

# Particle Post December 2012

*"Perhaps the best Yuletide decoration is being wreathed in smiles."* ~Author Unknown

Previous issues October 2004

## Note from the Chair Thomas Roser



As we approach the end of this year's shutdown activities are heating up in several areas. At the 10 o'clock area, where the two new electron lenses are being installed, it is getting difficult to find a parking spot. At the same time commissioning and operation is already in full swing. The new Optically Pumped Polarized Ion Source (OPPIS) has been running now for a while and is performing very well. The Electron Beam Ion Source (EBIS) delivered beam for NSRL and for commissioning new ion beams. Good progress is also occurring at the test Energy Recovering Linac (ERL), where the refrigerator is now operational and first rf power tests of the Superconducting RF electron gun show very good results.

I hope everybody will come to this year's C-AD Holiday Breakfast on December 20th and I wish everybody a great and enjoyable Holiday season.

## Administration Stephanie LaMontagne-McKeon



Many of you attended an informational meeting in Snyder last Thursday in which both DOE and BNL policy changes affecting the on-site government owned fleet were discussed.

The most contentious of the new policies discussed was the mandate by Secretary Chu to reduce the size of DOE'S fleet. Since last week's meeting we have been advised that the reductions planned for December 31, 2012 were grossly overestimated and that reductions planned for September 30, 2013 are no longer necessary. I am told that our interpretation of the mandate was faulty. Whatever the reason, news that only two of the twelve vehicles identified must be surrendered is an incredible relief.

Despite the more favorable interpretation of the Secretary's mandate, BNL is proceeding with the implementation of usage logs for all vehicles in the C-AD fleet. Steve Bubka has provided a clip board and log for each vehicle. Please help us to demonstrate the importance of these vehicles to C-AD's mission by documenting all use and providing your completed monthly logs for the prior month to Steve on the first working day of each month. BNL management can more effectively defend your transportation needs with supporting documentation.

Another policy update discussed at Thursday's meeting was reimbursement for business use of your personal vehicle. Reimbursement for on-site use is limited to routine, recurring use in the conduct of work responsibilities. Please note that the PRIOR approval of your supervisor is required. Within C-AD, the group secretaries will process monthly requests for reimbursement. Employees are required to maintain a log of business use on a format developed by C-AD for that purpose. The BNL policy governing reimbursement is documented in SBMS under domestic travel.

## Accelerator Division Wolfram Fischer



The NSRL Run 12 C concluded successfully before Thanksgiving after making up for all the time lost due to Hurricane Sandy. We will run the NSRL facility again for the National Reconnaissance Office (NRO), beginning 28 January 2013. BLIP operation is scheduled to begin on 17 December 2012.

The RHIC Run-13 preparations are now in full swing, led by Vahid Ranjbar, the Run Coordinator. We will run polarized protons at 255 GeV for the majority of the time, and have about 4 days of pp2pp operation with unusually large beams colliding in STAR. Time permitting we may also have a few weeks of low-energy gold-gold operation at the end.

The motor rotor of the Siemens motor-generator has been shipped for repair to a factory in Pennsylvania. Since there is chance it will not be here in time for the Run-13 start-up, we are also preparing for operation with the Westinghouse motor-generator. Cool-down to 4K in RHIC is scheduled for 11 February 2013, and the dry run for 14-18 January 2013.

The new polarized source, being build by Anatoly Zelenski and his team, made very good progress. If the polarization measurement at 200 MeV (after the linac) gives values at least as good as last year, it will be used for the first time in the upcoming run, and pave the way for more polarized proton intensity. The second device needed for more intensity is an electron lens in each of the rings. These are now being installed in IR10, and we plan to commission hardware and electron beams in Run-13.

## Experimental Support & Facilities Division Phil Pile



The 11 February start for Run 13 is holding firm with plans for at least a 15 week run. The run plan remains unchanged beginning with 255 x 255 GeV polarized protons with plans to accommodate a four day special STAR pp2pp run to be scheduled sometime near the middle of the run. A low energy gold run is planned should the goals for the polarized proton run be completed early and we run for more than 15 weeks.

STAR is finishing installation of a new smaller diameter beryllium beam pipe and has added a complete 24 quadrant Forward Gem Tracker (FGT) system and installed more than half of the 118 module Muon Detector Telescope (MTD) system (the remainder comes in 2014). In addition some parts of the new STAR Heavy Flavor Tracker (HFT) system will be tested during Run 13 with the full installation slated for the 2013 summer shutdown. PHENIX did not add any new detector systems this year but concentrated on repairs and upgrades to their present detector systems. One of the upgrades is the addition of new shielding in the North and South tunnels in places devilishly hard to access! The shielding should help to reduce background from beam losses affecting operation of the Resistive Plate Chamber (RPC's) detectors. We will be working on this until the last minute.

