

NOV '15
ISSUE

PARTICLE POST

COLLIDER-ACCELERATOR DEPARTMENT

Contact: [A. Lamberti](#)

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Quote of the Month: "The art and science of asking questions is the source of all knowledge." - Thomas Berger

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NOTE FROM OUR CHAIR: Thomas Roser

We are still funded on a Continuing Resolution until December 11 but the recent two-year budget agreement that adds 5% to this year's discretionary budget cap makes it more likely that a federal budget for FY16 will be adopted. In that case we will likely be able to run RHIC this year for the planned 22 weeks.

In preparation of the RHIC run the 56 MHz SRF storage cavity has been equipped with a new higher order mode damper. The cavity is being cold tested right now. Also, the installation of the 20 MeV electron accelerator and the permanent magnet undulators for the Coherent electron Cooling test is progressing well in the new 2 o'clock interaction region.

The installation of the Low Energy RHIC electron Cooling system is starting with the cooling section in the 1 o'clock warm straight sections. This project is progressing well and the team just successfully passed a cost and schedule review. Congratulations to all!

VIEW [CONFERENCE PROJECTIONS FOR 2015: DUE ASAP -](#)
CONFERENCES SHOULD BE PROJECTED THROUGH DECEMBER 2015

DID YOU KNOW??

Check out who received an employee Service Award this year! Collider-Accelerator Dept. employees who received a [Service Award](#).

Check out who received an employee [Spotlight Award](#) this year!

The holidays are fast approaching and the United Way Yankee Candle Fundraiser is a great way to help those in need.

EVENTS/SEMINARS



Check out the [BNL Calendar](#) for upcoming Events & Seminars or the [Upcoming Conferences & Workshops](#) page for those happening at BNL.

November 18 - (Berkner Hall | 10a-2p) Books Are Fun Book Fair

November 19 - (Bldg. 510 - Large Seminar Room |



C-AD Bake Sale



United Way Fundraiser



Tuesday, December 8, 2015

9:00 am – 12:00 noon

Bldg. 911 Lobby

Please come and enjoy the delicious baked goods donated by your co-workers



seeds of the cosmos, primordial goo created by the Big Bang, which existed on briefly before cooling the matter that helped birth stars, galaxies and planets. [Read more.](#)

Brookhaven National Laboratory projects are up for awards

Four projects developed at BNL have been nominated as finalists for awards to be presented this year by a national magazine. [Read more.](#)

Scientists Create Primordial 'Perfect Liquid' in Lab

The BNL's Relativistic Heavy Ion Collider smashed together large nuclei at nearly the speed of light to recreate the fundamental particles in the primordial soup present during the earliest days of the universe. [Read more.](#)

World's most powerful digital camera being built by US Department of Energy

The US Department of Energy is building a digital camera that puts your camera to shame. [Read more.](#)

The last place left in America that's piecing together the origins of the universe

In the instant after the Big Bang, the only thing in the universe that existed was a hot plasma soup full of subatomic particles. But to study that plasma, you don't have to travel back in time billions of years to the Big Bang itself - just go to Long Island, NY. [Read more.](#)



Comet C/2014 S2 Panstarrs, photographed by Steve Bellavia.



"Spiral galaxy, M74 (NGC 628), in the constellation Pisces is 32 million light years away. This galaxy is home to about 100 billion stars." -Steve Bellavia

WHAT'S GOING ON IN OUR NEIGHBORHOOD?

Interested in Cycling?

<http://www.bicyclelongisland.org/majoride.htm>

<http://www.cyclotour.com/events.htm>

Interested in Running or Walking?

Massapequa Park Turkey Trot – Nov 21 (9 am) Brady Park, Massapequa Park

Seeds of Hope 5K/10K – Nov 22 (9 am) at Neville Park in Center Moriches

DAY AT THE VINEYARDS...

