

Scientists Find Link Between Dopamine, Obesity

Dopamine, a brain chemical associated with addiction to cocaine, alcohol, and other drugs, may also play an important role in obesity, according to researchers from BNL's Medical and Chemistry Departments.

In a study appearing in *The Lancet* of February 3, 2001, the researchers announced that, compared with the brains of normal-weight people, obese people's brains have fewer receptors for dopamine, a neurotransmitter that helps produce feelings of satisfaction and pleasure. The findings imply that obese people may eat more to try to stimulate the brain's dopamine "pleasure" circuits, just as addicts do by taking drugs.

"The results from this study suggest that strategies aimed at improving dopamine function might be beneficial in the treatment of obese individuals," said Gene-Jack Wang, Medical, the lead scientist on the study. Other collaborators included Nora Volkow, Naomi Pappas, Noelwah Netusil, and C. T. Wong of Medical; Jean

Gene-Jack Wang and Nora Volkow are among the BNL and collaborating researchers who use positron emission tomography to study links between dopamine receptors in the brain and obesity.

Logan and Joanna Fowler of Chemistry; and W. Zhu of Stony Brook University.

BNL scientists have done extensive research showing that dopamine plays an important

role in drug addiction. They have found that addictive drugs increase the level of dopamine in the brain, and that addicts have fewer dopamine receptors than normal subjects.

"Since eating, like the use of addictive drugs, is a highly reinforcing behavior, inducing feelings of gratification and

pleasure, we suspected that obese people might have abnormalities in brain dopamine activity as well," Volkow said.

"It's possible that obese people have fewer dopamine receptors because their brains are trying to compensate for having chronically high dopamine levels, which are

(continued on page 2)



Roger Stoulenburgh CN-291-01

Holland to Head DOE Area Office



Roger Stoulenburgh CN-184-01

Michael Holland, a longtime employee of DOE's Brookhaven Area Office, was named manager of that office effective December 31, 2000. Holland is now responsible for assuring that BSA effectively manages and operates BNL.

As senior DOE official at the BNL site, Holland has responsibility for all Lab activities and its approximately \$400 million budget. This includes day-to-day management of an office of more than 30 federal employees. In support of DOE's research and development mission, he also oversees Lab science and technology programs. Safe and environmentally sound management of BNL's major research facilities,

including the National Synchrotron Light Source and the Relativistic Heavy Ion Collider, is an integral part of his oversight activities.

"Mr. Holland is well-known and respected in the community," said Marvin E. Gunn, Jr., manager of DOE's Chicago Operations Office. "He will ensure that DOE complements the very real progress BSA has made over the last three years."

Laboratory Director John Marburger added, "I was delighted to learn that Mike Holland will be DOE's senior manager at the Lab. He understands the Laboratory, the community, and the Department of Energy, and brings a

(continued on page 2)

BNL Employees Honored

Awards Given for Science & Technology, Engineering & Computing, Support

The talent and dedication of 15 Lab employees were rewarded on January 24, when they received one of BNL's annual Employee Recognition Awards. The awards were presented at the BNL Employee Recognition Award Ceremony and reception hosted by BNL Director John Marburger in Berkner Hall. Established last year, the ceremony and reception celebrate the award winners' distinguished contributions and symbolize the value that the Laboratory places on their achievements.

The three major BNL awards are: the Science & Technology Award, a \$5,000 prize that may be won in any scientific or technical discipline other than engineering and computing; the Engineering Award, a \$5,000 prize designed to honor engineering and computing contributions; and the Brookhaven Award, a \$2,000 prize which recognizes key support-function contributors whose performance and achievements represent outstanding service to BNL.

FY2001 BNL Employee Recognition Awardees

Science & Technology Award: Ilan Ben-Zvi, National Synchrotron Light Source Department and Collider-Accelerator Department; Thomas Roser, Collider Accelerator; Peter Johnson, Physics Department; Charles Springer, Chemistry Department; and Toshi Sugama, Energy Sciences & Technology Department.

Engineering Award: Scott Coburn, Physics; Joseph DePace, Information Technology Division; Michael Hauptmann, Environmental Restoration Division; Anand Kandasamy, Instrumentation Division; and Charles Pearson, Collider-Accelerator.