PHENIX will be ready to turn on their detectors for cosmic ray tests in about a month.

Last month I talked about the AGS g-2 experiment move (in progress) to Fermilab. Another one of our premier AGS fixed target experiments may also find renewed life at Fermilab. The experiment ran as E787 from 1984 to 1999 (with substantial upgrades along the way), as E949 from 2000-2002 and was prematurely terminated in 2002 along with the g-2 experiment with the loss of AGS fixed target funding. The experiment was a success in that it was able, for the first time, to identify a handful (7 to be exact) of decay events associated with the rare (one in ten to the tenth branching ratio) decay of a positive kaon to a pion and two neutrinos. This decay rate is precisely predicted by the Standard Model making a high statistics measurement of the decay a way to investigate physics beyond the Standard Model should the measured decay rate differ from the Standard Model prediction. The Fermilab proposal has Stage 1 approval and we are talking with the proponents about possible reuse of the LESBIII kaon beam line components used for E787/949 in the experiment at Fermilab. It remains to be seen if Fermilab can improve on the design of the LESBIII beam line. The BNL Electronic Detector Group (Physics Department) is directly involved with ORKA proposal.

NSRL Run12C for NASA finished on schedule on 19 November. Run12C will be followed by experiments sponsored by the National Reconnaissance Office (NRO) aimed at studying ways to improve electronics survival in space. The NRO experiment schedule has changed and is now planned to begin on 28 January and run through 8 February. The EBIS will deliver ions to the Booster for these experiments. NSRL Run13A for NASA is expected to start sometime in March 2013.

BLIP is scheduled to begin operations with LINAC beams on 17 December and will continue into early summer.

## Accelerator R&D Division Ilan Ben-Zvi



Commissioning of the ERL SRF gun continues. Up to date we have conditioned the fundamental power coupler up to 68 kW in stable operation and 82 kW for a short period. Klystron power of 68 kW corresponds to approximately 1.1 MV +/-10% gun accelerating voltage. As we spend more time at high power, outgassing is reduced and we are making progress toward the target voltage of 2.5 MV.

The 56 MHz RHIC cavity is at AES for the final acid etch and cleaning before an acceptance test in the Large VTF.

Coherent electron Cooling (CeC) infrastructure development at IP2 is progressing well. The 112 MHz SRF gun cryostat assembly is complete at Niowave and the RF test of the gun is planned for December 17-19. The first round of chemical etch of the 5-cell SRF cavity (BNL3-1) was completed at AES and the cavity is at BNL for a 600C bake in our vacuum oven (building 912). After the bake, this cavity will be shipped back to AES for final cleaning prior to a vertical test at BNL. Fabrication of the second cavity, BNL3-2, is in progress at Niowave. This cavity will be prepared similarly to BNL3-1 and tested at BNL. The best performing of the two cavities will be integrated in a cryomodule for installation in CeC linac. A review of the CeC Proof-of-Principle experiment took place. The international committee, chaired by Oliver Bruning of CERN, and including Hasan Padamsee of Cornell, Valery Lebedev of FNAL and Bob Palmer of BNL gave an extremely positive summary at the review close-out.

The prototype of the Double Quarter Wave Crab Cavity for the LHC high luminosity upgrade is under fabrication, and will be finished by the end of 2012. The crab cavity and related subjects were presented at the Hi-Lumi/LARP workshop on November 14<sup>th</sup> held in Frascati, Italy. Our cavity and the corresponding helium vessel are highly appraised by the attendants from CERN and other institutes. As we have finalized the cavity design, its mechanical aspects including the cryostat are next on the agenda.

## Operations Paul Sampson

Shutdown work continues to progress throughout the complex. Major focus is on the RHIC e-lens project. Installation of equipment in the tunnel, trailer and support buildings is ongoing.

Other RHIC projects are also being completed including: installation and testing of new and modified RHIC RF components for the 56 and 9MHz systems and the bunch-by-bunch dampers, CeC preparation work, Stochastic cooling equipment and instrumentation and other projects. Some the scheduled RF tests require no access in the 4 o'clock area of RHIC. These tests are being performed in the evenings to minimize impact on other work. Other projects around RHIC continue to make headway. Recertification of the Access



Controls system for RHIC continues this month. Minor impact on access is possible during live tests. For details on all work, follow the link below.

