, but not in processing of the reward per se. That means this response effectively primes the brain to seek the reward, which is also observed in drug-addicted subjects," Wang said.

Inasmuch as binge eating is not exclusively found in obese individuals, the scientists believe further studies are warranted to assess the neurobiological factors that may differentiate obese and non-obese binge eaters.

The research was funded by the National Institutes of Health through the Intramural Program of the National Institute on Alcoholism and Alcohol Abuse (NIAAA) and the General Clinical Research Center of Stony Brook University (SBU), using infrastructure supported at BNL by the DOE Office of Science. Authoring the paper with Wang were: Jean Logan and Christopher Wong, BNL; Joanna Fowler, BNL and MSSM; Allan Geliebter, Kochavi Galanti, and Peter Selig, SLRH; Nora Volkow, National Institute of Drug Abuse and NIAAA; Frank Telang and Millard Jayne, NIAAA; and Hao Han and Wei Zhu, SBU.

— Karen McNulty Walsh

Talk on Plans for College Costs, 4/14

Guest speaker Craig Ferrantino of the Foundation for Personal Financial Education will hold a workshop on "Financial Preparation for College Costs," Thursday, April 14, at noon in Berkner Hall, Room B. The Lab community is invited to this free event, which will include 529 plans and how they work, other savings vehicles for college, and how to prepare for your child's college expenses.

BERA Sports Tickets, Trips

Buy tickets at the BERA Store, Berkner Hall, weekdays, 9 a.m. -3 p.m. for Long Island Ducks and New York Mets games as well as trips to Brooklyn Botanic Garden, (May 7, \$22 per person), Chelsea Market & Meatpacking District, and High Line Park (April 30, \$60 per person). Find more information at www.bnl.gov/bera/recreation/events.asp.

Waltz Swing Rumba Tango With BNL's Ballroom Dance Club

Good with a groove? Have trouble finding the beat? All are invited to join the BNL Ballroom Dance Club for three new series of dance lessons in the Brookhaven Center on Wednesdays, starting on April 13. Each series is \$45 per person and includes six classes. The schedule is:

- 5:15 p.m. Beginner Waltz and West Coast Swing
- 6:15 p.m. Intermediate American Rumba
- 7:15 p.m. Intermediate Tango

Mark your calendar: In place of regular classes, the club will also host dance socials on April 20 and 27 from 5.30 until 8.30 p.m. All are welcome and more details will follow.

For more information, contact Vinita Ghosh, Ext. 6226; Mike Hanson, Ext. 2947; John Millener, Ext. 3853; or Kathy Tuohy, Ext. 3845.

CALENDAR

— WEEK OF 4/11 —

Mon-Fri, 4/11-15

*National Library Week

All week. Research Library, Bldg. 477. Events including Webinars, Open House, more. See notice, p.2.

Tuesday, 4/12

*Brookhaven Veterans Association

Noon. Hamilton Auditorium, Chemistry, Bldg. 555. Quarterly BVA meeting. See p.2.

Wednesday, 4/13

*BSA Noon Recital

Noon. Berkner Hall. The Prima Trio will perform. Sponsored by BSA, the concert is free and open to the public. See p.2.

Thursday, 4/14

*Talk: Planning for College Costs

Noon. Berkner Hall, Room B. The Lab community is welcome to a talk by Craig Ferrantino, Foundation for Personal Financial Education, on "Financial Preparation for College Costs." See article below.

— WEEK OF 4/18 —

Wednesday, 4/20

468th Brookhaven Lecture

4 p.m. Berkner Hall. Robert Bari, Energy Sciences & Technology Department, will talk on "Small Modular Reactors." All are welcome to this free lecture, open to the public. Visitors to the Lab of 16 and older must carry a photo I.D.

Thursday, 4/21

Talk on Robots for Surgery

4 p.m. Berkner Hall. Catherine Mohr, M.D., Director of Medical Research at Intuitive Surgical, Inc., will talk on "From Surgeons to Superheroes — How Robots Can Change the Future of Surgery." All are invited.