Brookhaven Award: Stephen Dewey, Chemistry; Robert Ernst, Physics; George Goode, Environmental Services Division; Darcy Mallon, Director's Office; Patricia Williams, Plant Engineering Division.

During the ceremony, a special award was presented to representatives of the Relativistic Heavy Ion Collider (RHIC) construction team for the successful completion of RHIC. In addition, last year's Spotlight Award recipients were congratulated. During the year, these awardees had each won an after-tax award between \$100-900 for their response to the extraordinary needs of their departments or divisions.

More information on the Science & Technology award winners follows on page 2; summaries of the achievements of the other winners will be given in forthcoming Bulletins.

Nuclear Physicists: Sights on Future

Despite a snowy start, some 120 physicists gathered at BNL January 21 to 23 to discuss future directions for the field of nuclear physics. This Town Meeting on Nuclear Matter and Hadrons at High Energy was the last in a series of four recent town meetings sponsored by the American Physical Society Division of Nuclear Physics to provide input for the Nuclear Science Advisory Committee's long-range plan.

The plan, which will be completed this spring by DOE and the National Science Foundation, sets the ten-year agenda for new facilities and research directions, and is used to persuade Congress to fund these projects.

This town meeting, which was focused on research opportunities presented by the Relativistic Heavy Ion Collider (RHIC), made four scientific recommendations:

- 1) Full operation of RHIC for 37 weeks per year for the near future, with upgrades to the detectors.
- 2) A vigorous R&D program to pursue the next generation of accelerator and detector developments, including a luminosity upgrade at RHIC and a high-luminosity electron-ion collider.
- 3) The need to pursue the unprecedented opportunities for progress in theoretical physics made possible by recent advances in computing.
- 4) Participation in the heavy-ion experiments at the Large Hadron Collider (LHC) under development at CERN, the European laboratory for particle physics.

"These are all very positive recommendations for Brookhaven," said meeting chair Larry McLerran, Physics Department. "If they all come to pass and are sited here, they would guarantee Brookhaven's status as the world center for high-energy nuclear physics for the foreseeable future."

In addition to the scientific recommendations, the group expressed the need to continue educational outreach, support for university laboratories and teaching, efforts to recruit under-represented members of the workforce, and efforts such as a fellowship to encourage and support young scientists.

(continued on page 2)

Calendar
of Laboratory Events

- The BERA Sales Office is located in Berkner Hall. It is open on weekdays from 9 a.m. to 3 p.m. For more information on BERA events, contact Andrea Dehler, Ext. 3347 or M. Kay Dellimore, Ext. 2873.
- Additional information for Hospitality Committee events can be found at the Lollipop House and the Laundry Room in the apartment area.
- The Recreation Building is located in the apartment area.
- Calendar events flagged with an asterisk (*) have a longer story appearing in this week's Bulletin.

— EACH WEEK —

Tuesdays: Welcome Coffee
10-11:30 a.m. Recreation Bldg. Newcomers meet friends. Mimi Luccio, 821-1435
— Hospitality event

Wednesdays: On-Site Play Group
9:30 a.m.-11:30 a.m. Recreation Bldg. Parents meet while children play. Free, drop in any time. Monique de la Bey, 399-7656.
— Hospitality event.

Wednesdays: beg.-adv. Dance Lessons
6-9 p.m., Brookhaven Ctr. North Ballroom
Marsha Belford, Ext. 5053.

Wednesdays: Yoga Practice Sessions
12:10-12:50 p.m., Recreation Bldg., free. For more information, contact Ext. 3924.

Tues. & Thurs.: Aerobic Dance
5:15 p.m., Recreation Bldg. \$4 per class or \$35 for any ten classes. Pat Flood, Ext. 7886; or Susan Monteleone, Ext. 7235.

Mon., Tues. & Thurs: Cardio Kickboxing
noon-1 p.m., Mon. & Thurs. and 5:15-6:15 p.m., Tues. & Thurs. Mary Wood, Ext. 5923, or wood2@bnl.gov.