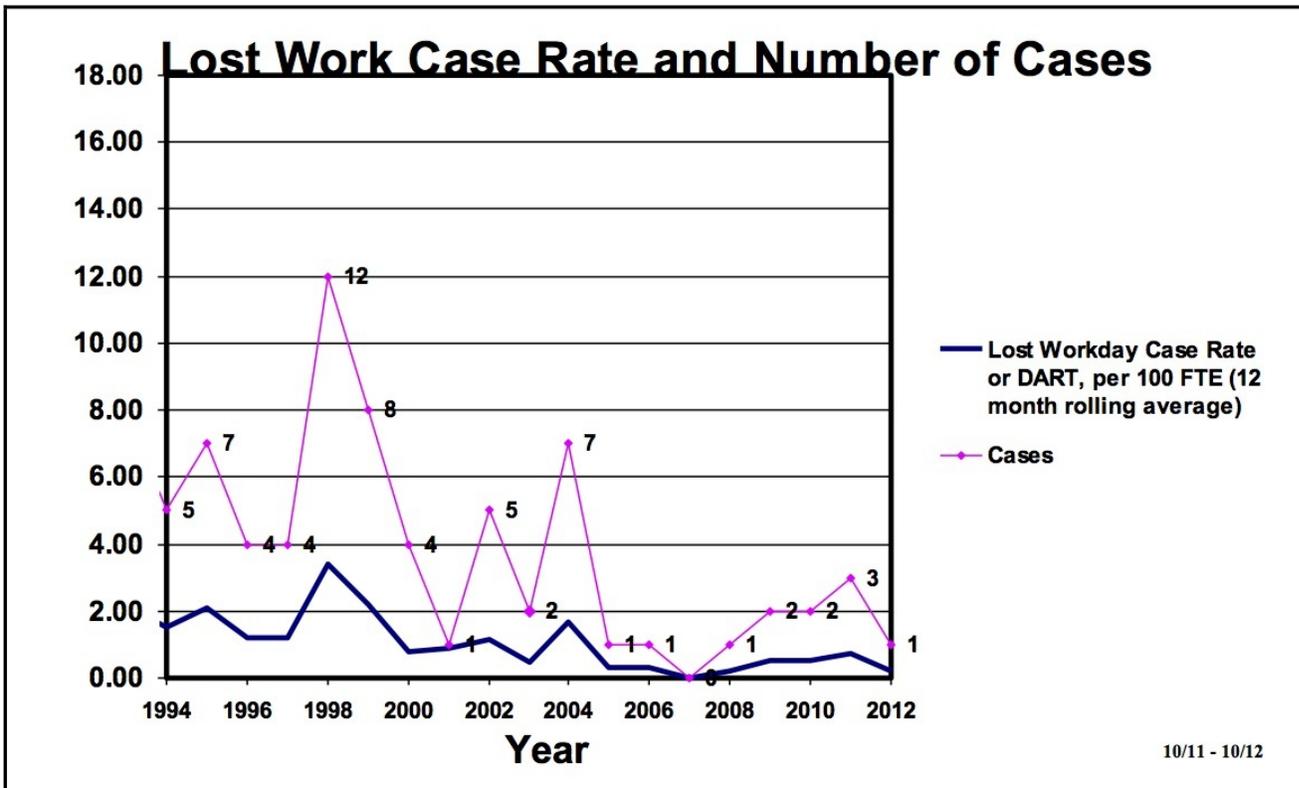
Injector work is wrapping up as startup nears. Final recertification of all systems at LINAC is underway. LINAC will be running for BLIP starting December 17<sup>th</sup>, as scheduled. Elsewhere, the installation of the new Access Controls System is almost complete. Testing is underway with full commissioning and certification expected by then end of the month. Other AGS shutdown work is also being completed. Preparation of the Westinghouse Motor Generator, including installation of new main bearings, is expected to finish by early January, which will enable polarized proton beam setup to commence by mid month.

Some minor work in the Booster is being completed during the gap in operation this month. It will be restored to operation in early January.

To view a list of the approved work for maintenance days or the shutdown, go the [Job Request System](#) and select the appropriate date. This link is behind the firewall and requires privileges to view.

For schedule updates see: [This Week](#), which can be viewed by all.