— WEEK OF 4/25 —

Monday, 4/25

IBEW Meeting

6 p.m. Centereach Knights of Columbus Hall, 41 Horseblock Rd., Centereach. A meeting for shift workers will be held at 3 p.m. in the union office. The agenda includes regular business, committee reports, and the president's report.

Arrivals & Departures

— Arrivals —

Guillermo Aparicio.... Photon Scis

Steven Dasaro WM

Jerry Fidel NNS

Robert Hoade Photon Scis

— Departures —

Fabien Tarrade..... Physics

New BERA Judo Class

A new BERA judo class will be held in the gym (Bldg. 461) on Thursdays from 7:30 until 8:30 p.m. Each class costs \$5, but the first is free. For more information, call Tom Baldwin, Ext. 4556.

Classified Advertisements

Placement Notices

The Lab's placement policy is to select the best-qualified candidate for an available position. Candidates are considered in the following order: (1) present benefits-eligible employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present benefits-eligible 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, disability or veteran status. Each week, the Human Resources Division lists new placement notices, first, so employees may request consideration for themselves, and, second, for 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. Access current job openings on the World Wide Web at www.bnl.gov/HR/jobs/.

To apply for a position, go to www.bnl.gov. Select "Job Opportunities," then "Search Job List."

OPEN RECRUITMENT – Opportunities for Lab employees and outside candidates.

CUSTODIAN POSITIONS (LG-1) – (Temporary May 16 through September 16, 2011) – Under general supervision, performs general cleaning and housekeeping duties in the Laboratory living quarters. Please apply to Job ID #15685.

Motor Vehicles & Supplies

07 BMW 335i – 53K mi. 6spd a/t, Dakota leather, immac cond, pwr train warr until 6/2013 or 100k. \$19,000. Mark, Ext. 3970.
07 SUZUKI M109R – 3.8K mi. Motorcycle, blk, 1800cc V twin, fuel inj, cust. exhaust/ computer. \$8,900 neg. 516-477-9511.
05 FORD F150 – 97K mi. Lariat, 5.4L, Tow pkg, lthr, bed liner/cover, 6.5 bed, 6 cd, ext cab, 4wd, \$16,500 neg. 806-5956.
05 NISSAN 350Z – 91K mi. 35 Anniv Ed, mint, a/t, orig ownr, gar, loaded, new tires, belts, brakes, bk val \$16k. \$14,500 neg. 294-7505.
97 GMC SUBURBAN – 150K mi. 350 V8, red, 4d 4wd a/c, v/gd, cond. \$3,000 neg. 648-0698.
96 GMC SONOMA – 99K mi. blk pickup trck, 6cyl, 5 spd, a/c, p/w p/l, p/s, new cltch, 20" rims, HID lights, bed linr. \$3,700 neg. 525-8835.
95 CHEVY CAMARO – 150K mi. 6cyl, 3.4L, a/t, a/c, all pwr, alarm, rem strtr, prem audio, tint windws, new batt, \$1,000 neg. Ext. 5806.
76 CHEVY CORVETTE – 72K mi. Cust CAN-AM-Wide Body 454 Big Block 4:11 Posi Rear Cragars, more. \$15k neg. 602-614-6729.
HARDTOP – from a '95 Jeep Wagler, \$450. Bobbi, 291-0245.

Boats

38' CHRIS/CRAFT COMMANDER – '67 fg twin screw, fresh water cooled, 800 hrs, repowrd 1989, extras, generator, Ioran, full bimini, etc. \$11,000 neg. 386-492-3953.