— NEXT WEEK —

Saturday, 2/10

BNL Gospel Choir Concert
3 p.m., Berkner Hall Auditorium. Four guest choirs will also be performing. Refreshments will be served. Tickets at \$10 per person are available in the BERA Sales Office.

Monday, 2/12

AT&T Wireless Demo
11 a.m.-2 p.m., Berkner Hall, AT&T will discuss special rate service plans. Denise Houlihan (516) 236-2053.

Tuesday, 2/13

Energy Forum
7 p.m., Berkner Hall, BNL's Community Advisory Council invites everyone to attend "Natural Gas Alternative Plants and How They Are Sited." Presentations will be made by Bob Charlebois, BNL; Fred Eisenbud, an expert on siting regulations; and Mark Serotoff, Town Line Civic Association.

Wednesday, 2/14

VoiceStream Demo
11 a.m.-2 p.m., Berkner Hall Richard Goll, (516) 343-5900.



From left: Charles Springer, Peter Johnson, Ilan Ben-Zvi, Toshi Sugama, and Thomas Roser

BNL's Science & Technology Award recognizes distinguished contributions to the Lab's science and technology mission over one or more years. This year's winners are:

Ilan Ben-Zvi
Ilan Ben-Zvi, National Synchrotron Light Source and Collider-Accelerator Departments, is recognized internationally for his outstanding leadership and technical innovation in the construction and operation of BNL's Accelerator Test Facility and its user program. His contributions include the development of high-brightness electron beams and advanced diagnostics for their characterization, the development of the BNL photocathode radio frequency electron source, the measurement of the emittance of time-slices of the electron bunch, and the tomographic measurement of electron phase-space distributions.

Thomas Roser
Thomas Roser, Collider-Accelerator Department, has made distinguished contributions in the field of accelerator physics which include heading C-A's Accelerator Division since October 1999 in the successful commissioning of the Relativistic Heavy Ion Collider (RHIC). A forefront figure in the acceleration of

polarized proton beams, Roser led the development of a partial Siberian snake for the Alternating Gradient Synchrotron and full Siberian snakes for RHIC, strongly contributing to the first successful acceleration and storage of polarized protons in RHIC during September 2000.

Peter Johnson
Peter Johnson, Physics Department, an internationally recognized leader in surface science and photoemission spectroscopy, heads the Physics Department's Electron Spectroscopy Group. His contributions include developing experimental techniques for inverse photoemission and spin-polarized photoemission, and the application of angle-resolved photoemission spectroscopy to the study of high-temperature superconductivity. Johnson and his group were the first to demonstrate that a new type of analyzer developed by SCIENTA can be operated to allow parallel collection of data as a function of both electron momentum and energy, substantially improving the energy resolution and data-collection rates.

Charles Springer
Charles Springer, Chemistry Department, has made exceptional contributions to both

basic magnetic resonance imaging (MRI) science and to the development of the BNL 4-Tesla (T) high-field MRI facility. Since joining the BNL Chemistry Department in 1994, he has directed the development of a 4T magnetic resonance instrument and the MRI laboratory. As part of the MRI program, Springer has pursued research focused on water dynamics in tissues, which has important implications for the functional imaging of the brain and the use of contrast agents routinely used in clinical MRI studies.

Toshi Sugama
Toshi Sugama of the Energy Sciences & Technology Department has focused his research on synthetic material chemistry, including organic and inorganic polymers and ceramics; and surface sciences, including adhesives, coatings, and corrosion. This year, Sugama, who holds 14 patents, became the only BNL scientist to have won three R&D 100 Awards, which are given annually to the top 100 technological achievements of the year. Sugama's award this year was for a high-performance cement, primarily suited for use in geothermal wells, but also useful in oil and gas wells and for soil remediation.

Michael Herbert CNI-164-01

Physicists (cont'd.)

Tom Ludlam, Director's Office, local chair for the meeting, noted how important the process of long-term planning is to the field. "It's a challenge to look ten years down the road to what will be important in upgrades and new directions. The fact that all these scientists, who've been buried analyzing data without sleep for the past five months, took the time out on a snowy weekend shows how important this is — and how passionate this community is about this work."