## ***Safety Stats***



### C-AD Occupational Injury Statistics

	For Year 2011	For Year* 2012
<b>First Aid Cases</b>	<b>4</b>	<b>3</b>
<b>Recordable Cases</b>	<b>3</b>	<b>3</b>
<b>Lost Work Cases</b>	<b>3</b>	<b>0</b>

\* Calendar Year through 10/12

**REMINDER: TLD exchange is done the *FIRST FRIDAY* of the Month.**  
**EXCHANGE DATE: FRIDAY, DECEMBER 7, 2012**  
**next: Friday, January 4, 2013**

*Pete Cirnigliario*



**Extension**

Patrick Bynum, Communications & Electronic Support, appointment has been extended through May 31, 2013.

## CONGRATULATIONS!

### Departures

Joseph O'Connor, BLIP Group retired on November 9.

Joel Scott, ESSHQ Division is retiring effective December 14.

## GOOD LUCK!



[RHIC Newsletter](#). Please click on link to the left to view the latest web publication of RHIC News.



*We wish all of you born in **December**  
a happy and healthy year ahead.  
Birthday people **ONLY** click on cake*



## Fun Time

Test your wit on holiday trivia by clicking [HERE](#). Good Luck!!



## Did You Know

## Laboratory Holidays

2013 Holidays	
New Year's Day	Tuesday, January 1, 2013
Floating Holiday (Martin Luther King Jr. Day)	Monday, January 21, 2013
President's Day	Monday, February 18, 2013
Memorial Day	Monday, May 27, 2013
Independence Day	Thursday, July 4, 2013
Floating Holiday	Friday, July 5, 2013
Labor Day	Monday, September 2, 2013
Veterans Day	Monday, November 11, 2013
Thanksgiving Day	Thursday, November 28, 2013
Day After Thanksgiving	Friday, November 29, 2013
Christmas Eve (1/2 day)	Tuesday, December 24, 2013
Christmas Day	Wednesday, December 25, 2013

\* The Christmas Eve Half-Holiday consists of the last four hours of regularly scheduled work preceding Christmas Day. A holiday which occurs on a Saturday is observed on the prior Friday; a holiday which occurs on a Sunday is observed on the succeeding Monday.

## C-AD Emergency Assembly Areas

[BNL: Departments](#) | [Science](#) | [ESSH](#) | [Newsroom](#) | [Administration](#) | [Visitors](#) | [Directory](#)

Building Number and Link to Building Picture	Building Description	Address	Outdoor Assembly Area	Indoor Assembly Area	Shelter In Place	Evacuation Zone Number
<a href="#">801</a>	RRPL	60 Rutherford Drive	801 Front Lawn	801 Room 1-9 Lunch Room	801 Room 1-9 Lunch Room	9
			901A		TRNG Control	

<b><u>901A</u></b>	Tandem Van De Graaff	59 Cornell Avenue	Parking Lot West of Building	TDVG Control Room	TDVG Control Room/Target Rooms	9
<b><u>911</u></b>	Office/Service Building	35 Lawrence Drive	East Parking Lot	911 Lobby/Snyder Seminar Hall	911 Lobby/Snyder Seminar Hall	1
<b><u>912</u></b>	AGS Experimental Hall	35 Lawrence Drive	East Parking Lot	911 Lobby/Snyder Seminar Hall	911 Lobby/Snyder Seminar Hall	1
<b><u>912</u></b>	Accelerator R&D Area	35 Lawrence Drive	East Parking Lot	911 Lobby/Snyder Seminar Hall	911 Lobby/Snyder Seminar Hall	1
<b><u>919A</u></b>	Works Building	4 Thomson Road	919A Parking Lot	930 Lobby	930 Basement	1
<b><u>919B</u></b>	Works Building	6 Thomson Road	South Parking Lot	919B	930 Basement	1
<b><u>922</u></b>	Scientific Assembly	38 Lawrence Drive	East Parking Lot	911 Lobby/Snyder Seminar Hall	911 Lobby/Snyder Seminar Hall	1
<b><u>923</u></b>	Electronic Equip Repair	1 E. Fourth Avenue	East Parking Lot	911 Lobby/Snyder Seminar Hall	911 Lobby/Snyder Seminar Hall	1
<b><u>925</u></b>	Works Building	33 Lawrence Drive	Front of 925 (South Side)	911 Lobby/Snyder Seminar Hall	911 Lobby/Snyder Seminar Hall	1
<b><u>928</u></b>	MG Power Supply	10 Cockcroft Street	928 Parking Lot By MG Set	Siemens Control Room	928 Basement	1
<b><u>929</u></b>	RF Power Supply	12 Cockcroft	No Sign	Siemens Control Room	928 Basement	1