Duckwalk North - SOUTHOLD - Music on Saturdays (4-6pm)

Castello di Borghese Vineyard & Winery - CUTCHOGUE - Vineyard Tours & Wine Tastings Every Thursday & Sunday at 1pm & FREE Jazz Every Saturday (2-4p) with Marguerite Volonts

Smithtown Kickers Turkey Trot - Nov 26 (9 am) in Smithtown

Run Your Turkey Off Race – Nov 27 (9:30 am) in West Islip

...Check out the [LI Running Calendar](#) for **more!**

For the Kids:

Celebrate Black Friday - Nov 27 (12 - 4 pm) in Stony Brook Village

* Free event includes Live Music, Petting Zoo, Balloon Animals, Celestial Singers, Wine Tastings, a holiday performance by Roseland School of Dance, and WALK Radio, as well as mega sales and specials in over 30 shops and restaurants!

Stony Brook Events:

Strangers in the Night (Holiday Musical Theater Performance) – Nov 18 - Jan 10 at the Educational & Cultural Center

The Jazz Loft Presents The Warren Vache Trio Jazz Concert - Nov 28 (7 pm) at the Educational & Cultural Center

Celebrating Ol' Blue Eyes - Dec 12 (7 - 9:30pm) at the Educational & Cultural Center

Port Jefferson Events:

Skating on the Harbor with the RinxVillage Center – Nov 27 – Mar 31 at PJ Village The Rinx

Santa Parade Main Street – Nov 28 at PJ Chamber

20th Annual Dickens Festival – Dec 4 - 6 in PJ Village

Homes of Harbor Hills - Lantern Light House Tour - Dec 12 at PJ Chamber

Check out Erik Forsyth's Travels:



[HTTP://WWW.YACHTFIONA.COM](http://www.yachtfiona.com)

Jamesport Vineyards - JAMESPORT -Live Music from 1-4pm every Fri, Sat & Sun

Martha Clara Vineyards - RIVERHEAD - Live Music every weekend

Palmer Vineyards - RIVERHEAD - Live Music every Sat (12-4).

Pindar Vineyards - PECONIC - Live Music Every Saturday (1-5pm)

Baiting Hollow Farm Vineyard - BAITING HOLLOW - Music every Sat & Sun from (2-6)

Faumanok Vineyards - RIVERHEAD - Fresh, Local Oysters (2-5pm) every Sat & Sun starting Memorial Day through September

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NOTE FROM OUR ADMINISTRATION: Sue Pankowski

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Fiscal year 2016 began in October with federal budgets on a continuing resolution (CR) that would fund the U.S. government through December 11, 2015. What does this mean for C-AD? The funding allocated to C-AD for our Department of Energy operating programs is only about 20% of last year's funding levels, and the actual fiscal year 2016 budgets are not yet determined.

Starting the year on a CR has become the norm over the past several years, and always presents us with unique fiscal challenges as we plan for the upcoming RHIC run. As a department, we were able to control costs in fiscal year 2015, leaving us with a healthy amount of carryover funds (that is, funding allocated last year that was not spent) to start this new year. That carryover coupled with the 20% CR funding is what allows us to continue operating as planned. But without knowing the complete picture on what to expect as a final budget for the year, we can only make our best educated guess. With that being said, for those of you working on RHIC, we ask that you focus on spending only what is absolutely essential to prepare for RHIC Run 16.

As for the overall federal budget status, last week both houses of Congress passed a bipartisan two-year budget bill, and the President subsequently signed that bill into law. This budget deal establishes the framework for federal government spending for the next two years, however, it doesn't actually appropriate any funds beyond the current CR. That responsibility goes back to the hands of congressional appropriations committees, who must write that legislation to allocate funding to all federal programs prior to the December 11 deadline. Tune in next month for what we hope will be a positive federal budget update.

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NOTE FROM OUR ACCELERATOR DIVISION: Wolfram Fischer

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The NSRL Run15C is now under way and will last until Thanksgiving. We are still planning to start the RHIC Run-16 in January 2016, and will have Au+Au at 100 GeV, followed - time and budget permitting - by d+Au at a number of energies. During Run-16 and Run-17 the Coherent electron Cooling Proof of Principle (CeC Pop) experiments will run.

The BLIP Raster project, lead by Rob Michnoff, has now installed the raster magnet into the BLIP beam line and final tests are under way. With the raster, and the already demonstrated increase in the beam current from the Linac, we will be able to make more medical isotopes than in previous years.