The snow had threatened to put a damper on the meeting. But everything started on time and ran smoothly, Ludlam said, thanks to meeting planners Marcy Chaloupka, Physics, and Susan White-DePace, Director's Office, who even arrived the night before and stayed in BNL dormitory rooms to beat the snow. Plant Engineering had the roads and parking lots plowed, Staff Services employees supported the conference, and Flik dining services kept everyone well fed.

— Karen McNulty Walsh

Arrivals & Departures

Arrivals

- Thomas E. Carroll
Plant Engineering
- Edwin G. Haas
NLS
- Jamal Jalilian-Marian
Physics
- Karl P. Kusche Jr.
NLS
- Sergey Y. Panitkin
Physics
- Vincent J. Susinno
Plant Engineering

Departures

- Dan T. Abell
Collider - Accelerator
- Cel T. Morada
Occupational Medicine
- Martin L. Purschke
Physics
- Elaine Taylor
Superconducting Magnet

Link Between Dopamine, Obesity (cont'd.)

triggered by chronic overeating," says Wang. "However, it's also possible that these people have low numbers of dopamine receptors to begin with, making them more vulnerable to addictive behaviors including compulsive food intake."

The researchers note that, based on this study alone, they cannot conclude whether the brain changes they have detected are a consequence or a cause of obesity. They also acknowledge that the regulation of body weight is extremely complex, involving many physiological mechanisms and neurotransmitters. But they do suggest that addressing the dopamine receptor deficiency or finding other ways to regulate dopamine in obese people might help reduce their tendency to overeat.

Unfortunately, many of the drugs that have been shown to alter dopamine levels are

highly addictive. But exercise, which has other obvious benefits in weight control, is another way obese subjects might be able to stimulate their dopamine pleasure and satisfaction circuits, the researchers suggest. "In animal studies conducted elsewhere, exercise has been found to increase dopamine release and to raise the number of dopamine receptors," Volkow says. This suggests that obese people might be able to boost their dopamine response through exercise instead of eating — just one more reason to exercise if you're trying to lose weight.

This study was funded by DOE and the National Institute on Drug Abuse, part of the National Institutes of Health. For more information, see BNL's news releases at http://www.bnl.gov/bnlweb/pubaf/pr/news_releases.html.

— Karen McNulty Walsh

Holland to Head DOE Area Office (cont'd.)

sound record of dedication and personal integrity to his new job."

As manager of the High Flux Beam Reactor Transition Project, Holland was a champion of community involvement and openness.

"He has committed to build on Brookhaven's strengths and enhance the efficiency and effectiveness of laboratory operations," said Gunn. "He brings a fresh, active approach to management that considers science, the environment and the community."

Holland has over 25 years of federal and private sector experience in the conduct of operations of reactors and other large facilities, and has extensive experience in public communications.

Over the past 10 years at Brookhaven, Holland managed high profile, complex projects as a team leader, su-

pervisor, and division director. His initial assignment was line management oversight of operations at the High Flux Beam Reactor (HFBR) and Brookhaven Medical Research Reactor (BMRR).

Recent responsibilities included start up of the Relativistic Heavy Ion Collider; the Brookhaven Graphite Research Reactor and HFBR decommissioning projects; and an assortment of environmental restoration projects. Special projects included the management of the HFBR environmental impact statement process and the Brookhaven spent fuel shipping project.

Holland began his career in the U.S. Navy in main propulsion engineering (1969-1974). In 1988, he received a BSc in nuclear technology from the State University of New York Regents College, Albany, New York.

— Peter Genzer

Rice Presents Talk at International Conference on ‘Counseling and Treating People of Color’

O narae Rice, a medical associate in BNL’s Medical Department, talked on the neurochemical aspects of substance abuse at the 14th annual international conference, “Counseling and Treating People of Color,” held on December 3-6, 2000, in San Juan, Puerto Rico.

Topics discussed at the conference highlighted both the social and neurobiological aspects of addiction and treatment.

According to Rice, “You need to understand both the social dynamics of addiction counseling and treatment, and the neurobiological mechanisms involved. They are equally important in identifying the most effective way of treating addiction.”