<u>930</u>	200 MeV Linac and EBIS Addition	16 Fifth Avenue	930 Parking Lot	930 Lobby	930 Basement	1
<u>931</u>	BLIP	20 Michelson Street	931 Driveway	931 Control Room	931 Control Room	1
<u>940</u>	Center for Accelerator Science Education	72 Fifth Avenue	East Parking Lot	940 Kitchen	966 Main Lobby	1
<u>958</u>	NSRL Exp. Support Bldg.	West Fifth Avenue	958 Parking Lot	958 Kitchen	930 Basement	1
<u>966</u>	Experiment Computer	35 Lawrence Drive	East Parking Lot	966 Main Lobby	966 Main Lobby	1
<u>975</u>	Machine Shop/SPS	10 Thomson Road	South Parking Lot	919B	930 Basement	1
<u>1002D</u>	BRAHMS Counting House	Renaissance Circle	1002B Parking Lot	1005S Lobby	1002D	2
<u>1004A</u>	RF Service Building	Renaissance Circle	1004A Parking Lot	1005S Lobby	1005S Lobby	2
<u>1005S</u>	Collider Center	500 Renaissance Circle	North East Parking Lot	1005S Lobby	1005S Lobby	2
<u>1006A</u>	STAR Service Building	Renaissance Circle	1006C Parking Lot	1006C Conference Room	1006C Conference Room	2
<u>1006C</u>	STAR Counting House	Renaissance Circle	1006C Parking Lot	1006C Conference Room	1006C Conference Room	2
<u>1006D</u>	Office Modular	Renaissance Circle	1006C Parking Lot	1006C Conference Room	1006C Conference Room	2
<u>1008A</u>	PHENIX Service Building	Renaissance Circle	1008A Parking Lot	1008A Control Room	1008A Control Room	2
<u>1008E</u>	Office Modular	Renaissance Circle	1008A Parking Lot	1008A Control Room	1008A Control Room	2
<u>1010B</u>	PHOBOS Counting House	Renaissance Circle	1010B South Parking Lot	1010B	1010B	2

*The Food Pantry needs our help.....*

*If everyone can bring in at least one non-perishable food item, this would help the local food pantries in our area. There are so many families who are in need of food and depend on their local food pantry to have at least one meal a day. With the food supply so low, the volunteer's who help out at our local food pantries can't help those in need. So please.....bring whatever you can to replenish the food supply for those in need.*

*Your donation of any non-perishable food item can be left in the box marked "Food Drive" located in the 911A Lobby. Your continued support is appreciated.*

*Thank you.*

From: Carter, Christine B  
Sent: Thursday, December 06, 2012 4:05 PM  
Subject: BERA UPDATE & OTHER INFO 12/6/12

**HEADS UP! 2 CHANGES IN TRAFFIC @BNL!**

a) The driveway across from the Gym by the Post Office 179 is now ONE WAY!!! The driveway from Center Street to the parking lot alongside Bldg. 179, where the Post Office is located, is now for entering only. Signs have been posted. Drivers should exit the parking lot onto Bell Avenue. [Map](#)

b) There is now a stop sign on Upton & Cornell, as you would head towards the North Gate.

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- On sale now at the BERA Store : Nutcracker tickets at Staller Center for 12/16, as well as Nets in BROOKLYN @ BARCLAY on March 1, 2013!!!
- SCIENCE LEARNING CENTER TOY SALE IS ON!!
- Suggestions welcome for BERA Trips for this winter & spring! Email me or any BERA Board member!  
<http://www.bnl.gov/bera/recreation/board.asp>
- GYM MEMBERSHIPS BEGIN IN JANUARY & END EACH DECEMBER, SO IT'S TIME!! READ THIS~ SIGN UP BY MAIL FOR EMPLOYEES! [http://www.bnl.gov/bera/recreation/gym\\_membership.asp](http://www.bnl.gov/bera/recreation/gym_membership.asp)
- THE BERA STORE HAS SOME TERRIFIC NEW ITEMS, AND OF COURSE, MOVIE TICKETS, CHANNUKAH GIFTS & STOCKING STUFFERS!
- UNITED WAY AUCTION & YARD SALE IS 12 & 13 Wed/Thurs @ Berkner! <http://intranet.bnl.gov/unitedway/default.asp>
- CLOSURES & HOLIDAY SCHEDULES: <http://www.bnl.gov/bera/recreation/calendar.asp>
- LAB HOLIDAYS: <http://www.bnl.gov/bnlweb/Admin/holidays.php>
- BULLETIN: For, non-employees, guests and visitors, including those in the apartments who are not employees, "Brookhaven This Week" is an email newsletter and will be distributed on Fridays to those who subscribe. To subscribe, complete the subscription form at <https://lists.bnl.gov/mailman/listinfo/thisweek-l> (the last character is the letter "l" not the number "1").  
If you have a "BNL.GOV" email address, you will automatically receive the new, updated newsletters.