Audio, Video & Computers

32GB ZUNE HD - PLATINUM – mint cond, HD Radio, wireless, incl box/cables/ headphones/\$180. Jesse, Ext. 2122.
COMPUTER & CANNON PRINTER – Dell Dimension L600CX desktop PC Service Tag 2V1G80, gd cond, \$50/obo. Ext. 4925.
DELL LATITUDE E6500 – 15.4" LED screen, core 2 duo p8600, 4GB ram, 250GB 7200rpm HD, webcam, warr to 1/12, ask/\$700. Ext. 3970.
NINTENDO DSI XL – burgundy color w/orig pkg, w/Brain Age games preloaded/charger, barely used/\$160. Renee, Ext. 8278.
SAMSUNG COLOR LASER PRINTER – also scans, copies, & faxes, Mdl CLX-3175FN, w/box, papers, used 1X \$390. 806-4482.

Furnishings & Appliances

AIR CONDITIONERS (5) – all relatively new cond: (1)8K Btu; (2)6K Btu; (2)5K Btu, make offer. Rick, Ext. 6183.
DOVER BAR STOOLS – 2, slightly used, 30" w/suede swivel seats, orig from JC Penny's, pick up only, \$150/set. 347-581-3731.
FREEZER CHEST – lg Kenmore/\$150/ neg Glider Rocking chair, maple, \$200, lcade@uspsports.com. 516-740-8418.
FRIDGE – Kenmore, white side by side, water/ice maker, 1 yr old, energy star, moved into apt, must sell \$450/neg. 624-1277.
I-ZONE YOUTH LOFT BED W/AUDIO – w/ bookcase/drawer, twin metal loft w/ladder, pic avail, u-pic-up, \$800. 347-581-3731.
KITCHEN SET – 5pc, tile table, 4 chairs, gd cond, \$100; lamps/\$10; custom coffee table/\$100; car vacuum/\$10; food procsr/\$15. 744-4077.
MICROWAVE – GE, blk, over the range \$40, air purifier, \$20. 751-4539.
RANGE – GE 30", self-cleaning, free-standing, elec, coil burners, beige, v/gd cond, \$50. Ext. 5128.

Sports, Hobbies & Pets

BADMINTON RACQUETS – new APACS Visible Hollow 1800/\$65; 2 used: APACS Nano 9900 Pwr, APACS Lethal 11/\$55, Ext. 3725.
BOWFLEX SPORT – folds up, gd cond, u-pic-up, \$200. Bobbi, Ext. 2332.
CHARIOT CHILD CARRIER – for walking/ jogging, or tow after bike, super light wt, pd/\$400, sell/\$200, like new. 871-5652.

G.I. JOE DOLLS – new batch, authentic, excel cond, 1964, some w/tags, accessories also avail, Sue, Ext. 4931, 775-8160.
MALTESE/SHIH TZU DOG – male, 19 mos old, white & gray, under 10 lbs, v/playful, great w/kids, well trained, w/papers, chip & shots, w/crate/gate/beds/toys, more, pics avail, must sell, ask/\$450. 445-4027.
TERRY CAMPER – 1979, 29', master bdrm, full kit, shwr, 2 fld-dwn bunk beds, v/gd cond, pics.\$3000/neg. Ext. 4931.
UNIVERSAL WEIGHT BENCH – Golds Gym, hardly used, 150 lbs of weights. Rick, Ext. 6183.

Miscellaneous

COMICS, SPIDERMAN – approx 150, 1968-current, book value \$3-5 per comic, some higher. ask/\$300 for all. Ext. 2122.
KITCHEN SET – 5pc, tile table, 4 chairs/\$100, excel cond; 2 lamps/\$10ea; coffee table/\$50; food procsr/\$15/obo. 744-4077.
LIVE IN WATERFRONT HOME – RENT-FREE Massapequa, 3/bdrm, beachfront backyrd, patio, dock, in exchange for taking care of elderly gentleman. Rick, Ext. 3005.
RECESSED LIGHTING – (5) new 6" new work non-i/c cans w/o trim, \$40. Jeffrey, Ext. 3172 or jeffstewart@bnl.gov.
RIMS W/TIRES – 4 18" RT6 Enkei 360; 6 Lug; used 1 summer, under a yr old, ask/\$700, pd/\$1,800, pics avail. 813-6583.
SPRUCE EVERGREEN TREES – 6-7' tall, dug to order, 13 avail, \$65/ea, other evergreens, shade trees, & ewe bushes also avail, dug to order. Tom, 878-1060.