In his presentation, Rice described research that he participated in at BNL over the last two-and-a-half years. Rice, who is working towards his Ph.D. in biological psychology at Stony Brook University, cited neurotransmission and dopamine theory work conducted by research teams at BNL directed by Andrew Gifford, Nora Volkow, Stephen Dewey, and others.

As the title of the conference implies, talks focused on helping specific ethnic groups. As an African-American, Rice was pleased to be an invited speaker. However, he points out, the neurochemical mechanisms at work in the brain of substance abusers are universal, and not specific to any group in particular.

“Certainly, social and environmental factors play a large part in the treatment of addiction — and there are correlations that can be made between different ethnic groups with respect to these types of factors,” Rice said. “But our research investigates chemical changes on the cellular level. At that level no such correlations can be made.” — John Galvin



Roger Stoutenburgh CN-178-01

Inside Information

BNL’s Office of Economic Development and Technology Transfer has changed its name to the **Office of Intellectual Property and Industrial Partnerships** (OIP).

Margaret Bogosian, head of OIP, says the new name better reflects the functions of the office. Among OIP’s functions are providing patent and copyright protection for BNL-developed inventions and computer software with commercial applications, licensing BNL-developed technology to industry, and establishing research collaborations with industry.

Donald Fleming, BNL’s Chief Information Officer, announced that since November, 2000, **Carl Eyler** has been serving as the Lab’s Chief Cyber Security Officer, responsible for developing and implementing BNL’s cyber-security program.

Eyler joined BNL after serving for more than 13 years on active duty in the United States Army. He was with the Department of Defense (DOD) computer emergency response team and managed information security for DOD. He was also a network security engineering consultant for Lucent Technologies, New York City.

Eyler earned a B.S. in computer information systems from the University of the State of New York, and holds a Certified Information Systems Security Professional (CISSP) certificate from the International Information Systems Security Certification Consortium.

Wanted: BNL Judges for L.I. Science Fair

Volunteers are needed to act as judges for the Long Island Science & Engineering Fair, an annual competition for Long Island high school students. This year the fair will be held on Monday, March 12, and Thursday, March 15, at the Huntington Town House. Judges may choose to attend either one or both days. The projects to be assessed are on the level of INTEL projects and 160 judges are needed to interview students about their experiments.

To offer your expertise to help encourage young L. I. scientists, contact Elaine Lowenstein, BNL Ambassador Program, Community Involvement, elowenstein@bnl.gov, Ext. 2400.

Last Call for CRADA Pre-Proposals

Just a reminder that the pre-proposals for the multi-year CRADAs for the Laboratory Technology Research Program are due in the Office of Intellectual Property and Industrial Partnerships by Wednesday, February 14.

Computing Training

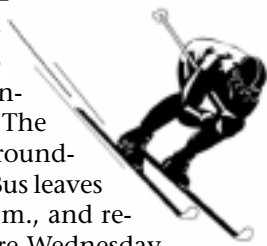
The Information Technology Division (ITD) has scheduled the following PC training classes for February:

date	class	time
March 5-9	Perl Programming	8 a.m. - noon
March 5-9	Introduction to UNIX	1 - 5 p.m.

These classes will meet in the PC training room in Bldg. 515. The training fee for each class is \$730 per student. To register for these classes, send an ILR for the appropriate amount, indicating which class you are registering for, to Pam Mansfield, Bldg. 515, by February 14. See the ITD training page at www.itd.bnl.gov/bnl/training for more information and course schedules.

BERA One-Day Ski Trip

There is still room available for the BERA-sponsored one-day ski trip to Camelback Mountain Ski Resort in Pennsylvania on Wednesday, February 21. The cost is \$45 per person, which includes round-trip bus transportation and a lift ticket. Bus leaves from the Brookhaven Center at 5:30 a.m., and returns at 9 p.m. Make reservations before Wednesday, February 14, at the BERA Sales Office. For more information, contact Andrea Dehler, Ext. 3347; Tom Dilgen, Ext. 7455; or Bob Marascia, Ext. 7779.



Remember: Donate to the BNL Food Drive!