**HAVE WONDERFUL & SAFE HOLIDAYS ~ BE SURE TO HAVE A DESIGNATED DRIVER!**



**ALUMNI NEWS: AGS/RHIC/C-AD RETIRED CROWD - We'd enjoy hearing from you and what you have been up to. Please send your notes to [pmanning@bnl.gov](mailto:pmanning@bnl.gov)**

**You can catch up on all of Eric Forsyth's travels by clicking on his sailing yacht below.**



 <h1 style="display: inline;">December 2012</h1>						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 Physics Colloquium, "TBA", Charles Gale, McGill U., , 3:30pm, Bldg. 510 Large Seminar	5	6	7 Pearl Harbor Remembrance Day  United Way Dunk Tank Event: 11am, The Firehouse  United Way Asian Food Tasting Event: 12pm, Bldg. 463 Biosciences Seminar Room  Holiday Shopping: Science Toys at the Science Learning Center, 12pm, Bldg. 935 Science Learning Center	8
9 	10	11 Physics Colloquium, "TBA", J. G. Milhano, CERN, 3:30pm, Bldg. 510 Large Seminar	12 United Way Event "Holiday Auction, Yard Sale and Holiday Boutique", 11am Berkner Lobby	13 'Get to Know the Lab' series, "The Business of a National Laboratory", Suzanne Davidson, Chief Financial Officer, 9am, Berkner, Room B  BNL Blood Drive, 9:30am, Brookhaven Center	14 Holiday Shopping: Science Toys at the Science Learning Center, 12pm, Bldg. 935 Science Learning Center  C-AD Accelerator Physics Seminar, "Accelerator Production of Radioisotopes-	15

				<p>United Way Event "Holiday Auction, Yard Sale and Holiday Boutique", 11am Berkner Lobby</p> <p>Hospitality Event "Evening with Santa", 5pm, Rec. Hall, Bldg. 317</p>	<p>Challenges and Opportunities", Dr. Suzanne Smith, BNL, 3:30pm, Bldg. 911B LCR</p>	
16	<p>17 United Way Event "WM 'Pie in the Face", 11:30am Berkner Auditorium</p>	<p>18 United Way Fundraiser - 2nd Annual Physics Pizza Palooza, 12pm, Bldg. 510, Physics Library</p> <p>Concert to Benefit the United Way "Songs of the 50's-60's", Featuring Tommy Sullivan, 5-7:30pm, Berkner</p>	<p>19 Sarah Wolfson (Lyric soprano) to perform, at Noon, Berkner</p> <p>Steve Vigdor Retirement Party, 3pm, Bldg. 510 Seminar</p>	<p>20 C-AD Holiday Breakfast, 9am-10:30am, 911A Lobby</p>	<p>21 Winter Begins 1/2 Lab Holiday</p>	22
23	<p>24 Lab Holiday</p>	<p>25  Lab Holiday</p>	<p>26 </p>	27	28	29
30	31					



# January 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		<p>&lt; b&gt;1 Lab Holiday New Year's Day</p>	2	3	< b>4< b>	5
6	7	8	9	10	11	12
13	<p>14 Technology Commercialization and Partnerships "Entrepreneurs' Network at BNL", James A. Hayward, Chairman, President and CE</p>	15	16	17	18	19
20	<p>21 Lab Holiday </p>	22	23	24	25	<p>&lt;&gt; 26 Office of Educational Programs Event "High School Science Bowl Competition", 8:30am, Berkner</p>
27	28	<p>29 Physics Colloquium "Constituent Quarks: The Beginning of the End", George Zweig, MIT, 3:30pm, Bldg. 510 Large Seminar</p>	30	31		



**We Remember**  
**Sept. 11, 2001**

**USS New York - A ship forged from the steel of the World Trade Center**

**Editor: Pamela Manning x4072**