Community Involvement

GLOBE GENERAL MEETING – The Gay, Lesbian Or Bisexual Employees Club (GLOBE) will be holding a general meeting on April 14. To attend please contact Jon for the meeting time/location. Jon, Ext. 3079 or allenj@bnl.gov.

Happenings

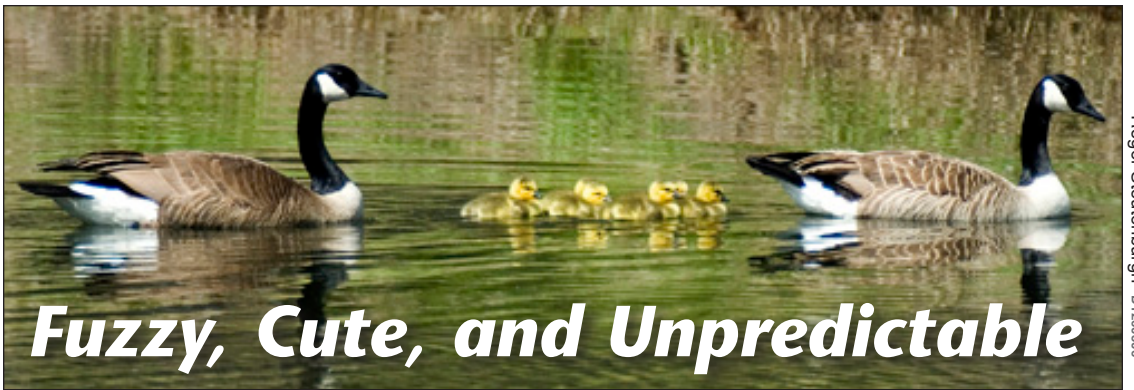
CHINESE AUCTION/CRAFT FAIR – Saturday, 4/16, 9am-3pm to support Riverhead NJROTC, Riverhead HS, 700 Harrison Ave, Riverhead. 645-1349.
FUNDRAISER FOR LIAM MCGUIRE – 7-yr old boy diagnosed with leukemia, Inn & Spa at East Wind, 5/12, 7-11pm, \$60 pp, Chinese Auction + 50/50 Raffle, Info & donations Facebook@Friends4Liam. 258-4607.
FUNDRAISER FOR PETER GANNON – Mercy HS Alumni Peter Gannon (1985) was diagnosed with brain cancer. Fundraiser at Rock Hill Country Club, 5/5, 6-9pm - friendssofpetergannon.com. Joe Macedonio, 428-9191.

Wanted

12" BOYS BIKE – pls call Ext 4290.
ADOPT-A-PLATOON – Monetary donations gratefully accepted towards mailing shipments to military overseas and to send goodie pkgs to BNL family members. Thank you. Joanne, jrula@bnl.gov.
BNL FAMILY MEMBERS IN MILITARY – If you have a family member that has been deployed overseas, please contact Adopt-a-Platoon so we may send them a goodie package. Joanne, jrula@bnl.gov.
BOXTOPS & CAMPBELL'S UPCS – for KG & 4th Grade class. Bldg. 911A. Nina, Ext. 5894 or nrivera@bnl.gov.
DONATIONS OF DOG/CAT FOOD – for pets of struggling families/elderly and or Kent Animal Shelter. Collection bins are in bldgs 134, 400, 510 (X5864), 725, 901 and 902. Ext. 3161 or kratto@bnl.gov.
FILEMAKER PRO DEVELOPER – We are looking to hire or contract someone who is excellent at FileMakerPro and who can develop a database for our agency. Please call for interview. Lillian Sanabria-Hernandez, 516-352-6088 or lilliansanabria@aol.com.
HAVAHAART RACCOON TRAP – Looking for a large size. Kevin, Ext. 3448 or kcampbell@bnl.gov.
MATURE RESPONSIBLE ADULT – Loving father in Sayville seeks part-time care for my high functioning loving autistic son. Job entails providing him with social interaction, support and guidance. Bruce, 300-7196.
REFRIGERATOR – basic, full size, reasonably priced. 708-4778.
SMALL UTILITY TRAILER – w/4 sidewalls, 2" hitch, for camping gear. Al, 456-2270.
VIOLIN – for 6 yr old student. Ext. 4532.