SQL Server 2000

If you are interested in taking a five-day, on-site course on SQL (Structured Query Language) Server 2000 for Windows NT/2000, contact Samantha Lin, slin@bnl.gov, Ext. 3471.

On-Site Degree Courses

Empire State College, a college of arts and sciences within the State University of New York, will hold two courses on site this spring semester.

Empire, which will offer associates’ and bachelor’s degrees in science, mathematics, and technology, uses individualized degree programs. Students pursue degrees with mentor guidance, individual projects, small group study, and independent research assignments. Life and work experience can satisfy some degree requirements, allowing students to complete their degrees more quickly. Students must formally register with Empire in order to attend these classes. The classes on site will be:

American History: 5-7:15 p.m. on six Wednesdays, 3/14, 3/28, 4/11, 4/25, 5/9, and 5/23.

Statistics: 5-7:15 p.m. on six Thursdays, 3/8, 3/15, 3/22, 3/29, 4/5, and 4/12.

An information/registration meeting will be held on Tuesday, February 27, from 5:15-7:15 p.m., in Berkner Hall, Room D. E-mail Marilyn Pandorf, pandorf@bnl.gov, or Starr Munson, munson@bnl.gov, if you are interested in attending.

Calendar

(continued)

Wednesday, 2/14 (cont’d.)

Rifle & Pistol Club Meeting

Noon, Conference Room, Bldg. 535A. For more information, contact Jim Dunan, Ext. 5993; Sue Foster, Ext. 5529; or the club’s hotline, Ext. 2658.

Ribbon-Cutting Ceremony

1 p.m., Procurement & Property Management celebrates the opening of the new warehouse, T-100, hosted by Dr. Marburger.

Safety Glasses Office Closed

Thursday, 2/15

BERA Bridge Club

7 p.m., Berkner Hall cafeteria. For more information, contact Morris Strongson, Ext. 4192, or mms@bnl.gov.

Friday, 2/16

Women Engineer’s Lunch Networking Meeting

Noon, Berkner Hall, Room A. Contact Lorraine Merdon, Ext. 3318.

—WEEK OF 2/19—

No Bulletin will be published this week due to the Lab holiday for President’s Day.

Monday, 2/19

Brookhaven is closed today in observance of Presidents’ Day.

Wednesday, 2/21

BNL Lecture

4 p.m., Berkner Hall. William Studier, Biology Department, will talk about structural genomics research at BNL.

—WEEK OF 2/26—

Wednesday, 2/28

BSA Distinguished Lecture

4 p.m., Berkner Hall. Anton Zeilinger, a professor of experimental physics at the University of Vienna, will speak on quantum experiments and the foundations of physics.

Thursday, 3/1

BERA Bridge Club

7 p.m., Berkner Hall cafeteria. For more information, contact Morris Strongson, Ext. 4192, mms@bnl.gov.

—WEEK OF 3/12—

Thursday, 3/15

BERA Bridge Club

7 p.m., Berkner Hall cafeteria. For more information, contact Morris Strongson, Ext. 4192, mms@bnl.gov.

Note: This calendar is updated continuously and will appear in the Bulletin whenever space permits. Submissions must be received by the preceding Friday at noon to appear in the following week’s Bulletin. Please enter the information for each event in the order listed above (date, event name, description, and cost) and send it to bulletin@bnl.gov. Write “Bulletin Calendar” in the subject line.

**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 employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action Plan, selections are made without regard to age, race, color, religion, national origin, sex, 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; call the JOBLINE, Ext. 7744 (344-7744), for a list of all job openings; use a TDD system to access job information by calling (631) 344-6018; or access current job openings on the World Wide Web at www.bnl.gov/JOBS/jobs.html.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

DD2004. SECRETARIAL POSITION – Requires an AAS degree in secretarial science or the equivalent, excellent communication skills, comprehensive knowledge of Laboratory practices, policies and procedures, and experience with spreadsheets, databases and file management software programs. Knowledge of presentation software, specialized tracking software and lab-wide administrative computer systems and the ability to perform complex administrative procedures and a customer service orientation is necessary. Will be expected to develop proficiency in web-based programs be responsible for maintaining confidential administrative records, developing reports, and arranging conferences. Standards Based Management Systems Office.