On 4-5 November 2015 a review of the Low Energy RHIC electron Cooling (LEReC) project was held by DOE. The project has now produced the first magnets and received other hardware for installation in the RHIC IR2. The substantial technical progress and improvements in project controls were noted at the review closeout. The Low Energy RHIC electron Cooling project is our largest upgrade, and will enable a 4-fold luminosity increase at the lowest collision energies, thereby enabling a 2-year physics program.

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NOTE FROM OUR EXPERIMENTAL SUPPORT & FACILITIES DIVISION: Phil Pile

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As we approach the end of the Summer shutdown, the PHENIX experiment has completed the installation of the North MPC and MPC-EX detectors and started the installation of the South detectors along with the West silicon vertex detector in the central magnet. The STAR experiment with minimal changes this Summer, just completed the global interlock certification and will start installing the silicon strip detector next. Both experiments will be ready with cool down set to begin on 4 January.

The Fall NSRL run started on 12 October and continues to serve the user community with biology, cells, animals, and physics research. This run is expected to end on Friday, November 20th. Commissioning of the new Booster D6 extraction magnet and a 1.5 GeV/n capable beam line (Galactic Cosmic Ray simulator) is going well with MCR showing a 1.470 GeV/n Si 12 beam being tuned yesterday.

The sPHENIX project is undergoing an important cost and schedule review on Monday and Tuesday of this week. The BaBar magnet is being prepared for a low power 100 amp test. After leak checking and fixing a few leaks by R. Ceruti and SMD folks, the valve box has been installed on the magnet. We are still awaiting delivery of the cryo spools. The return spool was completed and the supply is being manufactured. The shipment date is 13 Nov which represents a one week delay. With these in hand, the C-AD cryo people can proceed with installing these on the refrigerator when the ERL testing provides a window of opportunity. This is expected later in November.

We plan to bring on the LINAC for BLIP by 15 December with commissioning of the new raster system followed by beam on our first BLIP targets by 4 January. Final testing of the raster system in building 919 with a new set of transformers for the power supply has been completed. The magnet will be installed in the BLIP beam line this week. The 2016 BLIP run is presently scheduled to run through July 2016.

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Link to: [ATF Newsletter](#)

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NOTE FROM ACCELERATOR R&D DIVISION: Ilan Ben-Zvi

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○ Safety Stats



The eRHIC design is proceeding along two directions, with emphasis on reduced risk and luminosity staging. In addition to the linac-ring studies led by Vadim Ptitsyn, a ring-ring design group, headed by Chris Montag is pursued as a low risk approach, which can be upgraded to a linac-ring at an advanced stage. The eRHIC R&D Advisory Committee, chaired by Michael Harrison, held its first meeting in August 10-11, and will meet again on November 19-20.

ERL commissioning is proceeding under the leadership of Wencan Xu, with operations directed most of the time at the MCR.

The ATF held its 18th Users Meeting on October 1-2, (<https://indico.bnl.gov/conferenceDisplay.py?confId=1274>). The meeting was highly successful, with 48 participants, 22 reports from active experiments and presentation of 5 new user proposals.

The 56 MHz cavity, which achieved its design 2 MV voltage performance (without the HOM damper) at the end of RHIC run 15, has received the modified HOM damper and is ready for voltage test with the damper in place.

The CeC injector demonstrated record 3 nC electron bunches from its superconducting RF gun at the end of run 15. Installation of the CeC experiment is proceeding in this RHIC shut-down with high priority. All major components are in place, and Accelerator Readiness review is planned for January 2016.

The Gatling Gun, now located at Stony Brook University, has been conditioned to over 58kV using High vacuum krypton with very low field emission as compared with earlier vacuum conditioning. The combiner magnet has been completed and installed, and all Gatling gun systems including drive laser have been completed and are ready for the start of beam tests. Multiple high quantum efficiency GaAs cathodes have been produced and the first strained superlattice photocathodes have been produced at BNL with near record quantum efficiency.

The collaboration between Cornell University and C-AD continues to develop the design for the FFAG-ERL demonstration experiment. A collaboration meeting was held at Cornell on October 30.

Wencan Xu, who has a large LDRD grant on "Design, fabrication and test of SRF cavity prototype for eRHIC ERL" won another large, highly competitive LDRD grant on "Higher-Order-Mode (HOM) damping for full luminosity of eRHIC". This new grant is for \$1.372 million over three years.