For Rent

BAITING HOLLOW – new, furn or not, studio apt, sep eik, tiled bath, priv ent, util/int/HD incl, no smkg, walk beach. \$900/mo. Lisa, 804-8117.
BELLPORT VILLAGE – 1 bdrm upstairs apt in 2/fam home, fully carpeted, lots of lights, prvt drway/ent, village amenities, util incl, avail May 1. \$1,100/mo. 275-0745.
E. PATCHOGUE – 1bdrm apt, l/r kitch combo, no smkg/pets, 15 min to Lab, incl all, 1 mo sec. \$1,000/mo. Carol, 286-4236.
MASTIC – 3 bdrm, 2.5 ba house, rec. construc., eik, W/D, basement, 1-car gar. patio, a/g pool. 7 mi to BNL. Rmmates, some pets OK w/ refs. +utils, sec. \$1,950/mo. 790-7179.
MIDDLE ISLAND – 1 bdrm lg bsmt apt, pvt ent, phone, cable, int, strictly no smkg/pets, quiet, all incl, nr Lab, BNL employee only, 1 mo sec. \$800/mo. 672-2451.
MIDDLE ISLAND – co-op apt, 2nd flr, newly renov kit/ba, lg master bdrm w/walk in closet & balc, priv prkg/ent, gd credit needed, no pets. \$1,000/mo neg. 843-768-2019.



Roger Stoutenburgh D1260705

Fuzzy, Cute, and Unpredictable

Enjoy BNL's Wildlife...From a Safe Distance

Written for Monday Memo of March 28, 2011, by Tim Green, BNL's Natural Resources Manager

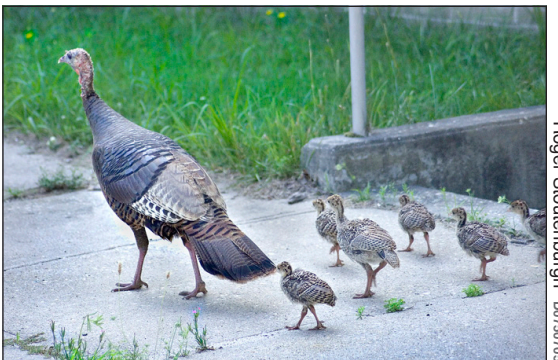
Spring is officially here and with it comes the annual rituals of courtship and birth by our furry and feathered friends. This results in seasonal problems of human-wildlife interactions. Here are some tips for you.

Geese

Geese tend to get very protective of their mates and offspring each spring and will not hesitate to defend their territory. If you notice a goose on a nest, please do not approach it. Its mate is likely close by and may run or fly at you to protect the nesting mate. Once goslings appear, geese will protect them as well and may chase humans away. If you notice geese and goslings, it's best to stay clear of them. If you can't avoid walking close to them, be aware of your surroundings such as trip hazards, low branches, and cars so that you can move quickly and safely if necessary. If a goose attacks, it's often better to stand your ground, spread your arms wide, and take a few steps toward the goose. Running from them puts you at risk of injury from losing your footing.