OPEN RECRUITMENT – Opportunities for Laboratory employees and outside candidates.

MK9081. ASSISTANT CHEMIST – Requires a Ph.D. in chemistry, physics or a related field with postdoctoral experience preferred. Will work with a group focusing a new major effort in nanoscience with areas of interest in nanoscale charge transfer, catalysis and synthesis. The specific field of research is open, but should fall under the mission of the Department of Energy Office of Basic Energy Sciences and exploit the unique capabilities of the Laboratory. Under the direction of C. Creutz. Chemistry Department.

MK9126. POSTDOCTORAL RESEARCH ASSOCIATE – Requires a Ph.D. in material science, chemistry or physics with experience in the processing and study of magnetic materials. Additional experience should include the measurement and analysis of magnetic properties, electron and scanning probe microscopies, thermal analysis, and excellent communication skills. The research program endeavors to elucidate, via detailed and careful studies, the structural factors underlying the structure-sensitive magnetic properties of advanced permanent magnetic materials. In addition will study of the rapidly-solidified precursors to advanced magnetic materials and related rare-earth based magnetic materials. Under the direction of L. Lewis. Energy Sciences and Technology Department.

MK9026. POSTDOCTORAL RESEARCH ASSOCIATE – Requires a Ph.D. in experimental physics in superconductor development for magnet applications or in accelerator magnet development. The following experience is desirable: laboratory experience with superconductors (short sample testing, winding into coils for accelerator magnets), standard analysis software (Ansys or Roxie), and familiarity with the use of magnets in accelerators. Research will involve modifying the superconductor used for RHIC magnets or use at higher ramp rates, testing superconductor at high ramp rates, and assisting the construction and testing of model magnets made with the fast-ramp superconductor. Under the direction of A. Ghosh. Collider-Accelerator Department.

MK2200. POSTDOCTORAL RESEARCH ASSOCIATE – Requires a Ph.D. in chemistry. The ability with fast kinetic measurements, purification of chemical materials and solvents, computer-controlled data acquisition and mathematical modeling is important. Will investigate charge transport in molecular wire materials, short-lived ions or organometallic species and electron transfer in hydrogen-bonded complexes. The candidate would use Brookhaven's LEAF electron accelerator to inject charges into nanoscale wires and smaller molecules. Under the direction of J. Miller. Chemistry Department.

NS7722. MECHANICAL ENGINEERING POSITION – (Reposting) This entry-level position requires a BSME (MSME preferred), with academic training in thermodynamics, heat transfer, fluid flow, and material science. Familiarity with modern software tools is desirable. Tasks include development, modification, upgrading, and the supporting operations of cryogenic systems applied to high energy accelerators and complex high energy physics experiments. Collider-Accelerator Department.

DD2002. ENGINEERING POSITION – Requires a BS/BA degree in a science or engineering field and significant operational radiological experience; MS degree or CHP desirable. Will provide radiological engineering support the Laboratory departments and

divisions and the RCD Facility Support organization. Will be responsible for the Radiological Awareness Report Program and the Radiological lessons Learned Program. In addition, will participate in review of facility and shielding designs, Health and Safety plans, SAD/SAR review, ALARA reviews. Radiological Control Division.

TB8689. TECHNICAL POSITIONS – Requires an associate of applied science degree in mechanical technology or equivalent. The candidate should have good mechanical skills, the ability to work with basic hand tools, and familiarity with mechanical drawings and process and instrumentation drawings. Tasks include operation of large helium refrigeration systems, fabrication and installation of cryogenic piping, valves, cryostats and cryogenic targets. The candidate should also be familiar with general vacuum techniques and equipment associated with cryogenic insulating vacuum systems. Good communications skills, and the ability to work as part of a team are important. Regular rotating shift work is required. Cryogenics Systems Group, Collider-Accelerator Department.

DD8715. OFFICE SERVICES POSITION – Requires an AAS degree or equivalent related experience. A working knowledge of personal computers and exposure to computerized business systems is also required, as is knowledge of Excel, Word and payroll processing and systems. Fiscal Division.