The design of helium vessel, magnetic shielding, and cryomodule for the Double Quarter Wave Crab Cavity (DQWCC) for Hi-Lumi LHC has been completed. A full review of the cryomodule will take place early November at CERN. Seven higher-order mode dampers and a tuning system were fabricated. The tuning system will be tested on the Proof of Principle cavity before installation on the cavities for SPS beam test. The assembled cryomodule is scheduled for a horizontal test in the first half of 2017, and SPS beam test in early 2018. All technical efforts are shared between BNL, Univ. of Lancaster (UK) and CERN.

Several people have retired or moved on. Harold Kirk, Kathy Tuohy and Pam Manning retired. We welcome Alyssa Pilkington as the Accelerator R&D Divisional Assistant. Sergey Belomestnykh left us to serve as the Chief Technology Officer of Fermilab. We will miss him and wish him success in his new position. Qiong Wu is acting SRF Group Leader. Diktys Stratakis started a leave of absence, spending most of his time at Fermilab's Muon Department, and the rest at BNL.

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NOTE FROM OPERATIONS: Paul Sampson



The final two months of the RHIC shutdown will continue to be very busy and completion of scheduled work will be challenging. Work in the AGS is reaching the final stages in anticipation of startup next month. Shutdown work and testing at LINAC continues where startup will occur mid December and BLIP production early January. Tandem, EBIS, and Booster continue to run for NSRL.

Focus at RHIC continues in the 1 and 2 o'clock regions and on the CeC PoP, LEReC and associated projects. Testing of RF in the 4 o'clock region continues including cold tests of the 56 MHz SRF cavity. Annual Access Controls System testing is ongoing, with some scheduled access interruptions in the RHIC tunnel and service buildings throughout the month.

The Booster continues to run well for users at NSRL. Run 15C is on schedule for completion on November 20th. At that time, the Booster will be shut down for 3 weeks. Possible installation of the new actuator for the r-line stripping foils and new BtA stripping foils would call for bakeouts in D sector and BtA respectively.

Preparation in the BLIP tunnel for installation of the Raster Project components has commenced and will continue until Linac startup in December. The Scanning Magnet and power supply have successfully been tested. The magnet will be installed in the BLIP tunnel early this month. Raster commissioning will begin after startup in December.

The "[RHIC Broadcast](#)" link displays the latest schedules for testing, power disruptions, outages and daily schedules.

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

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

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ARRIVALS: Welcome!

Louis Pena - Transferred from Biology to C-AD and will be working with Cathy Cutler in MIRP.

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DEPARTURES: Farewell, you will surely be missed..

Susan Thomas

Lou Russo

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Guest Notices:

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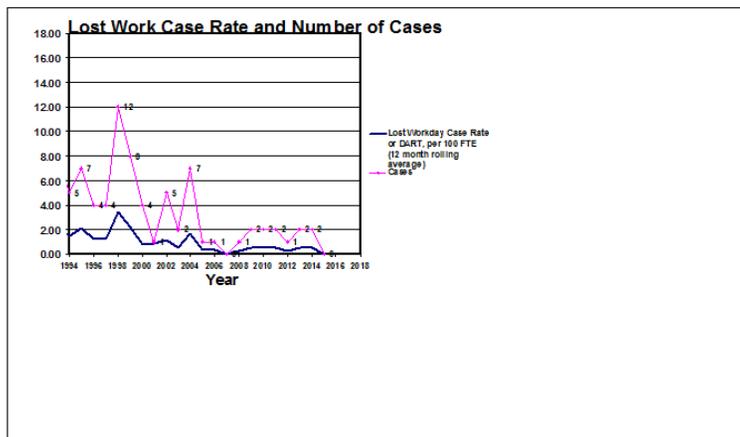
Acc. R&D Div.

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SAFETY STATS: Peter Ciriigliaro

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 Safety Stats



C-AD Occupational Injury Statistics

	For Year 2014	For Year* 2015
First Aid Cases	8	5
Recordable Cases	3	1
Lost Work Cases	1	0

* Calendar Year through 10/15