Turkeys

Tom turkeys tend to get amorous with their own reflections in glass doors, shiny cars, and other reflective surfaces. As many BNLers know, strutting turkeys will completely ignore traffic and may block it at times. When this happens, inch your car forward very slowly and the turkeys likely will move (if they don't, please stop and wait until the turkeys clear the area). If you're walking and a turkey approaches you, keep calm and continue on your way since they seldom get aggressive. If they continue to follow, turn around, spread your arms and walk confidently toward them. If you're wearing a jacket, put your hands in the pockets and open the jacket to make you appear much larger. Walking toward



Roger Stoutenburgh D0750705

the turkey usually forces it to walk in the other direction. Once it has turned away, you may turn and resume your journey.

Baby Animals

Many baby animals get separated from their parents each spring by over-caring humans. Most animal parents leave their offspring alone for long periods of time. If you see a baby deer, baby birds, or other small animals, they're likely being cared for by their parents. Human interaction with babies disturbs parents and prevents them from feeding their xyoung. If baby animals are abandoned, BNL attempts to get them rehabilitated. Even rehabilitated animals seldom make it on their own after being raised by humans.

Feeding

As I've mentioned, feeding wildlife, except for song birds, is not a good practice. Wildlife becomes dependent on the handout and, once dependent, the animal may become aggressive to you or others as it expects food.

Remember, wildlife is wild. That cute and fuzzy animal you're trying to get close to may turn out to be not so cute. Enjoy the many wild creatures at BNL, but do so from a distance.



Joseph Rubino D3441009

OCEAN BEACH – 4 bdrm hse, fully equip, great May rates avail incl Mem. Day wkend special, \$1500/up. \$1,500/wk. 404-5254.

RIDGE – 1 lg bdrm w/2 closets, 1 bath w/ jacuzzi tub, pvt drwy, use of yd, lg windows, incl, util, cable, int, 1 mos sec req. \$1,000/mo. 965-2039.

SHIRLEY – lg 1 bdrm bsmt apt, suitable for one, close to beaches/parks/free-ways/lirr/lab, all incl, 1 mo + 2 mo sec. \$750/mo. Ext. 3846.

SHOREHAM – spacious bsmt apt, 10 mins to BNL, lg bdrm, l/r, bath, eik, priv ent, immed occ, close to shopping, 1 mo sec. \$900/mo. Vinny, 744-4049.

WADING RIVER – 1-bdrm. (poss. 2 bdrm.) bath, kit-l/r combo, fenced bk. yd., Riverhead S.D., 1 block to beach & state park, avail. 5/1, sec. & utils extra. \$1,150/mo. 987-3264.

KISSIMMEE, FL – TIMESHARE: 15 mins to Disney World, www.calypsocay.com for pics, 1-brm unit/\$500/wk, sleeps 4; 2-bdrm unit/sleeps 8, \$1,000/wk, 475-1297. \$1,000/wk neg. Ext. 5894 or nrivera@bnl.gov.

For Sale

AQUEBOGUE – 3 level 3000sq ft Condo-3 1/2 ba, cac & vac, 2 car gar, hot tub, walk on priv beach, 3 zone basebd heat, heated pool/tennis, all appli, will paint to suit. \$725,000. Carmine, Ext. 5101.

BAYPORT – Grt. S. Bay area, 2,300 sq.ft ranch, approx 1 acre, priv., wooded, 3 bdrm, 2-half ba, den, lr/dr, kit, util rm, scrnd porch, carport, excel schls. \$2,300/ mo. or. \$585,000. 617-332-6264.

LOWER EAST SIDE, NYC – Seward Park Co-op, 1/bdrm, lg l/rm, d/r, eik, balcony w/view of NYC, laundry rm, fitness center, more, ask/. \$600,000. 467-4386.

In Appreciation

Thanks to all my BNL friends who expressed their love and sympathy on the passing of my mother. — Jim Vaz